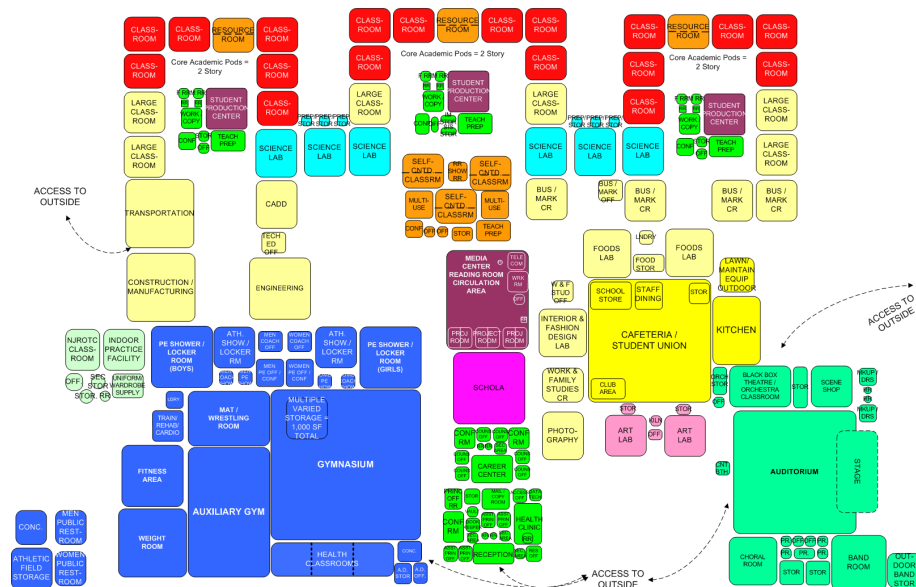


# High School Educational Specifications



**April 2009**

## Acknowledgements

DeJONG and HBA extend their appreciation to the Virginia Beach City Public School Division for commissioning these high school educational specifications and for its cooperation to make this possible. Special acknowledgements go to John Kalocay and Tony Arnold and their staffs for their tremendous support and guidance throughout the entire planning process.

We also thank the High School Educational Specifications Committee and the Virginia Beach City Public School Board.

### Virginia Beach City Public School Board

Mr. Daniel D. Edwards: Chairman; District 1 – Centerville  
Mrs. Rita Sweet Bellitto: Vice Chairman At-Large  
Mr. Todd C. Davidson: At-Large  
Mrs. Emma L. Davis: District 5 – Lynnhaven  
Mrs. Patricia Edmonson: District 6 – Beach  
Mr. Edward Fissinger, Sr.: At-Large  
Mr. Dan R. Lowe: District 4 – Bayside  
Mr. Lyndon Remias: District 7 – Princess Anne  
Ms. Sandra Smith-Jones: District 2 – Kempsville  
Mr. Michael W. Stewart: District 3 – Rose Hall  
Mrs. Carolyn D. Weems: At-Large

### Virginia Beach City Public Schools

**Superintendent:** Dr. James G. Merrill

**Deputy Superintendent:** Dr. Sheila S. Magula

**Asst. Superintendent of Accountability:**

Dr. Jared A. Cotton

**Asst. Superintendent of Administrative Support Services:** John Kalocay

**Chief Financial Officer:** Farrell E. Hanzaker

**Asst. Superintendent of Curriculum & Instruction:**

Dr. Christine W. Caskey

**Asst. Superintendent for High School Education:**

Dr. Hazel Jessee

**Chief Information Officer for Dept. of Technology:**

Ramesh K. Kapoor

**Director of Facilities Planning & Construction:** Tony Arnold

**Sustainable Schools Project Manager:** Tim Cole

**Project Support Staff: Office of Employee Relations:** Jerry Deviney

### HBA

Mike Ross, AIA, REFP, Vice-President

Joyce Craig, REFP, Facilities Planner

### DeJONG

William DeJong, Ph.D. REFP, CEO

Tracy Richter, President DeJONG-RICHTER, Project Director

Joy Ercoli, Planner

Kerrienne Smith, Planner

Alton Willis, Project Coordinator

## High School Educational Specifications Steering Committee

The School Division and Consultants would like to extend a special appreciation to the members of the High School Educational Specifications Steering Committee.

This Committee represents a broad cross section of the school community including students, parents, teachers, administrative staff, and community members. The Steering Committee had the important task development of the High School Educational Specifications.

The Committee was responsible for reviewing demographic and facility data, examining future trends that will impact educational facilities, and developing the high school educational specifications for presentation to the School Board regarding the future high school facility needs of the Division.

Kathy Allen  
Norma Baumstimler  
Bowen Beacham  
T'na Bell  
Cathy Benn  
Bruce Biehl  
John Brewington  
Joe Burnsworth  
Cindy Copperthite  
Vera Coppedge-Cornish  
Roger Crider  
Jerry Deviney  
Barry Frankenfield  
Leah Greber  
Pat Griffin  
Joanie Grimes

Eric Hallal  
Jack Harcourt  
James Haynie  
Teesha Henderson  
Rhonda Hinson  
Hazel Jessee  
Bill Johnsen  
Cindy Johnson  
Daniel Keever  
Laurie Knott  
Monica Lang  
Bob Lint  
Sara Lockett  
Jim Long  
Lauryn Moxey  
Evangeline Muldon  
Terrence Murphy  
Jeanne Noll  
David Palmer  
Dick Ponti  
Akira Powell  
David Prescott  
Jay Ratliff  
Kevin Rhue  
Eva Roupas  
Kathleen Rupprecht  
Lisa Senter  
Lois Smith

## Table of Contents

<b>Executive Summary.....</b>	<b>1</b>
<b>Overall Building Compilation of Space.....</b>	<b>3</b>
<b>Spatial Relationships .....</b>	<b>4</b>
<b>Illustration.....</b>	<b>5</b>
<b>Program Areas Compilation of Space .....</b>	<b>6</b>
<b>Program Area Overview .....</b>	<b>14</b>
<b>Special Features.....</b>	<b>17</b>
<b>Flexibility of the Learning Environment.....</b>	<b>19</b>
<b>21<sup>st</sup> Century Best Practices .....</b>	<b>21</b>
<b>Orientation &amp; Visioning Work Session Overview .....</b>	<b>27</b>
<b>Technology.....</b>	<b>45</b>
<b>Safety &amp; Security .....</b>	<b>51</b>
<b>Site Issues .....</b>	<b>56</b>
<b>Green Sustainable Schools .....</b>	<b>61</b>
<b>Aesthetics .....</b>	<b>64</b>
<b>Student Spaces .....</b>	<b>66</b>
<b>Public Spaces .....</b>	<b>67</b>
<b>Community Use .....</b>	<b>68</b>



## Executive Summary

The Division-Wide High School Educational Specifications document is a collaborative effort of a team of approximately fifty teachers, administrators, community representatives, and students to define the program design requirements for future Virginia Beach High Schools. The development of this document is a direct result of the Facility Master Plan which was completed in 2007 and which recommends new construction and renovations beginning at the high school level.

Consultants DeJONG, Inc. and HBA Architecture facilitated the process through a series of work sessions:

- The ***Orientation and Visioning*** session was held on February 26, 2008 and with a focus on how high schools of the future might be organized included a presentation of social and demographic trends, and trends in program delivery options at the high school level.

Participants worked in small groups to discuss the following topics for the year 2030:

- What students will be doing
- What staff will be doing
- What the learning environments will look like
- How communities and schools will collaborate
- The impact of technology on education
- How flexibility in learning environments can be created

Participants also discussed the advantages and disadvantages of organizational structures that included:

- Ninth grade academies, 10-12
  - Small learning communities
  - Thematic schools-within-schools
  - Departmental high schools
  - "Out of the box"
  - Small vs. large high schools
- ***Lab #1*** was a two-day work session held on March 11-12, 2008 in which participants worked in their program areas (e.g. core academic, visual arts, physical education, performing arts) to define the size and number of spaces, describe the adjacencies of spaces, activities in the spaces, as well as requirements for furniture, technology, plumbing, electrical, doors and windows, and any special considerations. Each group presented their descriptions to the whole group which fostered further discussions (such as flexible spaces, shared spaces, location of spaces), on a larger scale. Program spaces that are considerably large (cafeteria, auditorium, media center, schola, and career education) were addressed as well as student and public spaces. Lab #1 also included a review of issues such as safety and security, technology, site issues, outdoor athletic needs, sustainability, community use, and aesthetics that impact the whole school.

- **Lab #2** was a two-day work session held on April 16-17, 2008 in which participants worked in their program areas to review and further refine their descriptions, illustrations, and adjacencies. During the second day of the lab, participants were divided into heterogeneous groups to suggest ways of reducing the overall square footage and to establish priorities. Through the group exercise of sharing suggested reductions, some common patterns were evident (e.g. the elimination of dedicated study halls, the reduction of sizes of some spaces, and suggestions for shared spaces) that brought the proposed square footage into an acceptable range. The resulting building is a total of 289,488 square feet and has a capacity for 1,925 students (an average of 150 square feet per student). Both the summary of space and the overall building layout illustration are highlighted on the next two pages.

- The **Final meeting** was held on May 8, 2008 to give a final review of the High School Education Specifications document, and to address any questions of the committee.

The collaborative process of the work sessions allowed participants to define not only their own program area but gave them the opportunity to look at, and understand all areas. This promoted, for example, productive discussions regarding the merits of centralized and decentralized administration and guidance; having an enclosed cafeteria or an open commons for student dining; how to integrate technology education classes into the core of the building and not on the periphery; and making the media center more available by providing student production centers in each core area. Perhaps one of the most important discussions that resurfaced as a theme was the need to keep the building as flexible as possible to accommodate future programs and changes in program delivery methods.

## Overall Building Compilation of Space

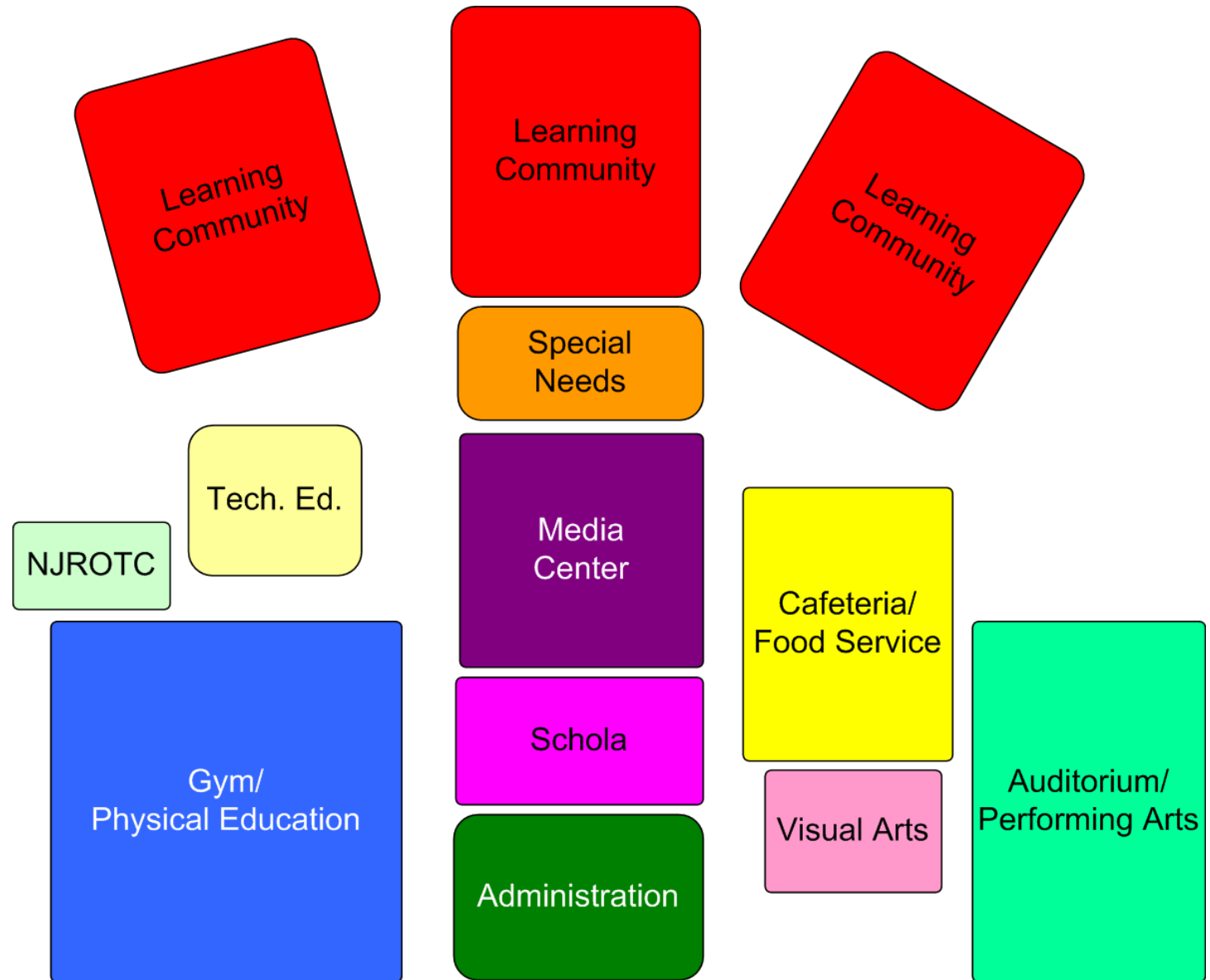
Space	Suggested	
	TS	Total
Learning Community #1	11	13,600
Learning Community #2	11	13,600
Learning Community #3	11	13,600
Learning Community #4	11	13,600
Learning Community #5	11	13,600
Learning Community #6	11	13,600
Special Needs	3	4,990
Technical / Career Education	13	20,050
Visual Arts	2	3,300
Music/Performing Arts	3	22,000
Gym / Physical Education	9	39,720
Schola		3,000
Media Center		6,500
Welcome Center/Administration		6,055
Cafeteria / Food Services		13,600
Custodial / Building Services		3,050
<b>Sub Total Programmed Areas</b>		<b>203,865</b>
Building Services, Circulation, Restrooms, etc.	42%	85,623
<b>Total</b>	<b>96</b>	<b>289,488</b>

Net to Gross: 42% of Program Area or 30% of Total is approx. the Same Number

Add Alternate [Needs to be decided by Site]	TS	Total
NJROTC (add alternate)	2	3,100

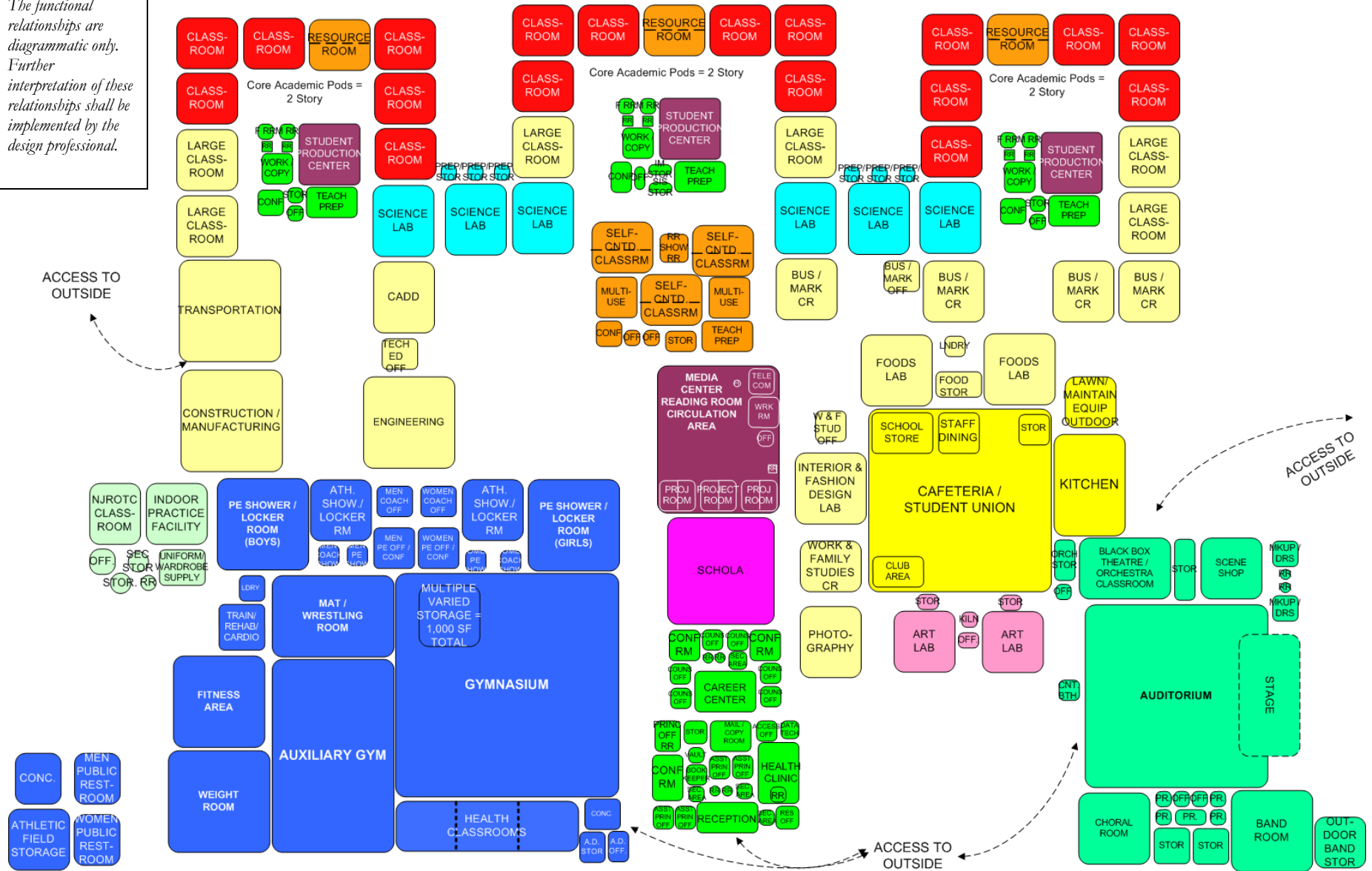
## High School Facility Spatial Relationship Drawing

*The functional relationships are diagrammatic only.  
Further interpretation of these relationships shall be  
implemented by the design professional.*



## High School Facility Illustration

The functional relationships are diagrammatic only. Further interpretation of these relationships shall be implemented by the design professional.



## Program Areas Compilation of Space

### Core Academic Learning Community

Learning Community	Suggested			
Core Academics	TS	Quantity	SF	Total
Classrooms	6	6	850	5,100
Large Classrooms [*Tech Ed Lab]	2	2	1,000	2,000
Resource Room	1	1	850	850
Science Lab	2	2	1,200	2,400
Science Prep/Storage		2	200	400
Student Production Center [Decentralized Media]		1	1,000	1,000
<b>Decentralized Admin/Guidance/Teacher Prep Area</b>				
Conference Room		1	250	250
Office		1	150	150
Instructional Material Storage		1	150	150
Work/Copy		1	300	300
Staff Restrooms		2	50	100
Teacher Prep		1	500	500
Student Restroom (male / female)		2	200	400
<b>Learning Community</b>	<b>11</b>			<b>13,600</b>
<b>Number of Learning Communities</b>				<b>6</b>
<b>Totals per Pod / Cluster</b>	<b>66</b>			<b>81,600</b>

\*Larger classrooms also could be Tech Ed Labs [Business, Marketing, Computer Labs]

### Special Needs

Special Needs	Suggested			
	TS	Quantity	SF	Total
Self-contained Classroom	3	3	850	2,550
Restroom/Shower		1	100	100
Multi-Use Special Needs Room		2	500	1,000
Additional Offices		2	120	240
Conference Room		1	300	300
Storage		1	300	300
Teacher Prep/Offices		1	500	500
<b>Special Needs-Sub Total</b>	<b>3</b>			<b>4,990</b>

**Technical / Career Education**

Technical / Career Education	Suggested			
	TS	Quantity	SF	Total
Foods Lab	2	2	1,400	2,800
Work & Family Studies Classroom	1	1	850	850
Food Storage		1	400	400
Laundry		1	200	200
Design Lab	1	1	1,400	1,400
Work & Family Studies Office		1	300	300
Construction/Manufacturing	1	1	2,400	2,400
Transportation	1	1	2,400	2,400
Engineering	1	1	2,000	2,000
CADD	1	1	1,200	1,200
Photography	1	1	1,200	1,200
Technical Education Office		1	350	350
Business/Marketing	4	4	1,000	4,000
Storage		1	200	200
Business/Marketing Office		1	350	350
<b>Total</b>	<b>13</b>			<b>20,050</b>

**Visual Arts**

Visual Arts	Suggested			
	TS	Quantity	SF	Total
Art Lab	2	2	1,300	2,600
Kiln Room		1	100	100
Storage		2	200	400
Office		1	200	200
Digital Art Lab	See Technical Education Photography			
<b>Visual Arts Sub-Total</b>	<b>2</b>			<b>3,300</b>

**Music and Performing Arts**

Music / Performing Arts	Suggested			
	TS	Quantity	SF	Total
Choral Room	1	1	1,600	1,600
Storage (Robes, Music)		1	500	500
Band Room	1	1	2,300	2,300
Band Storage (Instruments, Music)		1	500	500
Practice rooms		4	50	200
Auditorium Seating (800 seats)*		1	7,200	7,200
Control Booth		1	200	200
Auditorium Stage		1	3,500	3,500
Scene Shop		1	1,200	1,200
Make Up/Dressing		2	300	600
Storage (Costumes, Props)		1	500	500
Restrooms		2	50	100
Offices		3	150	450
Large Practice Room		1	100	100
Orchestra Storage		1	300	300
Black Box Theatre / Orchestra Classroom	1	1	2,000	2,000
Band Storage (Outdoor)		1	750	750
<b>Music/ Performing Arts Sub-Total</b>	<b>3</b>			<b>22,000</b>

\*Recommended that high schools have seating for 750-800 with 3-4 high schools having seating for 1,000



**Gym / Physical Education**

Gymnasium / Physical Education	Suggested			
	TS	Quantity	SF	Total
Gymnasium	2	1	15,000	15,000
Seating included in above: 2000 seats				
Storage		Multiple	Varied	1,000
Auxiliary Gym	1	1	5,000	5,000
PE Shower/Locker Room		2	2,000	4,000
Fitness Area	1	1	2,000	2,000
Wrestling Room	1	1	2,500	2,500
Weight Room	1	1	2,500	2,500
Athletics Shower/Locker Room		2	1,000	2,000
Training / Rehabilitation / Cardio Lab		1	500	500
PE Office/Conference		2	400	800
PE Staff Toilets/Showers		2	100	200
Laundry		1	200	200
Coaches Offices		2	300	600
Coaches Toilet/Shower		2	100	200
Health Classroom	3	3	850	2,550
Concessions		1	300	300
Athletic Director's Storage		1	220	220
Athletic Director's Office		1	150	150
<b>Physical Education Sub-Total</b>	<b>9</b>			<b>39,720</b>
Outdoor Spaces	Suggested			
	TS	Quantity	SF	Total
Football Stadium				
Athletic Field Storage		1	1,000	1,000
Public Restrooms		2	600	1,200
Concession		1	600	600
<b>Physical Education Outdoor Sub-Total</b>				<b>2,800</b>
<b>Physical Education Total</b>	<b>9</b>			<b>42,520</b>

**Schola**

Schola	Suggested			
	TS	Quantity	SF	Total
Schola [175 Seats]		1	3,000	3,000
<b>Schola Sub-Total</b>				<b>3,000</b>

**Media Center**

Media Center	Suggested			
	TS	Quantity	SF	Total
Reading Room/Circulation		1	4,000	4,000
Student Production Centers	In Each Learning Community			
Media Specialist Office		1	150	150
Workroom/Storage		1	400	400
Telecommunications Room		1	300	300
Hub Rooms, distributed thru Bldg		4	25	100
Project Room		3	500	1,500
Restroom		1	50	50
<b>Media Center Sub-Total</b>				<b>6,500</b>

\* 6 Student Production Centers. One in each Learning Community

**Welcome Center / Administration**

<b>Welcome Center / Administration</b>		<b>Suggested</b>		
<b>Administration</b>	<b>TS</b>	<b>Quantity</b>	<b>SF</b>	<b>Total</b>
Reception		1	600	600
Secretarial Area		3	80	240
Principal's Office/Rest Room		1	225	225
Assistant Principal's Office		4	125	500
Conference Room		1	400	400
Mail/Copy Room		1	300	300
Storage		1	150	150
Staff Restrooms		2	50	100
Resource Officer		1	150	150
Bookkeeper		1	120	120
Data Technician		1	100	100
Access Office		1	120	120
Health Clinic		1	700	700
Vault		1	80	80
<b>Guidance</b>				
Career Center		1	700	700
Counselors' Offices		6	120	720
Secretarial Area		1	100	100
Conference Room		2	250	500
Staff Restrooms		2	50	100
<b>Decentralized [See Core Academic]</b>				
School Improvement Specialist Storage [In One Pod]		1	150	150
Offices for Itinerant and Others		6	150	See Core
<b>Total</b>				<b>6,055</b>

**Cafeteria / Food Service**

Cafeteria / Food Service	Suggested			
	TS	Quantity	SF	Total
Kitchen		1	3,500	3,500
Preparation Area				
Serving Area				
Dry Food Storage				
Cooler/Freezer				
Ware Washing				
Kitchen Mgr Office				
Restroom				
Lockers				
Cafeteria / Student Union		1	8,000	8,000
Table & Chair Storage		1	300	300
Staff Dining w/Vending		1	600	600
School Store		1	700	700
Club Areas		1	500	500
<b>Food Service Sub-Total</b>				<b>13,600</b>

**Custodial / Building Services**

Custodial / Building Services	Suggested			
	TS	Quantity	SF	Total
Receiving/Storage		1	1,000	1,000
Maintenance/Repair Area		1	600	600
Office/Planning/Meeting Area/Break Room		1	300	300
Locker Room/Toilets		2	200	400
Lawn/Maintenance Equipment (Outdoor Storage)		1	750	750
Loading Area	Outside			
<b>Custodial / Building Services Sub-Total</b>				<b>3,050</b>

**NJROTC**

NJROTC	Suggested			
	TS	Quantity	SF	Total
Indoor Practice Facility	1	1	1,200	1,200
Classroom	1	1	850	850
Uniform / Wardrobe Supply		1	600	600
Office		1	200	200
Secure Armory Storage		1	100	100
General Storage		1	100	100
Restroom		1	50	50
<b>NJROTC Sub-Total</b>	<b>2</b>			<b>3,100</b>

## Program Area Overview

Listed below is an overview of each program area to be included in high school facilities in Virginia Beach. Special features of the school, such as furniture, equipment, technology, and site are also described.

- **Learning Community**

The learning community (pod/cluster) concept accommodates a variety of instructional strategies and student-grouping approaches. This concept also provides a learning environment that is characterized by flexibility, a sense of community for the students and teachers working in a pod/cluster or community, and a safe/well-supervised environment. Teachers will have the option and flexibility within a cluster to create and organize learning environments that work for students and their learning styles.

The basic organizational unit for this school will be the pod/cluster, consisting of general-purpose learning labs or classrooms, teachers' center, classrooms for intervention, accommodation, or transition, resource rooms, and science labs.

The learning communities can be organized based on individual grade level, grade groupings, or departmental grouping. The learning communities should be located near the Media Center and away from noisy spaces like the Gymnasium and Cafeteria. Special attention should be given to accessibility of all educational and support spaces and an integrated learning program.

- **Special Needs**

To ensure that students with special needs are integrated into the high school, it is important to provide various types of learning environments to best their needs. A learning cluster for special needs students will be developed for students who benefit by learning in self contained classrooms. The cluster will also provide space for special needs teacher offices, a teacher prep area, conference room, restrooms, a shower, and related support services such as speech therapy. Resource rooms will also be located within each of the Core Academic Learning Communities for students to have access for small group learning and assistance. The core classrooms will also provide inclusion for students within each learning community.

- **Technical and Career Education**

Workers of today may change occupations five to seven times in their lifetimes. In order to better prepare students for this trend, technical and career education courses are now organized into career clusters. Courses within the three cluster areas provide for career exploration, pursuit of career interests, preparation for the changing demands of life roles, study of the principles and practical experiences of technology and science, and application of academic learning in the world of work. In addition, many courses apply the concepts of Total Quality Management.

Students seeking employment after graduation from high school, as well as students seeking employment after the completion of college, may choose from a wide variety of technical and career courses.

- **Visual Arts**

Visual Arts is an integral component of the high school curriculum and these spaces should be designed to accommodate both 2-D and 3-D instruction.

Adequate storage, display cases (in the art labs and throughout the building), natural lighting, durable work surfaces, appropriate cabinetry and furnishings, need to be given strong consideration when planning these labs. Access to an outdoor space is also desirable.

- **Music & Performing Arts**

Music and performing arts should be accommodated in teaching spaces specifically designed for this curriculum. Vocal and instrumental music and performing arts are a dynamic part of any curriculum, providing students with an opportunity to improve their creative skills.

Design, size and shape of room, flexibility, ceiling heights, acoustics, storage, and room adjacencies should be especially considered when planning these spaces. Further, since the community will use these spaces, the location should be strategically placed within close proximity to an exterior entrance.

- **Schola**

The schola is a multi-use space similar to a lecture hall with a tiered floor and fixed seating. The schola should have an approximate capacity of 175 and be located between the cafeteria and media center. The schola should have state-of-the-art technology for multi-media presentations and other large group meetings to be utilized by students, teachers, and the community.

- **Physical Education**

To support school physical education programs, a variety of indoor and outdoor areas are required. Outdoor physical education teaching areas should be located near the indoor gymnasium.

Physical education facilities should be designed and constructed with a focus on community use during non-school hours, since there is a high demand for both indoor and outdoor facilities.



- **Media Center / Student Production Center**

The Media Center serves a dual role. Its traditional role is a library and a place to conduct research. Its new role is to serve as a technology and information base center. In this new role, the Media Center houses a transparent voice/video/data network, which runs throughout the entire building. This network enables the transmission of media services to the desktops of teachers and students without them physically entering the Media Center. This area is changing from a "depository of books" to a "technology information distribution center." It is not projected that the library functions will discontinue; rather digital technology will enhance voice, video, and data communications within the school, among district facilities, and with distance learning resources. In addition to the traditional Media Center spaces, each Learning Community will house a Student Production Center.

- **Welcome Center / Administration**

Immediately upon entry, visitors will be greeted in the administration "welcome area." The school principal office, support staff offices, guidance, and health services should be located in a centralized area at the main entrance of the school. Additional offices will be housed in the Learning Communities to offer a decentralized approach for administration and/or guidance if desired. These offices can be used for itinerant staff as well.

- **Cafeteria / Food Service**

This area is planned as a flexible room that can accommodate student dining, assemblies, and community meetings. It is proposed, through creative design, that this area will effectively house multiple functions with seating space for all uses.

- **NJROTC**

The mission of the NJROTC program is to instill in students the values of citizenship, service to the United States, personal responsibility and a sense of accomplishment. This program is currently housed in five VBCPS high schools.

- **Custodial / Building Services**

The diversity of the work provided by the Custodial and Building Services staff requires certain spaces (custodial office, locker room, storage) to be located near food services while other custodial spaces (equipment and supply closets with floor drains and sinks) will need to be conveniently located throughout the building. Oversized doors are needed for all custodial equipment spaces. Provisions for outdoor storage with water and electricity are required as well. Careful consideration must be given to the location of loading docks, providing separate service roads with access for deliveries, and separate parking for custodial and food service staff and for school owned vehicles. Additionally, the custodial staff is concerned about the ease of cleaning. Wall and floor surfaces must be appropriate for the type of use expected and must be durable and easily cleaned. Windows can have window blinds designed in between panes of glass.



## Special Features

Listed below is an overview of special features to be included in Virginia Beach high school facilities. Special features of the school, such as furniture, equipment, technology, and site are also described.

- **Corridors and Commons Spaces**

The front entry lobby should be welcoming and inviting for students, staff, and visitors. Extensive display areas should be provided for two-dimensional and three-dimensional student work and awards. Finishes should be durable and easy to maintain. The scale of all spaces should be student-friendly. Colors, artificial lighting, and natural day lighting should be managed artfully to create an environment that communicates that school is a very special place.



- **Furniture & Equipment**

Classrooms vary in shape and size; therefore, the furniture should be flexible to accommodate a variety of classroom formats for both individual and group activities. Teachers and students should have storage space for personal belongings, papers, and books as well as storage for supplies and materials. Work areas exist with direct access to copiers, multi-media equipment, and telephones. Teacher preparation areas should be located in close proximity to classrooms to permit, encourage, and enhance student and teacher interaction.

- **Technology**

The facility should contain the latest in technology and be configured with wireless access points throughout the facility. It should also be wired for voice, video and data throughout the building. The program design is intended to bring information to the desk of the student, and computer technology will be distributed in every classroom. It is intended that access to technology will be seamless and pervasive throughout the building. The Media Center should serve as the hub for technology distribution. Closets will be required for routers and telephone equipment.

- **Handicapped Accessibility**

The entire facility should be accessible for all students, staff, and visitors. This should be accomplished through judicious use of ramping and elevators where necessary, sufficient internal clearances for circulation, convenient bus/van loading and unloading, and nearby handicapped parking spaces. All elements of the Americans with Disabilities Act must be complied with, including way-finding and signage, appropriate use of textures, and universal accessibility of all indoor and outdoor school facilities.

- **Voting Area**

An area near a public entrance, such as in the cafeteria or in a large lobby, should be designated as an area for use as a voting site on election days. Typically, the space would be used from 5am to 9pm on a Tuesday or Saturday. Access to electrical, internet, and phone outlets would be required.

- **Storage Space**

Some storage spaces, such as custodial closets, do not have potential reuse as occupied spaces, but many other storage spaces may be later reused as offices. Accordingly, all storage areas with potential occupancy should be equipped with power, ample lighting, HVAC, internet and voice outlets as well as fire alarm strobes.

## Flexibility of the Learning Environment

Constructing the indoor and outdoor structures and spaces where students go to school today must meet many challenges and expectations. The aesthetics should reflect, first and foremost, the high academic aspirations of the school. It should have community visibility and presence. Creating a community landmark will establish a recognizable identity that will instill pride in its students and community and also express the value that the community has for its children. Areas within the school should be developed to have clear organization and internal identity.

The facility should be inviting to students, making them feel that the space is special, and therefore infer that each individual is special. Aesthetics that affirm the value of the individual must be emphasized, with spaces for the admiration of the accomplishments of self and others. The school should resemble a place for academic success, high self-esteem, social interaction, and physical safety. The facility layout should be especially easy to comprehend and reflect how classes relate to one another. Spaces should be provided for positive socialization among students and with teachers.

- **Variety of Instructional/Learning Spaces**

Space needs for ongoing student assessments and emerging, more active learning methods results in a greater variety of spaces to support learning. These include Teacher Planning Areas and Instructional Materials Storage Rooms.

### High School Educational Specifications

Spaces should be designed to allow for flexibility in educational delivery, size of student grouping, noisy collaborative student activities, and increasingly intensive reliance on computer technology. Spaces should allow students to work independently and collaboratively, give and/or receive tutoring, as well as accept instruction.

- **Facility Change Should Be the Norm**

Configurations of multiple, isolated classrooms make changes and additions cost-prohibitive and, once a building is constructed, often difficult to accomplish. Facilities should be constructed in a manner in which change and flexibility is the norm, not the exception. Building materials, systems, and furniture should be selected to support these concepts as well.



*(Photograph used for illustration purposes only)*

- **Indoor and Outdoor Learning Environments**

By rethinking all spaces, better use of the facilities and site can occur. One way to accomplish this is to use windows and outside areas to make rooms “feel” larger as well as utilizing outdoor areas for teaching environments.

Common and shared use areas should be considered to provide spaces for positive interaction and orientation within the school. All learning environments should be developed to foster a sense of belonging and pride. The use of the building system/design as an actual teaching model and example of technology and environmentally conscious design should be considered. Creativity and functionality should work hand in hand. Color, building materials, furniture, and landscaping should be selected carefully to develop a pleasing and inviting atmosphere.

The learning environment should be student-centered and designed for “hands-on learning,” promoting student autonomy and independence. Space for active participation should be incorporated, with classrooms providing opportunities for integrating disciplines and easy access to tools of exploration. The outdoor site should serve as a pro-active learning environment as well. In summary, the school should be a teaching tool, not merely a structure to house students.

- **New versus Existing Buildings**

The concepts found herein can be applied to new construction as well as the renovation of existing facilities. It is important to point out that achieving the educational and facility concepts should be the primary goal, which may result in the need to modify some of the square footage or other guidelines. The final determination for modifications should be: Does the space meet the academic needs of the students?





High School Educational Specifications

These investigations have resulted in a series of educational “best practices” intended to provide students with the greatest opportunity for success. Implementing educational best practices can have a significant impact on facilities and should drive the design of the building. It is important to realize that buildings need to be designed for the future and that constant change requires flexibility to meet the ever changing demands of best practices, technology, instruction, delivery and learning. The following describes a few educational best practices, cites examples where they have been implemented, and expresses the impact each has on facilities.



*(Photograph used for illustration purposes only)*

## 21st Century Best Practices

Public education is at a critical point in history. We have transitioned from the industrial age to the information age, and as most organizations have already done, school districts across the country are considering changing the way they do business. School districts are investigating governance, curricula, organizational models, current and emerging technologies, the role of administration and their local communities to determine the effect each of these has on student performance.

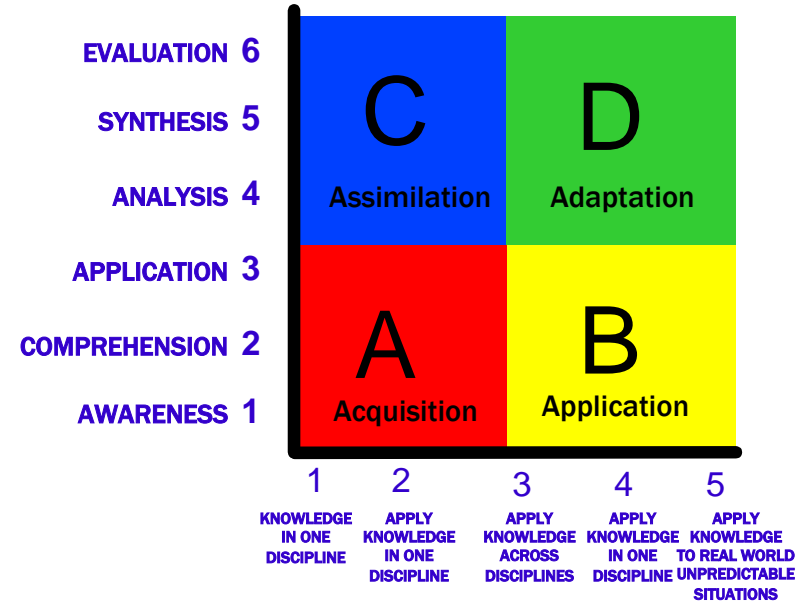
**Curriculum:** Offer essential knowledge, integrate it, and make connections to real life

- Based on federal and state content standards
- Require content areas to be linked to one another
- Accommodate multiple-intelligences and learning styles
- Demand critical thinking and problem-solving
- Incorporate pervasive technology
- Utilize multiple performance assessments

**Best Practice:** Best practices suggest that the core of the school curriculum must offer both the substance and the practicality to prepare students for an uncertain future. The curriculum should strive to meet individual needs without compromising larger goals. Dr. Willard Daggett, President of the International Center for Leadership in Education and a national expert on education, claims that schools should “make education rigorous and relevant for all students.” Daggett uses a Rigor and Relevance Matrix to categorize curricula into one of four quadrants. Daggett defines rigor as the level of Bloom’s Taxonomy achieved in any given lesson. He defines relevance as a continuum ranging from “knowledge in one discipline” to “applications to real-world unpredictable situations.”

**RIGOR/ RELEVANCE FRAMEWORK**

Source: International Center for Leadership in Education



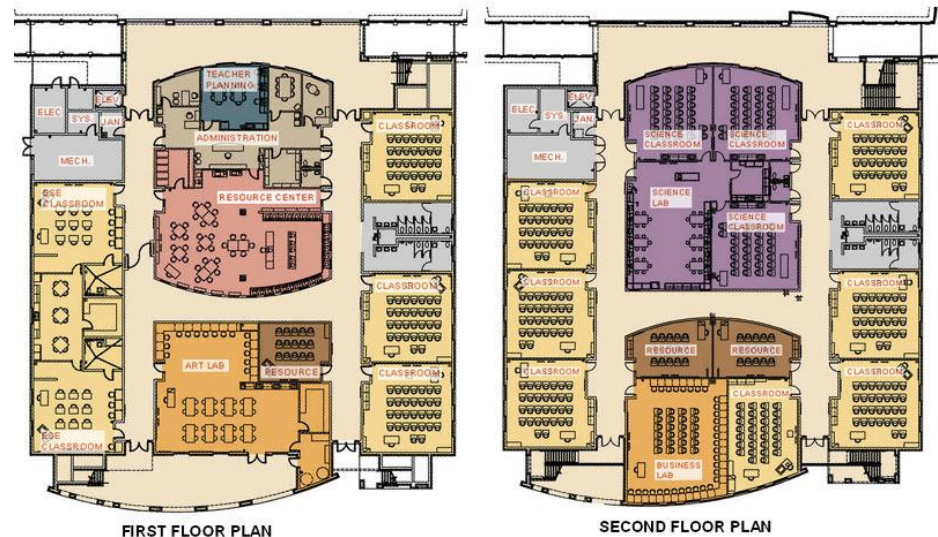
**Facilities Impact:** Adopting curricula that offer essential knowledge, integrated approaches, and connections to real life can have a significant impact on facilities. Facilities may require student production spaces for the creation of projects, small group rooms for collaboration, and large group presentation spaces for students to show their work.

## Organizational Models: Provide student-centered pod/cluster approach

**Best Practice:** Student-centered approaches provide students with a variety of opportunities to learn and develop skills and competencies based on their individual needs. Organizational models such as grade-level teaming, schools-with-in-a-school, and thematic approaches often characterize these student-centered approaches.

Best practices might suggest that facilities be organized into clusters/pods/houses, instructional units comprised of classroom spaces, student production spaces, and teacher preparation areas. Best practices might also suggest that double-loaded corridor designs cannot provide the flexibility necessary to accommodate multiple organizational models nor can they foster the same level of cooperation, teaming, and sharing of professional resources as house designs.

**Facilities Impact:** Implementing these organizational models, specifically the house/cluster/pod concept, offers significant advantages to the delivery of curriculum and observation of students. While the impact implementing the house concept has on facilities is continually being evaluated in terms of major systems, it typically should not outweigh the educational advantages.



New Chiles MS, FL  
SchenkelShultz Architects

*(Diagram used for illustration purposes only)*



## Examples of Organizational Models

- **Grade-Level Teaming:**

Grade-level teaming is based on organizing the building into separate grade-level units. Grade-level teams typically utilize an interdisciplinary approach. Each pod/cluster contains learning centers, regular classrooms, for each of the core academic content areas (i.e. mathematics, science, English, social studies). Students in each respective grade-level take their core academics in their house leaving only for specialty areas such as physical education, visual and performing arts, and technology education.

- **Schools-Within-A-School:**

Smaller schools or learning communities are housed in the same facility, but having separate governing bodies. Thus, a large school can be divided into smaller, more personalized units.

The school-within-a-school model provides an opportunity for more interaction between students and administrators and between administrators and staff. This allows the teachers to work cooperatively to best meet the needs of the students on their team.

- **Thematic Teaming:**

Thematic teaming is based on delivering curriculum within the context of a specific theme. Themes may include Science and Math, Fine and Performing Arts, or Foreign Language and Literature. A given school may have multiple themes or different themes for separate learning communities.



New Chiles MS, FL  
SchenkelShultz Architects



**Technology: Create pervasive and integrated systems**

- Access to voice, video, data, and electrical outlets provided in every instructional space
- Proficiencies incorporated into other content areas
- Utilize distance-learning opportunities
- Staff development

**Best Practice:** Technology continues to evolve and influence education. Technology has traditionally been perceived as a stand-alone content area with its own dedicated spaces. Best practices, however, suggest that technology should be incorporated into every learning space and into all curricula. Incorporating technology can accomplish two basic goals of education: linking traditionally isolated content areas and providing teachers with tools to explore more of Howard Gardner's multiple intelligences in their lessons.

Howard Gardner has indicated in "Frames of Mind" that there are several different types of intelligences (linguistic, mathematical, musical, kinesthetic, spatial, intrapersonal, interpersonal, and natural intelligence). Each person has strengths in some intelligences and weaknesses in others. Experts have indicated that students retain more information when several intelligences are involved in the learning process. For example, The NTL Institute for Behavior Science reports that students retain only 10% of what they read, but retain 90% of what they read, see, hear, experience, and teach.

**Facilities Impact:** Incorporating technology into all learning spaces and into all curricula can have a significant impact on facilities. First, all learning spaces would require access to voice, video, data ports, and electrical outlets. Second, infrastructure must be designed in such a way to allow access for maintenance and upgrades as technology continues to evolve.

**Administration: Increase student contact and flexibility**

**Best Practice:** As a result of recent violent crimes occurring in school facilities, school districts across the country are searching for both active and passive means of security. While not the only reason, best practices suggest that decentralizing administration serves this purpose. The decentralization of administrative services also provides the flexibility and opportunity for increased student contact, decreased student anonymity, and opportunities for passive supervision.

In addition, assistant principals, deans, and counselors form teams, are closer to the student and teacher, and can more efficiently use their time, expertise, and resources because their offices are located in the academic pods / clusters. Communication between administrators is no longer an issue as access to instructional information and student records and maintaining a positive and secure school environment can be achieved through the effective use of technology.

**Facilities Impact:** Decentralizing administration affects facilities only by the necessity to relocate offices and support spaces within each learning community and/or other areas.

**Community Use:** Instill a sense of participation, ownership, and pride

- Cooperative Alliances
- Youth Services
- Shared Decision-Making
- Community Service Volunteers
- Parent Involvement
- School/College Partnerships
- Polling places for elections

**Best Practice:** Best practices suggest that facilities should serve not only as an instructional centers for students, but also as user-friendly centers of the communities. Facilities should provide programs and access to resources for adults, businesses, and other community organizations. Community/school partnerships are playing an increasing role in secondary school facilities. These partnerships provide students with expanded learning opportunities, professional development opportunities for staff, and a venue for community activities.

High School Educational Specifications

**Facilities Impact:** Providing access to and forming partnerships with the community can have a significant impact on facilities. Additional spaces such as parent or community volunteer rooms, community locker rooms, and storage spaces may be necessary. In addition, for security purposes, community access may require careful attention to the organization of the facility. Community accessible portions of the facility may need to be located in areas that permit the remainder of the facility to be secure before, during, and after school hours.



*(Photograph used for illustration purposes only)*

## Orientation & Visioning Work Session Overview

On Tuesday, February 26, 2008 the Virginia Beach City Public Schools High School Education Specifications Committee met for the first time. The meeting was held at the Virginia Beach Resort Hotel & Conference Center on Shore Drive.

The meeting began with introductions of the committee, the school administration, and the consultants followed by a welcome from John Kalocay, Assistant Superintendent of Administrative Support Services and Director of Facilities Planning & Construction: Tony Arnold.

Tracy Richter, President of DeJONG-RICHTER, presented an overview of the Facility Master Plan that was completed Summer 2007. The plan recommends renovations and new builds across the Division, beginning at the high school level. Therefore, in order to proceed with the Facility Master Plan, educational specifications for the high schools are necessary. Mr. Richter also detailed the educational specifications process.

Dr. William DeJong, DeJONG CEO, made a PowerPoint Presentation entitled: High Schools – the Next Generation which discussed the history of high schools, social and demographic trends currently effecting high schools, and trends that are impacting the high schools of the future.





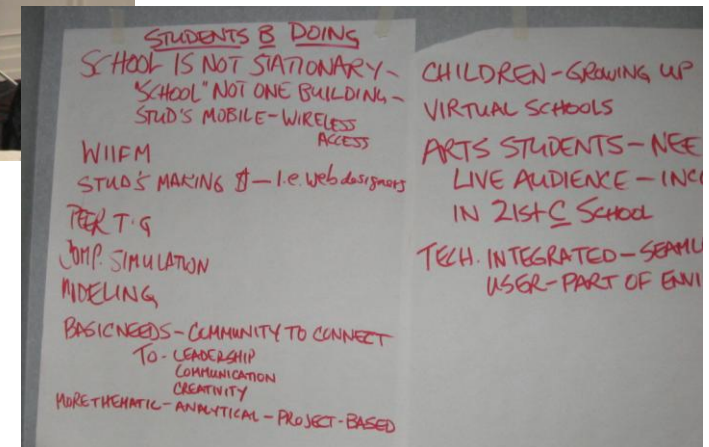
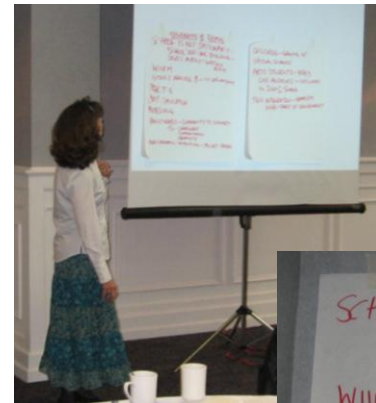
## Schools of the Future [2030]

The first task of the participants in this Work Session was to focus on the future of education. Although facilities are anticipated to have life expectancies of 50 years or more, we can be sure that education models will change during the life of the facility. The exercise was conducted to try to anticipate what the facility should be able to accommodate. Participants worked in one of six groups focused on these topics:

1. What will STUDENTS be doing in 2030?
2. What will STAFF be doing in 2030?
3. What will LEARNING ENVIRONMENTS look like in the year 2030?
4. How will COMMUNITY and SCHOOLS collaborate in the year 2030?
5. What will be the impact of TECHNOLOGY on education in the year 2030?
6. How do you create FLEXIBILITY IN LEARNING ENVIRONMENTS in the year 2030?

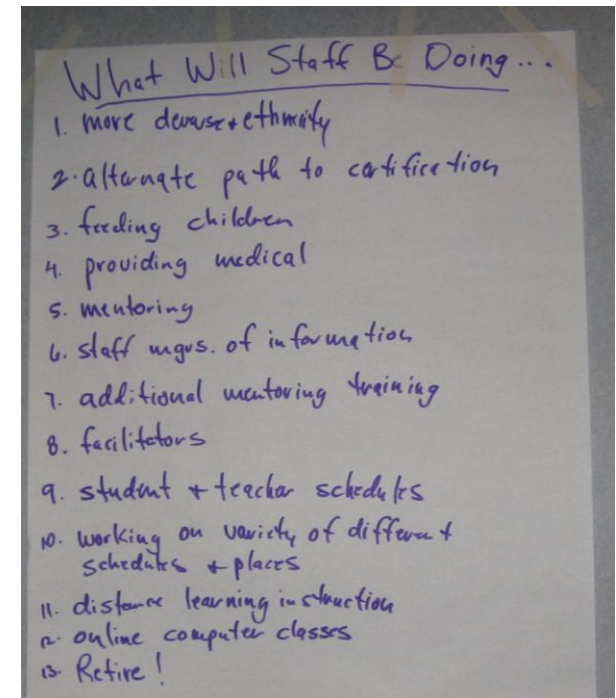
### 1. What will STUDENTS be doing in the year 2030?

- School is not stationary
- Schools not one building
- Students are mobile – wireless access
- Students making money – for example web designers
- Peer tutoring
- Computer simulation
- Modeling
- Basic needs – community to connect to leadership, communication, creativity
- More thematic, analytical, project-based
- Still children – growing up
- Virtual schools
- Art students need live audience – how is it included in the 21<sup>st</sup> Century school
- Technology is integrated – seamless, the user is part of the environment



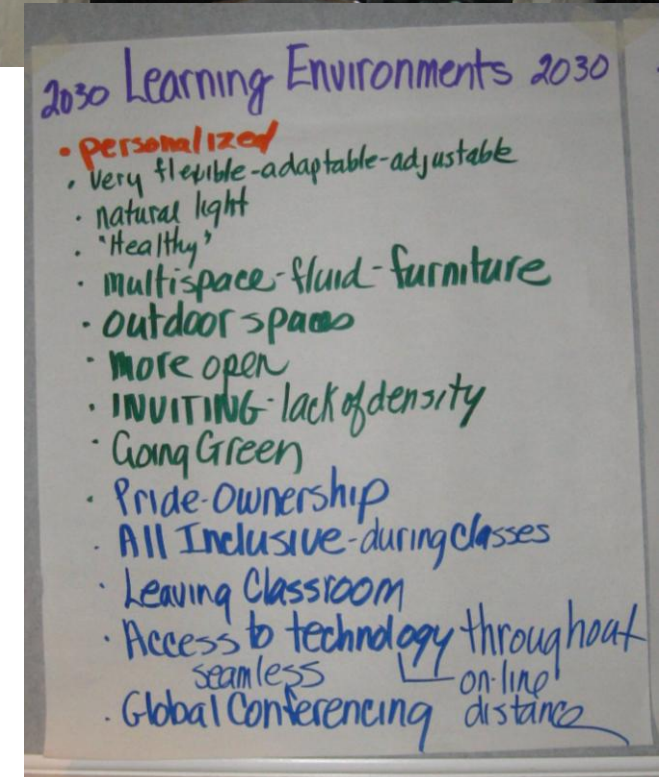
## 2. What will STAFF be doing in the year 2030?

1. More diverse and ethnicity
2. Alternative path to certification
3. Feeding children
4. Providing medical care
5. Mentoring
6. Managers of information
7. Additional mentoring training
8. Facilitators
9. Student and teacher schedules
10. Working on a variety of different schedules and places
11. Distance learning instruction
12. Online computer classes
13. Retire



### 3. What will LEARNING ENVIRONMENTS look like in the year 2030?

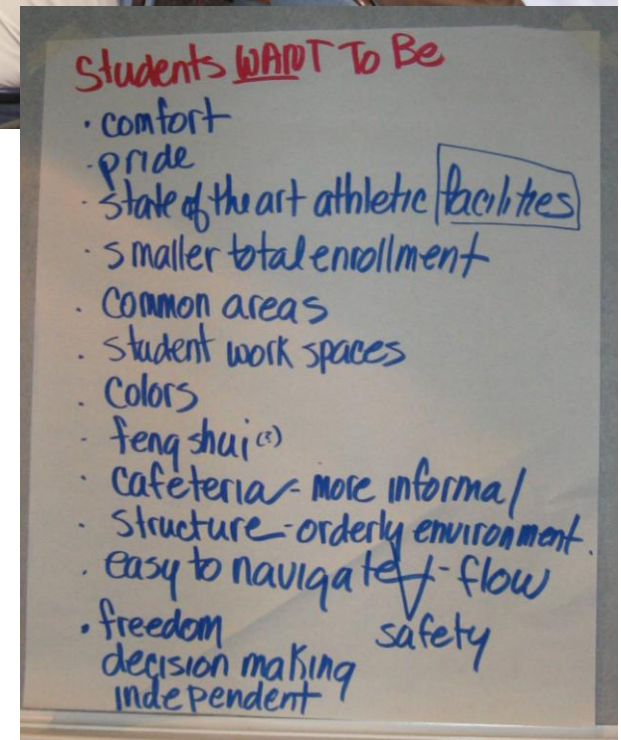
- Personalized
- Very flexible, adaptable, adjustable
- Natural light
- Healthy
- Multi-space, fluid, furniture
- Outdoor spaces
- More open
- Inviting, lack of density
- Going green
- Pride – ownership
- All inclusive – during classes
- Leaving classroom
- Seamless access to technology throughout – on-line, distance
- Global conferencing





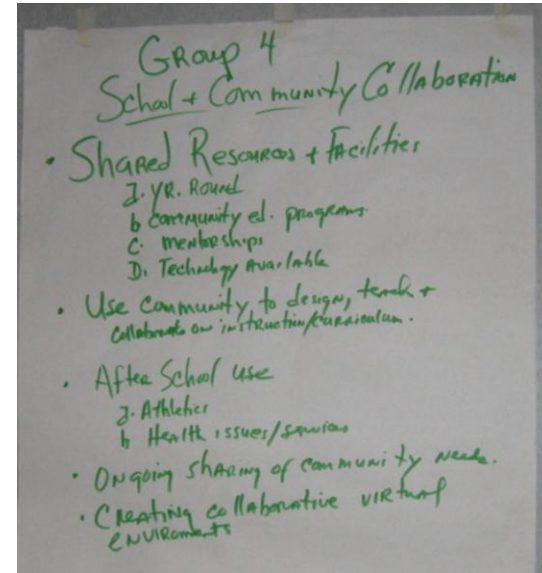
Students want:

- Comfort
- To be proud of environment
- State of the art athletic facilities
- Smaller total enrollment
- Common areas
- Student work spaces
- Colors
- Feng shui
- Informal cafeteria
- Structured and orderly environment
- Environment that's easy to navigate and flows well
- A safe environment
- Freedom
- To make independent decisions
- Storage space, not necessarily a locker
- Inviting entrances
- New library configuration
- Access to facilities after regular school hours
- Production centers
- Books? Real Books? Libraries=Book Museums?
- Adobe Connect
- Technology
- Flexibility



#### 4. How will COMMUNITY and SCHOOLS collaborate in the year 2030?

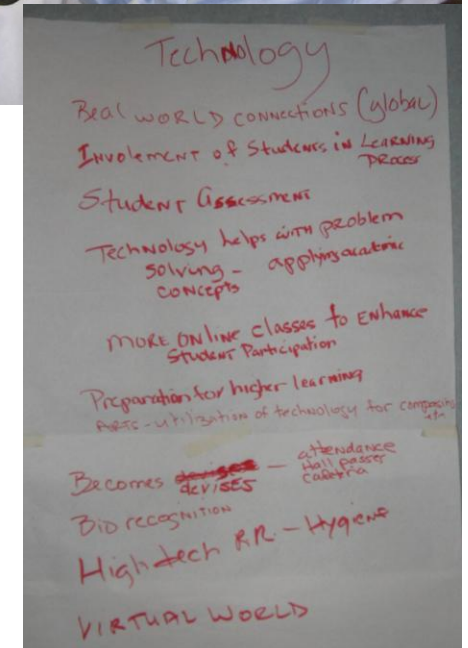
- Shared resources & facilities
  - Year round
  - Community education programs
  - Mentorships
  - Technology available
- Use community to design, teach, and collaborate on instruction / curriculum
- After school use
  - Athletics
  - Health issues / services
- Ongoing sharing of community needs
- Creating collaborative virtual environments





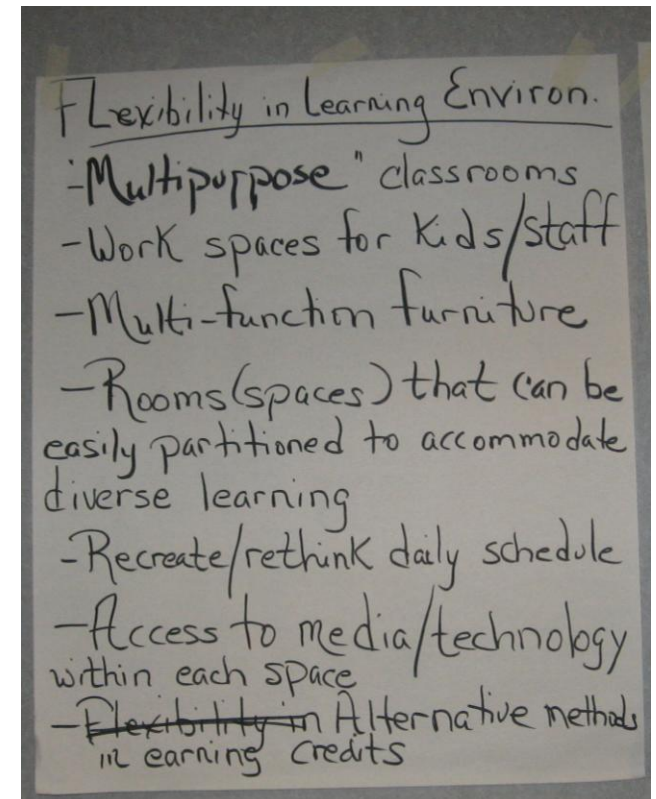
## 5. What will be the impact of TECHNOLOGY on education in the year 2030?

- Real world global connections
- Involvement of students in learning process
- Student assessment
- Technology helps with problem solving – applying academic concepts
- More online classes to enhance student participation
- Preparation for higher learning
- Arts – utilization of technology for composing, etc.
- Becomes devices for attendance, hall passes, cafeteria payments
- Bio-recognition
- High tech restroom – hygiene
- Virtual world



## 6. How do you create FLEXIBILITY IN LEARNING ENVIRONMENTS in the year 2030?

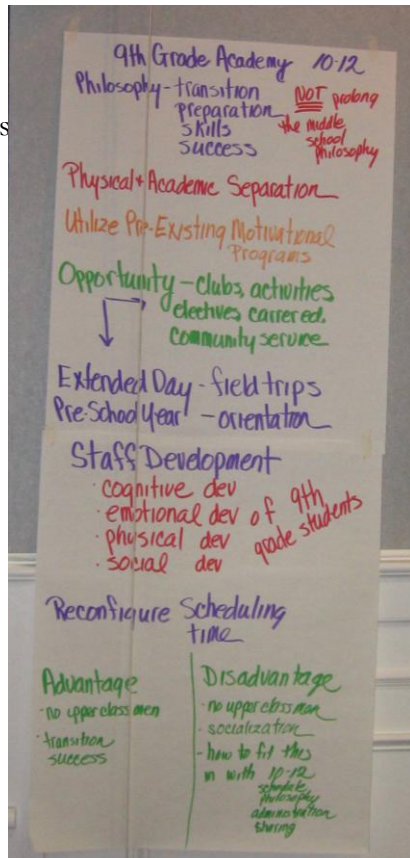
- Multipurpose classrooms
- Work spaces for kids / staff
- Multi-function furniture
- Rooms (spaces) that can be easily partitioned to accommodate diverse learning
- Recreate / rethink daily schedule
- Access to media / technology within each space
- Alternative methods in earning credits



## Program Delivery Options

How high schools are organized is in transition. High schools have historically been departmentalized. In recent years there has been increased focus on academies, thematic schools, small learning communities and a variety of other organizational structures. The construction of a new high school or the renovation of an existing school is costly; they are buildings which are to last for 50 years or more and need to be flexible to embrace change over time. Participants were divided into groups to define and brainstorm ideas regarding various approaches to organizing high schools and to discuss their advantages and disadvantages. The organizational structures examined were:

- A. 9<sup>th</sup> Grade Academy, 10-12
- B. Small Learning Communities
- C. Thematic Schools-Within-Schools
- D. Departmental High School
- E. Combinations of above
- F. Out of the Box



## A. 9<sup>th</sup> Grade Academy, 10-12

- Philosophy:
  - Transition
  - Preparation
  - Skills
  - Success
  - NOT prolong middle school philosophy
- Physical & academic separation
- Utilize pre-existing motivational programs
- Opportunity:
  - Clubs
  - Activities
  - Electives, Career education
  - Community service
- Extended day field trips
- Pre-school year orientation
- Staff Development regarding 9<sup>th</sup> grade students' development:
  - Cognitive
  - Emotional
  - Physical
  - Social
- Reconfigure scheduling time

### Advantages:

- No upper classmen
- Transition success

### Disadvantages:

- No upper classmen
- Socialization
- How to fit this in with 10-12:
  - Schedule
  - Philosophy
  - Administration
  - Sharing



## B. Small Learning Communities

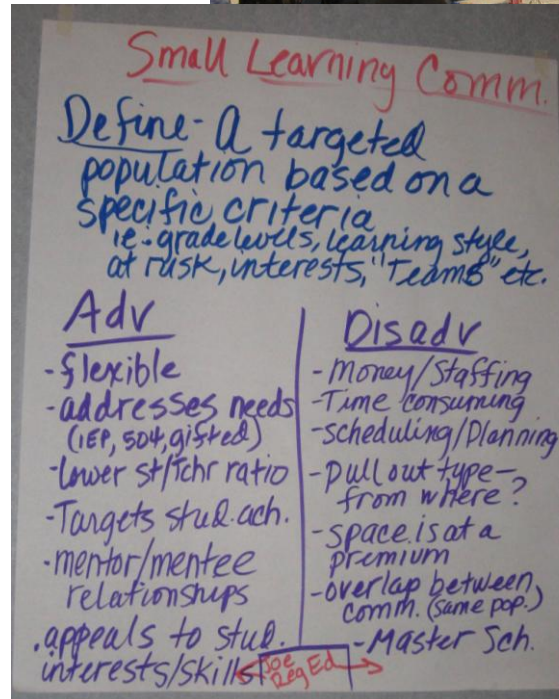
**Definition:** A targeted population based on a specific criteria i.e. grade levels, learning style, at risk, interests, “teams”, etc.

### Advantages:

- Flexible
- Addresses needs:
  - IEP
  - 504
  - Gifted
- Lower student / teacher ratio
- Targets student achievement
- Mentor / mentee relationships
- Appeals to students interests / skills

### Disadvantages:

- Money / staffing
- Time consuming
- Scheduling / Planning
- Pullout type – from where?
- Space is at a premium
- Overlap between communities (same population)
- Master schedule



## C. Thematic Schools-within-Schools

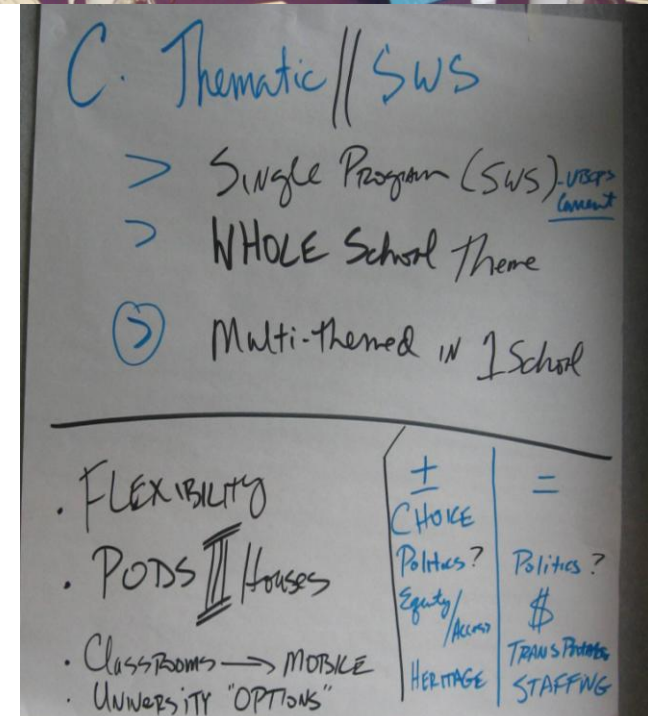
- Single program – Currently Virginia Beach City Public Schools has Schools-within-schools
- Whole school theme
- Multi-themed in one school
- Flexibility
- Pods
- Houses
- Mobile classrooms
- University options

### Advantages:

- Choice
- Politics
- Equity / access
- Heritage

### Disadvantages:

- Politics
- Cost
- Transportation
- Staffing



## D. Departmental High School

### Definition:

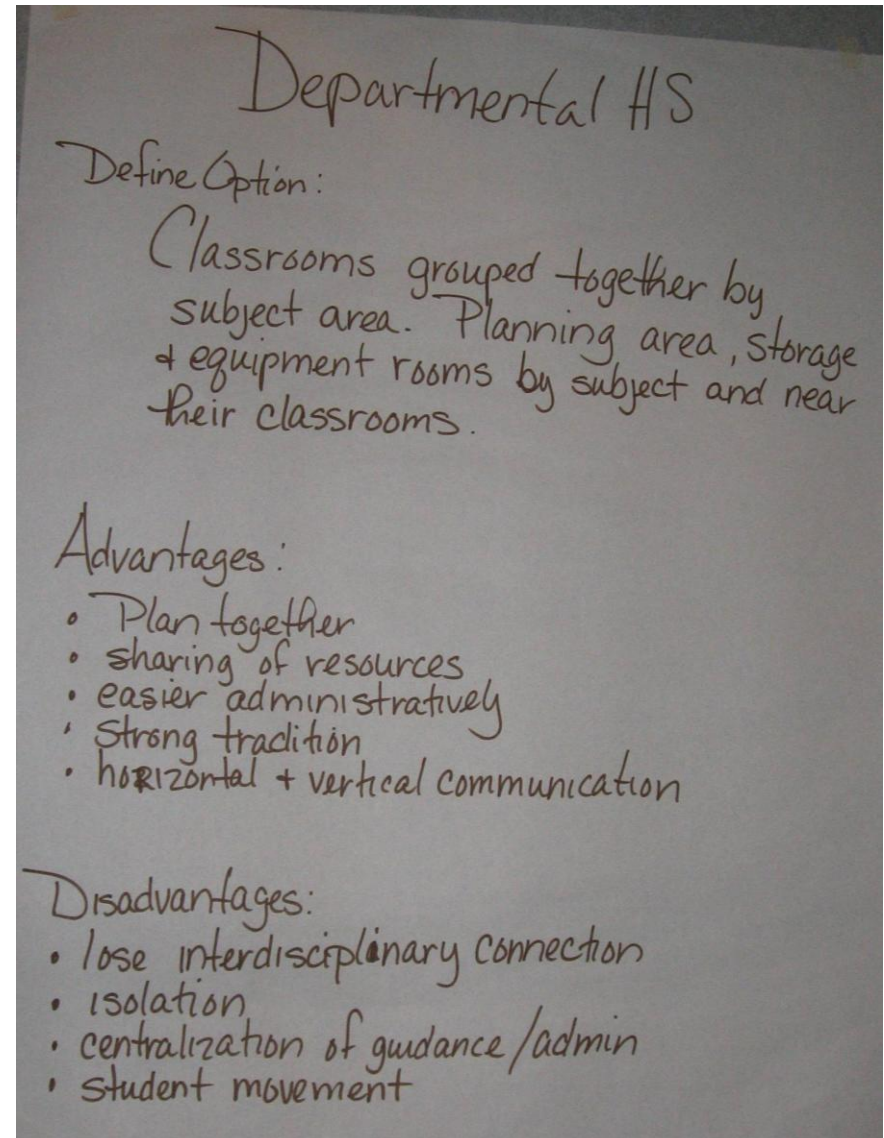
Classrooms grouped together by subject area. Planning area, storage & equipment rooms by subject and near their classrooms.

### Advantages:

- Plan together
- Sharing of resources
- Easier administratively
- Strong tradition
- Horizontal & vertical communication

### Disadvantages:

- Lose interdisciplinary connection
- Isolation
- Centralization of guidance / administration
- Student movement





## E. Combinations of above

**Definition:** Departmental and small learning communities.

### Ideas:

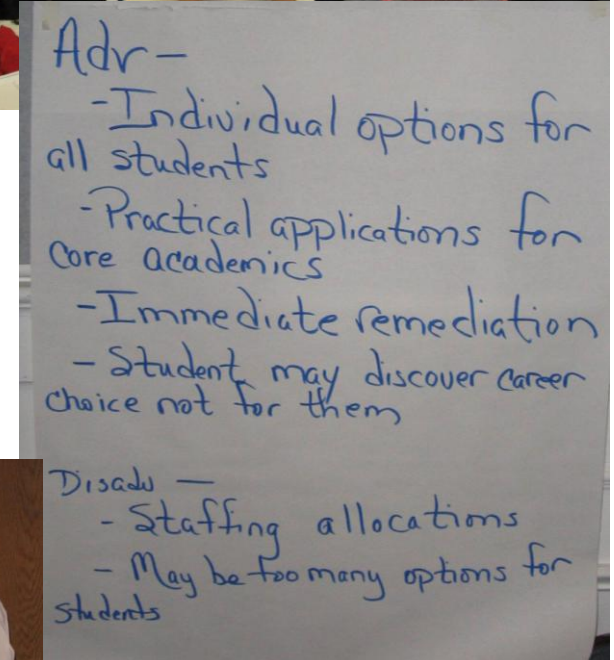
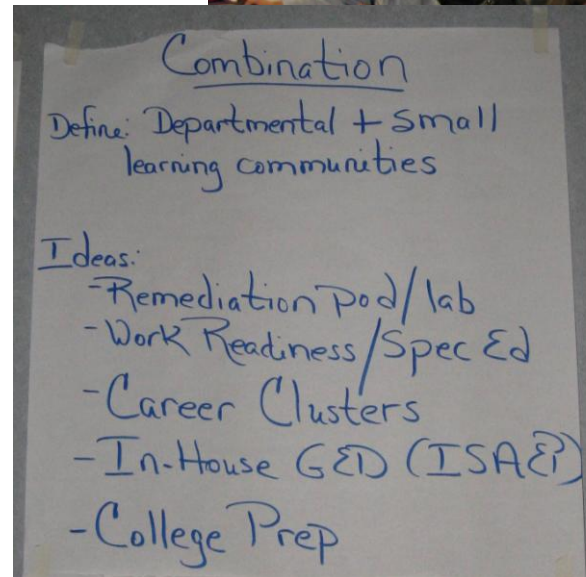
- Remediation pod / lab
- Work readiness / special education
- Career clusters
- In-house GED (ISAEP)
- College preparatory

### Advantages:

- Individual options for all students
- Practical applications for core academics
- Immediate remediation
- Student may discover career choice for them

### Disadvantages:

- Staffing allocation
- May be too many options for students



## F. Out of the Box

- Model high school like a community college, like school within a school 9-10, 11-12
  - Students choose courses
  - Open courses for the public
  - “Experts” teach courses
  - Flexible hours
  - Online, home school, and traditional class options
  - Project based / driven learning & assessments
  - Learning labs
  - Performing arts center / classes

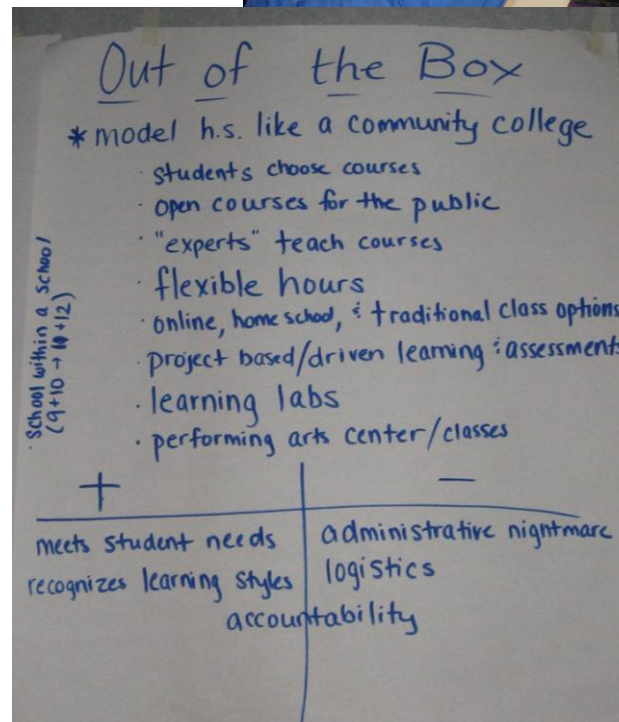


### Advantages:

- Meets students needs
- Recognizes learning styles
- Accountability

### Disadvantages:

- Administrative nightmare
- Logistics
- Accountability



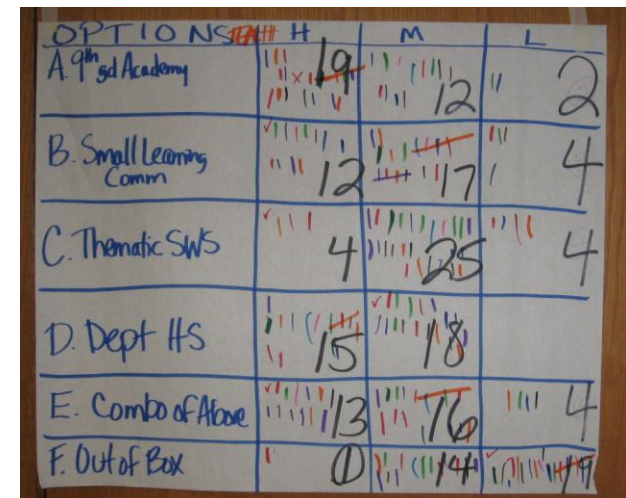
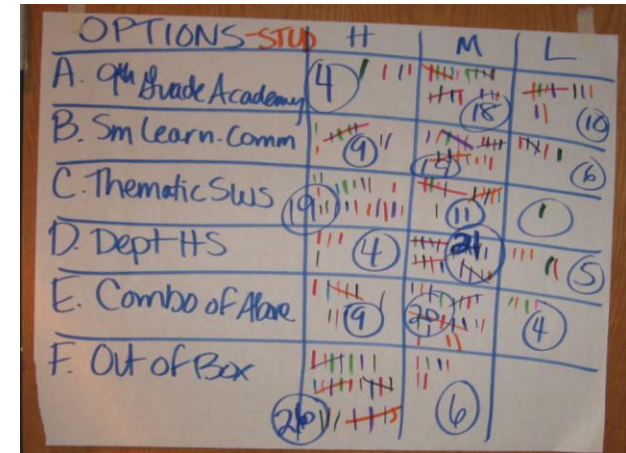


## Prioritize Options

After participants worked in groups to review and discuss the various organizational options, they were asked to rate the desirability of the options from a student's perspective and a staff perspective. As illustrated in this table, there was a wide range of perspective and there was a different perspective as to how these organizational structures would be viewed by students and by staff. The purpose of this exercise was to understand that a high school building in the future may need to be able to embrace a variety of approaches and even approaches which haven't even been identified, not to decide the best approach or which approach the high school educational specification should be based on.

Option	Student Perspective			Staff Perspective		
	High	Moderate	Low	High	Moderate	Low
A. 9 <sup>th</sup> Grade Academy, 10-12	4	18	10	19	12	2
B. Small Learning Communities	9	19	6	12	17	4
C. Thematic Schools-within-Schools	19	11	1	4	25	4
D. Departmental High School	4	21	5	15	18	0
E. Combinations of Above	9	20	4	13	16	4
F. Out of the Box	26	6	0	1	14	19

It should also be noted that many of the approaches can be accommodated if a building is organized to support team teaching where several teachers work together in an area of a building. Team areas include classrooms, project areas, and support spaces. Dr. DeJong shared several high schools from around the country which were organized into Houses/Clusters/Pods that are able to support the various organizational structures discussed.



## Comparing Large & Small High Schools

One of the most debated topic areas in education today is school size. Although the trend has been to increase the capacity of schools, there has been much effort in creating smaller learning communities as a way to create a small school environment.

The participants of the Visioning Session were asked to work in small groups to first determine what size constituted a small high school and what size constituted a large high school. The groups differed in their definitions of large high schools. Some groups indicated that a large high school would be defined as a school with more than 1,600 students, some groups defined a large high school as a school with more than 1,800 students, while other groups defined a large high school as a school with more than 2,000 students.

The groups then provided advantages and/or disadvantages to small and large high schools. The following are the results of those discussions.

**What are the Advantages / Disadvantages of a LARGE high school?**

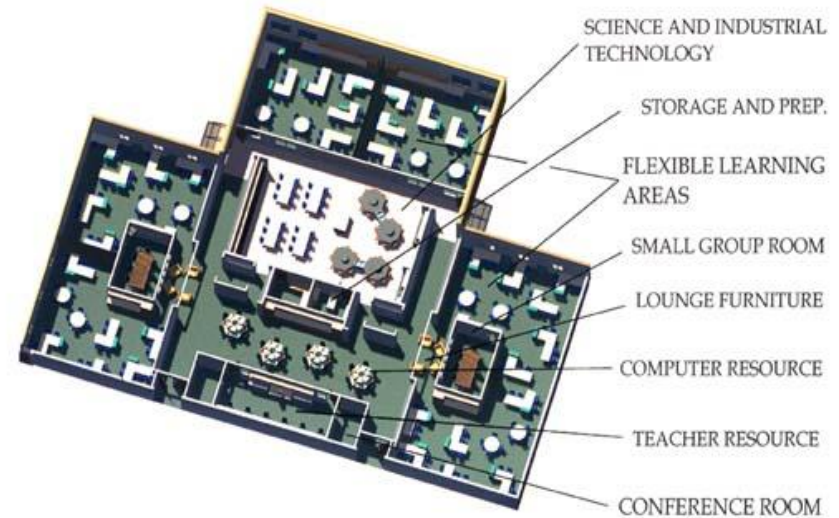


### LARGE HIGH SCHOOL ADVANTAGES:

- Acceptance
- Better:
  - access to resources – i.e. counselor, speech therapist
  - athletic teams
- Broader curriculum
- Cheaper to operate
- Diverse curriculum and student body
- Easier on staff – i.e. preps / extracurricular duties
- Easier to staff
- Extra staffing
- Increased staff development options
- Larger pool for:
  - Athletics
  - Course offerings
  - Resources
- Less Expensive
- More:
  - activities
  - choices / options – course offerings and extracurriculars
  - equipment
  - funding
  - options for specialized areas in buildings
- Services
- Socialization
- Stronger teams
- The numbers justify pay for programs – i.e. Advanced placement, special education, resource

## LARGE HIGH SCHOOL DISADVANTAGES:

- Anonymity
- Crime / safety
- Fall through cracks
- Fewer
  - athletic opportunities
  - leadership opportunities
  - students able to participate
- Hard to have whole school activity
- Impersonal
- Isolation of students and staff
- Lack of small group areas (i.e. schola)
- Less cohesive
- Limited space / crowded
- Lost in crowd
- More competitive in things like SCA
- Overcrowding
- Overwhelming for 9<sup>th</sup> graders
- Parking – morning and evening
- Relationships
- School wide gatherings
- Security
- Sense of Community
- Too many students





What are the Advantages / Disadvantages of a SMALL high school?

Small high school was defined as:

A school with less than 1,000 students.

### SMALL HIGH SCHOOL ADVANTAGES:

- “Big fish in small pond”
- Close-knit staff
- Community and tradition
- Community and parental involvement and support
- Create community
- Everyone knows you
- Flexible spaces
- Greater opportunities for building relationships
- Individual attention
- Less competitive in things like SCA
- Less crowding during transition
- More intimate and personal
- More support systems, like family
- Opportunity for participation
- Safety, or perception of safer feeling
- School wide gatherings
- Smaller class sizes
- Spirit and pride
- Teacher – student interaction
- Transportation

### SMALL HIGH SCHOOL DISADVANTAGES:

- “Big fish in small pond”
- Fewer academic, extracurricular, etc. program offerings
- Not as many advanced courses
- Not as many electives
- Less academic challenge
- Less diversity – social groups, etc.
- Less money
- Cost
- Everybody know everybody’s bad business
- More preps and extracurricular activities responsibilities for staff
- Sharing resource positions
- Small school can mean small building for teaching and learning space
- Flexible spaces



CONCEPT DIAGRAM



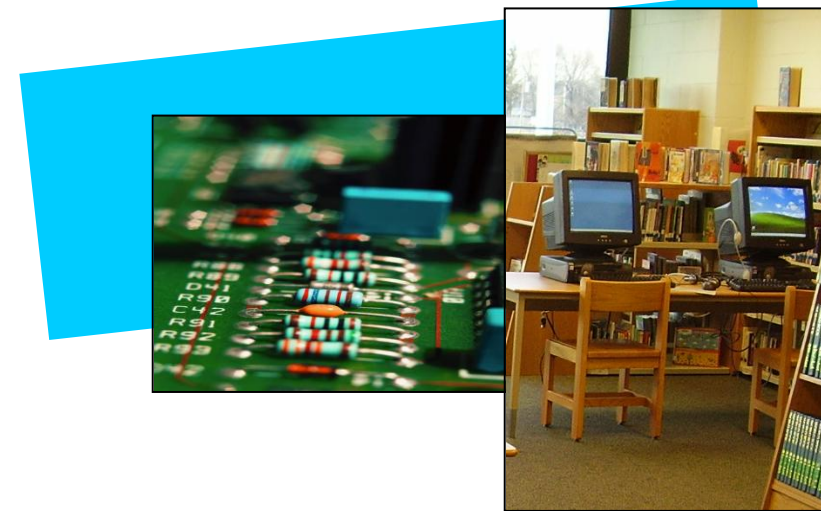
High School Educational Specifications

To take advantage of technology, schools will need comprehensive staff development programs and training; student access to technology applications; updated hardware and software in computer labs, classrooms, and Media Centers; wireless access points, updated school wiring and internet access; integration of technology into the academic content standards; home to school access; technical support personnel at the school level; and a security system that encourages use and protects the investment.

All classrooms should be multi-use/multi-purpose with invisible technological support. There should be a seamless web of technology to support the classroom management between administration, teachers, students, and the home.

Research suggests that multi-sensory teaching is most effective in mastery of basic skills. Technology supports visual, auditory and experiential learning; therefore, it is recommended that all instructional spaces have voice, video, and data accessibility. This access enhances the flexibility of the learning environment to respond positively to alterations in the use of space. The wiring and other infrastructure components should be the first priority since terminal devices can be added later; however, wireless networks should also be included. The facility should have surplus electrical power capacity and network wiring/bandwidth to permit expansion of technology.

It is important that all students demonstrate technology skills appropriate to their grade level. Students will be expected to possess technology skills, as defined and assessed through authentic learning opportunities and applicable technology.



*(Photograph used for illustration purposes only)*

## Technology

Today, technology is used extensively to help students learn basic and critical thinking skills. In the future, the applications and capabilities of educational and information management technology will increase dramatically. Today, the majority of jobs require at least some technology proficiency and as such, it is expected that students will leave school with the ability to work with and use technology.

The implementation of voice, video, and data throughout school facilities is becoming a standard in schools across the country. Appropriate and strategically designed and installed technology will greatly enhance the teaching and learning of basic skills and position a school to take advantage of technological developments in the future.

## Technology Components

**Voice:** Telephone and voice communications in every classroom and workspace to support internal and external communications. As voice and data are integrated, typical phone drops are replaced with normal network data drops.

**Video:** Video distribution in every classroom and throughout the building with interactive video capabilities to support whole and small group instruction, distance learning, and providing access to a wide range of internal and external resources.

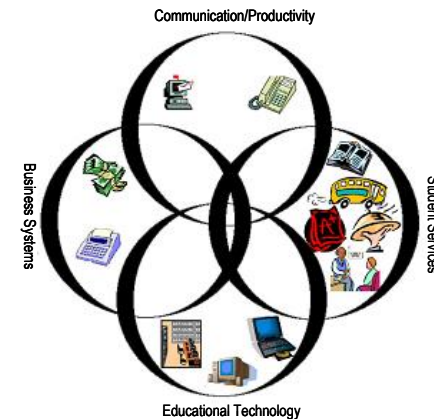
**Data:** Data retrieval capabilities in every classroom and throughout the building as well as network capabilities City-wide and to other external resources (i.e. Internet).

Today's schools are equipped to support management and instructional applications. Current voice, data and video systems can provide leadership, instruction, data management, internet access, and student services which go far beyond the systems in schools that were constructed as recently as the late 1980s. Technology is becoming increasingly useful and appropriate to the student and the educator. As home and business worlds move into higher levels of technological applications, it is critical for schools to be equipped and play a leadership role in the integration of technology into the teaching, learning, and communication processes.

## Applications of Technology

Technology has four primary applications within the school environment. These applications have the potential to have a positive impact on every aspect of the educational process found in school. The following table illustrates the four primary applications that interface with each other and some examples of educational applications in each area.

<b>Communication/Productivity:</b> E-Mail, Word Processing, Database, Spreadsheets, Phone, Internet	<b>Student Services:</b> Schedules, Grades, Attendance, Counseling, Transportation, Food Services
<b>Educational Technology:</b> Media Center, Computer Applications, A/V Applications, Distance Learning, Internet	<b>Business Systems:</b> Accounting, Payroll, Inventory



## Technology & the Learning Environment

Technology greatly enhances the learning environment. Technology, in the typical classroom, can support multiple instructional designs.

**Whole Group Instruction** [20-30 students] – This includes the use of document readers, computer projectors, DVD players, flat screen monitors, LCD flat panels and various forms of computer display techniques.

**Small Group Instruction** [6-8 students] – This includes areas in the classroom and in shared common spaces, which a teacher or another resource person can work with groups of 6-8 students. The technology is essentially the same as whole group instruction technology, the only difference being the size of the groups.

**Individualized Instruction** [1-2 students] – This is primarily a computer-based instruction design where students interact with a computer workstation. As all forms of technology become more and more digitized, it is envisioned that these will be multi-media workstations that integrate voice, video, and data formats as well as having high speed internet access. Technology will comply with accessibility for students with special needs that are mainstreamed in the classroom.

The diagram that follows represents typical technology applications found in schools today.



## Classroom

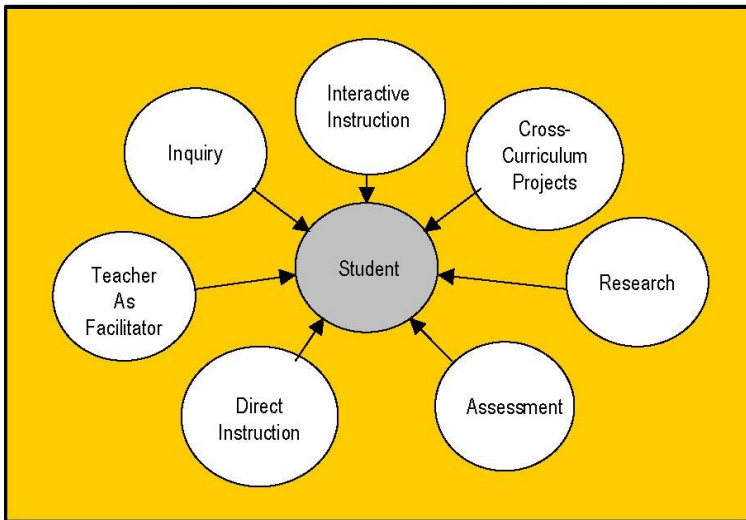
It is recommended that all classrooms have voice, data, wireless internet, and video accessibility. This will enhance the flexibility of the learning environment to respond positively to alterations in the use of space. The wiring and other infrastructure components should be the first priority since terminal devices can be added later with the exception of wireless networking. The facility should have surplus electrical power and cooling capacity to permit expansion of technology. Infrastructure, systems and cabling are typically funded as capital projects.

The following components should be included in each classroom:

- One teacher workstation with two data drops
- All network wiring to be CAT 6
- 5 data outlets for student multimedia stations
- 1 wireless access point – ceiling mounted
- Added cooling systems to offset the heat generated by the computers
- Face plate switches
- Audio classroom enhancements
- Student computer work stations or laptops
- DVD port
- Document readers
- Ceiling mounted projector with data drop in ceiling
- Projection screen
- Mounted Digital Interactive Whiteboard with USB connection to teacher plate
- 2 data outlets for laptop carts
- 1 data outlet for networked printer
- 1 data outlet wall plate for IP or Digital phone

Careful attention should be given to furnishings, i.e., student desks, specialized or customized cabinetry, location of data ports, white boards, and monitors.

Alternative wireless configurations where all staff and students are issued a personal computer/multimedia device should also be considered.



## Offices

Office areas have the following needs:

- Appropriate CAT 6 data drops
- 4 networked data drops for attendance
- 1 wireless access point – ceiling mounted
- Electric power availability (quad per drop)
- 1 data outlet wall plate for IP or digital phone
- Capability to support computer, network, printer, and fax
- Staff workstations or laptops
- Telephones (voicemail and fax capability)
- Security video system (main office only)
- PA system
- Audio system
- Data drop for fax machine
- Capability to support high speed networked copier
- Three office voice lines, independent of electric power for emergencies



*(Photograph used for illustration purposes only)*

## Conference Areas

Conference areas should include:

- Four CAT 6 data outlets (1 at each end of room; 1 for networked printer; 1 for IP or digital phone)
- 1 wireless access point – ceiling mounted
- Electric power availability [quad per drop]
- Ceiling mounted multi-media projector with data drop in ceiling
- Pull down projection screen

## Cafeteria/Student Union

This space should have the following equipment:

- Video ports and monitors that can be used for video displays of electronic bulletin boards
- CAT 6 data drops
- Data outlets in pairs (computer and phone) for each serving line
- Wireless access points mounted in ceiling
- 1 data outlet wall plate for IP or digital phone
- Telephones (voicemail capability in Cafeteria Office)
- Phone line to monitor refrigeration systems
- Mounted LCD and workstation
- Centralized control panel for video and data
- Large, electronically controlled screen



## Blackbox Theater

The theater should include:

- Computer projector capability
- PA system
- Audio system
- Storage space



## Gymnasium

The gymnasium should have the following equipment:

- Video ports and monitors that can be used for video displays of electronic bulletin boards
- 2-3 video and fiber/CAT 6 data drops with LAN, WAN, and Internet access
- Portable video projector (PVP), computer, and document reader
- Large, electric front projection screen concealed and flush with ceiling
- One data wall jack for phone, connected to loud bell ringer; cage mounted to protect phone
- PA system
- Audio system
- Centralized control panel for scoreboard and video

## Technology Control Room

The Technology Control Room will securely house Uninterruptible Power Supplies (UPS), communication servers, PBX, video system, network router, and network switches. In addition, this room will have additional cooling systems to maintain a consistent room temperature, 24 hours a day.

Furniture will consist of equipment racks, worktable, and monitor stand. All equipment must be located by ample electricity and have an assessable diameter of 4-5 feet.

## Wireless Access Points [APs]

The following locations contain the recommended number of wireless access points, all to be ceiling mounted:

- Public areas (media center, cafeteria, auditorium, gym) at least 2 APs)
- Computer labs – 1dedicated AP
- General classrooms – 1 AP per room
- Typical load – 30 users per AP



High School Educational Specifications

If we deal with the symptoms of the problem, we tend to focus on the active security procedures that can be implemented. If we deal with the cause of the problem, we are likely to address most of these issues through passive or program and building layout solutions.

The problems and their causes are multi-dimensional: some issues can be more easily addressed in design more than others. Causes include, but are not limited to, family problems, lack of sense of belonging, lack of identity, lack of communication, lack of accountability, lack of student/teacher relationships, as well as criminal activities by outsiders. Passive program and building layout should be the primary focus and active security systems the secondary focus.

Since the greatest number of discipline problems in a school occurs when students switch classes and have to travel from one end of the building to the other, having students spend the majority of their day in one section of the building, reducing movement will result in fewer discipline problems. Teams of teachers having responsibility for the same students improve the student/teacher relationship and results in greater continuity and monitoring of behavior issues.



*(Photographs used for illustration purposes only)*

## Safety & Security

There is a high interest in maintaining an inviting and deinstitutionalized environment, while simultaneously providing a safe environment for students, staff, and community who use the facility and adjacent support services. The organization of a building will have a major impact on student behavior and safety concerns. Building security can be addressed in an active or a passive manner: active security is based on security systems; passive security is based on program design, building layout, and community participation. Schools should be based on passive concepts with applied active concepts where necessary.

Organizing a building into teams or clusters results in a number of changes which will reduce behavior problems:

- Teacher preparation areas place adults in closer and more direct contact with students.
- Utilizing a decentralized administration approach provides the opportunity to have counselors, and/or assistant principals easily accessible to students in the academic clusters.
- Students have a greater sense of belonging and identity. For the majority of the day, their place is in the cluster/house.
- School pride becomes more apparent.
- Block scheduling is commonly utilized in secondary schools and also helps reduce pedestrian traffic within the building.
- Hidden or underequipped spaces are avoided.

The glass wall into the administration reception/waiting area in the pictures below provides good visibility of the main entrance. It serves a dual purpose of being inviting and welcoming to visitors while allowing administrative staff to monitor access during school hours. Way-finding is crucial to a successful school facility. The front entrance and reception area should be immediately obvious to anyone approaching and entering the building. Similarly, strong glass can provide security and visibility.



*(Photographs used for illustration purposes only)*

*CROSSWINDS MS, St Paul, MN*

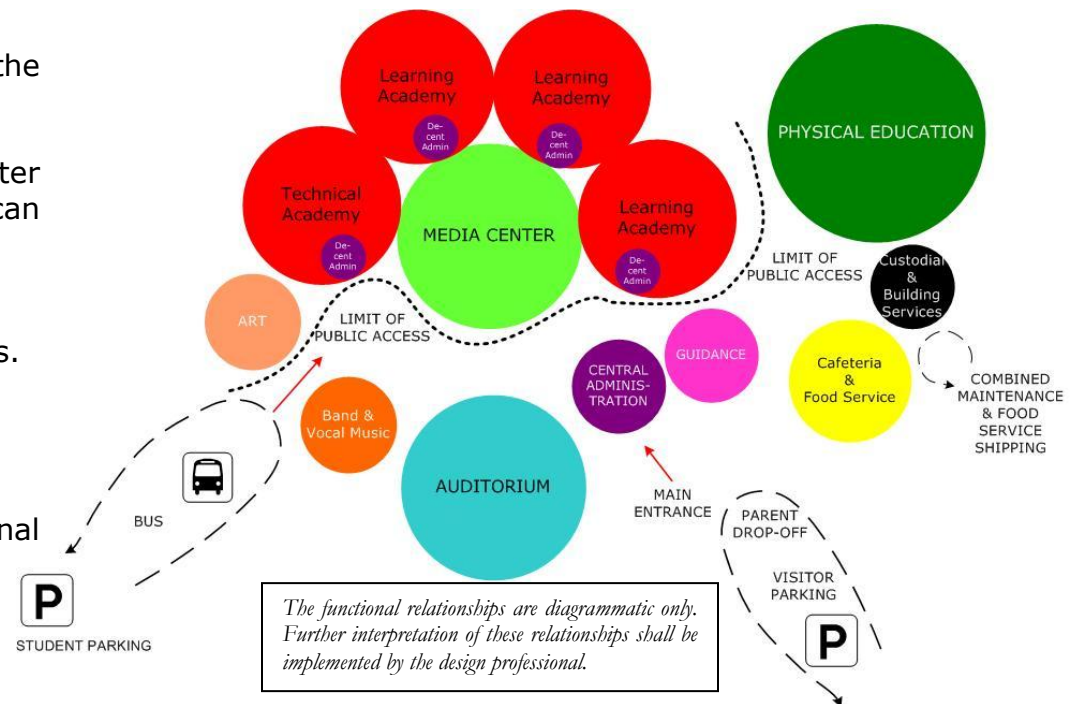


## Passive Security Concepts

### Building Layout

- Avoid blind spots, corners, and cubby holes [inside or outside].
- Locate administrative and teacher preparation with good visual contact of major circulation and gathering areas [i.e., corridors, cafeteria, bus drop-off, parking].
- Develop spatial relationships in such a manner that there are natural transitions from one location to another.
- Locate toilets in close proximity to classrooms.
- Design toilets to balance the need for privacy with the ability to supervise – open restrooms (i.e. airports)
- Locate staff restrooms close to student restrooms.
- Locate areas likely to have significant community [after school] use close to parking and where these areas can be closed off from the rest of the building.
- Provide for natural integration of students and staff.
- External exits from offices.
- Wide, naturally lighted stairwells in multi-story buildings.
- Open stairwells.
- Ability to partition unused portions of building.
- Avoid external exit for toilet rooms.
- Avoid easy access to roofs.
- All separated buildings should be connected via external walkways.

*This example below illustrates a cluster approach. Having teacher workrooms, commons area, restrooms, and storage integral to the cluster, reduces traffic and increases safety and security.*



## Types of Building Materials

- Use durable wall surfaces that are easy to clean so graffiti can be removed.
- Incorporate pitched roofs which inhibit roof entry and are aesthetically pleasing.
- Limits size of windows – use multiple smaller windows rather than one large window.
- Use safety glass or glass bricks.
- Glaze or tint windows.
- Install non-slip floors at point of entry.
- Handicapped accessible entrances.
- Ventilation system adequate to handle size of school.
- Sound device warnings for doors other than main entrance.
- Safe building materials.

## Vehicular and Pedestrian Traffic

- Separate bus drop-off area from other vehicular traffic.
- Separate and adequate staff, student, and community parking area, located in appropriate areas.
- Separate student [pedestrian] traffic flow.
- Consider impact on safety of “closed” campus vs. “open” campus.
- Protect playfields from vehicular traffic and parking.
- Additional exit specifically for sporting events (quick exits = less chaos/fights).
- No portables
- Outdoor restroom facility (centralized)

## Uses of Technology

For instructional and administrative purposes, the school should have extensive technology systems. These same infrastructures and technology components can be use to enhance building security.

- Phones in every instructional and support area.
- Building-wide all-call designed to be heard throughout the school and on the play fields when needed.
- Motion or infra-red detectors.
- Video cameras for security purposes with more people with access to the security cameras.
- Smoke and heat detectors located throughout the building for central monitoring.
- For access control into the building, there are alternatives to keys, such as access control cards. These are plastic “swipe cards” and proximity cards, both of which can be used as identification cards. The swipe card is placed in a machine, while the proximity card simply has to be used close [usually three to seven inches] to the reader to unlock a door. The cards are coded to allow entry to appropriate doors at selected times. Only one card is required for multiple entry points. Used in conjunction with the card is the controller, which monitors alarms, and the software, which is customized for the application [establishes parameters, maps input-output points, enters phone numbers for dial-up site]. Other approaches include a battery-operated lock that requires a numerical code on a keypad.
- Wiring for CCTV in all hallways, offices, classrooms, and parking area.
- Panic buttons located in all rooms.
- Securable lobby area.
- Programmed swipe cards used for doors.



- Sound detection system.
- Electronic student identification system, especially at secondary schools. All students to wear ID's.
- Bio recognition.
- Metal detectors at main entrance and bus loop entrance can be considered.

### Combustibles Storage

- Provide detached, fire-proof, building to store combustibles: paint, solvents, laminates, gasoline, etc.



*Mountain View ES- Johnson City, TN  
Ken Ross Architects, Inc.*

*The images left and below are examples of exterior and interior lighting usage to create a warm, safe, and inviting environment.*



### Landscaping, Playing and Practice Fields, Site, and Lighting

- Use high trees and low bushes (less than three feet high) to deter hiding. Eliminate trees at entrance.
- Use aesthetically pleasing fencing around perimeter of the building. Avoid barbed wiring.
- Consider placing some buildings or a tree buffer along the perimeter of the property to avoid extensive fencing, where feasible.
- Non-intrusive lighting of all area (not correctional-type lighting).
- Emergency lighting/power in hallways, stairwells, and rooms.
- Provide security lighting around building and parking lots with photo cell timer with on/off capacity.
- Provide efficient lighting for outdoor venues.
- Separate athletic fields and informal gathering areas.
- Locate athletic facilities away from building.
- Recess building on site to avoid vehicular and pedestrian conflicts.

*Council Rock HS – Richboro, PA Gilbert Architects*



*The image above is an example of using low bushes and high trees as landscaping features that deter hiding.*





## Site Issues

In some instances, implementation of the High School Educational Specifications for Virginia Beach will result in renovation or construction of new schools on new sites. The Architect of Record for each school will be responsible for location of school on the site as well as site issues including topography, drainage, pedestrian and vehicular traffic, bus drop-off and pick-up areas, service entry, and safety of playground areas.

## Design Considerations

- Separate faculty and visitor parking areas.
- 1/3 parking spaces for students.
- Student management/security in lots – staff, faculty, visitor parking lots
- Separate drives for parent drop-off and buses.
- Provide blacktop area.
- Provide multi-purpose playfield.
- Exterior lighting.
- Fire vehicle access.
- Fencing around school, aesthetically pleasing.
- Location of “athletic centers”.
- Service entry.
- Landscaping.
- Use of adjacent properties.
- Covered walkways between buildings.
- Location of utility “boxes” such as electrical transformers.

## Lighting

- Include exterior security lighting with motion detectors and/or photo-cell timer for parking lots and exterior of building.
- Provide appropriate lighting for athletic and practice fields.
- Provide appropriate lighting for walkways.
- Provide lighting that is easy to maintain and secure against vandalism.
- Must be easy to maintain and service.

## Traffic Flow

- Car, bus, and service vehicle traffic must be separated.
- Vehicular and pedestrian traffic must be separated.
- Consider access by fire department emergency vehicles when planning site circulation.
- Provide drive-up access for large items in areas such as Food Service and Custodial/Maintenance.
- Provide adequate areas for entering and leaving play fields.
- Separate drop-off for special education buses.
- Sufficient length in drop-off for bus stacking.
- Corridor locations off public transit stops, with a hard surface waiting area.

Parking Spaces Based on Percentage of School Population for 1,800 Students		
	High Schools	
<b>Staff</b>	<b>15%</b>	<b>270</b>
<b>Visitor</b>	<b>3%</b>	<b>54</b>
<b>Student</b>	<b>33%</b>	<b>600</b>
<b>Event</b>	<b>15%</b>	<b>270</b>

## Parking

- Adequate and separate parking facilities should be provided for visitors, staff, and students.
- The school site must provide adequate areas for entering and leaving, parking, and play fields.
- Consider covered walkways from car and bus drop-off areas.
- Comply with regulations for handicapped access.
- Consider bicycle racks.

## Landscaping

- Design irrigation of fields, lawn, and landscaped areas.
- Create landscaped areas that are sustainable from natural rainfall and minimize use of an irrigation system where possible.
- Low-maintenance landscaping plantings.
- Consider outdoor spaces as an extension of the classroom and opportunities for exploration and education.
- Recycling facilities.
- Student-friendly.
- Places to rest and read.
- Trees for shade.
- Benches around trees.
- Sufficient green space.

### Sheltered Areas

- For inclement weather.
- Eating lunch.
- Outdoor classwork.
- Before/after school activities.
- Walkways between buildings.
- Away from noise.

### Playing Fields

- Secure and safe playing fields for students with direct access from the building.
- 4 Practice fields – multi-use (P.E., athletics) with irrigation and lighting.
- Drinking fountains located throughout playing fields.

### Athletic Areas:

- Stadium seating for 5,000 (VHSL reg.), (football, soccer, lacrosse).
- 8 tennis courts.
- Baseball/softball facility complex (shared concession, rest rooms, storage; stand alone field space).
- Provide utilities for all playing fields/areas.
- Track (rubber) (restrooms, concessions, storage); large storage for hurdles, high jumps, pole vaults, etc.).
- **Landscaping:** multi-turf stadium/competition field (i.e. softball, soccer, lacrosse, track & field events; sustainable landscape or adequate irrigation factored in.
- **Lighting:** daylight intensity for athletics, parking, and bus areas.

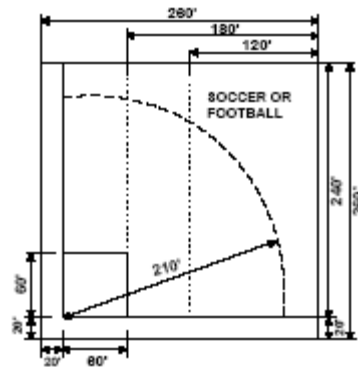
### Storage for Equipment

- Attach to building.
- Multiple, easy access.

### PE Office/Storage

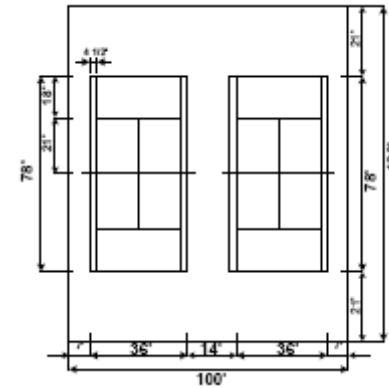
- Telephone.
- Stay in contact with main office.
- Emergencies.
- Recreational Aides.

The following pages illustrate site guidelines for play fields.



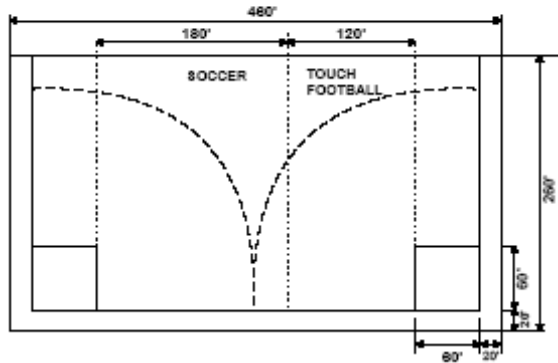
**BASIC UNIT G**

280' x 260' = 67,800 sq. ft.  
1 SOFTBALL OR 1 FIELD AREA



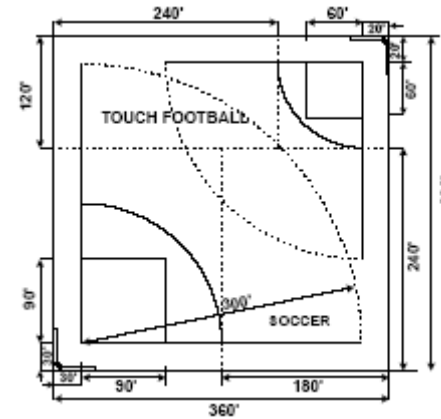
**BASIC UNIT K**

100' x 120' = 12,000 sq. ft.  
2 TENNIS COURTS



**BASIC UNIT H**

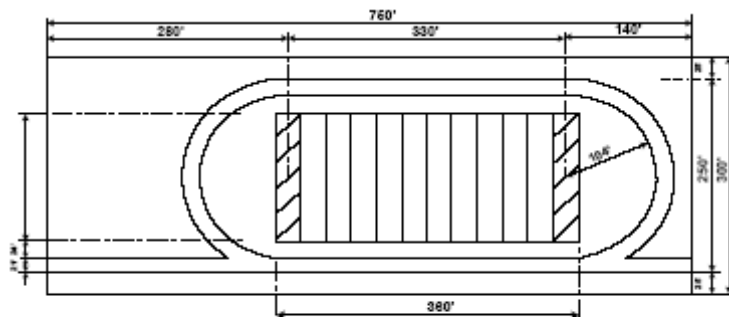
280' x 480' = 118,800 sq. ft.  
2 SOFTBALL OR 2 FIELD AREAS



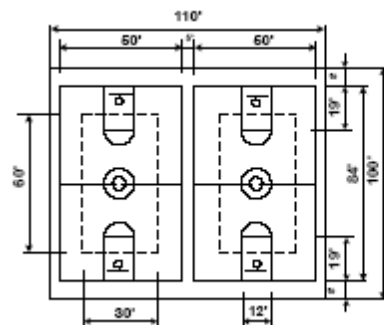
**BASIC UNIT L**

360' x 360' = 129,600 sq. ft.  
1 BASEBALL AND SOFTBALL  
OR 2 FIELD AREAS

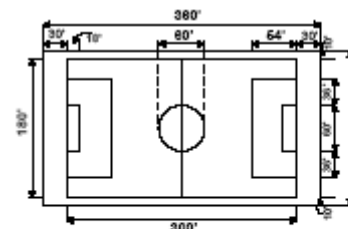




**BASIC UNIT M**  
300' x 760' = 226,000 sq. ft.  
FOOTBALL & TRACK

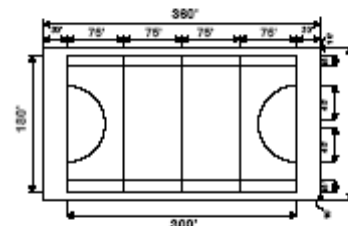


**BASIC UNIT N**  
100' x 110' = 11,000 sq. ft.  
BASKETBALL OR VOLLEYBALL

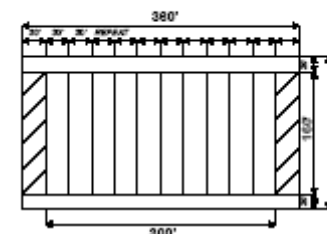


**BASIC UNIT O**  
200' x 360' = 72,000 sq. ft.

SOCCER



FIELD HOCKEY



TOUCH FOOTBALL

Basic Unit P, an apparatus area, is a space module of 1,000 square feet. The architect may design the area according to the dimensions of the particular type of apparatus to be installed as long as the total area does not exceed 1,000 square feet. Basic Unit P provides space for up to 75 students in grades six through twelve. (See Tables 4, 5, and 6 for additional basic units needed for enrollments beyond 75 in the upper grades.)

## Green Sustainable Schools



Green schools are healthy for students, teachers and the environment. Built right, green schools are productive learning environments with ample natural light, high-quality acoustics and air that is safe to breathe. Schools everywhere are going green, nurturing children while saving money.

The U.S. Green Building Council [USGBC], a nonprofit organization works to move the building industry toward sustainability which is the design and construction of buildings that are environmentally responsible. Green design refers to design and construction practices that significantly reduce or eliminate the negative impact of buildings on the environment and occupants in five areas:

- Sustainable site planning
- Safeguarding water and water efficiency
- Energy efficiency and renewable energy
- Conservation of materials and resources
- Indoor environmental quality

The USGBC developed and maintains the LEED Green Building Rating System. LEED is the national benchmark for green buildings promoting sustainable design and construction. The objective is to:

- Reduce impacts of natural resource consumption
- Protect air quality and water quality, biodiversity, and ecosystem health
- Improve economics of building operations, asset value, worker productivity, and the local economy
- Enhance building occupants health and safety, relating to risk management
- Minimize strain on local infrastructure such as landfills, water supply, stormwater sewers and related development and costs; decrease transportation development and maintenance for roadways, and encourage better performance of mass transit systems.

The LEED for Schools Rating System recognizes the unique nature of the design and construction of educational facilities and provides verification that a building project, whether new or renovated, is sensitive to the environment. It addresses such issues as classroom acoustics, mold prevention, environmental site assessment, and other matters related to school design and operation.

Green schools are healthy places to learn, to teach, save money, provide hands-on learning and are environmentally friendly.

## Planning Principles

Following are planning principles employed by school divisions when renovating or constructing new schools.

### Sustainable Sites:

- Construction activity pollution prevention
- Protect or restore habitat
- Stormwater design [i.e. using existing natural features such as ponds and creeks enhanced by constructed basins, and lot-line swales over gutter-and-pipe engineering]
- Joint use of facilities

### Water Efficiency:

- No potable use or no irrigation
- Water use reduction [i.e. use collected rainwater or gray water for toilet and urinal flushing or other non-potable uses]

### Energy & Atmosphere:

- Optimize energy performance
- On-Site renewable energy [i.e. geothermal, hydroelectric, solar, wind]
- Green power [i.e. purchase of green electricity]

### Materials & Resources:

- Storage & collection of recyclables
- Building reuse
- Construction waste management
- Regional materials
- Rapidly renewable materials [i.e. bamboo flooring, cork wall covering]
- Certified wood [wood/paper that comes from good forest management]

### Indoor Environmental Quality:

- Increased ventilation
- Outdoor air delivery monitoring
- Low-emitting materials
- Lighting system design & controllability
- Thermal comfort design & controllability
- Daylight & views [75-90% of classrooms & other spaces]
- Enhanced acoustical performance
- Mold prevention

### Innovation & Design Process:

- Innovation in design – project specific
- LEED accredited professional
- School as a teaching tool [i.e. high school students learn about alternative energy from the solar panels on their roof]



This school building uses native plants and natural wild flower grasses in the landscape as well as provides water quality treatment on site with an outlet into an existing creek.

Source: *Multnomah Education Service District, Dull Olson Weekes Architects, Portland, Oregon*

## Virginia Beach City Public Schools

With the completion of *Hermitage Elementary* in 2005, this school earned the distinction of being the first LEED Certified Elementary school in the State. Additionally, two schools under construction, *The Renaissance Academy*, and *Virginia Beach Middle School* are slated to be LEED Certified.

The School Division is committed to conserving resources and protecting the environment and received the 2007 Virginia Recycling Association Award for Excellence. Perhaps this is because they recycle on average, 123 tons of material per month. In September 2008, a *Sustainable Schools Committee* was formed to monitor and make recommendations regarding sustainability within the school division.





*(Photograph used for illustration purposes only)*

## Aesthetics

The indoor and outdoor structures and spaces where students go to school need to be aesthetically pleasing and healthful settings. The facility should be inviting to the students, making them feel that the space is special, and therefore emphasizing that each individual is important. Aesthetics that affirm the value of the individual must be stressed, with spaces for the admiration of the accomplishments of self and others. The school should resemble a place for academic success, high self-esteem, social interaction, and physical safety. The facility layout should be especially easy to comprehend and reflect how classes relate to one another in order to minimize the lost

## High School Educational Specifications

feeling common in students. Spaces should be provided for socialization among students and with teachers. Spaces should also be provided to display student work.

## Variety of Instructional / Learning Spaces

Ongoing assessment of student progress will require facilities to be able to adapt to a changing program. Multi-use of buildings should be the norm. Spaces should allow for a wide variety of specialized instructional and hands-on learning experiences.

Today, students do not just work in groups of 20-25. As technology continues to advance, students are becoming more involved in extensive individual learning activities that are supplemented by small group (2-6 students), moderate group (10-20), and large group (50-150) activities. Space should be provided for students to plan, work independently and collaboratively, give and/or receive tutoring as well as accept instruction.

## Staffing Patterns

The predominant staffing pattern is composed of teachers, supplemented with paraprofessionals and specialists. As the programs and groupings change, a more differentiated staffing pattern may emerge with lead or master teachers and more specialists and paraprofessional facilitators.

## Indoor and Outdoor Learning Environments

By rethinking spaces, better use of facilities can be made. Some ideas include: use gardens instead of pavement and use hallways as art galleries or museum strips. Creativity and functionality should work hand-in-hand. Color, greenery, building materials, and furniture should be

selected carefully to develop a pleasing and inviting atmosphere.

The learning environment should be student-centered and designed for "hands-on learning," promoting student autonomy and independence. Space for active participation should be incorporated with modular, flexible classrooms providing opportunities for integrating disciplines and easy access to tools of exploration. The outdoor site should serve as a pro-active learning environment as well. Outdoor spaces with benches, sheltered areas, and amphitheaters can be incorporated in the design.

### **Learning from Others**

Modern office environments provide greater insights into flexibility than current school environments. Many of their concepts should be taken into consideration:

- Demountable, movable wall systems.
- Modular furnishings.
- In-floor wiring.
- Non-load bearing wall systems.
- Raceways, cable trays.
- More generic space that can be adapted to specialized uses.

### **Planning Principles**

Following are planning principles employed by other districts when developing school facilities and sites:

- Building orientation important - obvious focal point/main entrance. Front of building should be facing where public can see it.

### **High School Educational Specifications**

- Good signage – marquee board (with directions on how to find entrance and location within the facility) – good directional/informational signage inside and out.
- Welcoming area by front door. Welcome area open, using spacious hallways and common areas.
- Create easy access for parents/community.
- Pleasing, warm, inviting, soothing colors.
- Visually appealing, both internally and externally.
- Cove lighting in corridors.
- Arched ceilings in corridors.
- Lighting – natural – skylights, glass, windows, open areas.
- Enclosed media center with skylights.
- Student art work – several showcases around school to promote student achievement.
- Plants – artificial and real.
- Classroom –tile with soothing pattern and color; comfortable furniture.
- Complimentary carpet and tile mix appropriately used throughout the building.
- Top windows operable.
- Student spaces should be equipped with technologies for student use.
- Transparent spaces.
- Landscaping – good upkeep.
- Dumpster not visible.
- Separate access road for deliveries.



*(Photograph used for illustration purposes only)*

## Student Spaces

From the time students arrive in the morning to the time they leave in the afternoon, they move through the building performing many tasks and visiting many spaces. Adhering to the principle that learning can and should take place anywhere and anytime, we need to look beyond the classroom at other “student spaces”. Students need places to work with peers on projects in a small group setting to collaborate, discuss, research, create, edit, organize, and prepare for presentation. This requires yes, a separate room, but a room with appropriate wireless technology for laptops, an interactive whiteboard, and appropriate flexible furniture. This type of room should be located throughout the learning clusters for ease of accessibility and visibility. This room can also be used for tutoring or testing.

Students need spaces to support their social involvement, leadership skills, and the various activities in which they are involved. This suggests dedicated meeting space for Student Council, for other various small club meetings (to include sufficient storage), and a school store.

Careful consideration should be given to the type of furniture chosen for the student dining area. Round tables promote conversation and a friendlier, less institutionalized environment. Other furniture in the perimeter or adjoining areas could include benches, small tables, and comfortable seating. The atmosphere becomes one of a student union.

Students also need to hear speakers and attend larger club meetings. A schola would work well for this purpose and could be used by the staff and community as well.

Looking to the future, it is very possible that some or many students would function well in a Virtual High Setting, spending perhaps, every other day at home, connected through technology, still learning and still contributing as a member of their school.

Ask students what spaces are currently “theirs” at school – and you will likely hear “our lockers” as a response. It is what they have to call their own.

High School Educational Specifications

Other more visible components, such as choice of colors, display and showcase areas, durable yet comfortable furnishings, use of glass, and lockers that do not block the view, make the school more inviting and appealing.

Still other components, such as appropriate interior and exterior signage, ensure good wayfinding for students, staff, and visitors. Electronic screens are also helpful in communicating current news and announcements to anyone in the building. Appropriate sidewalks and pathways should be designed on the site to provide logical pedestrian traffic patterns. Parking should be strategically located to provide separation for staff, students, and visitors, and to provide convenient event parking for off hours.

Along with wayfinding, comes the need for security and safety. This can be achieved in many ways through the arrangement and adjacencies of the various types of spaces to the intentional use of cameras, swipe cards, motion detectors, and security gates for off hours.

Energy saving practices such as water use reduction in restrooms, optimal heating and cooling, and lighting controls should also be considered.

These components, some obviously more visible and more tangible than others, provide a sense of belonging, a sense of comfort, a sense of security, and a sense of welcoming to all who enter the school.



*(Photograph used for illustration purposes only)*

## Public Spaces

There are many components of the school which could be considered public as they affect all who enter. Some of these, such as natural lighting, good air quality, good acoustics, and good heating and cooling systems are essential to provide comfort and a healthy environment.





### Community Use

It is anticipated that high schools will be used for a variety of community uses. Community involvement in education can take a variety of forms before, during, and after the school day. Additionally the school division would not have to pay for space elsewhere for banquets, PTA events, retirement events, student recognition events, if these types of spaces were available.

### The following is a partial list of potential community uses:

- Mentoring Programs.
- After School Youth Enrichment.
- Speech/Debate Clubs.
- Pageants.
- Child care (staff, community).
- Parks & Recreation Programs.
- Outdoor Festivals.
- Intramural Sports Programs.
- Dance Recitals.
- Open House Activities.
- Adult Education.
- Community Meetings and public hearings.
- School Board Meetings.
- School/Business Partnerships.
- Health Screening.
- Special Seminars.
- Voting.
- Teacher Training.
- Professional Development.
- Testing.
- Rental space for churches, local arts groups, sporting events.

**The areas in schools that have the greatest possibility for community usage include:**

- Gymnasium.
- Auditorium.
- Schola (Forum Room).
- Cafeteria.
- Media Center.
- Community Room/ Project Lab.
- Conference Rooms.
- Foyer/Entrance.
- Playfields/Stadium.
- Parking Lots.

**Special considerations include:**

- Disaster and emergency use.
- Configure and zone facility and site to enhance parking and circulation, security, and energy conservation.
- Adequate signage to assist community members.
- Layout of community use areas should be of a "user friendly" design.
- Storage for community functions –gym; auditorium; community use.
- After-hours lighting for parking areas.
- Extended hours – (6 am – 3pm typical day vs. 7 am – 11pm for all)
- Joint use.
- Mixed use.

## Table of Contents

<b>Learning Community Concept .....</b>	<b>2</b>
<b>Overall Building Compilation of Space.....</b>	<b>3</b>
<b>Spatial Relationships.....</b>	<b>4</b>
<b>Illustration.....</b>	<b>5</b>
<b>Program Areas Compilation of Space .....</b>	<b>6</b>
<b>Program Area Descriptions:</b>	
<b>Core Academics .....</b>	<b>14</b>
<b>Special Needs.....</b>	<b>39</b>
<b>Technical / Career Education .....</b>	<b>52</b>
<b>Visual Arts .....</b>	<b>79</b>
<b>Music/Performing Arts.....</b>	<b>88</b>
<b>Gym/Physical Education .....</b>	<b>113</b>
<b>Schola .....</b>	<b>141</b>
<b>Media Center .....</b>	<b>146</b>
<b>Welcome Center/Administration.....</b>	<b>159</b>
<b>Cafeteria/Food Services.....</b>	<b>184</b>
<b>Custodial/Building Services .....</b>	<b>205</b>
<b>NJROTC .....</b>	<b>216</b>

## Learning Community Concept

The Learning Community concept has been developed nationally as a way of achieving many of the advantages of small schools while maintaining many of the advantages of larger schools. When properly organized and supported through facilities the Pod/Cluster concept can deliver:

- **Small School Advantages:** Greater administrative flexibility, collective professional decision-making, smaller learning communities, greater personalization, less anonymity for students and teachers, possibility of thematic, focused instruction.
- **Large School Advantages:** Economies of scale, available of facilities, such as large media centers, auditoriums and gymnasiums, only affordable in large schools, greater range of competitive sports and extracurricular activities, shared special services and specialized instructional programs.

Additionally, in Virginia Beach the Learning Community concept allows the continued use of existing, large high school buildings when many of the educational and social values support small high schools.

This concept takes a total building capacity of 1,800 students and breaks it down into smaller Learning Communities. These communities have their own core academic spaces, special needs spaces, administration spaces, student spaces, and technology education spaces within their cluster or pod.

### Potential Types of Learning Communities:

- A. Traditional Departmental
- B. Themes
- C. Tech Focused [i.e. Engineering, Communications, Business]
- D. Combination of approaches

Shared between each community would be the self-contained special needs, cafeteria, media center, art, music and performing arts area, the physical education area and some administrative spaces.



## Overall Building Compilation of Space

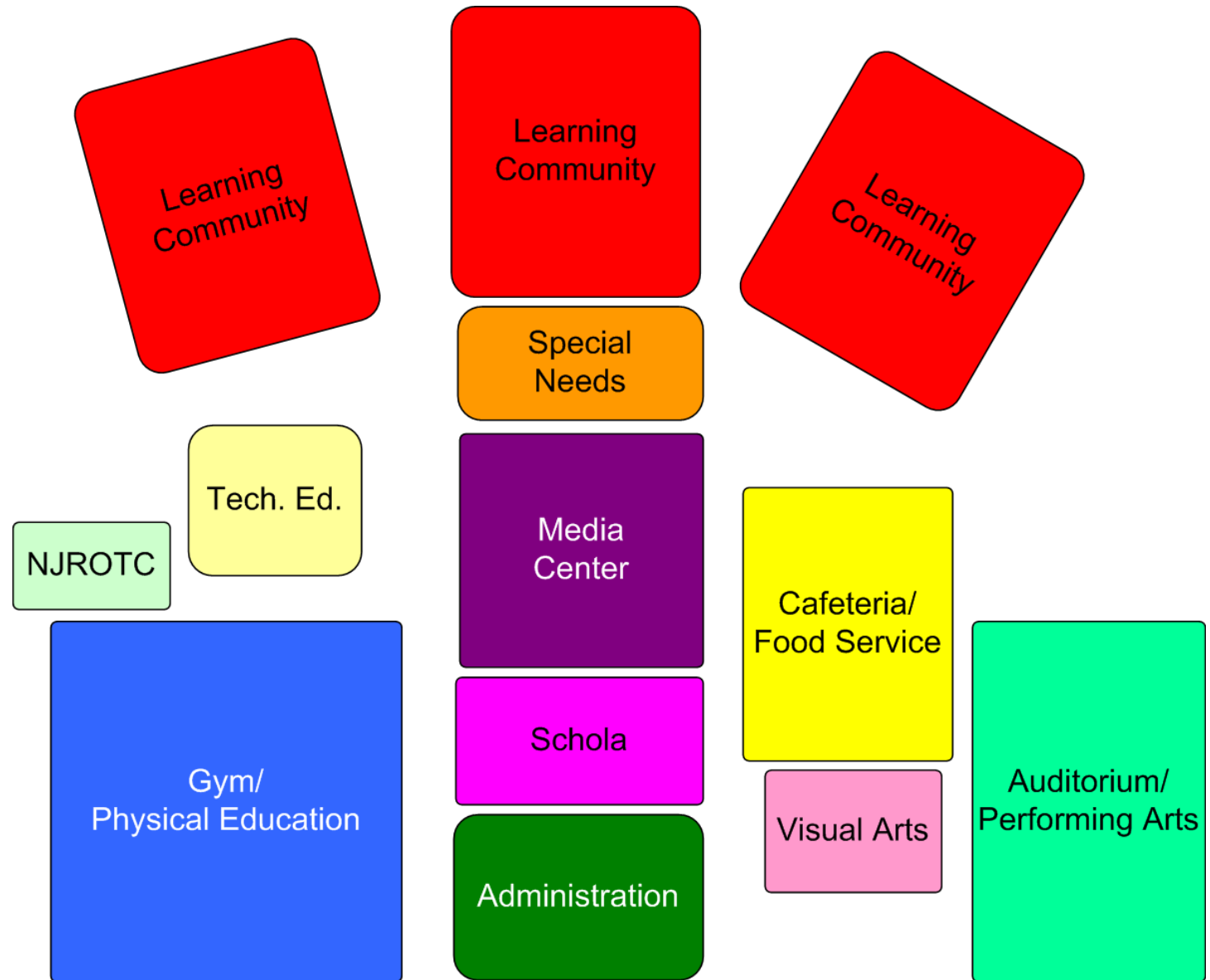
Space	Suggested	
	TS	Total
Learning Community #1	11	13,600
Learning Community #2	11	13,600
Learning Community #3	11	13,600
Learning Community #4	11	13,600
Learning Community #5	11	13,600
Learning Community #6	11	13,600
Special Needs	3	4,990
Technical / Career Education	13	20,050
Visual Arts	2	3,300
Music/Performing Arts	3	22,000
Gym / Physical Education	9	39,720
Schola		3,000
Media Center		6,500
Welcome Center/Administration		6,055
Cafeteria / Food Services		13,600
Custodial / Building Services		3,050
<b>Sub Total Programmed Areas</b>		<b>203,865</b>
Building Services, Circulation, Restrooms, etc.	42%	85,623
<b>Total</b>	<b>96</b>	<b>289,488</b>

Net to Gross: 42% of Program Area or 30% of Total is approx. the Same Number

Add Alternate [Needs to be decided by Site]	TS	Total
NJROTC (add alternate)	2	3,100

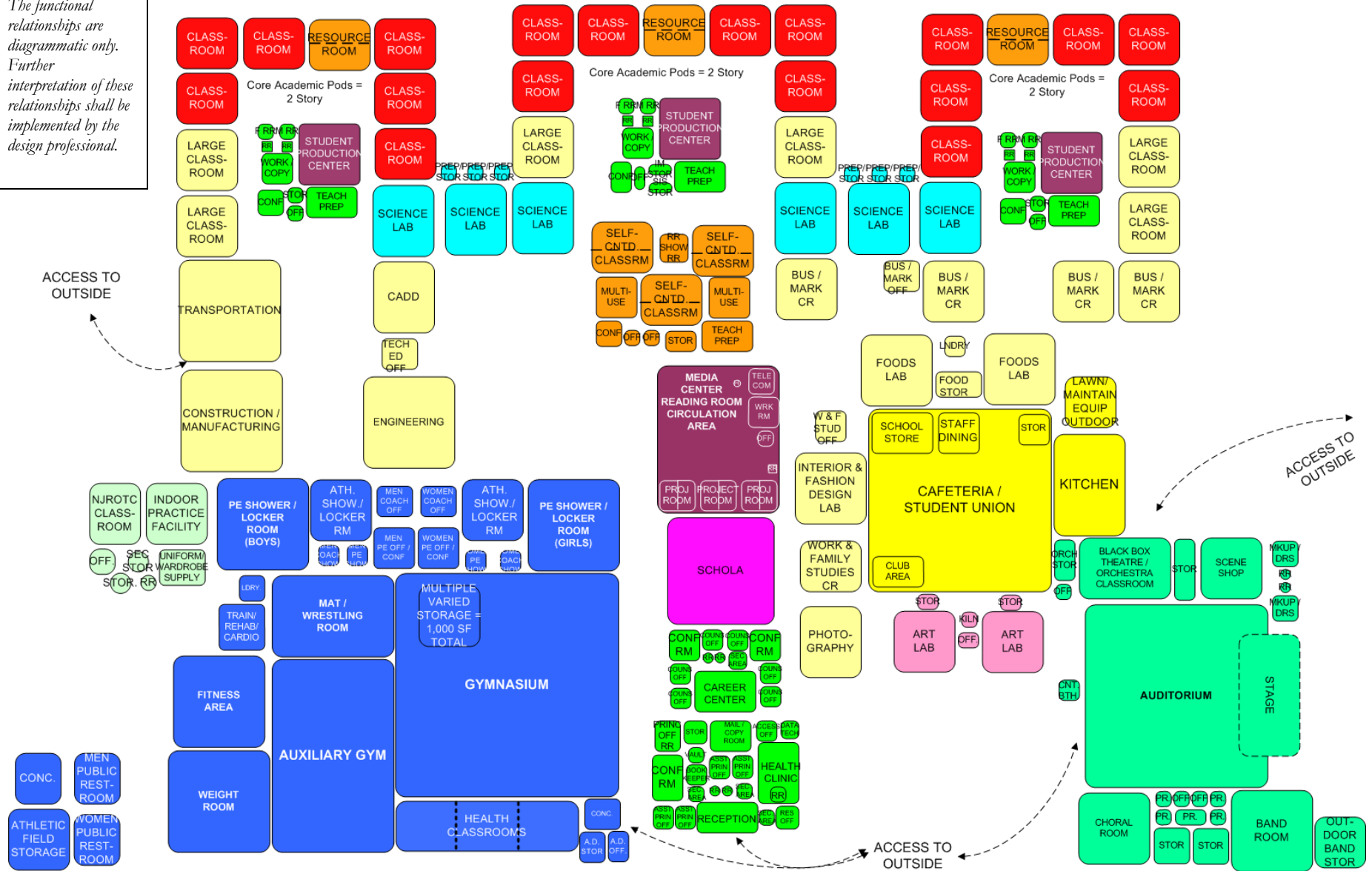
## High School Facility Spatial Relationship Drawing

*The functional relationships are diagrammatic only.  
Further interpretation of these relationships shall be  
implemented by the design professional.*



## High School Facility Illustration

The functional relationships are diagrammatic only. Further interpretation of these relationships shall be implemented by the design professional.



## Program Areas Compilation of Space

### Core Academic Learning Community

Learning Community	Suggested			
Core Academics	TS	Quantity	SF	Total
Classrooms	6	6	850	5,100
Large Classrooms [*Tech Ed Lab]	2	2	1,000	2,000
Resource Room	1	1	850	850
Science Lab	2	2	1,200	2,400
Science Prep/Storage		2	200	400
Student Production Center [Decentralized Media]		1	1,000	1,000
<b>Decentralized Admin/Guidance/Teacher Prep Area</b>				
Conference Room		1	250	250
Office		1	150	150
Instructional Material Storage		1	150	150
Work/Copy		1	300	300
Staff Restrooms		2	50	100
Teacher Prep		1	500	500
Student Restroom (male / female)		2	200	400
<b>Learning Community</b>	<b>11</b>			<b>13,600</b>
<b>Number of Learning Communities</b>				<b>6</b>
<b>Totals per Pod / Cluster</b>	<b>66</b>			<b>81,600</b>

\*Larger classrooms also could be Tech Ed Labs [Business, Marketing, Computer Labs]

### Special Needs

Special Needs	Suggested			
	TS	Quantity	SF	Total
Self-contained Classroom	3	3	850	2,550
Restroom/Shower		1	100	100
Multi-Use Special Needs Room		2	500	1,000
Additional Offices		2	120	240
Conference Room		1	300	300
Storage		1	300	300
Teacher Prep/Offices		1	500	500
<b>Special Needs-Sub Total</b>	<b>3</b>			<b>4,990</b>



**Technical / Career Education**

Technical / Career Education	Suggested			
	TS	Quantity	SF	Total
Foods Lab	2	2	1,400	2,800
Work & Family Studies Classroom	1	1	850	850
Food Storage		1	400	400
Laundry		1	200	200
Design Lab	1	1	1,400	1,400
Work & Family Studies Office		1	300	300
Construction/Manufacturing	1	1	2,400	2,400
Transportation	1	1	2,400	2,400
Engineering	1	1	2,000	2,000
CADD	1	1	1,200	1,200
Photography	1	1	1,200	1,200
Technical Education Office		1	350	350
Business/Marketing	4	4	1,000	4,000
Storage		1	200	200
Business/Marketing Office		1	350	350
<b>Total</b>	<b>13</b>			<b>20,050</b>

**Visual Arts**

Visual Arts	Suggested			
	TS	Quantity	SF	Total
Art Lab	2	2	1,300	2,600
Kiln Room		1	100	100
Storage		2	200	400
Office		1	200	200
Digital Art Lab	See Technical Education Photography			
<b>Visual Arts Sub-Total</b>	<b>2</b>			<b>3,300</b>

**Music and Performing Arts**

Music / Performing Arts	Suggested			
	TS	Quantity	SF	Total
Choral Room	1	1	1,600	1,600
Storage (Robes, Music)		1	500	500
Band Room	1	1	2,300	2,300
Band Storage (Instruments, Music)		1	500	500
Practice rooms		4	50	200
Auditorium Seating (800 seats)*		1	7,200	7,200
Control Booth		1	200	200
Auditorium Stage		1	3,500	3,500
Scene Shop		1	1,200	1,200
Make Up/Dressing		2	300	600
Storage (Costumes, Props)		1	500	500
Restrooms		2	50	100
Offices		3	150	450
Large Practice Room		1	100	100
Orchestra Storage		1	300	300
Black Box Theatre / Orchestra Classroom	1	1	2,000	2,000
Band Storage (Outdoor)		1	750	750
<b>Music/ Performing Arts Sub-Total</b>	<b>3</b>			<b>22,000</b>

\*Recommended that high schools have seating for 750-800 with 3-4 high schools having seating for 1,000

**Gym / Physical Education**

Gymnasium / Physical Education	Suggested			
	TS	Quantity	SF	Total
Gymnasium	2	1	15,000	15,000
Seating included in above: 2000 seats				
Storage		Multiple	Varied	1,000
Auxiliary Gym	1	1	5,000	5,000
PE Shower/Locker Room		2	2,000	4,000
Fitness Area	1	1	2,000	2,000
Wrestling Room	1	1	2,500	2,500
Weight Room	1	1	2,500	2,500
Athletics Shower/Locker Room		2	1,000	2,000
Training / Rehabilitation / Cardio Lab		1	500	500
PE Office/Conference		2	400	800
PE Staff Toilets/Showers		2	100	200
Laundry		1	200	200
Coaches Offices		2	300	600
Coaches Toilet/Shower		2	100	200
Health Classroom	3	3	850	2,550
Concessions		1	300	300
Athletic Director's Storage		1	220	220
Athletic Director's Office		1	150	150
<b>Physical Education Sub-Total</b>	<b>9</b>			<b>39,720</b>
Outdoor Spaces	Suggested			
	TS	Quantity	SF	Total
Football Stadium				
Athletic Field Storage		1	1,000	1,000
Public Restrooms		2	600	1,200
Concession		1	600	600
<b>Physical Education Outdoor Sub-Total</b>				<b>2,800</b>
<b>Physical Education Total</b>	<b>9</b>			<b>42,520</b>

**Schola**

Schola	Suggested			
	TS	Quantity	SF	Total
Schola [175 Seats]		1	3,000	3,000
<b>Schola Sub-Total</b>				<b>3,000</b>

**Media Center**

Media Center	Suggested			
	TS	Quantity	SF	Total
Reading Room/Circulation		1	4,000	4,000
Student Production Centers	In Each Learning Community			
Media Specialist Office		1	150	150
Workroom/Storage		1	400	400
Telecommunications Room		1	300	300
Hub Rooms, distributed thru Bldg		4	25	100
Project Room		3	500	1,500
Restroom		1	50	50
<b>Media Center Sub-Total</b>				<b>6,500</b>

\* 6 Student Production Centers. One in each Learning Community



**Welcome Center / Administration**

<b>Welcome Center / Administration</b>		<b>Suggested</b>		
<b>Administration</b>	<b>TS</b>	<b>Quantity</b>	<b>SF</b>	<b>Total</b>
Reception		1	600	600
Secretarial Area		3	80	240
Principal's Office/Rest Room		1	225	225
Assistant Principal's Office		4	125	500
Conference Room		1	400	400
Mail/Copy Room		1	300	300
Storage		1	150	150
Staff Restrooms		2	50	100
Resource Officer		1	150	150
Bookkeeper		1	120	120
Data Technician		1	100	100
Access Office		1	120	120
Health Clinic		1	700	700
Vault		1	80	80
<b>Guidance</b>				
Career Center		1	700	700
Counselors' Offices		6	120	720
Secretarial Area		1	100	100
Conference Room		2	250	500
Staff Restrooms		2	50	100
<b>Decentralized [See Core Academic]</b>				
School Improvement Specialist Storage [In One Pod]		1	150	150
Offices for Itinerant and Others		6	150	See Core
<b>Total</b>				<b>6,055</b>

**Cafeteria / Food Service**

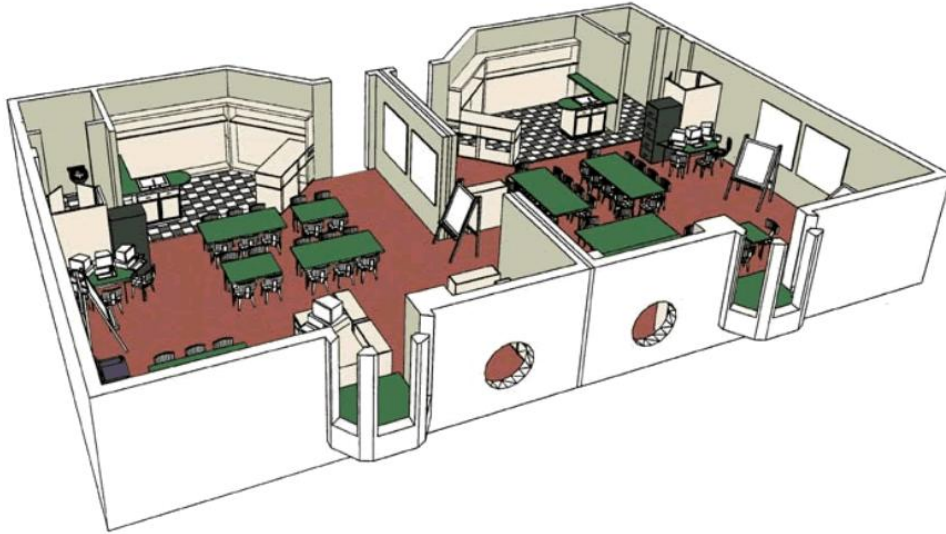
Cafeteria / Food Service	Suggested			
	TS	Quantity	SF	Total
Kitchen		1	3,500	3,500
Preparation Area				
Serving Area				
Dry Food Storage				
Cooler/Freezer				
Ware Washing				
Kitchen Mgr Office				
Restroom				
Lockers				
Cafeteria / Student Union		1	8,000	8,000
Table & Chair Storage		1	300	300
Staff Dining w/Vending		1	600	600
School Store		1	700	700
Club Areas		1	500	500
<b>Food Service Sub-Total</b>				<b>13,600</b>

**Custodial / Building Services**

Custodial / Building Services	Suggested			
	TS	Quantity	SF	Total
Receiving/Storage		1	1,000	1,000
Maintenance/Repair Area		1	600	600
Office/Planning/Meeting Area/Break Room		1	300	300
Locker Room/Toilets		2	200	400
Lawn/Maintenance Equipment (Outdoor Storage)		1	750	750
Loading Area	Outside			
<b>Custodial / Building Services Sub-Total</b>				<b>3,050</b>

**NJROTC**

NJROTC	Suggested			
	TS	Quantity	SF	Total
Indoor Practice Facility	1	1	1,200	1,200
Classroom	1	1	850	850
Uniform / Wardrobe Supply		1	600	600
Office		1	200	200
Secure Armory Storage		1	100	100
General Storage		1	100	100
Restroom		1	50	50
<b>NJROTC Sub-Total</b>	<b>2</b>			<b>3,100</b>



## Core Academics

It is the goal of the core academic program to provide opportunities for students of all grade levels to foster mastery of basic skills in reading, language, social studies, mathematics, science, citizenship, health, technology, and other content areas; experience and enhance their awareness and understanding of multi-cultural values, beliefs, and other aspects of society; and become involved in inquiry-based learning expressed by hands-on, minds-on, experiences.

The core academic area is composed of spaces associated with typical academic content areas such as language arts, mathematics, science, and social studies. Spaces include

classrooms, teacher workrooms, restrooms, and materials storage.

Specific spaces associated with the core academics and corresponding illustrations and adjacencies are described herein. Additionally, descriptions of activities and persons to be accommodated as well as design considerations are listed.

### Overview

The core academics concept should be organized to facilitate an interdisciplinary approach to instruction. Characteristics of this area are:

- Ability to organize space by teams
- Instruction and facility space to encourage team and student communication
- A flexible learning environment that is:
  - ✓ adaptable to change and supportive of different program delivery/organizational patterns
  - ✓ adequately sized with space to support the work of teams and production of student work, and encourages the integration of curricula

The concepts that will give direction to this interdisciplinary approach are:

- Integrated curricula
- Performance objectives for students
- Individualized/intra-dependent learning environments
- Performance assessment
- Decentralized/shared decision-making
- Coordination of services provided to students

In addition to the traditional large and small group instruction, many varied activities take place in the various Core Academic learning areas:

- Writing/composing
- Role playing – skits, acting out situations
- Hands-on projects and activities – individuals and groups
- Oral presentations
- Interactive activities – room-to-room, school-to-school, class-to-community
- Team teaching among all the disciplines
- Group and teamwork activities



**SCIENCE LAB**

**RESOURCE CENTER**



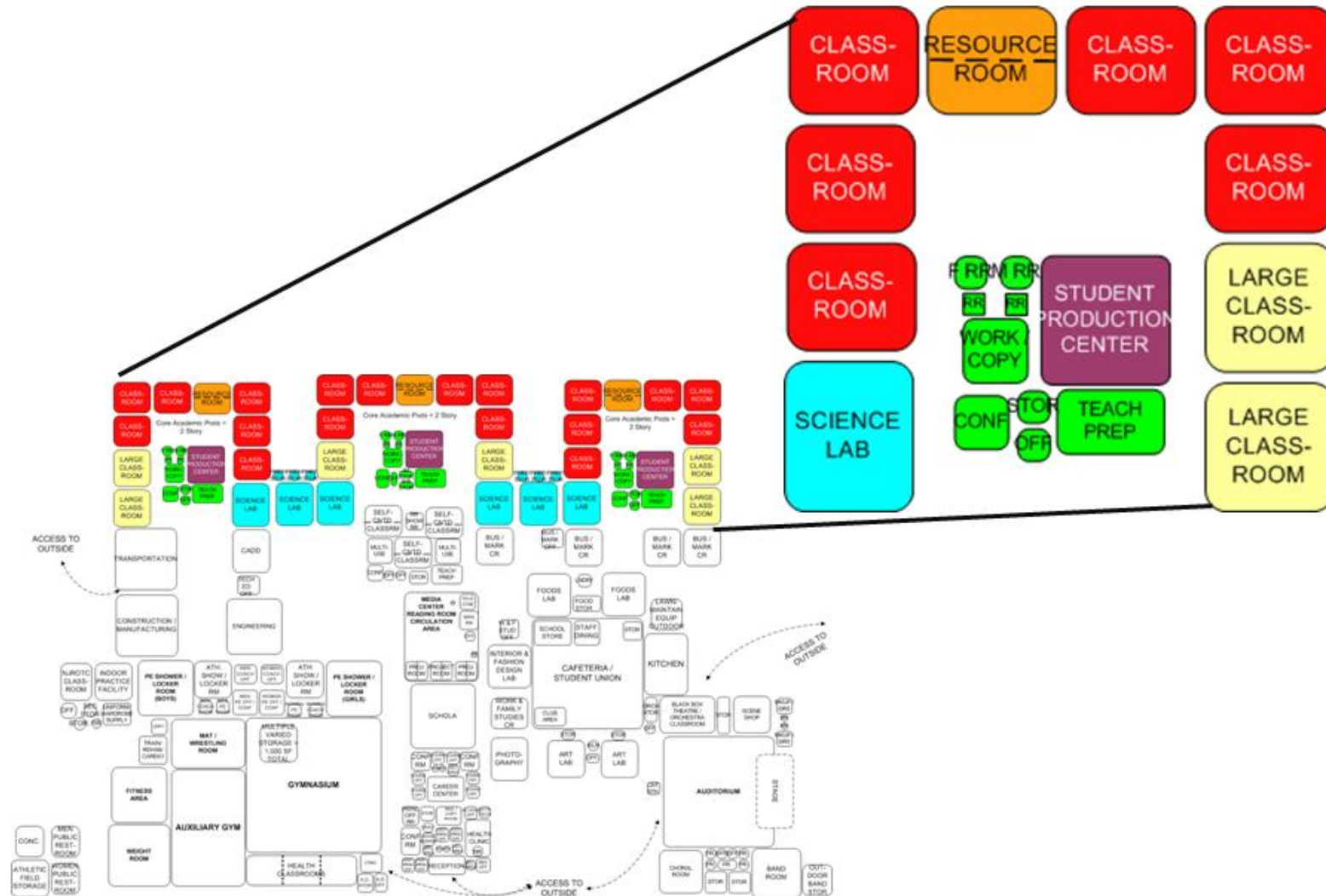


**Core Academics Space Requirements**

Learning Community	Suggested			
Core Academics	TS	Quantity	SF	Total
Classrooms	6	6	850	5,100
Large Classrooms [*Tech Ed Lab]	2	2	1,000	2,000
Resource Room	1	1	850	850
Science Lab	2	2	1,200	2,400
Science Prep/Storage		2	200	400
Student Production Center [Decentralized Media]		1	1,000	1,000
<b>Decentralized Admin/Guidance/Teacher Prep Area</b>				
Conference Room		1	250	250
Office		1	150	150
Instructional Material Storage		1	150	150
Work/Copy		1	300	300
Staff Restrooms		2	50	100
Teacher Prep		1	500	500
Student Restroom (male / female)		2	200	400
<b>Learning Community</b>	<b>11</b>			<b>13,600</b>
<b>Number of Learning Communities</b>				<b>6</b>
<b>Totals per Pod / Cluster</b>	<b>66</b>			<b>81,600</b>

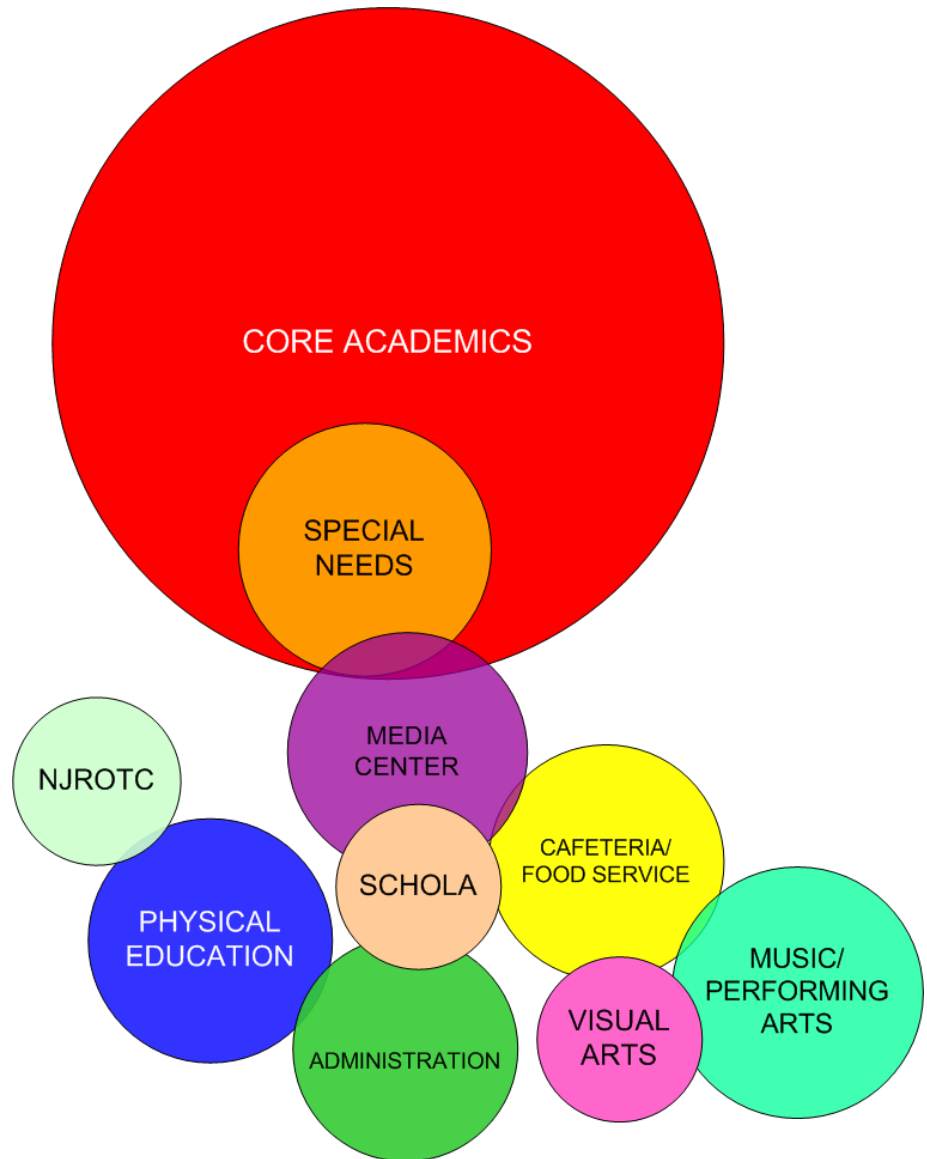
\*Larger classrooms also could be Tech Ed Labs [Business, Marketing, Computer Labs]

## Core Academics Illustration



### Core Academics Spatial Relationships

Core academics should be located adjacent to all other program areas: special needs, technical and career education as well as the media center. The three pod/cluster illustration is for a 2-story school.



## Core Academics Space Descriptions

### Classrooms

CLASSROOMS	
ACTIVITIES	PERSONS
Individual, small, and large group activities	Students
Storage of materials	Teachers
Project-based learning	Aides
Demonstrations	Volunteers
Computer-based instruction	Paraprofessionals
	Staff

CLASSROOMS		QTY
<b>MECHANICAL</b>	Quiet air conditioning	Yes
<b>PLUMBING</b>	Sink with hot and cold water	1
<b>ELECTRICAL / LIGHTING</b>	Duplex outlet	1 per wall
	Quad outlet @ each data port	1
	Overhead lighting	Yes
	Room darkening capability - dimmer switches	Yes
	Controlled day lighting, banked lighting	Yes
	Mobile tables need variety of ways to set electricity [floor or fixed table]	Yes
	Front row of light, dimmable	Yes
<b>TECHNOLOGY</b>	Voice, data, video outlets at teacher desk	1
	6 data drops with double, triple, or quad Communications Network Outlets	6
	2 data drops at teacher desk area	2
	Single data drop dedicated to wireless, high on wall	1
	Telephone	1
	Intercom	Yes
	Interactive whiteboard with integral computer projector	1
	Ceiling mounted computer projector with retractable screen	Yes
	Laptop computers with carts, shared	26
	Access to voice, video, data ports, and electrical outlets	Yes
	Teacher data port separate from student data ports	Yes
	Audio enhancement	1 system
	Document cameras for each class	Yes

## Core Academics Space Descriptions

### Classrooms

CLASSROOMS		QTY
FURNITURE / EQUIPMENT	Student work tables, 2 students each	Yes
	Comfortable ergonomic student chairs that allow movement	Yes
	Countertop over base cabinets	Yes
	Lockable overhead cabinets	Yes
	Magnetic marker board with tack strips above whiteboard	Yes
	Bulletin board	Yes
	Shelving	Yes
	Clock	Yes
	Locking storage cabinet with outlet	Yes
	All in One Computer Device	Yes
	Retractable projection screen	Yes
	Flexible or multiple display surfaces	Yes
	Adjustable, lockable, and mobile storage cabinets and shelving	Yes
	Flexible furniture: can be used as individual desks or fit together to make tables	Yes
DOORS & WINDOWS	Door with windows or view panel	Yes
	Locking mechanism	Yes
	Large energy efficient windows to outdoors with blinds	Yes
SPECIAL CONSIDERATIONS	Climate control for each classroom	Yes
	Vinyl tile, no scratch flooring	Yes
	Acoustical privacy	Yes
	Walls painted with warm and cool colors	Yes



## Core Academics Space Descriptions

### Large Classrooms

LARGE CLASSROOMS	
ACTIVITIES	PERSONS
Business Classes	Students
Marketing Classes	Teachers
Individual, small, and large group activities	Aides
Project-based learning	Volunteers
Demonstrations	Paraprofessionals
Computer-based instruction	Staff

LARGE CLASSROOMS		QTY
<b>MECHANICAL</b>	Quiet air conditioning	Yes
<b>PLUMBING</b>	No Special Requirements	
<b>ELECTRICAL / LIGHTING</b>	Duplex outlet	1 per wall
	Quad outlet @ each data port	1
	Overhead lighting	Yes
	Room darkening capability - dimmer switches	Yes
	Controlled day lighting, banked lighting	Yes
	Mobile tables need variety of ways to set electricity [floor or fixed table]	Yes
	Front row of light, dimmable	Yes
<b>TECHNOLOGY</b>	Voice, data, video outlets at teacher desk	1
	6 data drops with double, triple, or quad Communications Network Outlets	6
	2 data drops at teacher desk area	2
	Single data drop dedicated to wireless in ceiling	1
	Telephone	1
	Intercom	Yes
	Interactive whiteboard with integral computer projector	1
	Ceiling mounted computer projector with retractable screen	Yes
	Laptop computers with carts, shared	26
	Access to voice, video, data ports, and electrical outlets	Yes
	Teacher data port separate from student data ports	Yes
	Audio enhancement	1 system
	Document cameras for each class	Yes

## Core Academics Space Descriptions

### Large Classrooms

LARGE CLASSROOMS		QTY
FURNITURE / EQUIPMENT	Student work tables, 2 students each	Yes
	Comfortable ergonomic student chairs that allow movement	Yes
	Countertop over base cabinets	Yes
	Overhead cabinets	Yes
	Magnetic marker board with tack strips above whiteboard	Yes
	Bulletin board	Yes
	Shelving	Yes
	Locking storage cabinet with outlet	Yes
	All in One Computer Device	Yes
	Retractable projection screen	Yes
	Flexible or multiple display surfaces	Yes
	Adjustable, lockable, and mobile storage cabinets and shelving	Yes
	Flexible furniture: can be used as individual desks or fit together to make tables	Yes
DOORS & WINDOWS	Door with windows or view panel that open to exterior	Yes
	Locking mechanism	Yes
	Large energy efficient windows to outdoors with blinds	Yes
SPECIAL CONSIDERATIONS	Climate control for each classroom	Yes
	Vinyl tile, no scratch flooring	Yes
	Acoustical privacy	Yes
	Walls painted with warm and cool colors	Yes

## Core Academics Space Descriptions

### Resource Room

RESOURCE ROOM	
ACTIVITIES	PERSONS
Individual, small, and large group activities	Teachers
Physical therapy	Aides
Tutoring	Staff
	Volunteers
	Students

RESOURCE ROOM		QTY
<b>MECHANICAL</b>	Quiet air conditioning	Yes
<b>PLUMBING</b>	Sink with hot and cold water	1
<b>ELECTRICAL / LIGHTING</b>	Duplex electrical outlets on each wall	Yes
	Quad outlet @ each data port	Yes
	Overhead lighting	Yes
	Banked lighting	Yes
<b>TECHNOLOGY</b>	Front row of light, dimmable	1
	Telephone	1
	Intercom	Yes
	6 data drops with double, triple, or quad Communications Network Outlets	Yes
	Access to voice, video, data ports, and electrical outlets	Yes

**Core Academics Space Descriptions**  
**Resource Room**

<b>RESOURCE ROOM</b>		<b>QTY</b>
<b>FURNITURE / EQUIPMENT</b>	Student work tables	1
	Comfortable ergonomic student chairs	1/ 25 SF
	Magnetic whiteboard	8LF
	Ceiling mounted data projector	1
	Retractable projection screen	1
	Bulletin board	4 LF
	Clock	1
	Lockable storage cabinets	Yes
	Flexible surfaces	Yes
	Abundant shelving	Yes
	Flexible or multiple display surfaces	Yes
<b>DOORS &amp; WINDOWS</b>	Door with windows or view panel	Yes
	Locking mechanism	Yes
	Large energy efficient windows to outdoors with blinds	Yes
	Windows to corridor and / or Learning Community	Yes
<b>SPECIAL CONSIDERATIONS</b>	Spill and stain-resistant flooring	Yes
	Walls painted with warm / cool colors	Yes

**Core Academics Space Descriptions**
**Science Lab**

<b>SCIENCE LAB</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Cooperative learning	Students
Hands-on experiments	Teachers
Demonstrations	Aides
Long-term projects	Volunteers
Independent study	Staff
Interdisciplinary team teaching	
Computer-based instruction	

<b>SCIENCE LAB</b>		<b>QTY</b>
<b>MECHANICAL</b>	Fume hood	Yes
	Air conditioning	Yes
	Exhaust fan	Yes
	Gas at each sink	Yes
<b>PLUMBING</b>	Access to water, air, electric, and gas at every lab station	Yes
	Sinks with sliding / lockable cover (possibly with quick disconnects)	Yes
	Eye washing station, shower station, and sprinkler system	Yes
<b>ELECTRICAL / LIGHTING</b>	Front row of light, dimmable	Yes
	Quad outlet @ each data port	Yes
	6 data drops with double, triple, or quad Communications Network Outlets	Yes
	Banked lighting	Yes
	Controlled day lighting	Yes
	Room darkening capability	Yes
<b>TECHNOLOGY</b>	Access to voice, video, data ports, and electrical outlets at lab stations	Yes
	Ceiling-mounted computer projector with retractable screen	Yes
	Localized routers for computer WIFI wireless network access	Yes
	Interactive whiteboard w/integral computer projector	1
	Audio enhancement	1 system
	Voice, data, video outlets at teacher desk	1
	6 data drops with double, triple, or quad Communications Network Outlets	6
	2 data drops at teacher desk area	2
	Single data drop dedicated to wireless, high on wall	1
	Analog telephone	Yes
	Intercom	Yes
	Laptop computers with carts, shared	26



**Core Academics Space Descriptions**
**Science Lab**

<b>SCIENCE LAB</b>		<b>QTY</b>
<b>FURNITURE / EQUIPMENT</b>	Flexible or multiple display surfaces	Yes
	Magnetic whiteboard with tack strips above	Yes
	Lab seating	Yes
	Hanging display area [i.e. atom models, DNA models, cells, art projects, etc.]	Yes
	Small chairs	Yes
	Easels	Yes
	Mobile Labs	Yes
	Equipment storage / display cabinets	Yes
	Students work tables, 4 students each, 4' x 6'	6
	Student chairs	24
	Countertop over lockable base cabinets	Perimeter
	Lockable overhead cabinets	Perimeter
	Bulletin board	24 LF
	Shelving	24 LF
	Clock	Yes
	Locking storage cabinet	6 LF
	All in One Device	1
	Teacher demonstration desk	Yes
	Equipment storage / display cabinets	6 LF
	Retractable projection screen	1
<b>DOORS &amp; WINDOWS</b>	View panel in door	Yes
	Windows with blinds to control natural lighting	Yes
	Screens on windows	Yes
<b>SPECIAL CONSIDERATIONS</b>	Spill and stain resistant flooring	Yes
	Accessible to science prep area and storage	Yes
	Fire blankets and first aid kits	Yes
	Meet OSHA requirements for science	Yes
	Climate control for each classroom	Yes
	Lamps	Yes
	Copier / scanner / fax	Yes
	Bio lab, physical sciences, chemical lab	Yes
	Place to store / display projects	Yes
	Vandal and acid resistant surfaces	Yes
	Master shut-off switch for water, gas, and electricity	Yes
	Flip down gas outlets to regain table-top space	Yes
	Secure gas outlets below table-top with sliding, locking cover	Yes
	General exhaust fan to outside	Yes

## Core Academics Space Descriptions

### Science Prep / Storage

SCIENCE PREP STORAGE	
ACTIVITIES	PERSONS
Staff meetings	Teachers
Lesson planning and grading	Aides
Scheduling of appointments	Volunteers
Record keeping	Staff
Development and review of teacher materials	
Lab preparations	
Chemical (acid) storage	
Flammable storage	
Storage of refrigerated items	

SCIENCE PREP STORAGE		QTY
MECHANICAL	Fume hood	Yes
	Exhaust fan	Yes
PLUMBING	Quad outlet @ each data port	Yes
	For Dishwasher	Yes
	Eye washing station, shower station, and sprinkler system	Yes
ELECTRICAL / LIGHTING	Duplex electrical outlets on each wall	Yes
	Overhead lighting	Yes
TECHNOLOGY	Access to voice, video, data ports, and electrical outlets	Yes

**Core Academics Space Descriptions**  
**Science Prep / Storage**

<b>SCIENCE PREP STORAGE</b>		<b>QTY</b>
<b>FURNITURE / EQUIPMENT</b>	Lockable storage cabinets	Yes
	Dishwasher	Yes
	Abundant shelving	Yes
	Flexible or multiple display surfaces	Yes
	Chemical storage cabinet	Yes
	Adequate counter-top space for small appliances and production equipment	Yes
<b>DOORS &amp; WINDOWS</b>	View panel at door	Yes
	Lockable	Yes
<b>SPECIAL CONSIDERATIONS</b>	Spill and stain resistant flooring	Yes
	Accessible to Science Lab / Classroom	Yes
	Vandal and acid resistant surfaces	Yes
	Layout to maximize storage and efficiency	Yes
	Temperature and humidity control	Yes
	Secure	Yes
	Fire safety equipment	Yes
	Acid storage cabinet	Yes
	Nitric acid storage	Yes
	Flammable storage	Yes
	Corrosives storage	Yes

## Core Academics Space Descriptions

### Student Production Center

STUDENT PRODUCTION CENTER	
ACTIVITIES	PERSONS
Reading	Students
Circulation of materials and resources	Individual students for research
Whole group and small group instruction	Media specialist
Provide meeting areas	Community patrons for after school hours
Research	Volunteers
Processing new media	Teachers
	Technology Information Specialist

STUDENT PRODUCTION CENTER		QTY
<b>MECHANICAL</b>	No special requirements	
<b>PLUMBING</b>	No special requirements	
<b>ELECTRICAL / LIGHTING</b>	Multiple duplex electrical outlets on each wall	Yes
	Full spectrum lighting	Yes
	Ability to control specific lighting areas; dimmable	Yes
<b>TECHNOLOGY</b>	Telephone/intercom/voicemail port	Yes
	Video and data ports	Yes
	Quad outlet adjacent to each data port	Yes
	Wireless laptops with carts for battery recharging	Yes
	Electronic surveillance system	Yes
	Interactive whiteboards, computer projection opportunities throughout the room	Yes

**Core Academics Space Descriptions**  
**Student Production Center**

<b>STUDENT PRODUCTION CENTER</b>		<b>QTY</b>
<b>FURNITURE / EQUIPMENT</b>	Bookshelves, some portable	Yes
	Portable, lightweight 4-person tables with chairs	Yes
	Soft seating for recreational reading	20
	Computer tables with chairs	Yes
	Clock	Yes
	Copier / printer	1
	Printers and printer tables	Yes
	Networked computers with access to programs and online-card catalog	Yes
	Computer projector and mounted screen	2
<b>DOORS &amp; WINDOWS</b>	Door: double doors, large view panel	Yes
	Windows: operable, with blinds to allow controlled natural lighting	Yes
<b>SPECIAL CONSIDERATIONS</b>	Controlled natural light	Yes
	Open flow for traffic in reference/ professional/periodicals area	Yes
	Auditory privacy	Yes
	Provide method to darken room for AV presentations	Yes
	During/ after school hours access while maintaining security in the remainder of the school	Yes
	Carpeted flooring	Yes
	Magnetic marker boards	Yes
	Glass walls to corridor	
	Wireless, portable microphone to use when teaching	Yes
	Laptop charging stations	Yes



## Core Academics Space Descriptions

### Conference Room

CONFERENCE ROOM	
ACTIVITIES	PERSONS
Small group meetings/conferences	Administrators
	Counselors
	Parents
	Students
	Visitors
	Staff

CONFERENCE ROOM		QTY
<b>MECHANICAL</b>	Air conditioning	Yes
<b>PLUMBING</b>	Sink with hot and cold water	Yes
<b>ELECTRICAL / LIGHTING</b>	Multiple duplex electrical outlets on each wall	Yes
	Duplex outlet	1
	Overhead lighting [dimmable]	Yes
<b>TECHNOLOGY</b>	Telephone/intercom/voicemail port	Yes
	Video and data ports	Yes
	Quad outlet adjacent to each data port	Yes
	Whiteboard screen on whole wall	Yes
<b>FURNITURE / EQUIPMENT</b>	Countertop with sink, base, and wall cabinets	Yes
	Ceiling mounted data projector	1
	Modular conference table	1
	Conference chairs	1/25 SF
	Credenza	Yes
	Magnetic marker board	Yes
	Retractable projection screen	1
	Tack board	Yes
	Bulletin board	4 LF
	Bookshelves	Yes
	Clock	1
<b>DOORS &amp; WINDOWS</b>	Door: large view panel with optional sidelight	Yes
	Windows: to hallway with mini-blinds	Yes
<b>SPECIAL CONSIDERATIONS</b>	Consideration for sound transfer	Yes
	Carpeted flooring	Yes

**Core Academics Space Descriptions**
**Offices**

<b>OFFICES</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Meeting with students	School staff
	Student population

<b>OFFICES</b>		<b>QTY</b>
<b>MECHANICAL</b>	Quiet air conditioning	Yes
<b>PLUMBING</b>	No special requirements	
<b>ELECTRICAL / LIGHTING</b>	Duplex electrical outlets on each wall	Yes
	Quad outlet at each data port	Yes
<b>TECHNOLOGY</b>	Telephone/intercom/voicemail port	Yes
	Video and data ports	Yes
	Duplex outlet	Yes
	Quad outlet @ each data port	Yes
	Intercom	Yes
<b>FURNITURE / EQUIPMENT</b>	Flexible surfaces	Yes
	Legal size file lateral drawer	Yes
	6 data drops with double, triple, or quad Communications Network Outlets	1
	Desk chair	1
	Guest chairs	2
	Lamps	Yes
	Bookshelves	18LF
	Marker board	4LF
	Laptop computer	1
	Printer	1
	Locking file cabinet, 4 drawer	1 to 2
	Bulletin board	4LF
	Clock	1
<b>DOORS &amp; WINDOWS</b>	Door: view panel	Yes
<b>SPECIAL CONSIDERATIONS</b>	Bright, soft lighting	Yes
	Carpeted flooring	Yes

**Core Academics Space Descriptions**  
**Instructional Material Storage**

<b>INSTRUCTIONAL MATERIAL STORAGE</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Storage of instructional team materials	Teachers
	Staff

<b>INSTRUCTIONAL MATERIAL STORAGE</b>		<b>QTY</b>
<b>MECHANICAL</b>	No Special Requirements	
<b>PLUMBING</b>	No Special Requirements	
<b>ELECTRICAL &amp; LIGHTING</b>	Duplex outlets on each wall	Yes
	Overhead lighting	Yes
<b>TECHNOLOGY</b>	No Special Requirements	
<b>FURNITURE / EQUIPMENT</b>	Casework to include:	
	Countertop with base and wall cabinets	Yes
	Lockable storage cabinets	Yes
	Abundant wall shelving	Yes
<b>DOORS &amp; WINDOWS</b>	Solid door	Yes
	Keypad access	Yes
<b>SPECIAL CONSIDERATIONS</b>	Vinyl tile	Yes

**Core Academics Space Descriptions**
**Work / Copy**

<b>WORK / COPY</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Copying	Teachers
Collating	Staff
Laminating, book making, poster making	
General office work	

<b>WORK / COPY</b>		<b>QTY</b>
<b>MECHANICAL</b>	Quiet air conditioning	Yes
<b>PLUMBING</b>	No special requirements	
<b>ELECTRICAL / LIGHTING</b>	Duplex outlet	Yes
	Quad outlet @ each data port	1
<b>TECHNOLOGY</b>	Telephone/intercom/voicemail port	Yes
	Video and data ports	Yes
	Quad outlet adjacent to each data port	Yes
	Intercom	Yes
<b>FURNITURE / EQUIPMENT</b>	Work tables	2
	Counter over base cabinets	16 LF
	Overhead cabinets	8 LF
	Chairs	2
	Computer workstations	1
	Wall shelving	8 LF
	Lockable storage cabinet	Yes
	Fax machine	1
	Copier w/Sorter	1
	B&W and color printer	1
	Scanner	1
	Laminating machine	1
	Paper storage, shredder, and cutter	Yes
	Marker board	8 LF
	Tack board	Yes
	Bookshelves	Yes
	Clock	1
<b>DOORS &amp; WINDOWS</b>	Door: large view panel with optional sidelight	Yes
<b>SPECIAL CONSIDERATIONS</b>	Consideration for sound transfer	Yes
	Tile flooring	Yes

**Core Academics Space Descriptions**
**Staff Restrooms**

<b>STAFF RESTROOMS</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Personal hygiene	Teachers
	Administrators

<b>STAFF RESTROOMS</b>		<b>QTY</b>
<b>MECHANICAL</b>	Exhaust fan	Yes
<b>PLUMBING</b>	Sink with hot and cold water	Yes
	Toilet	Yes
<b>ELECTRICAL / LIGHTING</b>	Duplex electrical outlets on each wall	Yes
<b>TECHNOLOGY</b>	No special requirements	
<b>FURNITURE / EQUIPMENT</b>	Casework to include cabinet with mirror	Yes
<b>DOORS &amp; WINDOWS</b>	Solid door	Yes
<b>SPECIAL CONSIDERATIONS</b>	Hand-free dispensers	Yes



## Core Academics Space Descriptions

### Teacher Prep

TEACHER PREP	
ACTIVITIES	PERSONS
Teacher planning and collaboration	Teachers
Team meetings	Staff
Professional development	Paraprofessionals
Recordkeeping	
Preparation of teaching materials	
Faculty lunch	
Storage	

TEACHER PREP		QTY
<b>MECHANICAL</b>	Quiet air conditioning	Yes
<b>PLUMBING</b>	Sink with hot and cold water	Yes
<b>ELECTRICAL / LIGHTING</b>	Duplex outlet	Yes
	Quad outlet @ each data port	Yes
	Controlled day lighting	Yes
<b>TECHNOLOGY</b>	Access to voice, video, data ports, and electrical outlets	Yes
	Intercom	Yes

## Core Academics Space Descriptions

### Teacher Prep

TEACHER PREP		QTY
<b>FURNITURE / EQUIPMENT</b>	Teacher desks	12
	Lockable storage cabinets and closets	Yes
	Flexible surfaces	Yes
	Adequate counter top space for small appliances and production equipment	Yes
	Computer station with Internet access	Yes
	Work tables	2
	Conference chairs	Yes
	Conference table	Yes
	Abundant shelving	Yes
	Layout of shelving to maximize efficiency	Yes
	File cabinet, 4 drawer	12
	Refrigerator w/ ice maker	Yes
	Microwave	Yes
	Laptop computer	6
	Printer	1
	Magnetic Marker board	Yes
	Bulletin board	4 LF
	Clock	1
<b>DOORS &amp; WINDOWS</b>	Door: view panel	Yes
<b>SPECIAL CONSIDERATIONS</b>	Acoustical privacy	Yes

## Core Academics Space Descriptions

### Student Restroom

STUDENT RESTROOMS	
ACTIVITIES	PERSONS
Personal hygiene	Students

STUDENT RESTROOMS		QTY
<b>MECHANICAL</b>	Exhaust fan	Yes
<b>PLUMBING</b>	Sinks with hot and cold water	Yes
	Toilets	Yes
<b>ELECTRICAL / LIGHTING</b>	Duplex electrical outlets on each wall	Yes
<b>TECHNOLOGY</b>	No special requirements	
<b>FURNITURE / EQUIPMENT</b>	Casework to include cabinet with mirror	Yes
<b>DOORS &amp; WINDOWS</b>	Door: no view panel	Yes
	Windows: none	
<b>SPECIAL CONSIDERATIONS</b>	Hand-free dispensers	Yes



The pages that follow contain a list of spaces and drawings illustrating the relationship between various program areas, and the individual spaces within the program area. Additionally, a description of the activities, persons to accommodate, and items to be considered is included.

## Special Needs

The goal of the Special Needs Program Area is to meet the requirements of students with disabilities within the least restrictive environment enabling them to become responsible, life-long learners. To meet students' needs, the Special Education Program provides instruction within the general education environment through an inclusion process as well as separate classrooms for those students who need a resource environment or for those students who need a self-contained environment.

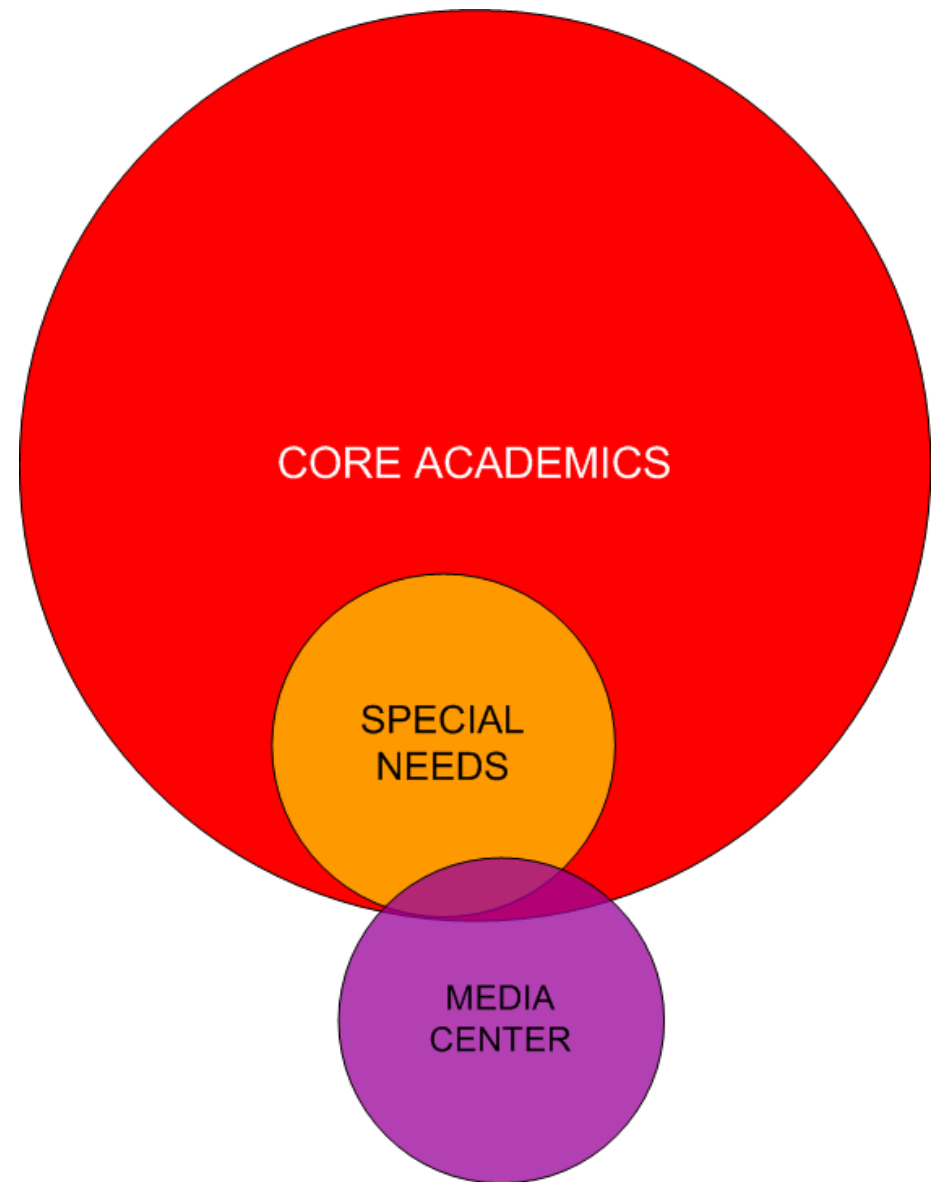
## Special Needs Space Requirements

Special Needs	Suggested			
	TS	Quantity	SF	Total
Self-contained Classroom	3	3	850	2,550
Restroom/Shower		1	100	100
Multi-Use Special Needs Room		2	500	1,000
Additional Offices		2	120	240
Conference Room		1	300	300
Storage		1	300	300
Teacher Prep/Offices		1	500	500
<b>Special Needs-Sub Total</b>	<b>3</b>			<b>4,990</b>

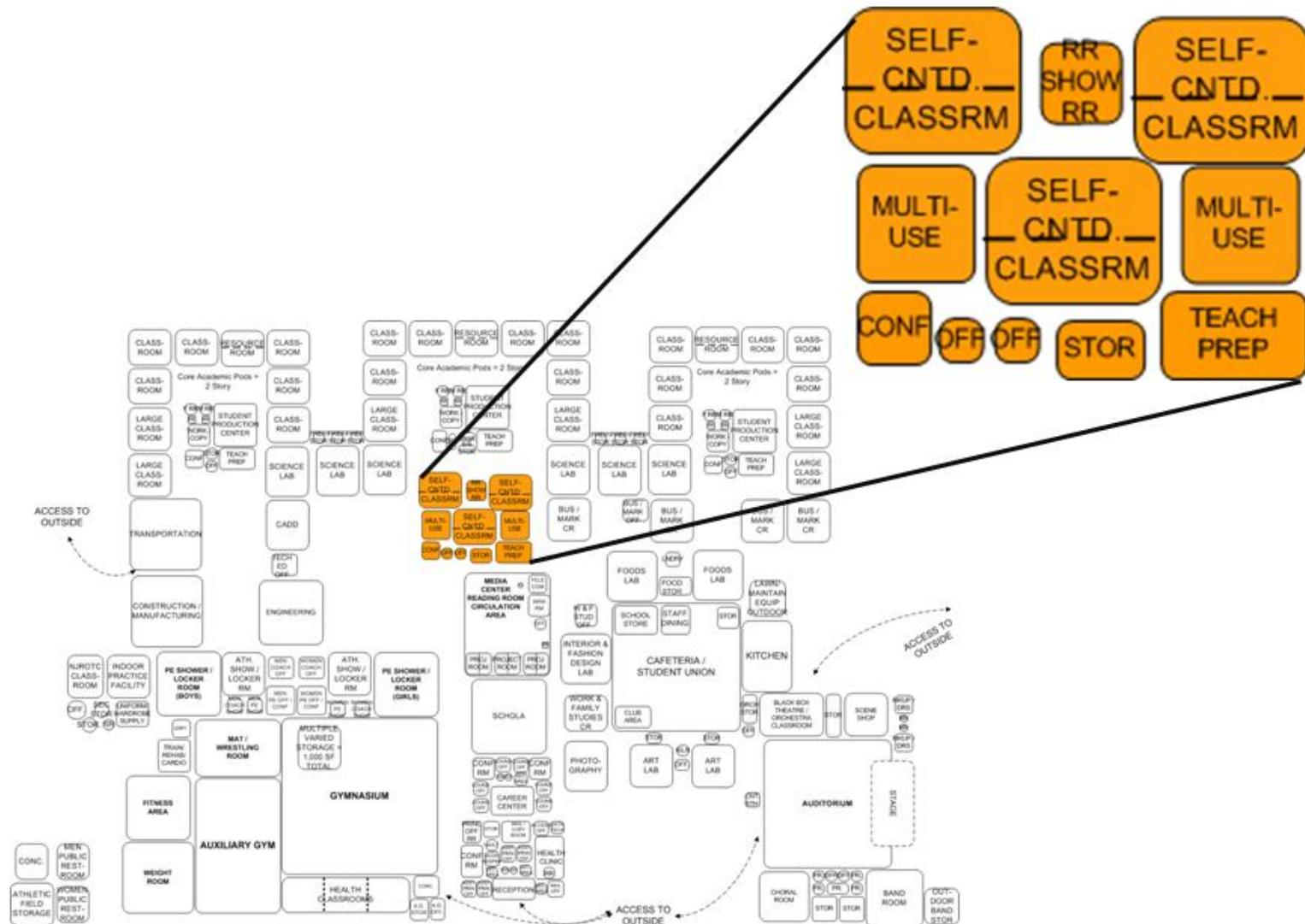


### Special Needs Spatial Relationships

Self-contained special needs classrooms should be adjacent to the core academics. Within the learning communities, special education resource rooms should be incorporated into the pod / cluster.



## Special Needs Illustration



**Special Needs Space Descriptions**
**Self-Contained Classrooms with Divider Wall**

<b>SELF CONTAINED CLASSROOM WITH DIVIDER WALL</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Individual, small, and large group activities	Students
Storage of materials, equipment	Teachers
Project-based learning	Parents
Computer-based instruction	Volunteers
	Other staff

<b>SELF CONTAINED CLASSROOM WITH DIVIDER WALL</b>		<b>QTY</b>
<b>MECHANICAL</b>	Low incidence equipment/ Assisted Technology equipment	Yes
	Air conditioning	Yes
	Hoyer lift [to be located in restroom]	Yes
	Gait trainer wheelchair	Yes
<b>PLUMBING</b>	Sink with hot and cold water	Yes
	Drinking fountain	Yes
	Age appropriate changing area [to be located in restroom]	Yes
	Kitchen sink	Yes
<b>ELECTRICAL / LIGHTING</b>	Multiple duplex electrical outlets on each wall	Yes
	Banked switching to allow varied light levels	Yes
	Room darkening capabilities	Yes
<b>TECHNOLOGY</b>	Telephone/intercom/voicemail port	Yes
	Video and data ports	Yes
	Quad outlet adjacent to each data port	Yes
	Audio enhancement system	Yes
	Ceiling-mounted computer projector with retractable screen	Yes
	Equipment for Deaf and Hearing Impaired	Yes

**Special Needs Space Descriptions**
**Self-Contained Classrooms with Divider Wall**

<b>SELF CONTAINED CLASSROOM WITH DIVIDER WALL</b>		<b>QTY</b>
<b>FURNITURE / EQUIPMENT</b>	Casework to Include: <ul style="list-style-type: none"> <li>- Countertop with sink, base, and wall cabinets</li> <li>- 4 tall storage cabinets with shelving, drawers, and lockable doors</li> <li>- Adjustable height bookshelves</li> <li>- Large shallow drawers sized to hold poster board and chart paper</li> <li>- Drawers for teacher storage</li> <li>- 2 Lockable file cabinets</li> </ul>	Yes
	Fixed cubbies for student storage with hooks	Yes
	Tables, chairs, and student desks that are mobile [wheelchair accessibility]	Yes
	Networked computers	4
	Teacher work station	Yes
	Kidney-shaped tables	2
	Rectangle tables	4 or more
	Magnetic marker board on primary and secondary teaching wall	Yes
	Tack board at each end of marker board on primary wall	Yes
	Tack strip above marker board and on walls	Yes
	Clock	yes
	Video screen	Yes
	One classroom equipped with kitchen, washer & dryer with areas for activities of daily living	Yes
<b>DOORS &amp; WINDOWS</b>	Door: view panel, outside accessibility	Yes
	Windows: operable, with blinds to allow controlled natural lighting	Yes
	Acoustical privacy	Yes
<b>SPECIAL CONSIDERATIONS</b>	Comfortable rooms with pleasant décor that contribute to an atmosphere conducive to creativity	Yes
	Proportion classroom for effective viewing and listening from all areas of the classroom	Yes
	Plenty of natural/quality lighting	Yes
	Oversize wheelchair accessibility	Yes
	Tile flooring: soft, padded	Yes
	Platform approximately one inch off of floor to be fitted for mat and moveable for students that participate in Mobility Opportunities Via Education	Yes
	Two-way mirrors into connected rooms	Yes
	Doors and windows should have built in safety features, childproof	Yes
	Evacuation chair	Yes

**Special Needs Space Descriptions**
**Restroom / Shower**

<b>RESTROOM / SHOWER</b>		
<b>ACTIVITIES</b>	<b>PERSONS</b>	
Personal hygiene	Nurse	
Adult supported for changing diapers	Paraprofessionals	
	Students	
	Teachers	
	Other staff	
<b>RESTROOM / SHOWER</b>		<b>QTY</b>
<b>MECHANICAL</b>	Exhaust fan	Yes
	Intake and outtake ventilation	Yes
<b>PLUMBING</b>	Sink with hot and cold water adaptable to special physical needs	Yes
	Toilet - adaptable to special apparatus	Yes
	Shower: wheelchair accessible	Yes
	Age appropriate changing area	Yes
	Hoyer lift	Yes
<b>ELECTRICAL / LIGHTING</b>	Multiple duplex electrical outlets on each wall	Yes
<b>TECHNOLOGY</b>	Intercom/phone/"help button"	Yes
<b>FURNITURE / EQUIPMENT</b>	Casework to include:	
	- Cabinet with mirror	Yes
	Hooks for clothing	Yes
	Hampers	Yes
	Clock	Yes
	Changing table	Yes
	Biohazard disposal can / Diaper disposal	Yes
	Cubbies for student supplies	Yes
<b>DOORS &amp; WINDOWS</b>	Door: no view panel	Yes
	Windows: none	Yes
<b>SPECIAL CONSIDERATIONS</b>	Situated near the Health Clinic	Yes
	Large restroom to accommodate wheel chair separate shower	Yes
	Hoyer lifts	Yes
	Chairs for changing assistance [pants, shoe removal]	Yes



**Special Needs Space Descriptions**
**Multi-Use Special Needs Room**

<b>MULTI-USE SPECIAL NEEDS ROOM</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Individual, small, and large group activities	Occupational Therapist
Storage of materials	Physical Therapist
Physical therapy	Psychologist
Occupational therapy	Social Worker
Storage	Speech Therapist
Testing	Community agencies
Speech therapy	Aides
	Staff
	Volunteers

<b>MULTI-USE SPECIAL NEEDS ROOM</b>		<b>QTY</b>
<b>MECHANICAL</b>	Air conditioning	Yes
<b>PLUMBING</b>	No special requirements	
<b>ELECTRICAL / LIGHTING</b>	Duplex electrical outlets on each wall	2
	Overhead lighting	Yes
	Controlled day lighting	Yes
<b>TECHNOLOGY</b>	Access to voice, video, data ports, and electrical outlets	Yes
<b>FURNITURE / EQUIPMENT</b>	Lockable storage cabinets	2
	Teacher desks and chairs	2
	Rectangular tables	3
	Clock	Yes
	Flexible surfaces	Yes
	Abundant shelving	Yes
	Multiple display surfaces	Yes
<b>DOORS &amp; WINDOWS</b>	Door: one-way for observation	Yes
<b>SPECIAL CONSIDERATIONS</b>	Room for different OT/PT activities such as motor skill development	Yes
	Moveable partition to divide room	Yes
	Handicapped accessible and accessible to large wheelchairs	Yes
	One Multi-Use Room attached to self-contained classroom with door	Yes
	Accessible to teachers' centers	Yes

**Special Needs Space Descriptions**
**Additional Offices**

<b>ADDITIONAL OFFICES</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Meeting with students	School staff
	Students

<b>ADDITIONAL OFFICES</b>		<b>QTY</b>
<b>MECHANICAL</b>	Air conditioning	Yes
<b>PLUMBING</b>	No special requirements	
<b>ELECTRICAL / LIGHTING</b>	Duplex electrical outlets on each wall	Yes
	Quad outlet at each data port	1
<b>TECHNOLOGY</b>	Telephone/intercom/voicemail port	Yes
	Video and data ports	Yes
	Quad outlet adjacent to each data port	Yes
	Telephone	1
	Intercom	Yes
<b>FURNITURE / EQUIPMENT</b>	Locking file cabinet, 4 drawer	1 to 2
	Clock	1
	File lateral drawer	1
	Desk	1
	Desk chair	1
	Guest chairs	2
	Lamps	1
	Bookshelves	18LF
	Marker board	4LF
	Laptop computer	1
	Printer	1
<b>DOORS &amp; WINDOWS</b>	Door: view panel	Yes
	Windows: no special considerations	Yes
<b>SPECIAL CONSIDERATIONS</b>	Bright, soft lighting	Yes
	Tile	Yes

**Special Needs Space Descriptions**
**Conference Room**

CONFERENCE ROOM		
ACTIVITIES	PERSONS	
Small group meetings/conferences	Administrators	
	Counselors	
	Parents	
	Students	
	Visitors	
	Staff	
CONFERENCE ROOM		QTY
<b>MECHANICAL</b>	Air conditioning	Yes
<b>PLUMBING</b>	Sink with hot and cold water	1
<b>ELECTRICAL / LIGHTING</b>	Multiple duplex electrical outlets on each wall	2 per wall
	Quad outlet at each data port	1
	Overhead lighting [dimmable]	Yes
<b>TECHNOLOGY</b>	Telephone/intercom/voicemail port	Yes
	Video and data ports	Yes
	Quad outlet adjacent to each data port	Yes
	White board screen on whole wall	Yes
	Ceiling-mounted computer projector with retractable screen and computer	1
<b>FURNITURE / EQUIPMENT</b>	Counter top with sink, base, and wall cabinets	Yes
	Modular conference table	1
	Conference chairs	1/25 SF
	Credenza	1
	Magnetic marker board	Yes
	Laptop computer printer	Yes
	Retractable projection screen	1
	Tack board	Yes
	Bookshelves	2 or more
	Clock	1
<b>DOORS &amp; WINDOWS</b>	Door: large view panel with optional sidelight	Yes
	Windows: to hallway with mini-blinds	Yes
<b>SPECIAL CONSIDERATIONS</b>	Consideration for sound transfer	Yes
	Tile	Yes

**Special Needs Space Descriptions**
**Storage**

<b>STORAGE</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Storage	Staff

<b>STORAGE</b>		<b>QTY</b>
<b>MECHANICAL</b>	Air conditioning	Yes
<b>PLUMBING</b>	No special requirements	
<b>ELECTRICAL / LIGHTING</b>	Duplex electrical outlets on each wall	Yes
<b>TECHNOLOGY</b>	No special requirements	
<b>FURNITURE / EQUIPMENT</b>	Case work to include: - Countertop with base and wall cabinets - Lockable storage cabinets (2) - Wall shelving - Lateral files (2)	Yes
	Fireproof storage cabinet	1
<b>DOORS &amp; WINDOWS</b>	Door: solid	Yes
<b>SPECIAL CONSIDERATIONS</b>	Connected with teacher prep room	Yes
	Tile flooring	Yes

## Special Needs Space Descriptions

### Teacher Prep / Offices

TEACHER PREP / OFFICES	
ACTIVITIES	PERSONS
Teacher planning and collaboration	Teachers
Team meetings	Staff
Professional development	Paraprofessional
Recordkeeping	
Preparation of teaching materials	
Faculty lunch	
Storage	

TEACHER PREP / OFFICES		QTY
<b>MECHANICAL</b>	Air conditioning	Yes
<b>PLUMBING</b>	Sink	Yes
<b>ELECTRICAL / LIGHTING</b>	Multiple duplex electrical outlets on each wall	2
	Overhead lighting	Yes
	Controlled day lighting	Yes
<b>TECHNOLOGY</b>	Access to voice, video, data ports, and electrical outlets	Yes
	Telephone	Yes
	Intercom	Yes



## Special Needs Space Descriptions

### Teacher Prep / Offices

TEACHER PREP / OFFICES		QTY
FURNITURE / EQUIPMENT	Lockable storage cabinets and closets	3
	Adequate counter top space for small appliances and production equipment	Yes
	Computer station with Internet access	4
	Work tables	3
	Abundant shelving	Yes
	Layout of shelving to maximize efficiency	Yes
	File cabinet, 4 drawer	4
	Refrigerator	1
	Microwave	1
	Laptop computer	4
	Printer	1
	Copy machine	1
	Bulletin board	4 LF
	Clock	1
DOORS & WINDOWS	Door: view panel	Yes
	Windows: open to Learning Community	Yes
SPECIAL CONSIDERATIONS	Connected with storage area	Yes
	Acoustical privacy	Yes



## Technical / Career Education

Workers of today may change occupations five to seven times in their lifetimes. In order to better prepare students for this trend, technical and career education courses are now organized into career clusters. Courses within the three cluster areas provide for career exploration, pursuit of career interests, preparation for the changing demands of life roles, study of the principles and practical experiences of technology and science, and application of academic learning in the world of work.

Students seeking employment after graduation from high school, as well as students seeking employment after the completion of college, may choose from a wide variety of technical and career courses.

A student in Grade 12 who completes any approved technical and career education program sequence may substitute one credit for either math or science under the 22-credit diploma system. Virginia Beach City Public Schools offers both one- and two-year career/vocational preparation programs in the following clusters: Business and Marketing, Engineering and Technology, and Work & Family Studies. All programs meet the state substitution requirement for the third math or science.

Some programs that might be included are:

### Technical Education:

- Construction / Manufacturing
- Power & Transportation
- Computers & Communications
- Technical Drawing
- Photography / Graphics

### Work & Family Studies:

- Introduction to Culinary Occupations I & II
- Hospitality & Catering
- Child Development & Parenting
- Child Care Occupations
- Introduction to Design I & II
- Independent Living
- Teach for tomorrow

Business:

- Accounting / Adv.
- Computer Systems / Adv.
- Information Technology Fundamentals
- Virtual Enterprise
- Keyboarding / Key Applications / Desktop
- Business Law
- Office Administration
- Cooperative Office Education

Marketing:

- Marketing / Adv.
- Fashion / Adv.

The pages that follow contain a list of spaces and drawings illustrating the relationship between various program areas, and the individual spaces within the program area. Additionally, a description of the activities, persons to accommodate, and items to be considered is included.

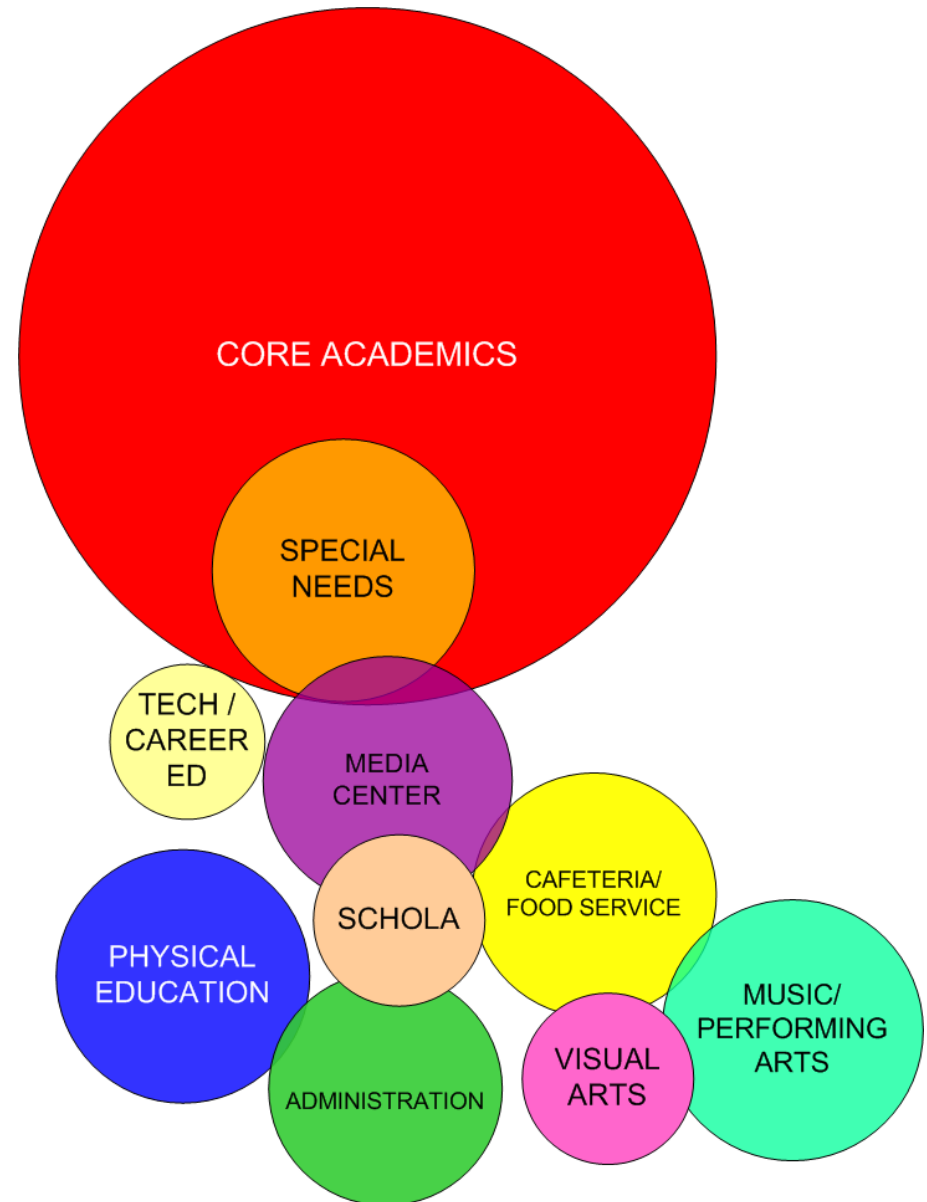
## Technical / Career Education Space Requirements

The table below lists the square footage allocated specifically for the Technical and Career Education classes. In addition to these spaces, some technical and career education courses such as Business & Marketing classes and Computers could be taught in the Large Classrooms contained within the Core Academics Area within each Learning Community. Finalization of space use will be determined on a site specific basis

Technical / Career Education	Suggested			
	TS	Quantity	SF	Total
Foods Lab	2	2	1,400	2,800
Work & Family Studies Classroom	1	1	850	850
Food Storage		1	400	400
Laundry		1	200	200
Design Lab	1	1	1,400	1,400
Work & Family Studies Office		1	300	300
Construction/Manufacturing	1	1	2,400	2,400
Transportation	1	1	2,400	2,400
Engineering	1	1	2,000	2,000
CADD	1	1	1,200	1,200
Photography	1	1	1,200	1,200
Technical Education Office		1	350	350
Business/Marketing	4	4	1,000	4,000
Storage		1	200	200
Business/Marketing Office		1	350	350
<b>Total</b>	<b>13</b>			<b>20,050</b>

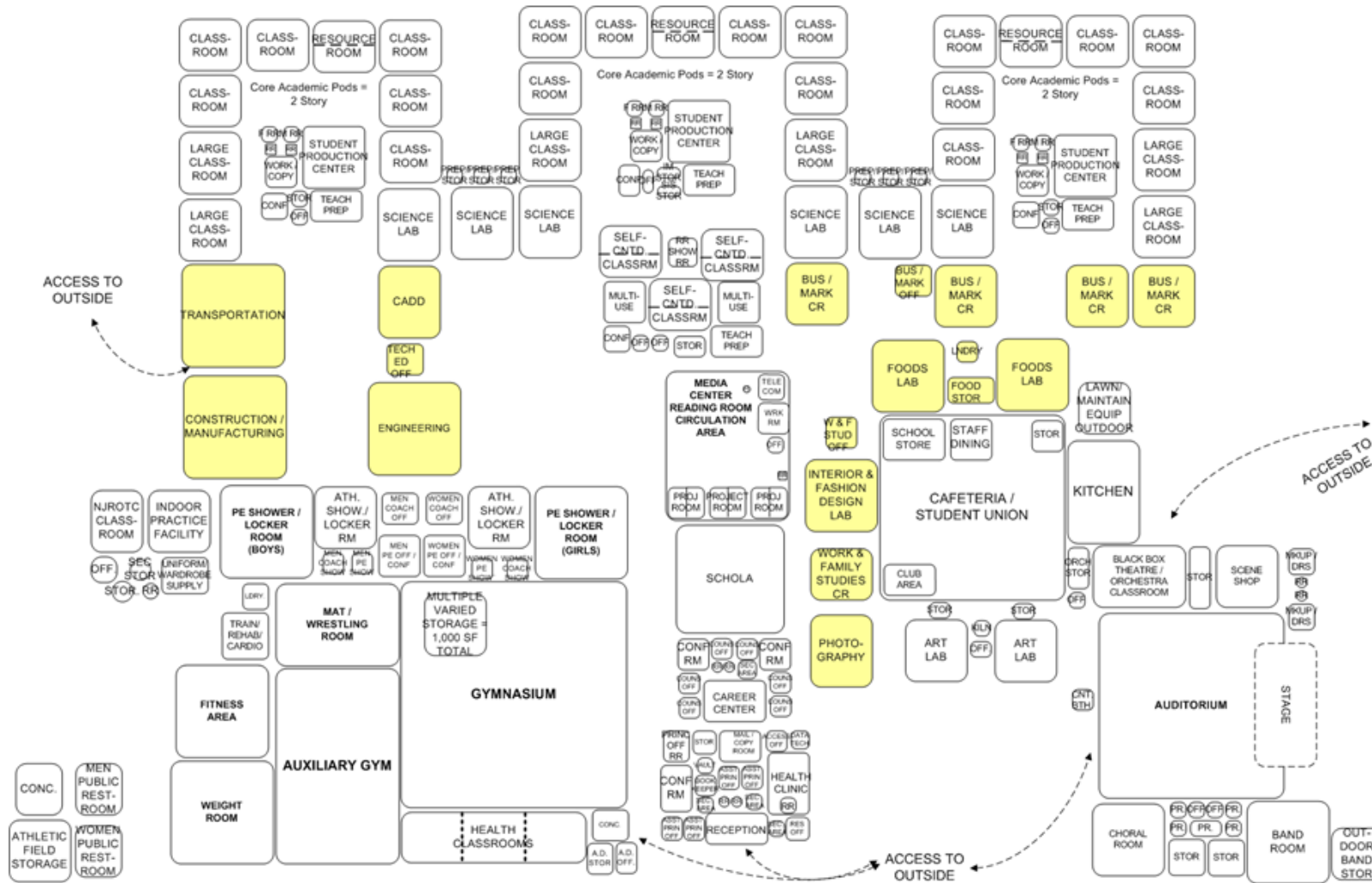
## Technical / Career Education Spatial Relationships

Technical and career education spaces should be adjacent to the core academic learning communities. Technical education classes should have access to the outside. Work & Family Studies classes should be adjacent to the food service area and be accessible for deliveries from the outside. A Business & Marketing Classroom should be adjacent to the school store. The photography classroom should be adjacent to the Visual Arts.





## Technical / Career Education Illustration



**Technical / Career Education Space Descriptions**
**Foods Lab**

<b>FOODS LAB</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Commercial Foods Labs	Students
Consumer Foods Labs	Teacher
	Aides
	Parents

<b>FOODS LAB</b>		<b>QTY</b>
<b>MECHANICAL</b>	Adequate ventilation for ranges	Yes
<b>PLUMBING</b>	3 compartment sink in commercial kitchen	Yes
	Commercial washer & dryer	1
	Hand washing sinks	3
	Sink / cleaning facilities	Yes
<b>ELECTRICAL / LIGHTING</b>	Duplex electrical outlets on each wall	Yes
	Front row of light, dimmable	Yes
	Quad outlet @ each data port	Yes
	Flexible electrical access	Yes
	Ability to control specific lighting areas	Yes
	Room darkening capability	Yes
<b>TECHNOLOGY</b>	Telephone / intercom / voicemail port	Yes
	Computer access for each student	Yes
	Quad outlet adjacent to each data port	Yes
	6 data drops with double, triple, or quad Communications Network Outlets	Yes
	Wireless laptops with carts for battery recharging	Yes
	Data ports	Yes

## Technical / Career Education Space Descriptions

### Foods Lab

FOODS LAB		QTY
FURNITURE / EQUIPMENT	Walk in refrigerator & freezer	Yes
	Lockers for student uniforms in Commercial Kitchen	Yes
	Food work stations + demo area	4
	Large table / workspace	Yes
	Tables for use as desks as well as serving meals	Yes
	Computer tables and chairs	Yes
	Printers and printer tables	Yes
	LCD projector and mounted screen	Yes
	Tack board	Yes
	Magnetic marker board	Yes
	Anti-static carpets	Yes
DOORS & WINDOWS	Double doors with large view panel	Yes
	Windows: to outside, operable, allow controlled natural lighting	Yes
SPECIAL CONSIDERATIONS	Natural light	Yes
	Auditory privacy	Yes
	Provide method to darken room for AV Presentations	Yes
	Non porous floor covering	Yes
	Access to exterior for deliveries	Yes
	Soundproofing	Yes

## Technical / Career Education Space Descriptions

### Work & Family Studies Classroom

#### WORK & FAMILY STUDIES CLASSROOM

ACTIVITIES	PERSONS
Individual, small, and large group activities	Students
Storage of materials	Teachers
Project-based learning	Aides
Demonstrations	Volunteers
Computer-based instruction	Paraprofessionals
	Staff

WORK & FAMILY STUDIES CLASSROOM		QTY
<b>MECHANICAL</b>	Quiet air conditioning	Yes
<b>PLUMBING</b>	Sink with hot and cold water	1
<b>ELECTRICAL / LIGHTING</b>	Duplex outlet	1 per wall
	Quad outlet @ each data port	1
	Overhead lighting	Yes
	Room darkening capability - dimmer switches	Yes
	Controlled day lighting, banked lighting	Yes
	Mobile tables need variety of ways to set electricity [floor or fixed table]	Yes
	Front row of light, dimmable	Yes
<b>TECHNOLOGY</b>	Voice, data, video outlets at teacher desk	1
	6 data drops with double, triple, or quad Communications Network Outlets	6
	2 data drops at teacher desk area	2
	Single data drop dedicated to wireless, high on wall	1
	Telephone	1
	Intercom	Yes
	Interactive whiteboard with integral computer projector	1
	Ceiling mounted computer projector with retractable screen	Yes
	Laptop computers with carts, shared	26
	Access to voice, video, data ports, and electrical outlets	Yes
	Teacher data port separate from student data ports	Yes
	Audio enhancement	1 system
	Document cameras for each class	Yes

## Technical / Career Education Space Descriptions

### Work & Family Studies Design Labs

WORK & FAMILY STUDIES CLASSROOM		QTY
FURNITURE / EQUIPMENT	Student work tables, 2 students each	Yes
	Comfortable ergonomic student chairs that allow movement	Yes
	Countertop over base cabinets	Yes
	Lockable overhead cabinets	Yes
	Magnetic marker board with tack strips above whiteboard	Yes
	Bulletin board	Yes
	Shelving	Yes
	Clock	Yes
	Locking storage cabinet with outlet	Yes
	All in One Computer Device	Yes
	Retractable projection screen	Yes
	Flexible or multiple display surfaces	Yes
	Adjustable, lockable, and mobile storage cabinets and shelving	Yes
	Flexible furniture: can be used as individual desks or fit together to make tables	Yes
DOORS & WINDOWS	Door with windows or view panel	Yes
	Locking mechanism	Yes
	Large energy efficient windows to outdoors with blinds	Yes
SPECIAL CONSIDERATIONS	Climate control for each classroom	Yes
	Vinyl tile, no scratch flooring	Yes
	Acoustical privacy	Yes
	Walls painted with warm and cool colors	Yes

**Technical / Career Education Space Descriptions**
**Food Storage**

<b>FOOD STORAGE</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Storage	Student
	Staff

<b>FOOD STORAGE</b>		<b>QTY</b>
<b>MECHANICAL</b>	Temperature and humidity control	Yes
<b>PLUMBING</b>	No special requirements	
<b>ELECTRICAL / LIGHTING</b>	Duplex electrical outlets on each wall	Yes
	Overhead lighting	Yes
<b>TECHNOLOGY</b>	No special requirements	
<b>FURNITURE / EQUIPMENT</b>	Shelving	Yes
<b>DOORS &amp; WINDOWS</b>	Solid doors	Yes
<b>SPECIAL CONSIDERATIONS</b>	Lockable	Yes



**Technical / Career Education Space Descriptions**
**Laundry**

<b>LAUNDRY</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Wash clothing and other fabric projects	Teachers
	Aides
	Staff

<b>LAUNDRY</b>		<b>QTY</b>
<b>MECHANICAL</b>	No special requirements	
<b>PLUMBING</b>	Hot and cold water for washer and sink	Yes
	Drain for washer	Yes
	Floor drain	Yes
<b>ELECTRICAL / LIGHTING</b>	Appropriate power for washer and dryer	Yes
<b>TECHNOLOGY</b>	No special requirements	
<b>FURNITURE / EQUIPMENT</b>	Commercial grade washer and dryer	Yes
	Base cabinets	Yes
	Wall cabinets	Yes
	Tables [folding]	Yes
<b>DOORS &amp; WINDOWS</b>	No special requirements	
<b>SPECIAL CONSIDERATIONS</b>	No special requirements	

## Technical / Career Education Space Descriptions

### Design Lab

WORK & FAMILY STUDIES DESIGN LAB	
ACTIVITIES	PERSONS
Interior Design	Students
Fashion Design	Teacher
	Aides
	Parents

WORK & FAMILY STUDIES DESIGN LAB		QTY
<b>MECHANICAL</b>	No Special Requirements	
<b>PLUMBING</b>	Hand washing sinks	3
	Sink / cleaning facilities	Yes
<b>ELECTRICAL / LIGHTING</b>	Duplex electrical outlets on each wall	Yes
	Front row of light, dimmable	Yes
	Flexible electrical access	Yes
	Ability to control specific lighting areas	Yes
	Room darkening capability	Yes
<b>TECHNOLOGY</b>	Telephone / intercom / voicemail port	Yes
	Computer access for each student	Yes
	Quad outlet adjacent to each data port	Yes
	6 data drops with double, triple, or quad Communications Network Outlets	Yes
	Wireless laptops with carts for battery recharging	Yes
	Data ports	Yes

## Technical / Career Education Space Descriptions

### Design Lab

WORK & FAMILY STUDIES DESIGN LAB		QTY
FURNITURE / EQUIPMENT	Demonstration area	Yes
	Large table / workspace	Yes
	Stations for Sewing Machines	20
	Commercial Embroidery Machine	1
	Small embroidery machines	6-10
	Sergers	6-10
	Ironing boards	Yes
	Computer tables and chairs	Yes
	Printers and printer tables	Yes
	LCD projector and mounted screen	Yes
	Tack board	Yes
	Magnetic marker board	Yes
	Anti-static carpets	Yes
DOORS & WINDOWS	Double doors with large view panel	Yes
	Windows: to outside, operable, allow controlled natural lighting	Yes
SPECIAL CONSIDERATIONS	Natural light	Yes
	Auditory privacy	Yes
	Provide method to darken room for AV Presentations	Yes
	Non porous floor covering	Yes
	Access to exterior for deliveries	Yes
	Soundproofing	Yes

**Technical / Career Education Space Descriptions**
**Offices**

<b>OFFICES</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Teacher meetings and preparation	Teachers

<b>OFFICES</b>		<b>QTY</b>
<b>MECHANICAL</b>	Quiet air conditioning	Yes
<b>PLUMBING</b>	No special requirements	
<b>ELECTRICAL / LIGHTING</b>	Duplex electrical outlets on each wall	Yes
	Quad outlet at each data port	Yes
<b>TECHNOLOGY</b>	Telephone/intercom/voicemail port	Yes
	Video and data ports	Yes
	Duplex outlet	Yes
	Quad outlet @ each data port	Yes
	Intercom	Yes
<b>FURNITURE / EQUIPMENT</b>	Flexible surfaces	Yes
	Legal size file lateral drawer	Yes
	6 data drops with double, triple, or quad Communications Network Outlets	1
	Desk chair	1
	Guest chairs	2
	Lamps	Yes
	Bookshelves	18LF
	Marker board	4LF
	Laptop computer	1
	Printer	1
	Locking file cabinet, 4 drawer	1 to 2
	Bulletin board	4LF
	Clock	1
<b>DOORS &amp; WINDOWS</b>	Door: view panel	Yes
<b>SPECIAL CONSIDERATIONS</b>	Bright, soft lighting	Yes
	Carpeted flooring	Yes

**Technical / Career Education Space Descriptions**
**Construction / Manufacturing**

<b>CONSTRUCTION / MANUFACTURING</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Construction	Teacher
Fabrication	Aides
Production	Parents
Manufacturing	Students
Project work	

<b>CONSTRUCTION / MANUFACTURING</b>		<b>QTY</b>
<b>MECHANICAL</b>	Dust Collection	Yes
	Fume hood	Yes
	Compressed air	Yes
	Adequate ventilation	Yes
<b>PLUMBING</b>	Sinks with hot and cold water	Yes
<b>ELECTRICAL / LIGHTING</b>	Duplex electrical outlets on each wall	Yes
	Quad outlet @ each data port	Yes
	Ability to control specific lighting areas	Yes
	Room darkening capability	Yes
<b>TECHNOLOGY</b>	Telephone / intercom / voicemail port	Yes
	Multi media projection	Yes
	Digital camera	Yes
	Projector from Ceiling	Yes
	Whiteboard / Projector Screen	Yes
	Front row of light, dimmable	Yes
	Data ports	Yes
	Quad outlet adjacent to each data port	Yes
	6 data drops with double, triple, or quad Communications Network Outlets	Yes
	Wireless laptops with carts for battery recharging	Yes
	Area for distance learning (with video conferencing)	Yes
	Headphones and microphones	Yes

**Technical / Career Education Space Descriptions**  
**Construction / Manufacturing**

<b>CONSTRUCTION / MANUFACTURING</b>		<b>QTY</b>
<b>FURNITURE / EQUIPMENT</b>	Benches	Yes
	Tables and chairs	Yes
	Printers and printer tables	Yes
	Networked computers with access to programs and card catalog	Yes
	LCD projector and mounted screen	Yes
	Tack board	Yes
	Magnetic marker board	Yes
	Tools	Yes
	Anti-static carpets	Yes
<b>DOORS &amp; WINDOWS</b>	Exterior Access Overhead Quality Doors with Keypads	Yes
	Windows: operable, allow controlled natural lighting	Yes
<b>SPECIAL CONSIDERATIONS</b>	Natural light	Yes
	Auditory privacy	Yes
	Presentation space	Yes
	Light and sound studio	Yes
	Provide method to darken room for AV Presentations	Yes
	Accessible computer equipment for special needs	Yes
	Soundproofing	Yes



**Technical / Career Education Space Descriptions**
**Transportation**

<b>TRANSPORTATION</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Power & Transportation Classes	Students
Project Work	Teacher
Whole group and small group instruction	Aides
	Parents

<b>TRANSPORTATION</b>		<b>QTY</b>
<b>MECHANICAL</b>	Dust Collection	Yes
	Fume hood	Yes
	Compressed air	Yes
	Adequate ventilation	Yes
<b>PLUMBING</b>	Sinks with hot and cold water	Yes
<b>ELECTRICAL / LIGHTING</b>	Duplex electrical outlets on each wall	Yes
	Quad outlet @ each data port	Yes
	Ability to control specific lighting areas	Yes
	Room darkening capability	Yes
<b>TECHNOLOGY</b>	Telephone / intercom / voicemail port	Yes
	Multi media projection	Yes
	Digital camera	Yes
	Projector from Ceiling	Yes
	Whiteboard / Projector Screen	Yes
	Front row of light, dimmable	Yes
	Data ports	Yes
	Quad outlet adjacent to each data port	Yes
	6 data drops with double, triple, or quad Communications Network Outlets	Yes
	Wireless laptops with carts for battery recharging	Yes
	Area for distance learning (with video conferencing)	Yes
	Headphones and microphones	Yes

**Technical / Career Education Space Descriptions**
**Transportation**

<b>TRANSPORTATION</b>		<b>QTY</b>
<b>FURNITURE / EQUIPMENT</b>	Benches	Yes
	Tables and chairs	Yes
	Printers and printer tables	Yes
	Networked computers with access to programs and card catalog	Yes
	LCD projector and mounted screen	Yes
	Tack board	Yes
	Magnetic marker board	Yes
	Tools	Yes
	Anti-static carpets	Yes
<b>DOORS &amp; WINDOWS</b>	Exterior Access Overhead Quality Doors with Keypads	Yes
	Windows: operable, allow controlled natural lighting	Yes
<b>SPECIAL CONSIDERATIONS</b>	Natural light	Yes
	Auditory privacy	Yes
	Presentation space	Yes
	Light and sound studio	Yes
	Provide method to darken room for AV Presentations	Yes
	Accessible computer equipment for special needs	Yes
	Soundproofing	Yes

**Technical / Career Education Space Descriptions**
**Engineering**

<b>ENGINEERING</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Whole group and small group instruction	Students
Engineering Classes	Teacher
Project Work	Aides
	Parents

<b>ENGINEERING</b>		<b>QTY</b>
<b>MECHANICAL</b>	Dust Collection	Yes
	Fume hood	Yes
	Compressed air	Yes
	Adequate ventilation	Yes
<b>PLUMBING</b>	Sinks with hot and cold water	Yes
<b>ELECTRICAL / LIGHTING</b>	Duplex electrical outlets on each wall	Yes
	Quad outlet @ each data port	Yes
	Ability to control specific lighting areas	Yes
	Room darkening capability	Yes
<b>TECHNOLOGY</b>	Telephone / intercom / voicemail port	Yes
	Multi media projection	Yes
	Digital camera	Yes
	Projector from Ceiling	Yes
	Whiteboard / Projector Screen	Yes
	Front row of light, dimmable	Yes
	Data ports	Yes
	Quad outlet adjacent to each data port	Yes
	6 data drops with double, triple, or quad Communications Network Outlets	Yes
	Wireless laptops with carts for battery recharging	Yes
	Area for distance learning (with video conferencing)	Yes
	Headphones and microphones	Yes

**Technical / Career Education Space Descriptions**
**Engineering**

<b>ENGINEERING</b>		<b>QTY</b>
<b>FURNITURE / EQUIPMENT</b>	Benches	Yes
	Tables and chairs	Yes
	Printers and printer tables	Yes
	Networked computers with access to programs and card catalog	Yes
	LCD projector and mounted screen	Yes
	Tack board	Yes
	Magnetic marker board	Yes
	Tools	Yes
	Anti-static carpets	Yes
<b>DOORS &amp; WINDOWS</b>	Exterior Access Overhead Quality Doors with Keypads	Yes
	Windows: operable, allow controlled natural lighting	Yes
<b>SPECIAL CONSIDERATIONS</b>	Natural light	Yes
	Auditory privacy	Yes
	Presentation space	Yes
	Light and sound studio	Yes
	Provide method to darken room for AV Presentations	Yes
	Accessible computer equipment for special needs	Yes
	Soundproofing	Yes

**Technical / Career Education Space Descriptions**
**CADD**

<b>CADD</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Project work	Teachers
Research	Students
Computer access	Volunteers
Group work	

<b>CADD</b>		<b>QTY</b>
<b>MECHANICAL</b>	No Special Requirements	
<b>PLUMBING</b>	No Special Requirements	
<b>ELECTRICAL / LIGHTING</b>	Duplex outlet	1 per wall
	Quad outlet @ each data port	1
	Overhead lighting	Yes
	Room darkening capability - dimmer switches	Yes
	Controlled day lighting, banked lighting	Yes
	Mobile tables need variety of ways to set electricity [floor or fixed table]	Yes
	Front row of light, dimmable	Yes
<b>TECHNOLOGY</b>	Wall mounted projection screen	Yes
	Voice, data, video outlets at teacher desk	1
	6 data drops with double, triple, or quad Communications Network Outlets	6
	2 data drops at teacher desk area	2
	Single data drop dedicated to wireless, high on wall	1
	Telephone	1
	Intercom	Yes
	Interactive whiteboard with integral computer projector	1
	Ceiling mounted computer projector with retractable screen	Yes
	Laptop computers with carts, shared	26
	Access to voice, video, data ports, and electrical outlets	Yes
	Teacher data port separate from student data ports	Yes
	Audio enhancement	1 system

**Technical / Career Education Space Descriptions**
**CADD**

<b>CADD</b>		<b>QTY</b>
<b>FURNITURE / EQUIPMENT</b>	Computer tables	Yes
	Teacher desk and chair	Yes
	Ergonomic chairs	Yes
	Interactive whiteboard	Yes
	Black and white printer	Yes
	Color printer	Yes
	Scanner	Yes
	Ceiling mounted projector screen	Yes
<b>DOORS &amp; WINDOWS</b>	Door with view panel	Yes
	Windows with built in blinds	Yes
<b>SPECIAL CONSIDERATIONS</b>	No special requirements	



## Technical / Career Education Space Descriptions

### Photography

PHOTOGRAPHY	
ACTIVITIES	PERSONS
Project work	Teachers
Research	Students
Computer access	Volunteers
Group work	

PHOTOGRAPHY		QTY
<b>MECHANICAL</b>	No Special Requirements	
<b>PLUMBING</b>	No Special Requirements	
<b>ELECTRICAL / LIGHTING</b>	Duplex outlet	1 per wall
	Quad outlet @ each data port	1
	Overhead lighting	Yes
	Room darkening capability - dimmer switches	Yes
	Controlled day lighting, banked lighting	Yes
	Mobile tables need variety of ways to set electricity [floor or fixed table]	Yes
	Front row of light, dimmable	Yes
<b>TECHNOLOGY</b>	Wall mounted projection screen	Yes
	Voice, data, video outlets at teacher desk	1
	6 data drops with double, triple, or quad Communications Network Outlets	6
	2 data drops at teacher desk area	2
	Single data drop dedicated to wireless, high on wall	1
	Telephone	1
	Intercom	Yes
	Interactive whiteboard with integral computer projector	1
	Ceiling mounted computer projector with retractable screen	Yes
	Laptop computers with carts, shared	26
	Access to voice, video, data ports, and electrical outlets	Yes
	Teacher data port separate from student data ports	Yes
	Audio enhancement	1 system

**Technical / Career Education Space Descriptions**
**Photography**

<b>PHOTOGRAPHY</b>		<b>QTY</b>
<b>FURNITURE / EQUIPMENT</b>	Computer tables	Yes
	Teacher desk and chair	Yes
	Ergonomic chairs	Yes
	Interactive whiteboard	Yes
	Black and white printer	Yes
	Color printer	Yes
	Scanner	Yes
	Ceiling mounted projector screen	Yes
<b>DOORS &amp; WINDOWS</b>	Door with view panel	Yes
	Windows with built in blinds	Yes
<b>SPECIAL CONSIDERATIONS</b>	No special requirements	

## Technical / Career Education Space Descriptions

### Business & Marketing

<b>BUSINESS &amp; MARKETING</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Whole group and small group instruction	Students
Computer learning	Teacher
	Aides
	Parents
	Community Members

<b>BUSINESS &amp; MARKETING</b>		<b>QTY</b>
<b>MECHANICAL</b>	No Special Requirements	
<b>PLUMBING</b>	No Special Requirements	
<b>ELECTRICAL / LIGHTING</b>	Duplex electrical outlets on each wall	Yes
	Quad outlet @ each data port	Yes
	Ability to control specific lighting areas	Yes
	Room darkening capability	Yes
<b>TECHNOLOGY</b>	Telephone / intercom / voicemail port	Yes
	Multi media projection	Yes
	Projector from Ceiling	Yes
	Whiteboard / Projector Screen	Yes
	Front row of light, dimmable	Yes
	Data ports	Yes
	6 data drops with double, triple, or quad Communications Network Outlets	Yes
	Wireless laptops with carts for battery recharging	Yes
	Area for distance learning (with video conferencing)	Yes
	Headphones and microphones	Yes

## Technical / Career Education Space Descriptions

### Business & Marketing

<b>BUSINESS &amp; MARKETING</b>		<b>QTY</b>
<b>FURNITURE / EQUIPMENT</b>	Movable tables and chairs	Yes
	Printers and printer tables	Yes
	Networked computers with access to programs and card catalog	Yes
	LCD projector and mounted screen	Yes
	Tack board	Yes
	Magnetic marker board	Yes
	Anti-static carpets	Yes
<b>DOORS &amp; WINDOWS</b>	Door with view panel	Yes
	Windows: operable, allow controlled natural lighting	Yes
<b>SPECIAL CONSIDERATIONS</b>	Natural light	Yes
	Auditory privacy	Yes
	Provide method to darken room for AV Presentations	Yes
	Accessible computer equipment for special needs	Yes

**Technical / Career Education Space Descriptions**
**Storage**

<b>STORAGE</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Storage of instructional materials	Teachers
	Staff

<b>STORAGE</b>		<b>QTY</b>
<b>MECHANICAL</b>	No Special Requirements	
<b>PLUMBING</b>	No Special Requirements	
<b>ELECTRICAL &amp; LIGHTING</b>	Duplex outlets on each wall	Yes
	Overhead lighting	Yes
<b>TECHNOLOGY</b>	No Special Requirements	
<b>FURNITURE / EQUIPMENT</b>	Casework to include:	
	Countertop with base and wall cabinets	Yes
	Lockable storage cabinets	Yes
	Abundant wall shelving	Yes
<b>DOORS &amp; WINDOWS</b>	Solid door	Yes
	Keypad access	Yes
<b>SPECIAL CONSIDERATIONS</b>	Vinyl tile	Yes



technology for completing 3-dimensional projects, doing virtual art museum tours and other design work.

The pages that follow contain a list of spaces and drawings illustrating the relationship between various program areas and the individual spaces within the program area. Additionally, a description of the activities, persons to accommodate, and items to be considered is included.

## Visual Arts

It is the goal of the visual arts program to increase students' skills, knowledge and appreciation of the visual arts. All 3 art labs should allow for multi-use for the visual arts discipline: 3-dimensional, 2-dimensional, and Graphic/Electronic Arts as well as traditional teaching of art appreciation and art history. All spaces should accommodate an "art portrait" area, i.e., photography, creating digital prints, and portfolios. There should be appropriate



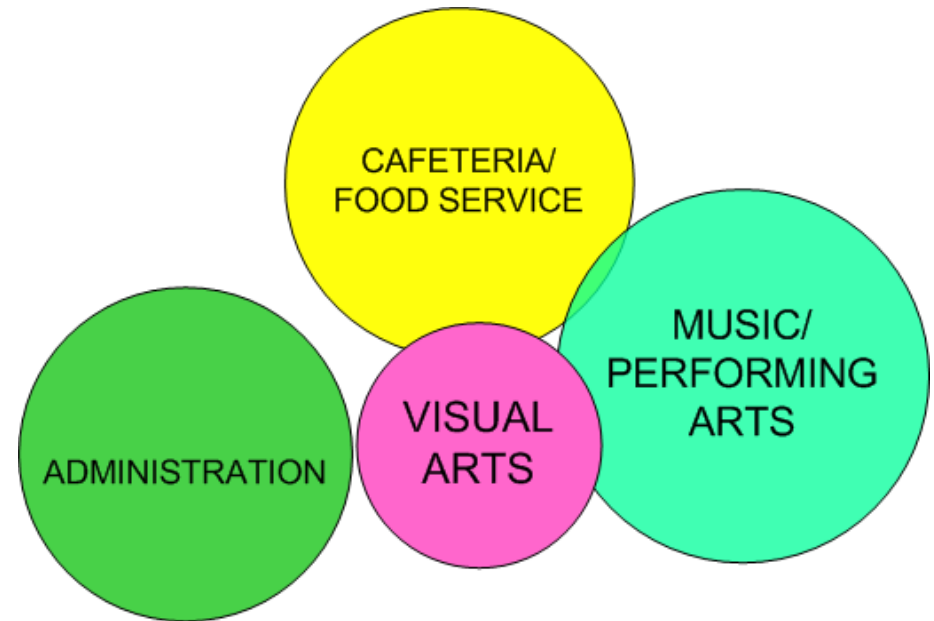
### Visual Arts Space Requirements

Visual arts spaces will be shared by each learning community. The pages that follow describe in more detail each program area spaces listed in the space requirements table below.

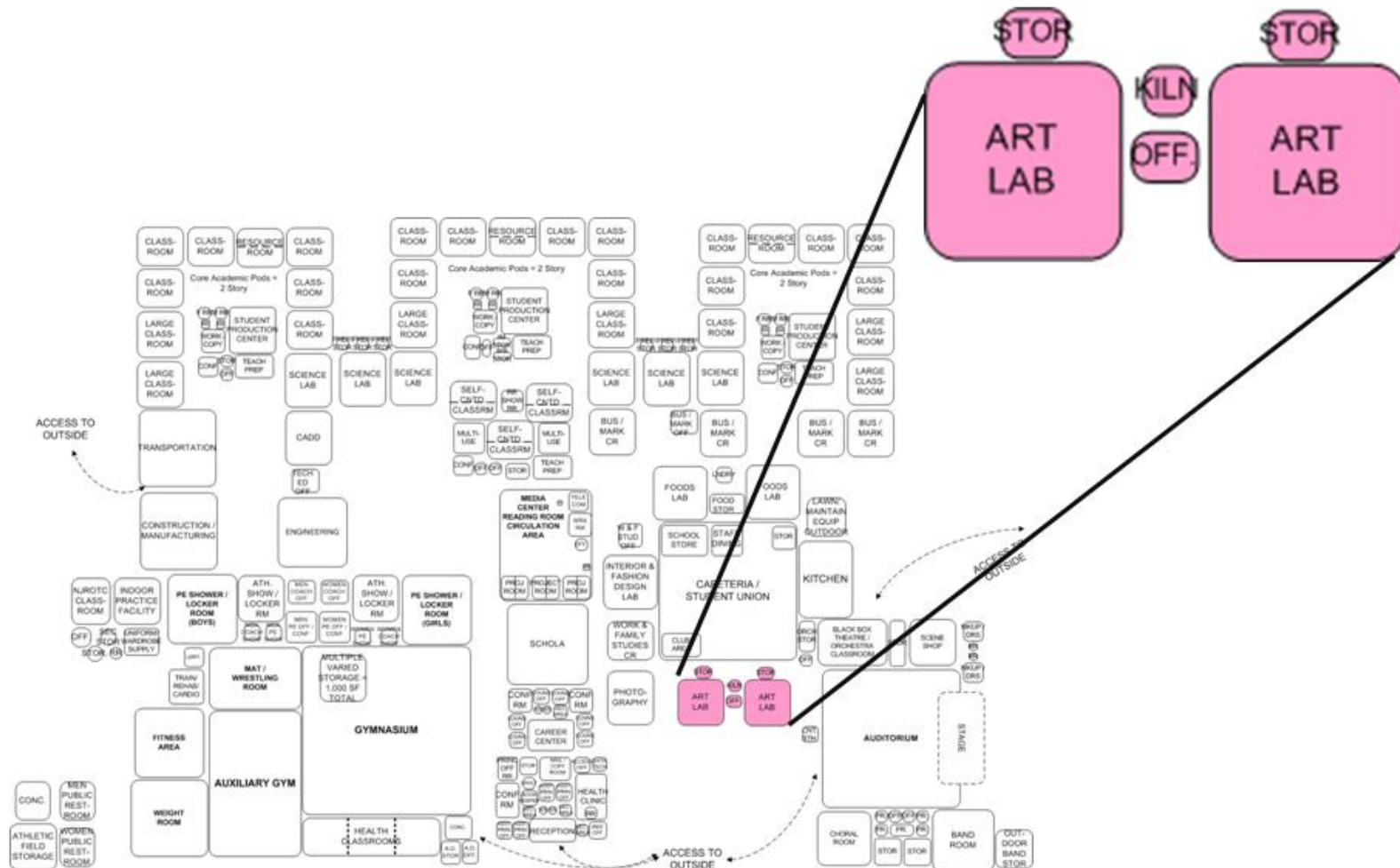
Visual Arts	Suggested			
	TS	Quantity	SF	Total
Art Lab	2	2	1,300	2,600
Kiln Room		1	100	100
Storage		2	200	400
Office		1	200	200
Digital Art Lab	See Technical Education Photography			
<b>Visual Arts Sub-Total</b>	<b>2</b>			<b>3,300</b>

### Visual Arts Spatial Relationships

The visual arts program area should be adjacent to the music and performing arts as well as the technical education photography classroom.



## Visual Arts Illustration



**Visual Arts Space Descriptions:**
**Art Labs**

<b>ART LABS</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Drawing	Students
Photography	Teacher
Sculpture	Other staff
Ceramics	
Art appreciation & history	
3-D & 2-D projects	

<b>ART LABS</b>		<b>QTY</b>
<b>MECHANICAL</b>	Ventilation for dust control	Yes
<b>PLUMBING</b>	Large, deep bowled sinks with hot and cold water, with clay traps	6
	Sinks built as island or peninsula - back to back	Yes
	Floor drains with sediment traps	Yes
<b>ELECTRICAL / LIGHTING</b>	Duplex electrical outlets on each wall	Yes
	Adjustable full-spectrum lighting	Yes
	Movable track lighting	Yes
	Electrical service to support art equipment	Yes
	Track lighting for flexibility	Yes
<b>TECHNOLOGY</b>	Telephone/intercom/voicemail port	Yes
	Video and data ports	Yes
	Data port for teacher	Yes
	Quad outlets adjacent to each port	Yes
	Ceiling-mounted computer projector with retractable screen	Yes
	Document camera	Yes

**Visual Arts Space Descriptions:**
**Art Labs**

<b>ART LABS</b>		<b>QTY</b>
<b>FURNITURE / EQUIPMENT</b>	Casework to include: - Acid and heat resistant countertops with sink, base, and wall cabinets with adjustable shelves - Bookcases with adjustable shelves - Built-in drying rack - Flat drawer storage for paper and multiple drawers for various papers - Tack board between base and wall cabinets - Clay bins with strong built-in counter	Yes
	Work tables with heavy flat surfaces and chairs	Yes
	Potters' wheels for ceramics	Yes
	Computer tables	Yes
	Vertical rolling cart storage built with vertical slots for individual student portfolios	Yes
	Vertical cabinets with pullout bins for individual student supplies or mini lockers	Yes
	Built in vertical slots open in front for canvases	Yes
	Cabinets for storing 3-D work and supplies	Yes
	Printer and table	Yes
	Light tables	Yes
	Scanner	Yes
	Tack boards and tack strips	Yes
	Marker boards	Yes
	Network computers	Yes
	Retractable screen	Yes
	Computer projector	Yes
<b>DOORS &amp; WINDOWS</b>	Double glass doors	Yes
	Windows: operable, with blinds to allow controlled natural lighting	Yes
<b>SPECIAL CONSIDERATIONS</b>	Floor to ceiling windows to allow tracing	Yes
	Natural lighting	Yes
	Access to outside	Yes
	Design space for ease in clean-up	Yes
	Floor drains on 1 <sup>st</sup> floor	Yes
	Vinyl flooring	Yes
	Drapes to darken room	Yes
	Secure display surfaces/areas for exhibiting art in corridors for 2-D & 3-D work	Yes

**Visual Arts Space Descriptions:**
**Kiln Room**

<b>KILN ROOM</b>		
<b>ACTIVITIES</b>	<b>PERSONS</b>	
Store ceramics	Students	
Firing of student projects	Teacher	
Storage of projects, equipment, and supplies	Aids	
<b>KILN ROOM</b>		<b>QTY</b>
<b>MECHANICAL</b>	Adequate ventilation for kiln	Yes
	Air conditioning	Yes
<b>PLUMBING</b>	Sink with hot and cold water	Yes
<b>ELECTRICAL / LIGHTING</b>	Appropriate wiring for kiln	Yes
	Duplex electrical outlets on each wall	Yes
	See manufacturers requirements for power and venting	Yes
<b>TECHNOLOGY</b>	No special requirements	
<b>FURNITURE / EQUIPMENT</b>	Casework to include: -Adjustable, deep shelving built to ceiling height -File cabinets	Yes
	Storage for wet clay projects (green ware rack)	Yes
	Metal cabinets for storing glaze	Yes
	Shelving for projects	Yes
	Clay bin	Yes
	Kiln with vent	Yes
	Layout of room to maximize storage	Yes
<b>DOORS &amp; WINDOWS</b>	Door: appropriate for high temperature	Yes
	No Windows	
<b>SPECIAL CONSIDERATIONS</b>	Door to include tack board	Yes
	Tile flooring	Yes



**Visual Arts Space Descriptions:**  
**Storage**

<b>STORAGE</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Storage of projects, equipment, and supplies	Teacher
	Students

<b>STORAGE</b>		<b>QTY</b>
<b>MECHANICAL</b>	No special requirements	
<b>PLUMBING</b>	Sink with hot and cold water	Yes
<b>ELECTRICAL / LIGHTING</b>	Duplex electrical outlets on each wall	Yes
<b>TECHNOLOGY</b>	No special requirements	
<b>FURNITURE / EQUIPMENT</b>	Casework to include: - Adjustable, deep shelving built to ceiling height - Large, flat paper storage drawers - File cabinets - Cabinets with pullout bins for supplies	Yes
	Tall center table for paper cutter	Yes
<b>DOORS &amp; WINDOWS</b>	Door: view panel	Yes
	No Windows	
<b>SPECIAL CONSIDERATIONS</b>	Door to include tack board	Yes
	Tile flooring	Yes

**Visual Arts Space Descriptions:**
**Office**

<b>OFFICE</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Teacher preparation	Teacher

<b>OFFICE</b>		<b>QTY</b>
<b>MECHANICAL</b>	Quiet air conditioning	Yes
<b>PLUMBING</b>	No special requirements	
<b>ELECTRICAL / LIGHTING</b>	Duplex electrical outlets on each wall	Yes
	Quad outlet at each data port	Yes
<b>TECHNOLOGY</b>	Telephone/intercom/voicemail port	Yes
	Video and data ports	Yes
	Duplex outlet	Yes
	Quad outlet @ each data port	Yes
	Intercom	Yes
<b>FURNITURE / EQUIPMENT</b>	Flexible surfaces	Yes
	Legal size file lateral drawer	Yes
	6 data drops with double, triple, or quad Communications Network Outlets	1
	Desk chair	1
	Guest chairs	2
	Lamps	Yes
	Bookshelves	18LF
	Marker board	4LF
	Laptop computer	1
	Printer	1
	Locking file cabinet, 4 drawer	1 to 2
	Bulletin board	4LF
	Clock	1
<b>DOORS &amp; WINDOWS</b>	Door: view panel	Yes
<b>SPECIAL CONSIDERATIONS</b>	Bright, soft lighting	Yes



## Music/Performing Arts

It is the goal of the music program to increase students' knowledge and appreciation of music and the performing arts.

The pages that follow contain a list of spaces and drawings illustrating the relationship between various program areas and the individual spaces within the program area. Additionally, a description of the activities, persons to accommodate, and items to be considered is included.

An important consideration for all music and performing arts spaces is flat flooring without steps, to ease transitions and movement of instruments scenery in and out of the building.

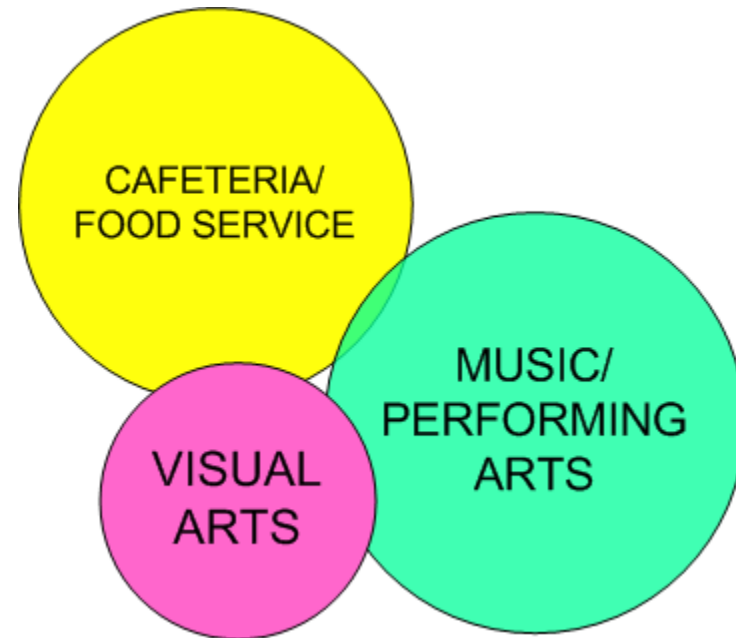
## Music / Performing Arts Space Requirements

Music / Performing Arts	Suggested			
	TS	Quantity	SF	Total
Choral Room	1	1	1,600	1,600
Storage (Robes, Music)		1	500	500
Band Room	1	1	2,300	2,300
Band Storage (Instruments, Music)		1	500	500
Practice rooms		4	50	200
Auditorium Seating (800 seats)*		1	7,200	7,200
Control Booth		1	200	200
Auditorium Stage		1	3,500	3,500
Scene Shop		1	1,200	1,200
Make Up/Dressing		2	300	600
Storage (Costumes, Props)		1	500	500
Restrooms		2	50	100
Offices		3	150	450
Large Practice Room		1	100	100
Orchestra Storage		1	300	300
Black Box Theatre / Orchestra Classroom	1	1	2,000	2,000
Band Storage (Outdoor)		1	750	750
<b>Music/ Performing Arts Sub-Total</b>	<b>3</b>			<b>22,000</b>

\*Recommended that high schools have seating for 750-800 with 3-4 high schools having seating for 1,000

### **Music / Performing Arts Spatial Relationships**

Music/performing arts spaces will be shared by each learning community. Music/ performing arts should be adjacent to Visual Arts. Members of the community will also use the music/performing arts before, after, and possibly during school hours. For this reason, there should be access to the outside, a separate secured entry, and a location near the Welcome Center.



The diagram is a comprehensive architectural floor plan of a school building, divided into several functional zones:

- Top Section:** Features large performance spaces including the "BLACK BOX THEATRE / ORCHESTRA CLASSROOM", "SCENE SHOP", "AUDITORIUM", and "STAGE". Support spaces include "ORCH STOR", "OFF", "MUP DRS", and "MUP DRS".
- Middle Section:** Contains academic and administrative buildings. The left side has multiple "CLASS-ROOM"s and "CORE ACADEMIC PODS - 2 STORY". The center features a "STUDENT CENTER" with "TEACH PREP" and "LARGE CLASS-ROOM"s. To the right are more "CLASS-ROOM"s and "LARGE CLASS-ROOM"s.
- Bottom Left Section:** Includes physical education and recreation facilities such as the "GYMNASIUM", "AUXILIARY GYM", "FITNESS AREA", "PE SHOWER / LOCKER ROOM (BOYS)", "PE SHOWER / LOCKER ROOM (GIRLS)", "ATHL SHOW / LOCKER RM", "MULTIPLE VARIOUS STORAGE 1,000 SF TOTAL", "HEALTH CLASSROOMS", "WEIGHT ROOM", "CONC.", "WOMEN PUBLIC REST-Room", and "ATHLETE FIELD STORAGE".
- Bottom Right Section:** Houses music and band programs, including the "CHORAL ROOM", "BAND ROOM", and "OUT-DOOR BAND STOR". It also includes "PR", "OFF", "PR", "PR", "PR", "STOR", and "STOR" rooms.
- Central Core:** A hub area containing the "CAFETERIA / STUDENT UNION", "KITCHEN", "SCHOLA", "WORKS FAMILY STUDIES CE", "PHOTOGRAPHY", "ART LAB", "CLUB AREA", "INTERIOR FASHION DESIGN LAB", "MEDIA CENTER READING ROOM CIRCULATION AREA", "FOODS LAB", "FOOD SIDEL", "STAFF DINING", "BUS / MARK CR", "SELF-COOL LIB", "SELF-COOL CLASSRM", "TEACH PREP", "SCIENCE LAB", "SCIENCE LAB", "SCIENCE LAB", "CAD/CAM", "ENGINEERING", "TRANSPORTATION", "ACCESS TO OUTSIDE", "CONSTRUCTION / MANUFACTURING", "INDOOR PRACTICE FACILITY", "NUTRITION CLASS-ROOM", "PE SHOWER / LOCKER ROOM (BOYS)", "ATHL SHOW / LOCKER RM", "MULTIPLE VARIOUS STORAGE 1,000 SF TOTAL", "HEALTH CLASSROOMS", "WEIGHT ROOM", "CONC.", "WOMEN PUBLIC REST-Room", and "ATHLETE FIELD STORAGE".

The plan uses solid black lines for walls and dashed lines for openings or specific structural elements. Room names are written in bold, uppercase letters throughout the drawing.



**Music / Performing Arts Space Descriptions:**  
**Choral Room**

<b>CHORAL ROOM</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Rehearsals	Students
Gathering performance area	Teachers
Recitals	Parents
Meeting area for school and community	Volunteers
Instruction	Other staff
Recording of performances	Community

<b>CHORAL ROOM</b>		<b>QTY</b>
<b>MECHANICAL</b>	Quiet HVAC system [noise from mechanical equipment should not be audible in classroom]	Yes
	Climate controlled	Yes
<b>PLUMBING</b>	Sink with hot and cold water	Yes
<b>ELECTRICAL / LIGHTING</b>	Duplex electrical outlets on each wall	Yes
<b>TECHNOLOGY</b>	Video and data ports	Yes
	Telephone/intercom/voicemail port	Yes
	Data port for teacher	Yes
	Quad outlet adjacent to each data port	Yes
	Ceiling-mounted computer projector with retractable screen	Yes
	Sound system w/microphones, amplifier, mixer, MIDI, speaker for recording and playing back student rehearsals, performances	Yes
	Ceiling-mounted recording microphones	Yes

**Music / Performing Arts Space Descriptions:**
**Choral Room**

<b>CHORAL ROOM</b>		<b>QTY</b>
<b>FURNITURE / EQUIPMENT</b>	Casework to include: - Countertops with sink, base, and wall cabinets - 4 tall storage cabinets with shelving, drawers, and lockable doors - Adjustable height bookshelves - Wardrobe cabinets - Music storage cabinets, lockable	Yes
	Musician ergonomic chairs and stands	Yes
	Portable music stand storage	Yes
	Conductor's chair, podium, and stand	Yes
	Mobile student desks	Yes
	Printer and printer table	Yes
	Desk and chair	Yes
	Portable risers and guard rails	Yes
	Electronic keyboard and upright piano	Yes
	CD/DVD player/burner, tape player, and video camera	Yes
	Networked computers	Yes
	Magnetic marker board with music staff on one section	Yes
	Tack boards and strips	Yes
	Instrument storage cabinets	Yes
	Keyboard lab tables	Yes
	Moveable teaching cart [portable]	Yes
	Microphones & speakers	Yes
	Metronome	Yes
	Teacher amplification system	Yes
	Digital recording system	Yes
<b>DOORS &amp; WINDOWS</b>	Door: double doors that lead onto stage	Yes
	Windows: operable, with blinds to allow for controlled lighting	Yes
<b>SPECIAL CONSIDERATIONS</b>	Appropriate acoustical treatment	Yes
	High ceilings	Yes
	Direct access to stage from music room [if possible]	Yes

**Music / Performing Arts Space Descriptions:**
**Storage (Robes, Music)**

<b>STORAGE (ROBES, MUSIC)</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Storage of:	Teacher
textbooks	Students
instruments	
choir robes	
supplies	
equipment	

<b>STORAGE (ROBES, MUSIC)</b>		<b>QTY</b>
<b>MECHANICAL</b>	No special requirements	
<b>PLUMBING</b>	No special requirements	
<b>ELECTRICAL / LIGHTING</b>	At least 2 duplex electrical outlet on each wall	Yes
<b>TECHNOLOGY</b>	No special requirements	
<b>FURNITURE / EQUIPMENT</b>	Casework to include: - Heavy duty, adjustable shelving on 2 walls - Filing cabinets	Yes
	Closets for choir robes and band uniforms	Yes
	Music folio cabinet, one per performing group or period	Yes
	Instrument storage shelving	Yes
	Storage cart for sound system	Yes
	Moveable teaching cart [portable]	Yes
<b>DOORS &amp; WINDOWS</b>	Door: view panel	Yes
	Windows: no special requirements	Yes
<b>SPECIAL CONSIDERATIONS</b>	2 Story - possibly in the mezzanine of the auditorium	Yes
	Security and visibility	Yes

**Music / Performing Arts Space Descriptions:**
**Band Room**

<b>BAND ROOM</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Rehearsals	Students
Gathering performance area	Teachers
Recitals	Parents
Meeting area for school and community	Volunteers
Instruction	Other staff
Recording	Community

<b>BAND ROOM</b>		<b>QTY</b>
<b>MECHANICAL</b>	Quiet HVAC system [noise from mechanical equipment should not be audible in classroom]	Yes
	Climate controlled	Yes
<b>PLUMBING</b>	Sink with hot and cold water	Yes
<b>ELECTRICAL / LIGHTING</b>	Duplex electrical outlets on each wall	Yes
<b>TECHNOLOGY</b>	Video and data ports	Yes
	Telephone/intercom/voicemail port	Yes
	Data port for teacher	Yes
	Quad outlet adjacent to each data port	Yes
	Ceiling-mounted computer projector with retractable screen	Yes
	Sound system w/microphones, amplifier, mixer, MIDI, speaker for recording and playing back student rehearsals, performances	Yes
	Ceiling-mounted recording microphones	Yes
	Document camera	Yes
	Interactive whiteboard	Yes

**Music / Performing Arts Space Descriptions:**
**Band Room**

<b>BAND ROOM</b>		<b>QTY</b>
<b>FURNITURE / EQUIPMENT</b>	Casework to include: - Countertops with sink, base, and wall cabinets - 4 tall storage cabinets with shelving, drawers, and lockable doors - Adjustable height bookshelves - Wardrobe cabinets - Music storage cabinets, lockable	Yes
	Musician ergonomic chairs and stands	Yes
	Conductor's chair, podium, and stand	Yes
	Mobile student desks	Yes
	Printer and printer table	Yes
	Desk and chair [foldable]	Yes
	Portable risers and guard rails	Yes
	Electronic keyboard [MIDI compatible]	Yes
	CD/DVD player/burner, tape player, and video camera	Yes
	Networked computers	Yes
	Magnetic marker board with music staff on one section	Yes
	Tack boards and strips	Yes
	Instrument storage cabinets	Yes
	Keyboard and MIDI workstations	Yes
	Moveable teaching cart [portable]	Yes
	Microphones & speakers	Yes
	Metronome	Yes
	Teacher amplification system	Yes
	Digital recording system	Yes
	Keyboard stands and cases	Yes
<b>DOORS &amp; WINDOWS</b>	Door: double doors that lead onto stage, no center bar	Yes
	Exterior double doors with no center bar	Yes
	Windows: operable, with blinds to allow for controlled lighting	Yes
<b>SPECIAL CONSIDERATIONS</b>	Appropriate acoustical treatment	Yes
	Direct access to stage from music room [if possible]	Yes
	High ceilings	Yes
	STET software	Yes
	Brass water valves	Yes

**Music / Performing Arts Space Descriptions:**
**Band Storage (Instruments, Music)**

<b>BAND STORAGE (INSTRUMENTS, MUSIC)</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Storage of:	Teacher
textbooks	Students
instruments	
supplies	
band uniforms	
equipment	

<b>BAND STORAGE (INSTRUMENTS, MUSIC)</b>		<b>QTY</b>
<b>MECHANICAL</b>	No special requirements	
<b>PLUMBING</b>	No special requirements	
<b>ELECTRICAL / LIGHTING</b>	At least 2 duplex electrical outlets on each wall	Yes
<b>TECHNOLOGY</b>	No special requirements	
<b>FURNITURE / EQUIPMENT</b>	Casework to include: - Heavy duty, adjustable shelving on 2 walls - Filing cabinets	Yes
	Music folio cabinet, one per performing group or period	Yes
	Instrument storage shelving	Yes
	Storage cart for sound system	Yes
	Moveable teaching cart [portable]	Yes
	Microphones & speakers	Yes
	Metronome	Yes
	Teacher amplification system	Yes
	Digital recording system, updated as technology improves	Yes
<b>DOORS &amp; WINDOWS</b>	Door: view panel	Yes
<b>SPECIAL CONSIDERATIONS</b>	Shelving to optimize storage	Yes
	Hanging rods for uniforms	Yes
	Security and visibility	Yes



**Music / Performing Arts Space Descriptions:**  
**Practice Rooms**

<b>PRACTICE ROOMS</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Provides an exclusive area for student musical practice and one-on-one instruction	Students
Recording performances	Teachers

<b>PRACTICE ROOMS</b>		<b>QTY</b>
<b>MECHANICAL</b>	No special requirements	
<b>PLUMBING</b>	Drinking fountain near vocal practice rooms	Yes
<b>ELECTRICAL / LIGHTING</b>	Duplex electrical outlet	Yes
	Quad outlet adjacent to each data port	Yes
<b>TECHNOLOGY</b>	No special requirements	
<b>FURNITURE / EQUIPMENT</b>	Chairs	Yes
	Music stands	Yes
	Mirror	Yes
	Acoustic tiling	Yes
<b>DOORS &amp; WINDOWS</b>	Door: secure, sound proof, with view panel	Yes
	Window: secure, sound proof	Yes
<b>SPECIAL CONSIDERATIONS</b>	Sound proof walls	Yes
	Adjacent to music room and instrument storage	Yes
	Visibility from music room/band room	Yes
	Carpet flooring	Yes

**Music / Performing Arts Space Descriptions:**  
**Large Practice Room**

<b>LARGE PRACTICE ROOM</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Provides an exclusive area for student musical practice and one-on-one instruction	Students
Small ensembles	Teachers
Recording performances	

<b>LARGE PRACTICE ROOM</b>		<b>QTY</b>
<b>MECHANICAL</b>	No special requirements	
<b>PLUMBING</b>	Drinking fountain near vocal practice rooms	Yes
<b>ELECTRICAL / LIGHTING</b>	Duplex electrical outlet	Yes
	Quad outlet adjacent to each data port	Yes
<b>TECHNOLOGY</b>	No special requirements	
<b>FURNITURE / EQUIPMENT</b>	Chairs	Yes
	Music stands	Yes
	Mirror	Yes
	Acoustic tiling	Yes
<b>DOORS &amp; WINDOWS</b>	Door: secure, sound proof, with view panel	Yes
	Window: secure, sound proof	Yes
<b>SPECIAL CONSIDERATIONS</b>	Sound proof walls	Yes
	Adjacent to music room and instrument storage	Yes
	Visibility from music room/band room	Yes
	Carpet flooring	Yes

**Music / Performing Arts Space Descriptions:**  
**Auditorium Seating**

<b>AUDITORIUM SEATING</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Student performances	Staff members
School and community program, meetings, and activities	Community – primarily after school hours
Faculty meetings	Students
Class instruction	

<b>AUDITORIUM SEATING</b>		<b>QTY</b>
<b>MECHANICAL</b>	Quiet separate zone	Yes
<b>PLUMBING</b>	No special requirements	
<b>ELECTRICAL / LIGHTING</b>	Duplex electrical outlets on each wall	Yes
	Variable lighting levels	Yes
	Theater lighting	Yes
<b>TECHNOLOGY</b>	Telephone/intercom/voicemail port	Yes
	Video and data ports	Yes
	Quad outlet adjacent to each data port	Yes
	Audio enhancement system	Yes
	Sound system with portable or wireless microphones	Yes

**Music / Performing Arts Space Descriptions:**  
**Auditorium Seating**

<b>AUDITORIUM SEATING</b>		<b>QTY</b>
<b>FURNITURE / EQUIPMENT</b>	CD/DVD player	Yes
	Equipment rack in control closet	Yes
	Computer projector	Yes
	Large, retractable projection screen	Yes
<b>DOORS &amp; WINDOWS</b>	Overhead doors	Yes
	Door: double doors with access to outside courtyard/dining area	Yes
	Windows: None	Yes
<b>SPECIAL CONSIDERATIONS</b>	Good sight lines to all areas of the room for supervision	Yes
	Acoustic sound panels	Yes
	Wing space	Yes
	Fly system	Yes
	Control closet with light and sound control box	Yes
	Sloped floor	Yes
	Fixed seats	Yes
	First several rows of seats removable to create orchestra space or orchestra pit	Yes

**Music / Performing Arts Space Descriptions:**  
**Control Booth**

<b>CONTROL BOOTH</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Control of audio and lighting systems of Auditorium	Students
	Teachers

<b>CONTROL BOOTH</b>		<b>QTY</b>
<b>MECHANICAL</b>	No special requirements	
<b>PLUMBING</b>	No special requirements	
<b>ELECTRICAL / LIGHTING</b>	Overhead lighting [dimmable]	Yes
	Multiple duplex outlets above work counter	Yes
	Coordinate power requirements with lighting and sound	Yes
<b>TECHNOLOGY</b>	Intercom	Yes
	Wireless headset communication to Stage	Yes
	Plug-ins for lighting and sound boards	Yes
<b>FURNITURE / EQUIPMENT</b>	Built-in work counter	Yes
	Adjustable height swivel stools	Yes
<b>DOORS &amp; WINDOWS</b>	Door: secure with small view panel	Yes
	Windows: sliding glass window to Auditorium	Yes
<b>SPECIAL CONSIDERATIONS</b>	Acoustical ceiling	Yes
	Dark colored walls	Yes

## Music / Performing Arts Space Descriptions:

### Auditorium Stage

AUDITORIUM STAGE	
ACTIVITIES	PERSONS
Provides multi-function place for student and community	Students
Musical and dramatic performances and rehearsals	Teachers
Student assemblies	Staff
Awards programs	Parents
Presentations	Community members
Guest speakers	
Community meetings	
Large group instruction	

AUDITORIUM STAGE		QTY
<b>MECHANICAL</b>	No special requirements	
<b>PLUMBING</b>	Fire sprinkler is under stage if storage in under stage	Yes
<b>ELECTRICAL / LIGHTING</b>	Duplex electrical outlets	Yes
	Stage lighting	Yes
	Quad outlets adjacent to each data port	Yes
	Audio ports	Yes
<b>TECHNOLOGY</b>	Voice port/phone	Yes
	Data ports and access to wireless network	Yes



**Music / Performing Arts Space Descriptions:**  
**Auditorium Stage**

<b>AUDITORIUM STAGE</b>		<b>QTY</b>
<b>FURNITURE / EQUIPMENT</b>	Upright piano	Yes
	Microphones	Yes
	Curtain	Yes
	Side curtains	Yes
	Pit cover [if there is an orchestra pit]	Yes
	Acoustic music shell and portable risers [instrumental and choral]	Yes
	Back drop screen	Yes
	Video production/projection screen	Yes
<b>DOORS &amp; WINDOWS</b>	Large overhead door from stage to scene shop	Yes
<b>SPECIAL CONSIDERATIONS</b>	Adjacent to auditorium and along edge that allow for the best sight lines of spectators to platforms	Yes
	Wing space - Minimum 10' on each side	Yes
	Wood flooring, also conducive for dance programs	Yes
	Adjacent to or in close proximity to music room and art room and drama room	Yes
	Pulleys and rigging for backdrop scenery	Yes
	Full fly space (Minimum 40' clearance)	Yes
	Storage area under stage	Yes
	Handicap access for raised stage	Yes

**Music / Performing Arts Space Descriptions:**
**Scene Shop**

<b>SCENE SHOP</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Preparation of props and scenery for use on Stage such as carpentry and painting	Students
	Teachers

<b>SCENE SHOP</b>		<b>QTY</b>
<b>MECHANICAL</b>	No special requirements	
<b>PLUMBING</b>	Sink with hot and cold water	Yes
<b>ELECTRICAL / LIGHTING</b>	Duplex outlets at 5' OC	Yes
	Uniform fluorescent lighting	Yes
<b>TECHNOLOGY</b>	Intercom	Yes
	Voice, video, and data ports	Yes
<b>FURNITURE / EQUIPMENT</b>	2' deep storage racks for tools and props	Yes
	Flammable materials storage cabinets	Yes
	Work benches	Yes
	Power tools	Yes
	Adjustable height stools	Yes
	Racks for storing backdrops	Yes
	Woodworking equipment	Yes
	Painting equipment	Yes
<b>DOORS &amp; WINDOWS</b>	Large overhead door to outside dock	Yes
	Large overhead door to stage	Yes
<b>SPECIAL CONSIDERATIONS</b>	Ventilation	Yes
	Recessed flooring	Yes
	Sealed concrete floor	Yes
	Paint rack area at one wall	Yes
	Adjacent to Stage	Yes

**Music / Performing Arts Space Descriptions:**  
**Make-up / Dressing**

<b>MAKE-UP / DRESSING</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Preparation of make-up and costumes for performances	Students
	Teachers
	Community members
	Staff

<b>MAKE-UP / DRESSING</b>		<b>QTY</b>
<b>MECHANICAL</b>	No special requirements	
<b>PLUMBING</b>	Sinks with hot and cold water	Yes
<b>ELECTRICAL / LIGHTING</b>	Make-up lighting at mirrors	Yes
<b>TECHNOLOGY</b>	Intercom	Yes
	Voice and data ports	Yes
<b>FURNITURE / EQUIPMENT</b>	Make-up counter with adjustable height chairs	Yes
	Mirrors with lighting above and adjacent	Yes
<b>DOORS &amp; WINDOWS</b>	Solid doors	Yes
<b>SPECIAL CONSIDERATIONS</b>	Privacy and security	Yes

**Music / Performing Arts Space Descriptions:**  
**Storage (Costumes, Props)**

<b>STORAGE (COSTUMES, PROPS)</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Storage for equipment, materials, props, and costumes	Students
	Teachers
	Staff
	Community members
	Parents

<b>STORAGE (COSTUMES, PROPS)</b>		<b>QTY</b>
<b>MECHANICAL</b>	No special requirements	
<b>PLUMBING</b>	No special requirements	
<b>ELECTRICAL / LIGHTING</b>	Duplex electrical outlet	Yes
	Quad outlet adjacent to each data port	Yes
<b>TECHNOLOGY</b>	No special requirements	Yes
<b>FURNITURE / EQUIPMENT</b>	Closet rods	Yes
<b>DOORS &amp; WINDOWS</b>	Doors: double doors to Stage	Yes
<b>SPECIAL CONSIDERATIONS</b>	Adjacent to stage	Yes
	2 Story - possibly in the mezzanine of the auditorium	Yes
	Large door opening	Yes

**Music / Performing Arts Space Descriptions:**
**Restrooms**

<b>RESTROOMS</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Personal hygiene	Students

<b>RESTROOMS</b>		<b>QTY</b>
<b>MECHANICAL</b>	Exhaust fan	1
	Intake and outake ventilation	1
<b>PLUMBING</b>	Sinks with hot and cold water	2
<b>ELECTRICAL / LIGHTING</b>	Duplex outlets on each wall	4
<b>TECHNOLOGY</b>	No special requirements	
<b>FURNITURE / EQUIPMENT</b>	Casework to include cabinet with mirror	1
	Biohazard disposal can	1
<b>DOORS &amp; WINDOWS</b>	Solid doors	1
<b>SPECIAL CONSIDERATIONS</b>	Separate from dressing room	

**Music / Performing Arts Space Descriptions:**
**Offices**

<b>PREP OFFICES</b>		
<b>ACTIVITIES</b>	<b>PERSONS</b>	
Meeting with students	School staff	
Teacher class preparation	Band, orchestra, and chorus instructors	
	Students	
<b>PREP OFFICES</b>		<b>QTY</b>
<b>MECHANICAL</b>	Air conditioning	Yes
<b>PLUMBING</b>	No special requirements	
<b>ELECTRICAL / LIGHTING</b>	Duplex electrical outlets on each wall	Yes
	Quad outlet at each data port	1
<b>TECHNOLOGY</b>	Telephone/intercom/voicemail port	Yes
	Video and data ports	Yes
	Quad outlet adjacent to each data port	Yes
	Telephone	1
	Intercom	Yes
<b>FURNITURE / EQUIPMENT</b>	Locking file cabinet, 4 drawer	1 to 2
	Clock	1
	File lateral drawer	Yes
	Desk	1
	Desk chair	1
	Guest chairs	2
	Lamps	Yes
	Bookshelves	18LF
	Marker board	4LF
	Laptop computer	1
	Printer	1
<b>DOORS &amp; WINDOWS</b>	Door: view panel	Yes
	Windows: no special considerations	Yes
<b>SPECIAL CONSIDERATIONS</b>	Bright, soft lighting	Yes
	Tile	Yes

**Music / Performing Arts Space Descriptions:**
**Orchestra Storage**

<b>ORCHESTRA STORAGE</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Storage of:	Teacher
textbooks	Students
instruments	
supplies	
equipment	

<b>ORCHESTRA STORAGE</b>		<b>QTY</b>
<b>MECHANICAL</b>	No special requirements	
<b>PLUMBING</b>	No special requirements	
<b>ELECTRICAL / LIGHTING</b>	At least 2 duplex electrical outlets on each wall	Yes
<b>TECHNOLOGY</b>	No special requirements	
<b>FURNITURE / EQUIPMENT</b>	Casework to include: - Heavy duty, adjustable shelving on 2 walls - Filing cabinets	Yes
	Music folio cabinet, one per performing group or period	Yes
	Instrument storage shelving	Yes
	Storage cart for sound system	Yes
	Moveable teaching cart [portable]	Yes
	Microphones & speakers	Yes
	Metronome	Yes
	Teacher amplification system	Yes
	Digital recording system, updated as technology improves	Yes
<b>DOORS &amp; WINDOWS</b>	Door: view panel	Yes
<b>SPECIAL CONSIDERATIONS</b>	Shelving to optimize storage	Yes
	Security and visibility	Yes



**Music / Performing Arts Space Descriptions:**
**Black Box Theatre / Orchestra Classroom**

<b>BLACK BOX THEATRE / ORCHESTRA CLASSROOM</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Preparation area for drama and music performances	Students
	Teachers
	Staff
	Community members
	Parents

<b>BLACK BOX THEATRE / ORCHESTRA CLASSROOM</b>		<b>QTY</b>
<b>MECHANICAL</b>	No special requirements	
<b>PLUMBING</b>	No special requirements	
<b>ELECTRICAL / LIGHTING</b>	With light grid	Yes
	Duplex electrical outlets on each wall	Yes
	Overhead lighting	Yes
<b>TECHNOLOGY</b>	Telephone / intercom / voicemail port	Yes
	Data ports	Yes
<b>FURNITURE / EQUIPMENT</b>	Movable auditorium-like seating	Yes
<b>DOORS &amp; WINDOWS</b>	Doors with view panel	Yes
	Windows: operable with blinds to allow for controlled natural lighting	Yes
<b>SPECIAL CONSIDERATIONS</b>	Access to storage	Yes
	Movable stage	Yes

## Music / Performing Arts Space Descriptions:

### Outdoor Band Storage

OUTDOOR BAND STORAGE	
ACTIVITIES	PERSONS
Storage of:	Teacher
paint	Students
outdoor percussison equipment	
flatbed trailers	
golf cart	
tractor	
field podiums	
yard markers	

OUTDOOR BAND STORAGE		QTY
<b>MECHANICAL</b>	Climate controlled	Yes
<b>PLUMBING</b>	No special requirements	
<b>ELECTRICAL / LIGHTING</b>	At least 2 duplex electrical outlets on each wall	Yes
<b>TECHNOLOGY</b>	No special requirements	
<b>FURNITURE / EQUIPMENT</b>	Shelving to optimize storage	Yes
<b>DOORS &amp; WINDOWS</b>	Solid double lockable doors without center bar	Yes
<b>SPECIAL CONSIDERATIONS</b>	Shelving to optimize storage	Yes
	Security and visibility	Yes



**Physical Education Goals:** The goal of the physical education curricula is to ensure that all students will:

- Learn about the health issues that affect their lives
- Learn how to become more physically fit
- Have a greater understanding of the need for physical fitness and health
- Gain the skills to become more productive individuals through physical activity and training
- Learn team activities and sportsmanship
- Practice and/or maintain a healthy lifestyle
- Learn and practice methods of self-assessment

The pages that follow contain a list of spaces and drawings illustrating the relationship between various program areas, and the individual spaces within the program area. Additionally, a description of the activities, persons to accommodate, and items to be considered is included.

## **Gym/Physical Education**

A variety of indoor and outdoor areas will be required to meet the physical education/health, athletic, and recreation needs of the students and the residents of the school division that will use these facilities.

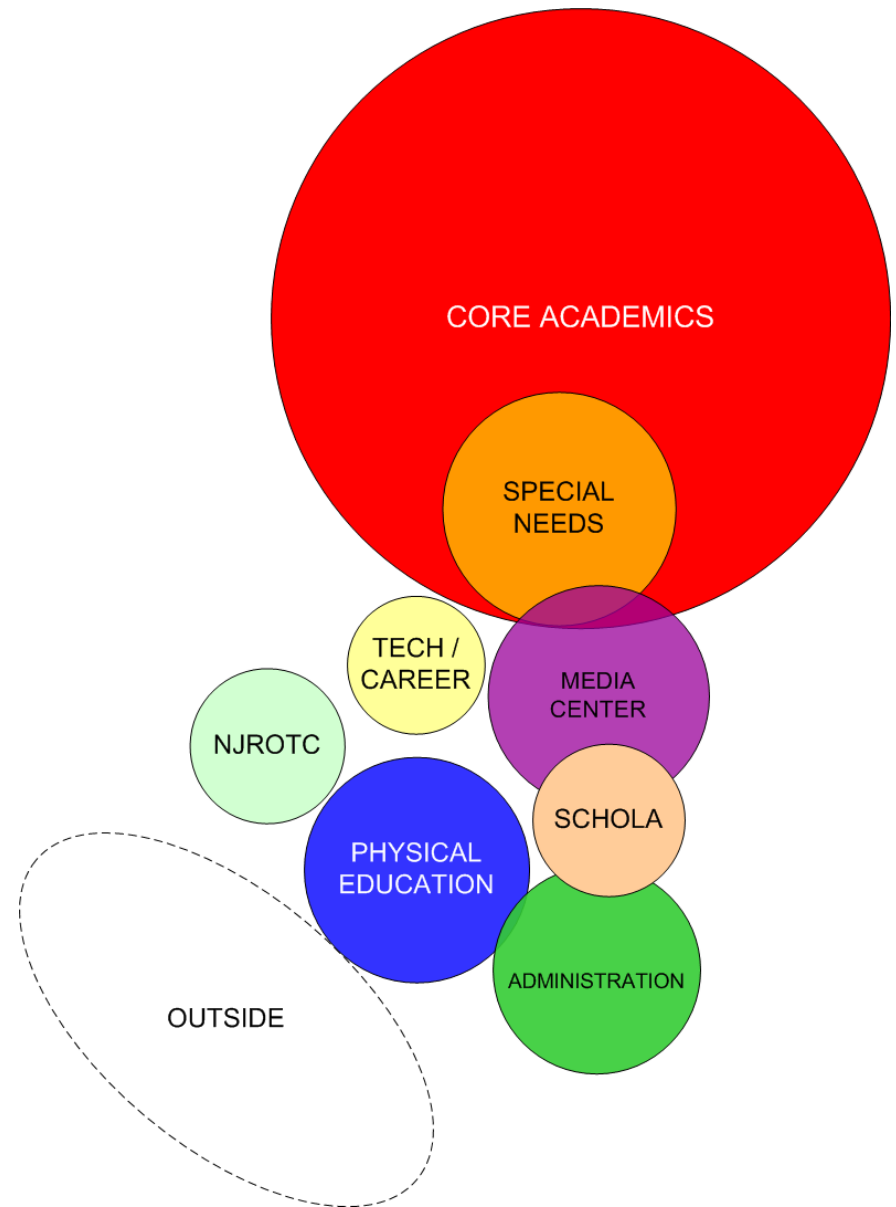
**Gym / Physical Education Space Requirements**

Gymnasium / Physical Education	Suggested			
	TS	Quantity	SF	Total
Gymnasium	2	1	15,000	15,000
Seating included in above: 2000 seats				
Storage		Multiple	Varied	1,000
Auxiliary Gym	1	1	5,000	5,000
PE Shower/Locker Room		2	2,000	4,000
Fitness Area	1	1	2,000	2,000
Wrestling Room	1	1	2,500	2,500
Weight Room	1	1	2,500	2,500
Athletics Shower/Locker Room		2	1,000	2,000
Training / Rehabilitation / Cardio Lab		1	500	500
PE Office/Conference		2	400	800
PE Staff Toilets/Showers		2	100	200
Laundry		1	200	200
Coaches Offices		2	300	600
Coaches Toilet/Shower		2	100	200
Health Classroom	3	3	850	2,550
Concessions		1	300	300
Athletic Director's Storage		1	220	220
Athletic Director's Office		1	150	150
<b>Physical Education Sub-Total</b>	<b>9</b>			<b>39,720</b>
<b>Outdoor Spaces</b>	<b>Suggested</b>			
	TS	Quantity	SF	Total
Football Stadium				
Athletic Field Storage		1	1,000	1,000
Public Restrooms		2	600	1,200
Concession		1	600	600
<b>Physical Education Outdoor Sub-Total</b>				<b>2,800</b>
<b>Physical Education Total</b>	<b>9</b>			<b>42,520</b>

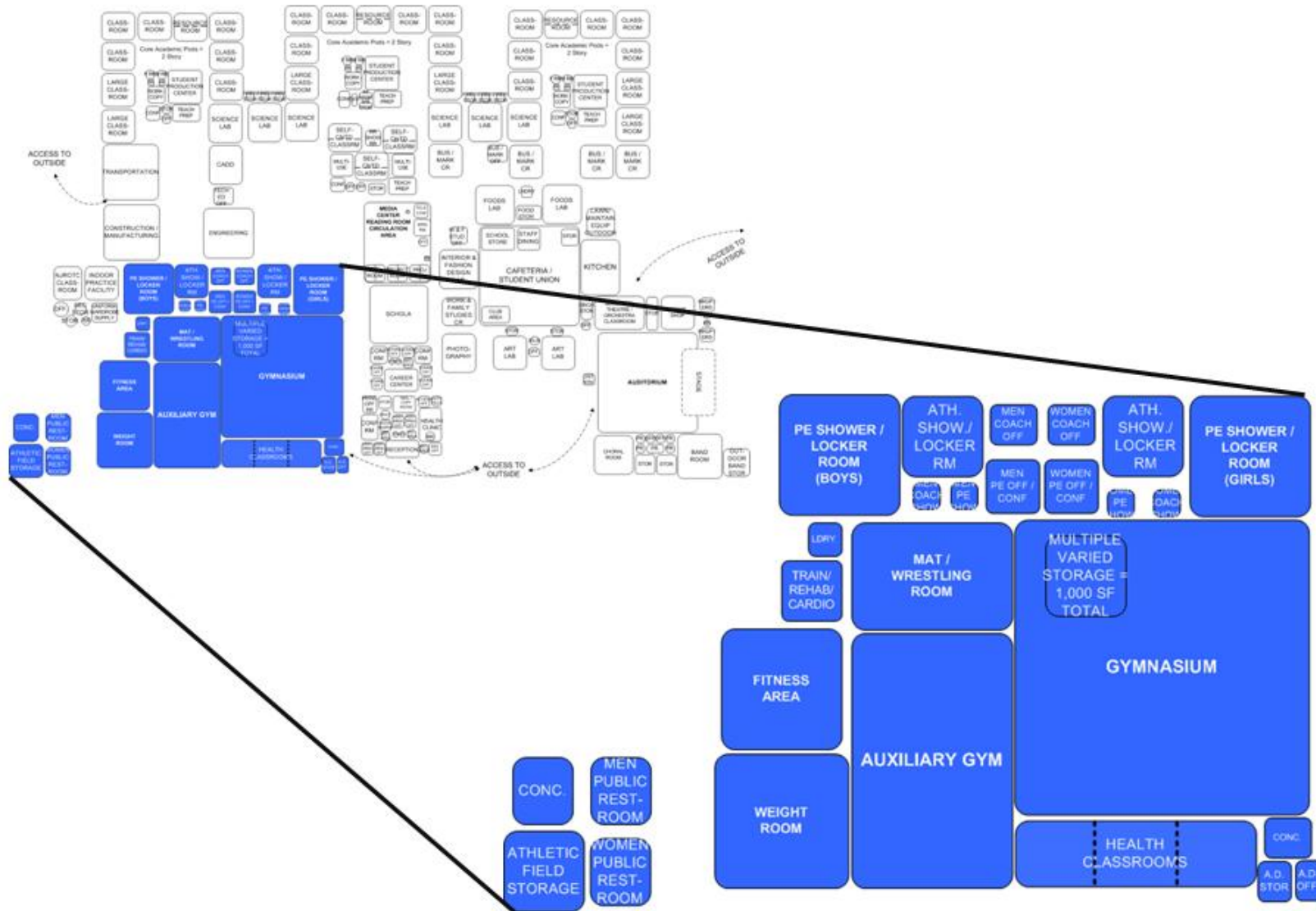
## Gym / Physical Education Spatial Relationships

Physical education spaces will be shared by each learning community. If the building will have the NJROTC Program, it should be adjacent to the Physical Education Area with access to the locker rooms. Members of the community will also use some of the physical education spaces before, after, and possibly during school hours. For this reason, there should be access to the outside, a separate secured entry, and a location near the Welcome Center. The pages that follow describe in more detail each program area space listed in the space requirements table.

Physical education spaces should be centrally located within the facility and in close proximity to the administration area, outdoor areas and spectator parking. In addition, the physical education spaces should be accessible by the community.



## Gym / Physical Education Illustration



**Physical Education Space Descriptions:**  
**Gymnasium**

<b>GYMNASIUM</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Physical education	Students
Sports – Basketball, Volleyball, Baseball	Faculty
Fitness/Health presentations, workouts	Staff
Large group activities	After-school community use
Ticket sales	

<b>GYMNASIUM</b>		<b>QTY</b>
<b>MECHANICAL</b>	Quiet mechanicals or on outside of building	Yes
	Additional ventilation	Yes
<b>PLUMBING</b>	Recessed drinking fountains located in corridor directly outside the gym	Yes
	Outside hose bib	Yes
<b>ELECTRICAL / LIGHTING</b>	Floor outlets and data access	Yes
	Wiring for power scoreboards, bleachers, sound system, lighting, curtains, and outlets on perimeter walls	Yes
	Drop down mat lamp for center stage type activities / shows	Yes
	Lighting which does not add heat to gym	Yes
	Cage over lights to avoid breakage	Yes
<b>TECHNOLOGY</b>	All technology should be protected: wireless or recessed into wall	Yes
	Telephone/intercom/voicemail port	Yes
	Video and data ports	Yes
	Quad outlet adjacent to each data port	Yes
	Wireless	Yes
	Audio enhancement system	Yes
	Sound system	Yes



**Physical Education Space Descriptions:**
**Gymnasium**

<b>GYMNASIUM</b>		<b>QTY</b>
<b>FURNITURE / EQUIPMENT</b>	Adjustable baskets from ceiling	Yes
	Whiteboards	Yes
	Scoreboards	Yes
	Two portable magnetic marker boards	Yes
	Safety wall mats behind baskets if close to wall	Yes
	Floor mats	Yes
<b>DOORS &amp; WINDOWS</b>	Door: large double doors to outside for equipment	Yes
	Garage door	Yes
	Door: double door to storage area for moving equipment	Yes
	Unbreakable, translucent glass in windows	Yes
	Windows: cages to avoid breakage	Yes
<b>SPECIAL CONSIDERATIONS</b>	Must be able to isolate gym from the rest of the school for activities after hours	Yes
	Acoustics for activities other than basketball for community use, guest speaker, district in-service	Yes
	Retractable bleachers	Yes
	Glass basketball backboards	Yes
	Multi-purpose flooring	Yes

**Physical Education Space Descriptions:**
**Storage**

<b>STORAGE</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Storing equipment used in the physical education/athletic areas	Staff

<b>STORAGE</b>		<b>QTY</b>
<b>MECHANICAL</b>	No special requirements	
<b>PLUMBING</b>	Floor drain	Yes
<b>ELECTRICAL / LIGHTING</b>	Duplex electrical outlets on each wall	
<b>TECHNOLOGY</b>	No special requirements	Yes
<b>FURNITURE / EQUIPMENT</b>	Mat storage	Yes
	Equipment storage	Yes
	Heavy duty adjustable shelving	Yes
	Layout to maximize storage of Physical Education equipment	Yes
	Lockable storage area for athletic teams' equipment and uniforms	Yes
<b>DOORS &amp; WINDOWS</b>	Doors: oversized that opens into gym	Yes
	Windows: none	Yes
<b>SPECIAL CONSIDERATIONS</b>	Secure/lockable	Yes

**Physical Education Space Descriptions:**  
**Auxiliary Gymnasium**

<b>AUXILIARY GYMNASIUM</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Physical education	Students
Sports – Gymnastics, Volleyball, Baseball	Faculty
Fitness/Health presentations, workouts	Staff
Large group activities	After-school community use

<b>AUXILIARY GYMNASIUM</b>		<b>QTY</b>
<b>MECHANICAL</b>	Quiet mechanicals or on outside of building	Yes
	Additional ventilation	Yes
<b>PLUMBING</b>	Recessed drinking fountains located in corridor directly outside the gym	Yes
	Outside hose bib	Yes
<b>ELECTRICAL / LIGHTING</b>	Floor outlets and data access	Yes
	Wiring for power scoreboards, bleachers, sound system, lighting, curtains, and outlets on perimeter walls	Yes
	Lighting which does not add heat to gym	Yes
	Cage over lights to avoid breakage: translucent, unbreakable glass	Yes
<b>TECHNOLOGY</b>	Telephone/intercom/voicemail port	Yes
	Video and data ports	Yes
	Quad outlet adjacent to each data port	Yes
	Audio enhancement system	Yes
	Sound system	Yes

**Physical Education Space Descriptions:**  
**Auxiliary Gymnasium**

<b>AUXILIARY GYMNASIUM</b>		<b>QTY</b>
<b>FURNITURE / EQUIPMENT</b>	Adjustable baskets from ceiling	Yes
	Tack boards	Yes
	Scoreboards	Yes
	Two portable magnetic marker boards	Yes
	Safety wall mats	Yes
	Floor mats	Yes
<b>DOORS &amp; WINDOWS</b>	Door: large double doors to outside for equipment or garage door	Yes
	Removable center posts	Yes
	Door: double door to storage area for moving equipment	Yes
	Windows: cages to avoid breakage	Yes
<b>SPECIAL CONSIDERATIONS</b>	Must be able to isolate gym from the rest of the school for activities after hours	Yes
	Acoustics for activities other than basketball for community use, guest speaker, district in service	Yes
	Gym key control	Yes
	Glass basketball backboards	Yes
	Multi-purpose flooring	Yes

**Physical Education Space Descriptions:**
**PE Shower / Locker Room**

<b>PE SHOWER / LOCKER ROOM</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Storage of personal items while using gym or fitness area	Physical Education students
Personal hygiene	Sports teams
	Students [after-hours]

<b>PE SHOWER / LOCKER ROOM</b>		<b>QTY</b>
<b>MECHANICAL</b>	Additional ventilation	Yes
<b>PLUMBING</b>	Drinking fountains	Yes
	Sinks	Yes
	Showers	Yes
	Restrooms	Yes
<b>ELECTRICAL / LIGHTING</b>	Overhead lighting	Yes
	Duplex outlets	Yes
<b>TECHNOLOGY</b>	No special requirements	Yes
<b>FURNITURE / EQUIPMENT</b>	Benches	Yes
	Small lockers [based on school enrollment divided by two for each locker room]	Yes
	Large lockers [based on number of students]	Yes
<b>DOORS &amp; WINDOWS</b>	Door: solid door with no window	Yes
	Windows: No windows	Yes
<b>SPECIAL CONSIDERATIONS</b>	Handicap accessible	Yes
	Non-slip flooring	Yes
	Privacy and security	Yes
	Layout to optimize locker arrangements	Yes
	Layout should avoid congestion	Yes

**Physical Education Space Descriptions:**
**Fitness Area**

<b>FITNESS AREA</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Physical fitness	Students
Aerobics	Faculty
Cardiovascular Training	Staff
Physical Education	After-school community use
Team Training	
Rehabilitation	
Plyometrics	

<b>FITNESS AREA</b>		<b>QTY</b>
<b>MECHANICAL</b>	Additional ventilation	Yes
<b>PLUMBING</b>	Recessed drinking fountains	Yes
<b>ELECTRICAL / LIGHTING</b>	Lighting which does not add heat	Yes
	Uniform lighting	Yes
<b>TECHNOLOGY</b>	All technology should be protected: wireless or recessed into wall	Yes
	Telephone/intercom/voicemail port	Yes
	Video port and monitor/flatscreen	Yes
	Data ports	Yes
	Quad outlet adjacent to each data port	Yes
	Media player	Yes
	Audio enhancement system	Yes
	Sound system	Yes

**Physical Education Space Descriptions:**
**Fitness Area**

<b>FITNESS AREA</b>		<b>QTY</b>
<b>FURNITURE / EQUIPMENT</b>	Tack boards	Yes
	Portable magnetic marker boards	Yes
	Storage closet	Yes
	Rolling storage racks	Yes
	Dumbbell racks	Yes
	Physio balls	Yes
	Aerobic steps	Yes
	Stationary bikes	Yes
<b>DOORS &amp; WINDOWS</b>	Double Door with removable post and windows to corridor	Yes
	Windows: to corridor for external monitoring	Yes
	Windows: natural light	Yes
<b>SPECIAL CONSIDERATIONS</b>	Isolate fitness area from the rest of the school for activities after hours	Yes
	Sanitizable flooring	Yes
	Resilient rubber flooring	Yes
	Adjacent to the Gymnasium and Locker Rooms	Yes
	Acoustical sound treatment	Yes
	Mirrors on wall	Yes



**Physical Education Space Descriptions:**  
**Wrestling**

<b>WRESTLING</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Dance Class	Instructor
Fitness Program	Students
Fitness Training	Community
Wrestling	
Aerobics Classes	

<b>WRESTLING</b>		<b>QTY</b>
<b>MECHANICAL</b>	Additional ventilation	Yes
<b>PLUMBING</b>	Recessed drinking fountains	Yes
<b>ELECTRICAL / LIGHTING</b>	Lighting which does not add heat	Yes
	Uniform lighting	Yes
<b>TECHNOLOGY</b>	Telephone/intercom/voicemail port	Yes
	Video port and data ports	Yes
	Quad outlet adjacent to each data port	Yes
	Audio enhancement system	Yes
	Sound system	Yes
<b>FURNITURE / EQUIPMENT</b>	Sound system	Yes
	Mats = 42' x 56'	Yes
	Floor to ceiling mirrors on one long wall	Yes
<b>DOORS &amp; WINDOWS</b>	Large doors for moving mats with view panel	Yes
	No windows	Yes
<b>SPECIAL CONSIDERATIONS</b>	Low ceiling with storage room above	Yes
	Padded walls	Yes
	Rubberized flooring	Yes

**Physical Education Space Descriptions:**
**Weight Room**

<b>WEIGHT ROOM</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Weight training	Students
Cardiovascular training	Faculty
Physical education	Staff
Team training	After school community use
Rehabilitation	

<b>WEIGHT ROOM</b>		<b>QTY</b>
<b>MECHANICAL</b>	Additional ventilation	Yes
<b>PLUMBING</b>	Recessed drinking fountains	Yes
<b>ELECTRICAL / LIGHTING</b>	Lighting which does not add heat	Yes
	Uniform lighting	Yes
<b>TECHNOLOGY</b>	Telephone / intercom / voicemail port	Yes
	Video port and monitor	Yes
	Data ports	Yes
	Quad outlet adjacent to each data port	Yes
	Audio enhancement system	Yes
	Sound system	Yes
<b>FURNITURE / EQUIPMENT</b>	Tack boards / strips	Yes
	Portable magnetic marker boards	Yes
	Shelves	Yes
	Desk	Yes
	Weights and stationary equipment	Yes
<b>DOORS &amp; WINDOWS</b>	Large door with windows to corridor	Yes
<b>SPECIAL CONSIDERATIONS</b>	Must be able to isolate from the rest of the school for activities after hours	Yes
	High ceilings	Yes
	Resilient rubber flooring	Yes
	Adjacent to fitness room	Yes
	Acoustical sound treatment	Yes

**Physical Education Space Descriptions:**  
**Athletics Shower / Locker Room**
**ATHLETICS SHOWER / LOCKER ROOM**

ACTIVITIES	PERSONS
Storage of personal items while using gym or fitness area	Students
Personal hygiene	Sports teams
	After-school community use

ATHLETICS SHOWER / LOCKER ROOM		QTY
MECHANICAL	Additional ventilation	Yes
PLUMBING	Drinking fountains	Yes
	Sinks	Yes
	Showers	Yes
	Restrooms	Yes
ELECTRICAL / LIGHTING	Overhead lighting	Yes
	Duplex outlets	Yes
TECHNOLOGY	No special requirements	Yes
FURNITURE / EQUIPMENT	Benches	Yes
	Lockers	Yes
	Informational boards	Yes
	Storage cabinets	Yes
DOORS & WINDOWS	Door: solid door with no window	Yes
	Windows: No windows	Yes
SPECIAL CONSIDERATIONS	Handicap accessible	Yes
	Porcelain or ceramic tile flooring	Yes
	Hair dryers	Yes
	Vending machines	Yes

**Physical Education Space Descriptions:**
**Training / Rehab / Cardio Lab**

<b>TRAINING / REHAB / CARDIO LAB</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Injury rehabilitation	Athletic Trainer
Injury prevention	Physical Education Teachers
Injury management	Students
Treatments such as hydrotherapy, stretching, and taping	Coaches

<b>TRAINING / REHAB / CARDIO LAB</b>		<b>QTY</b>
<b>MECHANICAL</b>	No special requirements	Yes
<b>PLUMBING</b>	Sink	Yes
	Floor drain	Yes
	Portable whirlpool tubs	Yes
<b>ELECTRICAL / LIGHTING</b>	No special requirements	Yes
<b>TECHNOLOGY</b>	Voice, video, and data ports	Yes
	Intercom	Yes
<b>FURNITURE / EQUIPMENT</b>	Trainer workstation	Yes
	Trainer tables	Yes
	Lockable medicine cabinets	Yes
	Portable modesty screens/ceiling divider curtains	Yes
	Portable chairs	Yes
<b>DOORS &amp; WINDOWS</b>	View panel	Yes
<b>SPECIAL CONSIDERATIONS</b>	Ceramic, non-slip tile flooring	Yes

**Physical Education Space Descriptions:**
**PE Office / Conference**

<b>PE OFFICE / CONFERENCE</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Central place for coach and teacher administrative duties	Coaches
Storage of PE student portfolios	Athletic Trainer
Secure storage for:	Physical Education Teacher
video cameras	Students
heart rate monitors	
DVDs	
music	
other equipment	

<b>PE OFFICE / CONFERENCE</b>		<b>QTY</b>
<b>MECHANICAL</b>	No special requirements	
<b>PLUMBING</b>	No special requirements	
<b>ELECTRICAL / LIGHTING</b>	Duplex outlets at each station	Yes
<b>TECHNOLOGY</b>	Intercom	Yes
	Voice and data ports	Yes
	Outlets for charging batteries of portable sound system and for ball pumps	Yes
<b>FURNITURE / EQUIPMENT</b>	Moveable furniture [desk, chair, filing cabinet]	Yes
	Dry board/ tack board	Yes
<b>DOORS &amp; WINDOWS</b>	Door: no special requirements	Yes
	Window: ½ windows to adjacent corridors or gymnasium	Yes
<b>SPECIAL CONSIDERATIONS</b>	No special requirements	

**Physical Education Space Descriptions:**  
**PE Staff Toilets / Showers**

<b>PE STAFF TOILETS / SHOWERS</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Changing clothes, showering, and personal hygiene	Coaches
	Athletic Trainer
	Physical Education teacher
	Game officials

<b>PE STAFF TOILETS / SHOWERS</b>		<b>QTY</b>
<b>MECHANICAL</b>	No special requirements	
<b>PLUMBING</b>	Hot and cold water for sink & shower	Yes
<b>ELECTRICAL / LIGHTING</b>	No special requirements	
<b>TECHNOLOGY</b>	No special requirements	
<b>FURNITURE / EQUIPMENT</b>	Shower with adjacent private changing wall	Yes
	Floor drain	Yes
	Lockers	Yes
	Mirror above counter	Yes
	Paper towel holder	Yes
	Soap dispenser	Yes
	Hand dryer	Yes
<b>DOORS &amp; WINDOWS</b>	Door to Office	Yes
<b>SPECIAL CONSIDERATIONS</b>	Adjacent to team locker rooms	Yes
	Adjacent to gymnasium	Yes
	Connected to coach's office	Yes

**Physical Education Space Descriptions:**
**Laundry**

<b>LAUNDRY</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Wash uniforms and student clothing	Teachers
	Aides
	Staff

<b>LAUNDRY</b>		<b>QTY</b>
<b>MECHANICAL</b>	No special requirements	
<b>PLUMBING</b>	Hot and cold water for washer and sink	Yes
	Drain for washer	Yes
	Floor drain	Yes
<b>ELECTRICAL / LIGHTING</b>	Appropriate power for washer and dryer	Yes
<b>TECHNOLOGY</b>	No special requirements	
<b>FURNITURE / EQUIPMENT</b>	Commercial grade washer and dryer	Yes
	Base cabinets	Yes
	Wall cabinets	Yes
	Tables [folding]	Yes
<b>DOORS &amp; WINDOWS</b>	No special requirements	
<b>SPECIAL CONSIDERATIONS</b>	No special requirements	



**Physical Education Space Descriptions:**  
**Coaches Offices**

<b>COACHES OFFICES</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Central place for coach and teacher administrative duties	Coaches
Storage of PE student portfolios	Athletic Trainer
Secure storage for:	Physical Education Teacher
video cameras	Students
heart rate monitors	
DVDs	
music	
other equipment	

<b>COACHES OFFICES</b>		<b>QTY</b>
<b>MECHANICAL</b>	No special requirements	
<b>PLUMBING</b>	No special requirements	
<b>ELECTRICAL / LIGHTING</b>	Duplex outlets at each station	Yes
<b>TECHNOLOGY</b>	Intercom	Yes
	Voice and data ports	Yes
	Outlets for charging batteries of portable sound system and for ball pumps	Yes
<b>FURNITURE / EQUIPMENT</b>	Moveable furniture [desk, chair, filing cabinet]	Yes
	Dry board/ tack board	Yes
<b>DOORS &amp; WINDOWS</b>	Door: no special requirements	Yes
	Window: ½ windows to adjacent corridors or gymnasium	Yes
<b>SPECIAL CONSIDERATIONS</b>	No special requirements	

**Physical Education Space Descriptions:**  
**Coaches Toilet / Shower**

<b>COACHES TOILETS / SHOWERS</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Changing clothes, showering, and personal hygiene	Coaches
	Athletic Trainer
	Physical Education teacher
	Game officials

<b>COACHES TOILETS / SHOWERS</b>		<b>QTY</b>
<b>MECHANICAL</b>	No special requirements	
<b>PLUMBING</b>	Hot and cold water for sink & shower	Yes
<b>ELECTRICAL / LIGHTING</b>	No special requirements	
<b>TECHNOLOGY</b>	No special requirements	
<b>FURNITURE / EQUIPMENT</b>	Shower with adjacent private changing wall	Yes
	Floor drain	Yes
	Lockers	Yes
	Mirror above counter	Yes
	Paper towel holder	Yes
	Soap dispenser	Yes
	Hand dryer	Yes
<b>DOORS &amp; WINDOWS</b>	Door to Coach's Office	Yes
<b>SPECIAL CONSIDERATIONS</b>	Adjacent to team locker rooms	Yes
	Adjacent to gymnasium	Yes
	Connected to coach's office	Yes

**Physical Education Space Descriptions:**  
**Health Classroom**

<b>HEALTH CLASSROOM</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Individual, small, and large group activities	Physical Education/ Health teacher
Storage of materials	Students
Project-based learning	
Demonstrations	
Computer-based instruction	

<b>HEALTH CLASSROOM</b>		<b>QTY</b>
<b>MECHANICAL</b>	Quiet air conditioning	Yes
<b>PLUMBING</b>	Sink with hot and cold water	Yes
<b>ELECTRICAL / LIGHTING</b>	Duplex electrical outlets on each wall	Yes
	Overhead lighting	Yes
	Room darkening capability	Yes
	Abundant day lighting	Yes
<b>TECHNOLOGY</b>	Access to voice, video, data ports, and electrical outlets	Yes
	Teacher data port separate from student data ports	Yes
	Interactive whiteboard with integral computer projector	Yes

**Physical Education Space Descriptions:**  
**Health Classroom**

<b>HEALTH CLASSROOM</b>		<b>QTY</b>
<b>FURNITURE / EQUIPMENT</b>	Student work tables, 2 students each	18
	Comfortable ergonomic student chairs that allow movement	36
	Countertop over base cabinets	4 LF
	Overhead cabinets	4 LF
	Magnetic marker board	16 LF
	Bulletin board	24 LF
	Shelving	24 LF
	Locking storage cabinet	6 LF
	All in One Computer Device	1
	Mobile bookcases, 3' long	2
	Retractable projection screen	1
	Flexible or multiple display surfaces	Yes
	Adjustable, lockable, and mobile storage cabinets and shelving	Yes
	Interactive whiteboard	Yes
	White boards	Yes
	Flexible furniture: can be used as individual desks or fit together to make tables	Yes
	Tack boards and tack walls	Yes
<b>DOORS &amp; WINDOWS</b>	Door: view panel	Yes
	Windows: with blinds	Yes
<b>SPECIAL CONSIDERATIONS</b>	No special requirements	

**Physical Education Space Descriptions:**
**Concessions**

<b>CONCESSIONS</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Sales	Volunteers
	Students
	Parents

<b>CONCESSIONS</b>		<b>QTY</b>
<b>MECHANICAL</b>	Ventilation	Yes
	Heating and Cooling	Yes
<b>PLUMBING</b>	Sinks	Yes
<b>ELECTRICAL / LIGHTING</b>	Outlets for refrigerator, grill, crock pots	Yes
	Duplex electrical outlets on each wall	Yes
<b>TECHNOLOGY</b>	PA system from gymnasium	Yes
<b>FURNITURE / EQUIPMENT</b>	Shelving	Yes
	Locked storage areas	Yes
	Cashier areas	Yes
<b>DOORS &amp; WINDOWS</b>	Door	Yes
	Roll-up 1/2 door for serving area	Yes
	Concession window	Yes
<b>SPECIAL CONSIDERATIONS</b>	Good proximity to gymnasium and athletic events	Yes
	Sufficient corridor area for groups of people to stand in line and mingle	Yes

**Physical Education Space Descriptions:**  
**Athletic Director's Storage**

<b>ATHLETIC DIRECTOR'S STORAGE</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Storing equipment used in the physical education/athletic areas	Staff

<b>ATHLETIC DIRECTOR'S STORAGE</b>		<b>QTY</b>
<b>MECHANICAL</b>	No special requirements	
<b>PLUMBING</b>	No special requirements	Yes
<b>ELECTRICAL / LIGHTING</b>	Duplex electrical outlets on each wall	
<b>TECHNOLOGY</b>	No special requirements	Yes
<b>FURNITURE / EQUIPMENT</b>	Equipment storage	Yes
	Heavy duty adjustable shelving	Yes
	Layout to maximize storage of Physical Education equipment	Yes
	Lockable storage area for athletic teams' equipment and uniforms	Yes
<b>DOORS &amp; WINDOWS</b>	Doors: oversized that opens into gym	Yes
	Windows: none	Yes
<b>SPECIAL CONSIDERATIONS</b>	Secure/lockable	Yes

**Physical Education Space Descriptions:**  
**Athletic Director's Office**

<b>ATHLETIC DIRECTOR'S OFFICE</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Administration of Athletics	Athletic Director
	Athletic Trainer
	Physical Education/ Health teacher
	Coaches
	Students

<b>ATHLETIC DIRECTOR'S OFFICE</b>		<b>QTY</b>
<b>MECHANICAL</b>	No special requirements	
<b>PLUMBING</b>	No special requirements	
<b>ELECTRICAL / LIGHTING</b>	Duplex electrical outlets on each wall	Yes
	Overhead lighting	Yes
<b>TECHNOLOGY</b>	Access to voice, video, data ports, and electrical outlets	Yes
<b>FURNITURE / EQUIPMENT</b>	Desk	Yes
	Desk chair	Yes
<b>DOORS &amp; WINDOWS</b>	Doors with windows	Yes
<b>SPECIAL CONSIDERATIONS</b>	No special requirements	



**Physical Education Space Descriptions:**
**Athletic Field Storage**

<b>ATHLETIC FIELD STORAGE</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Storing equipment used in the outdoor physical education/athletic areas	Staff

<b>ATHLETIC FIELD STORAGE</b>		<b>QTY</b>
<b>MECHANICAL</b>	No special requirements	
<b>PLUMBING</b>	Floor drain	Yes
<b>ELECTRICAL / LIGHTING</b>	Duplex electrical outlets on each wall	
<b>TECHNOLOGY</b>	No special requirements	Yes
<b>FURNITURE / EQUIPMENT</b>		Yes
	Equipment storage	Yes
	Heavy duty adjustable shelving	Yes
	Layout to maximize storage of Physical Education equipment	Yes
	Lockable storage area for athletic teams' equipment and uniforms	Yes
<b>DOORS &amp; WINDOWS</b>	Solid doors - either double without center bar or garage doors	Yes
	Windows: none	Yes
<b>SPECIAL CONSIDERATIONS</b>	Secure/lockable	Yes

**Physical Education Space Descriptions:**  
**Public Restrooms**

<b>PUBLIC RESTROOMS</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Personal hygiene	Community

<b>PUBLIC RESTROOMS</b>		<b>QTY</b>
<b>MECHANICAL</b>	No special requirements	
<b>PLUMBING</b>	Appropriate for public toilets and sinks	Yes
<b>ELECTRICAL / LIGHTING</b>	Duplex electrical outlets on each wall	
<b>TECHNOLOGY</b>	No special requirements	Yes
<b>FURNITURE / EQUIPMENT</b>	Storage cabinet for restroom supplies	Yes
<b>DOORS &amp; WINDOWS</b>	Solid exterior doors	Yes
	Windows: none	Yes
<b>SPECIAL CONSIDERATIONS</b>	Secure/lockable when not in use for activity	Yes



## Schola

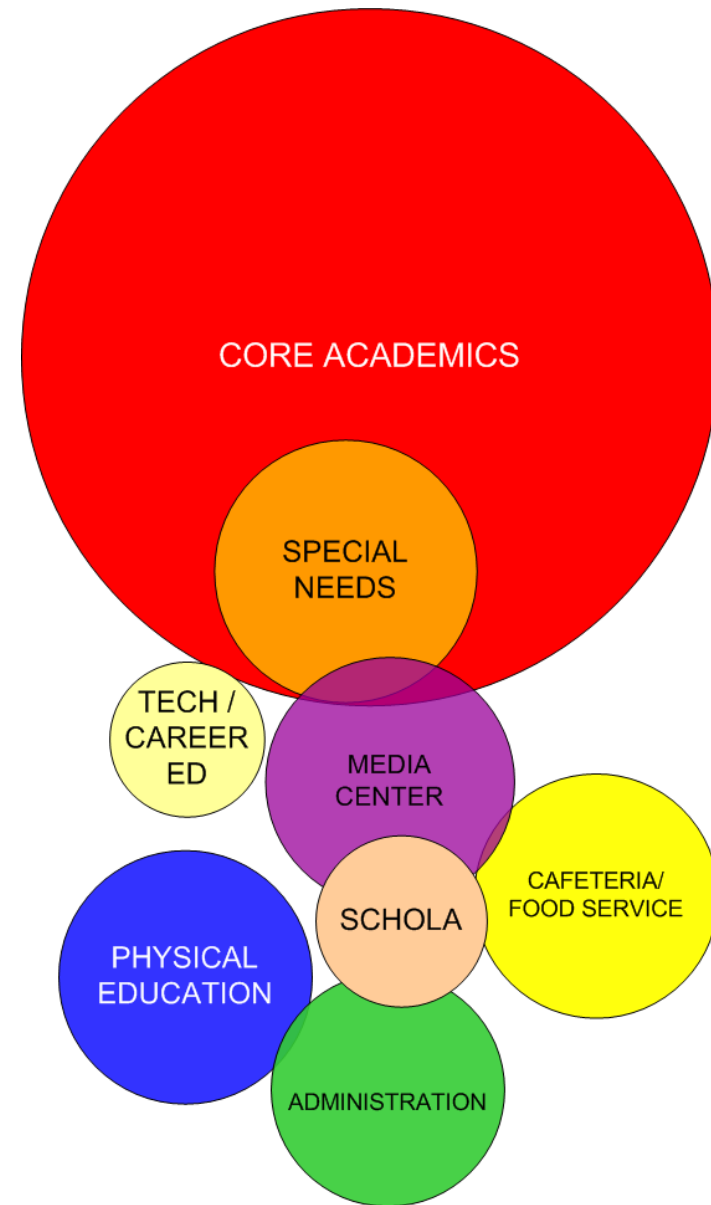
The schola is a multi-use space similar to a lecture hall with a tiered floor, fixed seating and tables. The schola should have an approximate capacity of 175, or enough capacity to seat the entire faculty and staff and be located between the cafeteria and media center. The schola should have state-of-the-art technology for multi-media presentations and other large group meetings to be utilized by students, teachers and the community.

## Schola Space Requirements

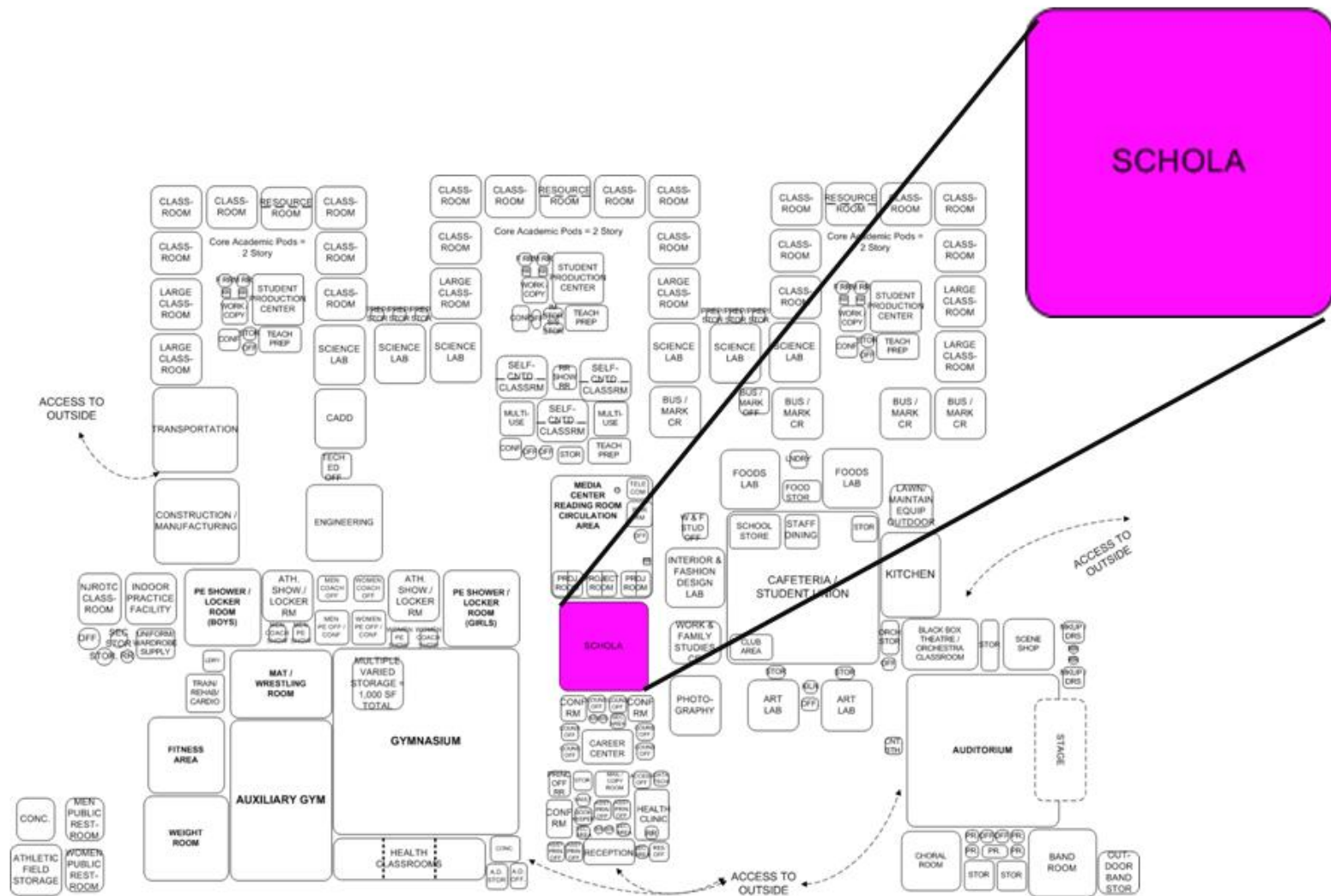
Schola	Suggested			
	TS	Quantity	SF	Total
Schola [175 Seats]		1	3,000	3,000
<b>Schola Sub-Total</b>				<b>3,000</b>

## Schola Spatial Relationships

The schola should be accessible to the public and be adjacent to the welcome center.



## Schola Illustration



## Schola Space Descriptions

### Schola

SCHOLA	
ACTIVITIES	PERSONS
Presentations	Students
Debates	Teachers
Church	Community
Senior Meetings	Staff
Testing	
Guest Speakers	
Faculty Meetings	
Lecture	
Professional Development	
Community Meetings	

SCHOLA		QTY
<b>MECHANICAL</b>	No Special Requirements	
<b>PLUMBING</b>	No Special Requirements	
<b>ELECTRICAL / LIGHTING</b>	Dimmable lighting	Yes
	Microphones with sound system	Yes
	Data ports	Yes
	Electrical outlets	Yes
<b>TECHNOLOGY</b>	Ceiling mounted projector	Yes
	Retractable projection Screen	Yes
	Wireless laptop access	Yes
	Interactive whiteboard	Yes
<b>FURNITURE / EQUIPMENT</b>	Fixed seating	Yes
	Narrow lecture style table with built-in raceways and modesty panels	Yes
	Ergonomic chairs	Yes
	Podium	Yes
<b>DOORS &amp; WINDOWS</b>	Door with view panel	Yes
<b>SPECIAL CONSIDERATIONS</b>	Mobile walls	Yes
	Convention Style	Yes
	Tiered	Yes





## Media Center

The Media Center will serve as the information hub of the school, providing access to materials within and outside the physical facility. An important aspect of this area is the continued use of printed material as well as electronic sources of information.

All curricular areas of the school will share the Media Center instructional technologies, which include computers, audio, database access, and Internet information technologies. The Media Center is a technology-intensive environment, with computer information stations located throughout the Reading/Learning/Circulation area.

The Media Center Program Area is the program containing spaces for library and technology services. This includes spaces for a reading room and circulation, a media specialist's office, storage, and a workroom. It also includes separate spaces for the technology control center and student instruction.

While there will be a central Media Center, each Learning Community will also contain a Student Production Center.

The Media Center should be utilized by all students, staff, teachers, and community members. Therefore, a centrally located Media Center with public access would be ideal.

The Media Center will consist of:

- Reading Room/Circulation/ Instructional Space
- Reference Center
- Computer Lab
- Media Specialist Office
- Workroom/Storage
- Telecommunications Room
- Document Storage
- Internal unisex restroom
- Student production center
- Distance learning lab

The Media Center maintains a high profile in the life of the school and is an active participant.

An emphasis is placed on the Media Center providing experiences regarding the following opportunities for students:

- Identify, evaluate, and communicate information
- Exercise responsibility when using materials, information, and technology
- Maintain the highest standards of scholarship
- Develop the habits of confident, skillful, and discerning readers

Students are expected to become self-directed learners and feel comfortable using the Media Center for any field of inquiry.

The Media Center will serve students in grades 9-12. Its resources are available to all students in an atmosphere that is inviting, comfortable, and vibrant.

The Media Center should have flexible work and social settings for multiple activities that take place simultaneously. The instructional and meeting rooms should be able to be used without impacting the reading room and other spaces. The Media Center also provides spaces for reflection.

The pages that follow contain a list of spaces and drawings illustrating the relationship between various program areas, and the individual spaces within the program area. Additionally, a description of the activities, persons to accommodate, and items to be considered is included.



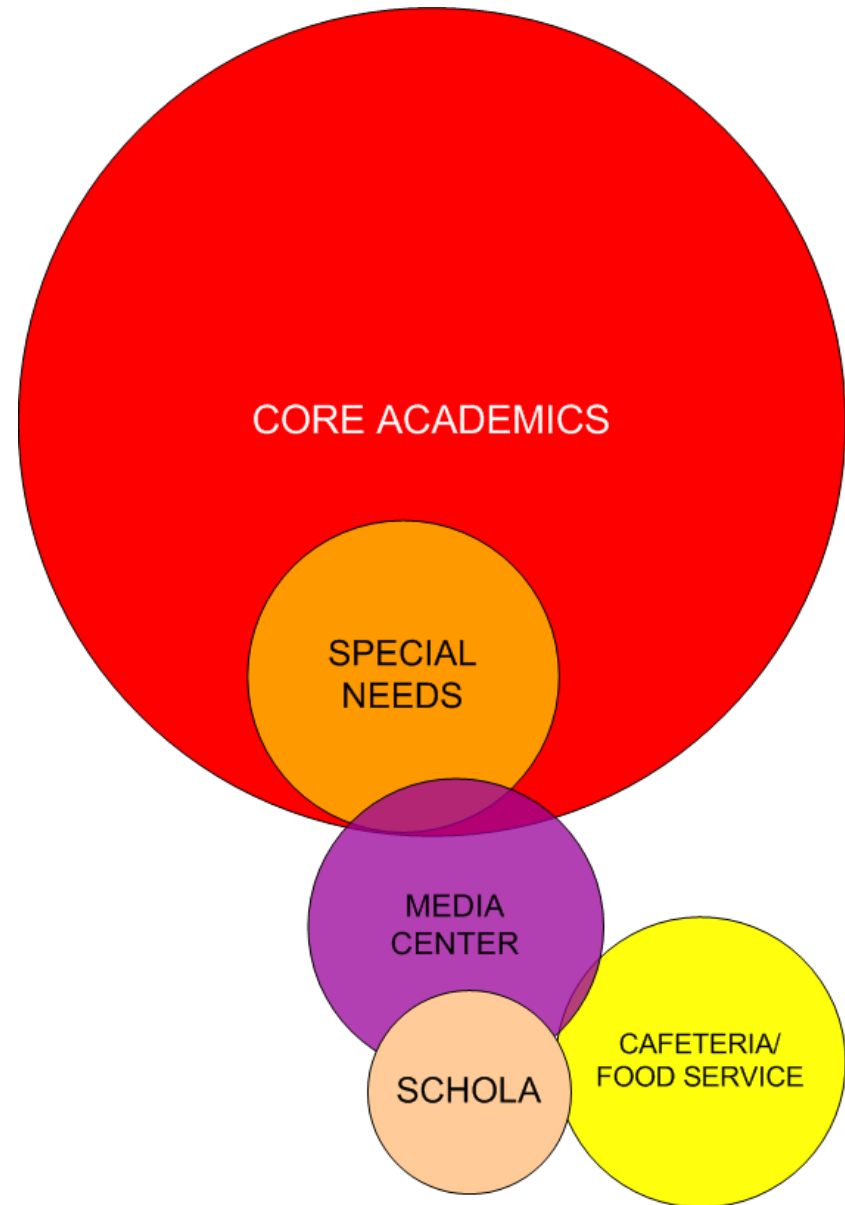
## Media Center Space Requirements

Media Center	Suggested			
	TS	Quantity	SF	Total
Reading Room/Circulation		1	4,000	4,000
Student Production Centers	In Each Learning Community			
Media Specialist Office		1	150	150
Workroom/Storage		1	400	400
Telecommunications Room		1	300	300
Hub Rooms, distributed thru Bldg		4	25	100
Project Room		3	500	1,500
Restroom		1	50	50
<b>Media Center Sub-Total</b>				<b>6,500</b>

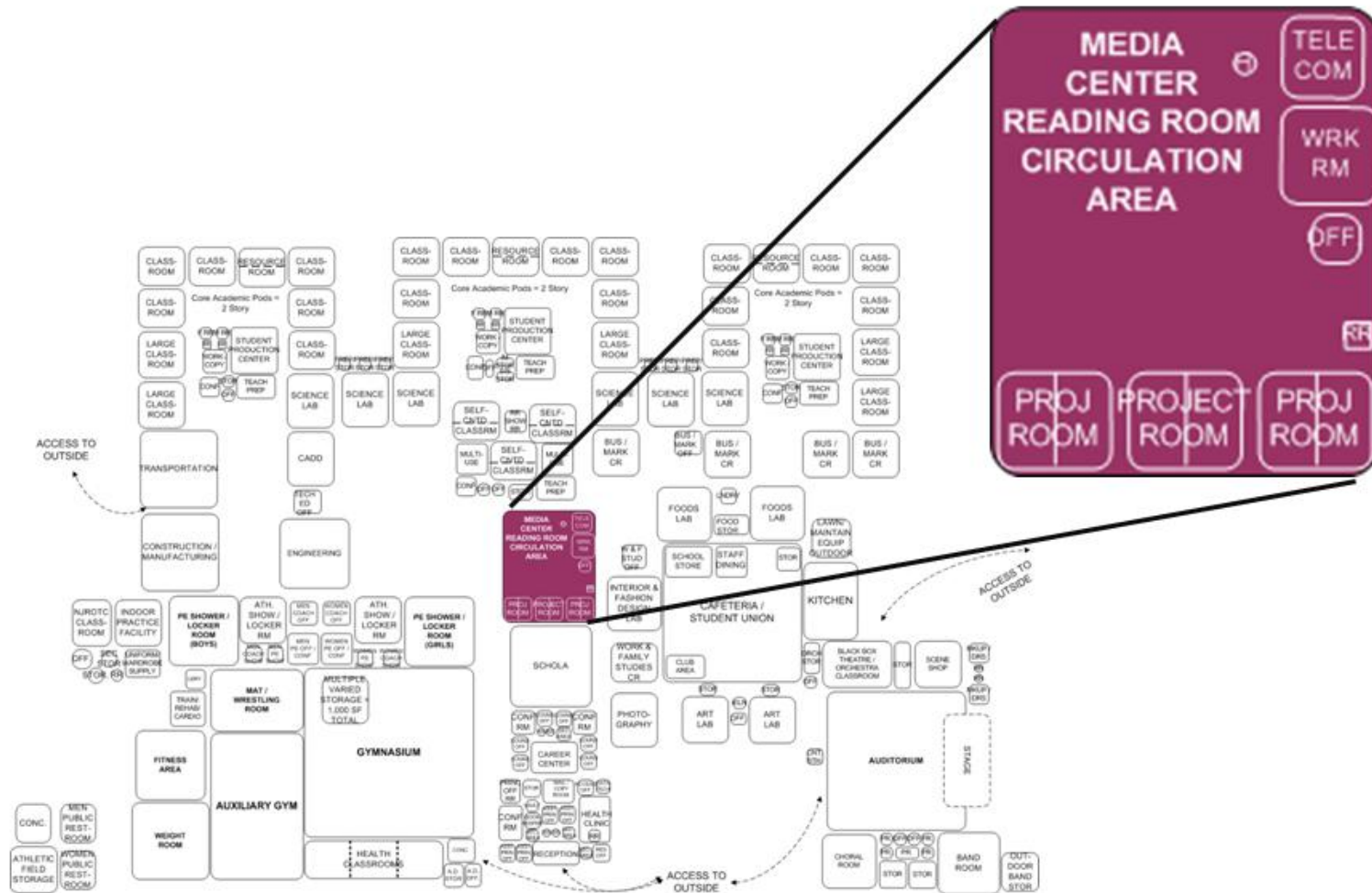
\* 6 Student Production Centers. One in each Learning Community

## Media Center Spatial Relationships

Media center spaces will be shared by each learning community. In addition to the traditional media center spaces, each learning community will also house the Student Production Centers. Members of the community will also use the media center before, after, and possibly during school hours. For this reason, the media center should have access to the outside, a separate secured entry, and should be located near the Welcome Center. The pages that follow describe in more detail each program area space listed in the table below.



## Media Center Illustration



## Media Center Space Descriptions

### Reading Room / Circulation

READING ROOM / CIRCULATION	
ACTIVITIES	PERSONS
Reading	Students
Circulation of materials and resources	Individual students for research
Whole group and small group instruction	Media specialist
Provide meeting areas	Community patrons for after school hours
Research	Volunteers
Processing new media	Teachers
	Technology Information Specialist

READING ROOM / CIRCULATION		QTY
<b>MECHANICAL</b>	No special requirements	
<b>PLUMBING</b>	No special requirements	
<b>ELECTRICAL / LIGHTING</b>	Multiple duplex electrical outlets on each wall	Yes
	Full spectrum lighting	Yes
	Ability to control specific lighting areas; dimmable	Yes
	Book theft detector	Yes
<b>TECHNOLOGY</b>	Telephone/intercom/voicemail port	Yes
	Video and data ports	Yes
	Quad outlet adjacent to each data port	Yes
	Wireless access points throughout school	Yes
	Wireless laptops with carts for battery recharging	Yes
	Electronic surveillance system in every area/room	Yes
	Interactive whiteboards, computer projection opportunities throughout the room	Yes



**Media Center Space Descriptions**
**Reading Room / Circulation**

<b>READING ROOM / CIRCULATION</b>		<b>QTY</b>
<b>FURNITURE / EQUIPMENT</b>	Casework to include: - Circulation desk and base cabinets - Periodical shelving - Bookshelves, some portable	Yes
	Portable, lightweight 4-person tables with chairs	Yes
	Soft seating for recreational reading	20
	Computer tables with chairs	Yes
	Clock	Yes
	Copier / printer (multi-function device)	1
	Printers and printer tables	Yes
	Networked computers with access to programs and online-card catalog	Yes
	Computer projector and mounted screen	2
<b>DOORS &amp; WINDOWS</b>	Door: double doors, large view panel with built in book drop	Yes
	Windows: operable, with blinds to allow controlled natural lighting	Yes
<b>SPECIAL CONSIDERATIONS</b>	Controlled natural light	Yes
	Ceiling height proportionate to room dimensions (1.5 story)	Yes
	Open flow for traffic in reference/ professional/periodicals area	Yes
	Auditory privacy	Yes
	Provide method to darken room for AV presentations	Yes
	Access to Library/Media Center during/ after school hours while maintaining security in the remainder of the school	Yes
	Carpeted flooring	Yes
	Magnetic marker boards	Yes
	Passive and active security	Yes
	Wireless, portable microphone to use when teaching	Yes
	Laptop charging stations	Yes



## Media Center Space Descriptions

### Media Specialist Office

MEDIA SPECIALIST OFFICE	
ACTIVITIES	PERSONS
Administrative work	Library/ Media Specialist
Scheduling	
Minor repairs	
Processing new books	
Materials – ordering	
Preliminary website search for curricular match – classroom presentation and bookmarking	

MEDIA SPECIALIST OFFICE		QTY
<b>MECHANICAL</b>	No special requirements	
<b>PLUMBING</b>	No special requirements	
<b>ELECTRICAL / LIGHTING</b>	Duplex electrical outlets	
<b>TECHNOLOGY</b>	Telephone/intercom/voicemail port	Yes
	Video and data ports	Yes
	Quad outlet adjacent to each data port	Yes
	Desktop and laptop	Yes
<b>FURNITURE / EQUIPMENT</b>	Casework to include: - Counter top with base and wall cabinets - File cabinets - Bookcase	Yes
	Desk and chair	2
	Networked computer	2
	Printer	1
	Magnetic marker board	Yes
	Small tack board	Yes
<b>DOORS &amp; WINDOWS</b>	Door: view panel	Yes
	Windows: ½ glass wall looking into Reading Stacks and Circulation	Yes
	Clear visibility of Library/ Media Center	Yes
	Operable blinds	Yes
<b>SPECIAL CONSIDERATIONS</b>	Auditory privacy	Yes
	Carpeted flooring	Yes
	Adjacent to Workroom/Storage & Reading Room	Yes

## Media Center Space Descriptions

### Workroom / Storage

WORKROOM / STORAGE	
ACTIVITIES	PERSONS
Preparing for presentations	Library/Media Specialist
Processing new media	Students
Repair book bindings	Teachers
	Other staff
	Community

WORKROOM / STORAGE		QTY
<b>MECHANICAL</b>	No special requirements	
<b>PLUMBING</b>	No special requirements	
<b>ELECTRICAL / LIGHTING</b>	Duplex electrical outlets on each wall	Yes
	Electrical outlets with building surge protectors as needed	Yes
	Dedicated circuits with grounds	Yes
	Dimmer for all lights	Yes
<b>TECHNOLOGY</b>	Telephone intercom/voicemail port	Yes
	Video and data ports	Yes
	Quad outlet adjacent to each data port	Yes
	Wireless network equipment	Yes
	Wireless laptops with room for 1 cart for battery recharging	Yes
<b>FURNITURE / EQUIPMENT</b>	Casework to include: - 4 tall storage cabinets with shelving, drawers, and lockable devices	Yes
	Equipment racks	Yes
	Tables, chairs, and student work desks	Yes
	Networked computers	Yes
	Printer and printer tables	Yes
	Portable video conferencing equipment	Yes
	Portable video production equipment	Yes
	Scanner	Yes
<b>DOORS &amp; WINDOWS</b>	Door: view panel	Yes
	Windows: ½ glass wall looking into Reading Stacks and Circulation	Yes
<b>SPECIAL CONSIDERATIONS</b>	Vinyl flooring	Yes

**Media Center Space Descriptions**
**Telecommunications Room**

<b>TELECOMMUNICATIONS ROOM</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Security	Media Specialist
Networking of computers	Technology Technician
Storage of licensed technology	Curriculum Resource Specialist
Recharging laptops	Other staff

<b>TELECOMMUNICATIONS ROOM</b>		<b>QTY</b>
<b>MECHANICAL</b>	HVAC to meet requirements of heat producing equipment	Yes
<b>PLUMBING</b>	No special requirements	
<b>ELECTRICAL / LIGHTING</b>	Duplex electrical outlets on each wall	Yes
	Electrical outlets with building surge protectors as needed	Yes
	Dedicated circuits with grounds	Yes
	Special electrical requirements and protection	Yes
<b>TECHNOLOGY</b>	Telephone/intercom/voicemail port	Yes
	Video and data ports	Yes
	Quad outlet adjacent to each data port	Yes
	Wireless network equipment	Yes
	Video distribution system	Yes
	See district technology specifications	Yes
<b>FURNITURE / EQUIPMENT</b>	Equipment racks	Yes
	Shelving for video/cable system	Yes
	Work tables	Yes
<b>DOORS &amp; WINDOWS</b>	Doors: lockable	Yes
	Windows: none	Yes
<b>SPECIAL CONSIDERATIONS</b>	Tile flooring	Yes
	Optional special requirements for technology consultants	Yes

## Media Center Space Descriptions

### Hub Rooms

#### HUB ROOMS, DISTRIBUTED THRU BLDG

ACTIVITIES	PERSONS
File server storage	Administration
WAN equipment	Technology personnel
Network equipment	
Telephony	

HUB ROOMS, DISTRIBUTED THRU BLDG		QTY
<b>MECHANICAL</b>	Climate controlled	Yes
<b>PLUMBING</b>	No special requirements	
<b>ELECTRICAL / LIGHTING</b>	Quad outlets on each wall	Yes
<b>TECHNOLOGY</b>	Data ports	Yes
	Wireless access points	Yes
<b>FURNITURE / EQUIPMENT</b>	Racks	Yes
	Servers	Yes
<b>DOORS &amp; WINDOWS</b>	Lockable door	Yes
	No windows	Yes
<b>SPECIAL CONSIDERATIONS</b>	No sunlight	Yes

**Media Center Space Descriptions**
**Project Room**

<b>PROJECT ROOM</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Meeting space for school community	Media Specialist
Quiet reading/study area for students	Media Assistant
	Staff
	Students
	Teachers

<b>PROJECT ROOM</b>		<b>QTY</b>
<b>MECHANICAL</b>	No special requirements	
<b>PLUMBING</b>	Hot and cold water for sink	Yes
<b>ELECTRICAL / LIGHTING</b>	Multiple duplex electrical outlets on each wall	Yes
	Quad outlet at each data port	1
	Overhead lighting [dimmable]	Yes
<b>TECHNOLOGY</b>	Telephone/intercom/voicemail port	Yes
	Video and data ports	Yes
	Quad outlet adjacent to each data port	Yes
	White board screen on whole wall	Yes
	Ceiling-mounted computer projector with retractable screen and computer	Yes
<b>FURNITURE / EQUIPMENT</b>	Counter top with sink, base, and wall cabinets	Yes
	Modular conference table	1
	Conference chairs	1/25 SF
	Credenza	Yes
	Magnetic marker board	Yes
	Retractable projection screen	1
	Tack board	Yes
	Clock	1
<b>DOORS &amp; WINDOWS</b>	Door: large view panel with optional sidelight	Yes
	Windows: to hallway with mini-blinds	Yes
<b>SPECIAL CONSIDERATIONS</b>	Carpeted flooring	Yes

**Media Center Space Descriptions**
**Restroom**

<b>RESTROOM</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Personal hygiene	Teachers
	Community
	Staff
	Administrators

<b>RESTROOM</b>		<b>QTY</b>
<b>MECHANICAL</b>	Exhaust fan	Yes
<b>PLUMBING</b>	Sink with hot and cold water	1
	Toilet (male / female)	1
<b>ELECTRICAL / LIGHTING</b>	Duplex electrical outlets on each wall	Yes
<b>TECHNOLOGY</b>	No special requirements	
<b>FURNITURE / EQUIPMENT</b>	Casework to include: - cabinet with mirror	Yes
<b>DOORS &amp; WINDOWS</b>	Door: no view panel	Yes
	Windows: none	Yes
<b>SPECIAL CONSIDERATIONS</b>	Hands-free dispensers	Yes



*Brooklyn Park MS (MD) Grimm and Parker Architects*

The pages that follow contain a list of spaces and drawings illustrating the relationship between various program areas and the individual spaces within the program area. Additionally, a description of the activities, persons to accommodate, and items to be considered is included.

## **Welcome Center / Administration**

Administration will provide the organizational and instructional leadership needed to create an atmosphere that is conducive for teaching and learning. This area includes the centralized and decentralized administrative functions of the Learning Community and student support services (counselors, support staff, etc.).

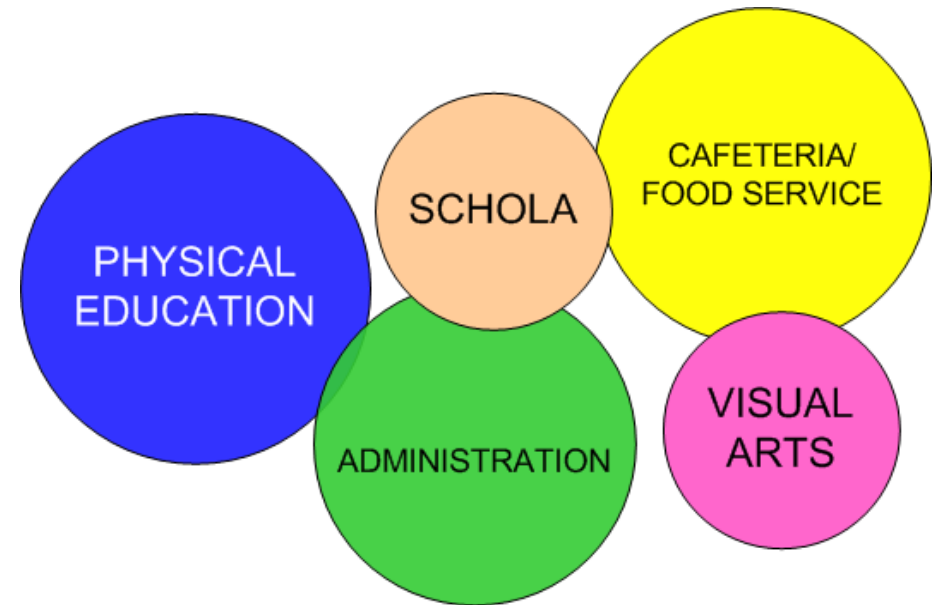


**Welcome Center / Administration Space Requirements**

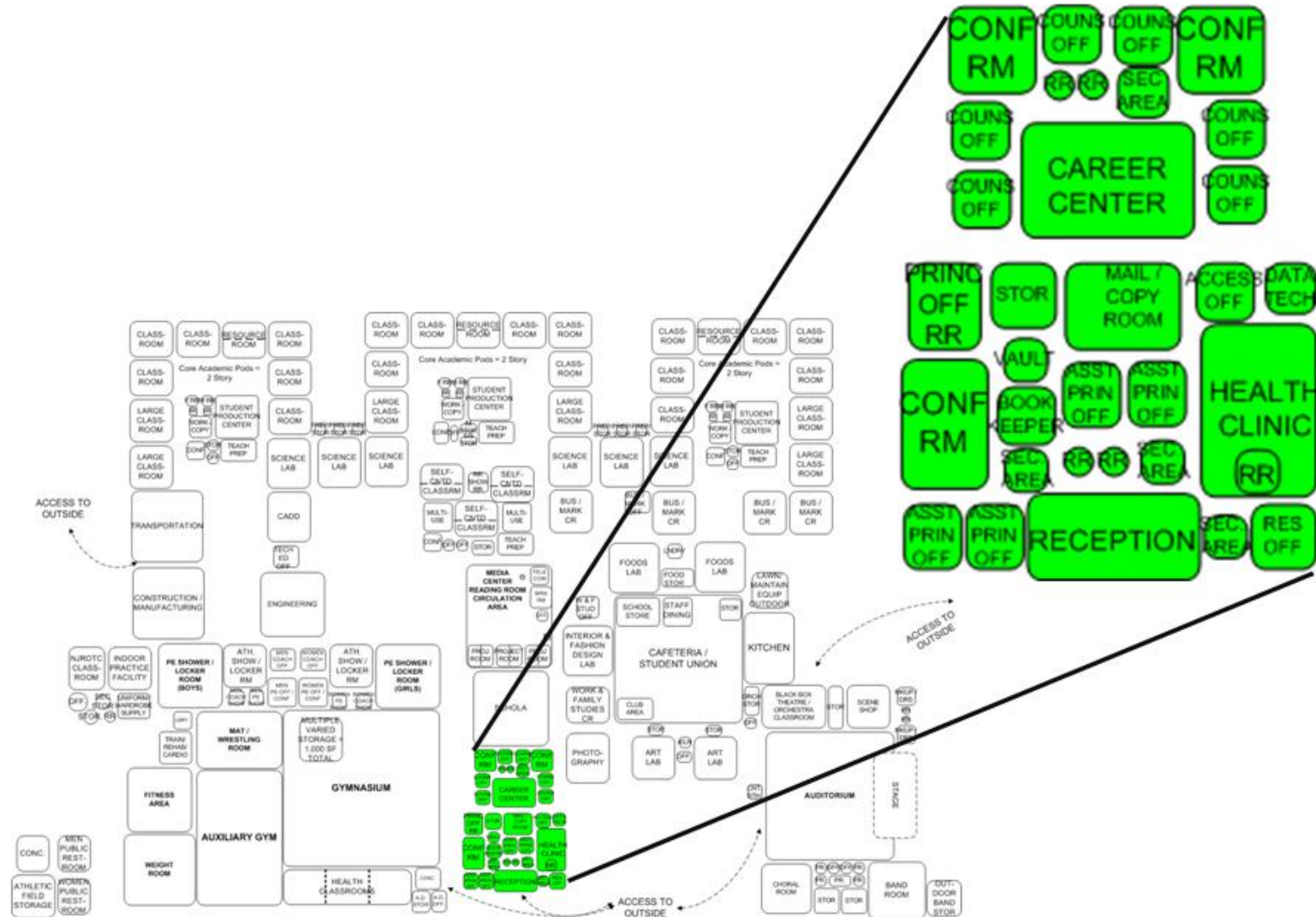
<b>Welcome Center / Administration</b>		<b>Suggested</b>		
<b>Administration</b>	<b>TS</b>	<b>Quantity</b>	<b>SF</b>	<b>Total</b>
Reception		1	600	600
Secretarial Area		3	80	240
Principal's Office/Rest Room		1	225	225
Assistant Principal's Office		4	125	500
Conference Room		1	400	400
Mail/Copy Room		1	300	300
Storage		1	150	150
Staff Restrooms		2	50	100
Resource Officer		1	150	150
Bookkeeper		1	120	120
Data Technician		1	100	100
Access Office		1	120	120
Health Clinic		1	700	700
Vault		1	80	80
<b>Guidance</b>				
Career Center		1	700	700
Counselors' Offices		6	120	720
Secretarial Area		1	100	100
Conference Room		2	250	500
Staff Restrooms		2	50	100
<b>Decentralized [See Core Academic]</b>				
School Improvement Specialist Storage [In One Pod]		1	150	150
Offices for Itinerant and Others		6	150	See Core
<b>Total</b>				<b>6,055</b>

### Welcome Center / Administration Spatial Relationships

The Welcome Center should be located near the front and center of the building. There should be some decentralized administration spaces near the Learning Community's entrance. Administration should be accessible to the community and adjacent to the Core Academic Program Area. The Welcome Center should contain the main office space off the front entrance. Guidance offices should be in the rear of the Welcome Center to maintain a connection with the Learning Communities.



## Welcome Center / Administration Illustration



## Welcome Center / Administration Space Descriptions

### Reception

RECEPTION AREA	
ACTIVITIES	PERSONS
Greeting and welcoming people and directing them to the proper location or person	School staff
Waiting area for visitors, students, and staff members	Parents
	Students

RECEPTION AREA		QTY
MECHANICAL	No special requirements	
PLUMBING	No special requirements	
ELECTRICAL / LIGHTING	Duplex electrical outlets on each wall	Yes
TECHNOLOGY	Telephone/voicemail port at each workstation	Yes
	Video and data ports for each workstation	Yes
	Quad outlet for each data port	Yes
	Mounted television monitor	Yes
	Intercom	Yes

## Welcome Center / Administration Space Descriptions

### Reception

RECEPTION AREA		QTY
FURNITURE / EQUIPMENT	Student and visitor seating	Yes
	Locking file cabinets	Yes
	Ergonomic task chairs	Yes
	Networked computers	Yes
	Information board	Yes
	Message board	Yes
	Bulletin board	Yes
	Magnetic marker board	Yes
	Clock	Yes
	Reception desk	Yes
DOORS & WINDOWS	Door: large view panel	Yes
	Windows: operable with blinds to allow controlled natural lighting	Yes
	Glass walls to work room and front hall	Yes
	Visual ability to view persons entering and leaving building	Yes
SPECIAL CONSIDERATIONS	Bright, yet soft lighting	Yes
	Inviting to visitors	Yes
	Colorful	Yes
	Secure entry for visitors [light and buzzer indicator alerts]	Yes
	Multiple Parent and Student entrances	Yes
	Vinyl tile flooring	Yes
	Kiosk	Yes

## Welcome Center / Administration Space Descriptions

### Secretarial Area

SECRETARIAL AREA	
ACTIVITIES	PERSONS
Greeting people and directing them to the proper location or person	School staff
Assisting in administrative duties	

SECRETARIAL AREA		QTY
MECHANICAL	No special requirements	
PLUMBING	No special requirements	
ELECTRICAL / LIGHTING	Duplex electrical outlets	Yes
TECHNOLOGY	Telephone/voicemail port at each workstation	Yes
	Video and data ports for each workstation	Yes
	Quad outlet for each data port	Yes
	Mounted television monitor	Yes
	Entryway buzzer	Yes
FURNITURE / EQUIPMENT	Desk/computer workstation	Yes
	Locking file cabinets	Yes
	Ergonomic task chairs	Yes
	Bulletin board	Yes
	Magnetic marker board	Yes
	Message board	Yes
	Networked computers	Yes
	Printer/copier	Yes
	Paper shredder	Yes
	Fax machine	Yes
	Clock	Yes
DOORS & WINDOWS	Windows: operable with blinds	Yes
SPECIAL CONSIDERATIONS	Bright, yet soft lighting	Yes
	Inviting to visitors	Yes
	Colorful	Yes
	Secure entry for visitors	Yes
	Enclose one secretarial area	Yes
	Carpeted flooring	Yes
	Additional storage for secretarial/bookkeeper	Yes

## Welcome Center / Administration Space Descriptions

### Principal's Office / Restroom

PRINCIPAL'S OFFICE RESTROOM	
ACTIVITIES	PERSONS
Conferences with staff and visitors	Principal
Telephone calls	Small group meetings [4-6 people]
Administrative activities	
Planning	
Computer Work	

PRINCIPAL'S OFFICE RESTROOM		QTY
<b>MECHANICAL</b>	No special requirements	
<b>PLUMBING</b>	Small restroom adjacent to office	1
<b>ELECTRICAL / LIGHTING</b>	Duplex electrical outlets on each wall	Yes
	Quad outlet at each data port	1
<b>TECHNOLOGY</b>	Telephone/intercom/voicemail port	Yes
	Video and data ports [walls and floors]	Yes
	Quad outlet adjacent to each data port	Yes
	Security monitor	Yes
	Telephone	Yes
	Intercom	Yes
<b>FURNITURE / EQUIPMENT</b>	Lockable storage cabinets	Yes
	Flexible surfaces	Yes
	Legal size file lateral drawer	Yes
	Desk with return	1
	Desk chair	1
	Guest chairs	4
	Lamps	Yes
	Bookshelves	18LF
	Marker board	4LF
	Laptop computer	1
	Printer	1
	Locking file cabinet, 4 drawer	1 to 2
	Bulletin board	4LF
	Clock	1
<b>DOORS &amp; WINDOWS</b>	Door: narrow or view panel [two entrances]	Yes
	Windows: operable, with blinds to allow for controlled natural lighting	Yes
<b>SPECIAL CONSIDERATIONS</b>	Second exit for security	Yes
	Carpeted flooring	Yes
	Access to conference room	Yes



## Welcome Center / Administration Space Descriptions

### Assistant Principal's Office

ASSISTANT PRINCIPAL'S OFFICE	
ACTIVITIES	PERSONS
Conferences with staff and visitors	Assistant Principal
Telephone calls	
Administrative activities	
Planning	
Computer Work	

ASSISTANT PRINCIPAL'S OFFICE		QTY
<b>MECHANICAL</b>	Air conditioning	Yes
<b>PLUMBING</b>	No special requirements	
<b>ELECTRICAL / LIGHTING</b>	Duplex electrical outlets on each wall	Yes
	Quad outlet at each data port	1
<b>TECHNOLOGY</b>	Telephone/intercom/voicemail port	Yes
	Video and data ports	Yes
	Quad outlet adjacent to each data port	Yes
	Telephone	1
	Intercom	Yes
<b>FURNITURE / EQUIPMENT</b>	Lockable storage cabinets	Yes
	Flexible surfaces	Yes
	Legal size file lateral drawer	Yes
	Desk with return	1
	Desk chair	1
	Guest chairs	4
	Lamps	Yes
	Bookshelves	18LF
	Marker board	4LF
	Laptop computer	1
	Printer	1
	Locking file cabinet, 4 drawer	1 to 2
	Bulletin board	4LF
	Clock	1
<b>DOORS &amp; WINDOWS</b>	Door: narrow or view panel [two entrances]	Yes
	Door: to the conference room	Yes
	Windows: operable with blinds to allow for controlled natural lighting	Yes
<b>SPECIAL CONSIDERATIONS</b>	Carpeted flooring	Yes

**Welcome Center / Administration Space Descriptions**
**Conference Room**

<b>CONFERENCE ROOM</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Small group meetings/conferences	Administrators
	Counselors
	Staff
	Parents
	Students
	Visitors

<b>CONFERENCE ROOM</b>		<b>QTY</b>
<b>MECHANICAL</b>	Air conditioning	Yes
<b>PLUMBING</b>	No special requirements	
<b>ELECTRICAL / LIGHTING</b>	Multiple duplex electrical outlets on each wall	Yes
	Quad outlet at each data port	1
	Overhead lighting [dimmable]	Yes
<b>TECHNOLOGY</b>	Telephone/intercom/voicemail port	Yes
	Video and data ports	Yes
	Television	Yes
	Quad outlet adjacent to each data port	Yes
	White board screen on whole wall	Yes
	Ceiling-mounted computer projector with retractable screen and computer	1
<b>FURNITURE / EQUIPMENT</b>	Counter top with sink, base, and wall cabinets	Yes
	Modular conference table	1
	Conference chairs	1/25 SF
	Credenza	Yes
	Magnetic marker board	Yes
	Retractable projection screen	1
	Tack board	Yes
	Bulletin board	4 LF
	Bookshelves	Yes
	Clock	1
<b>DOORS &amp; WINDOWS</b>	Door: large view panel with optional sidelight	Yes
	Windows: to hallway with mini-blinds	Yes
<b>SPECIAL CONSIDERATIONS</b>	Consideration for sound transfer	Yes
	Carpeted flooring	Yes

## Welcome Center / Administration Space Descriptions

### Mail / Copy Room

MAIL/COPY ROOM	
ACTIVITIES	PERSONS
Copying	Staff
Collating	
Preparing communications for mailing	
Laminating, book making, poster making	
General office work	
Delivery of general mail	
Storage	

MAIL/COPY ROOM		QTY
<b>MECHANICAL</b>	Air conditioning	Yes
<b>PLUMBING</b>	No special requirements	
<b>ELECTRICAL / LIGHTING</b>	Duplex electrical outlets on each wall	Yes
	Quad outlet at each data port	1
<b>TECHNOLOGY</b>	Telephone/intercom/voicemail port	Yes
	Video and data ports	Yes
	Quad outlet adjacent to each data port	Yes
	Telephone	1
	Intercom	Yes

**Welcome Center / Administration Space Descriptions**  
**Mail / Copy Room**

<b>MAIL/COPY ROOM</b>		<b>QTY</b>
<b>FURNITURE / EQUIPMENT</b>	Work tables	2
	Counter over base cabinets	16 LF
	Electric paper cutter	Yes
	Overhead cabinets	8 LF
	Chairs	2
	Computer workstations	1
	Wall shelving	8 LF
	Lockable storage cabinet	Yes
	Staff mailboxes	Yes
	Fax machine	1
	Copier w/Sorter	1
	B&W and color printer	1
	Scanner	1
	Laminating machine	1
	Paper storage, shredder, and cutter	yes
	Marker board	8 LF
	Tack board	Yes
	Bookshelves	Yes
	Clock	1
<b>DOORS &amp; WINDOWS</b>	Door: large view panel with optional sidelight	Yes
<b>SPECIAL CONSIDERATIONS</b>	Consideration for sound transfer	Yes
	Separate entrance for staff to have mailbox access	Yes
	Multiple access points	Yes
	Tile flooring	Yes

**Welcome Center / Administration Space Descriptions**
**Storage**

<b>STORAGE</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Storage	Staff

<b>STORAGE</b>		<b>QTY</b>
<b>MECHANICAL</b>	No special requirements	
<b>PLUMBING</b>	No special requirements	
<b>ELECTRICAL / LIGHTING</b>	Duplex electrical outlets on each wall	Yes
<b>TECHNOLOGY</b>	No special requirements	
<b>FURNITURE / EQUIPMENT</b>	Case work to include: - countertop with base and wall cabinets - Lockable storage cabinets - Wall shelving - Lateral files	Yes
	Fireproof storage cabinet	Yes
	Clock	Yes
<b>DOORS &amp; WINDOWS</b>	Solid, lockable door	Yes
<b>SPECIAL CONSIDERATIONS</b>	Tile flooring	Yes
	Optimize layout for storage	Yes

**Welcome Center / Administration Space Descriptions**
**Staff Restrooms**

<b>STAFF RESTROOMS</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Personal hygiene	Teachers
	Administrators

<b>STAFF RESTROOMS</b>		<b>QTY</b>
<b>MECHANICAL</b>	Exhaust fan	Yes
<b>PLUMBING</b>	Sink with hot and cold water	2
	Toilet (male / female)	2
<b>ELECTRICAL / LIGHTING</b>	Duplex electrical outlets on each wall	Yes
<b>TECHNOLOGY</b>	No special requirements	
<b>FURNITURE / EQUIPMENT</b>	Casework to include:	Yes
	- cabinet with mirror	
<b>DOORS &amp; WINDOWS</b>	Door: no view panel	Yes
	Windows: none	Yes
<b>SPECIAL CONSIDERATIONS</b>	Hands-free dispensers	Yes

## Welcome Center / Administration Space Descriptions

### Resource Officer

RESOURCE OFFICER	
ACTIVITIES	PERSONS
School security	Resource officer

RESOURCE OFFICER		QTY
<b>MECHANICAL</b>	Climate controlled	Yes
<b>PLUMBING</b>	No Special Requirements	
<b>ELECTRICAL / LIGHTING</b>	Quad outlets at each data port	Yes
<b>TECHNOLOGY</b>	Data ports	Yes
	Wireless access	Yes
<b>FURNITURE / EQUIPMENT</b>	Security monitoring system	Yes
	Desk	Yes
	Chairs	4
<b>DOORS &amp; WINDOWS</b>	Door with view panel	Yes
	Windows with operable blinds	Yes
<b>SPECIAL CONSIDERATIONS</b>	Securable room	Yes
	Lockable storage	Yes



**Welcome Center / Administration Space Descriptions**
**Bookkeeper**

<b>BOOKKEEPER</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
General journal entry	School staff

<b>BOOKKEEPER</b>		<b>QTY</b>
<b>MECHANICAL</b>	Air conditioning	Yes
<b>PLUMBING</b>	No special requirements	
<b>ELECTRICAL / LIGHTING</b>	Duplex electrical outlets on each wall	Yes
	Quad outlet at each data port	1
<b>TECHNOLOGY</b>	Telephone/intercom/voicemail port	Yes
	Video and data ports	Yes
	Quad outlet adjacent to each data port	Yes
	Telephone	1
	Intercom	Yes
<b>FURNITURE / EQUIPMENT</b>	Lockable storage cabinets	Yes
	Flexible surfaces	Yes
	Legal size file lateral drawer	Yes
	Desk with return	1
	Desk chair	1
	Guest chairs	2
	Lamps	Yes
	Bookshelves	18LF
	Marker board	4LF
	Laptop computer	1
	Printer	1
	Locking file cabinet, 4 drawer	1 to 2
	Bulletin board	4LF
	Clock	1
<b>DOORS &amp; WINDOWS</b>	Door: view panel	Yes
	Windows: no special considerations	
<b>SPECIAL CONSIDERATIONS</b>	Bright, soft lighting	Yes
	Carpeted flooring	Yes

**Welcome Center / Administration Space Descriptions**
**Data Technician**

<b>DATA TECHNICIAN</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Maintain technology infrastructure	School staff

<b>DATA TECHNICIAN</b>		<b>QTY</b>
<b>MECHANICAL</b>	Air conditioning	Yes
<b>PLUMBING</b>	No special requirements	
<b>ELECTRICAL / LIGHTING</b>	Duplex electrical outlets on each wall	Yes
	Quad outlet at each data port	1
<b>TECHNOLOGY</b>	Telephone/intercom/voicemail port	Yes
	Video and data ports	Yes
	Quad outlet adjacent to each data port	Yes
	Telephone	1
	Intercom	Yes
<b>FURNITURE / EQUIPMENT</b>	Lockable storage cabinets	Yes
	Flexible surfaces	Yes
	Legal size file lateral drawer	Yes
	Desk with return	1
	Desk chair	1
	Guest chairs	2
	Lamps	Yes
	Bookshelves	18LF
	Marker board	4LF
	Laptop computer	1
	Printer	1
	Locking file cabinet, 4 drawer	1 to 2
	Bulletin board	4LF
	Clock	1
<b>DOORS &amp; WINDOWS</b>	Door: view panel	Yes
	Windows: no special considerations	
<b>SPECIAL CONSIDERATIONS</b>	Bright, soft lighting	Yes
	Carpeted flooring	Yes

**Welcome Center / Administration Space Descriptions**
**Access Office**

<b>ACCESS OFFICE</b>		
<b>ACTIVITIES</b>	<b>PERSONS</b>	
Meeting and work space	School staff	
<b>ACCESS OFFICE</b>		<b>QTY</b>
<b>MECHANICAL</b>	Air conditioning	Yes
<b>PLUMBING</b>	No special requirements	
<b>ELECTRICAL / LIGHTING</b>	Duplex electrical outlets on each wall	Yes
	Quad outlet at each data port	1
<b>TECHNOLOGY</b>	Telephone/intercom/voicemail port	Yes
	Video and data ports	Yes
	Quad outlet adjacent to each data port	Yes
	Telephone	1
	Intercom	Yes
<b>FURNITURE / EQUIPMENT</b>	Lockable storage cabinets	Yes
	Flexible surfaces	Yes
	Legal size file lateral drawer	Yes
	Desk with return	1
	Desk chair	1
	Guest chairs	2
	Lamps	Yes
	Bookshelves	18LF
	Marker board	4LF
	Laptop computer	1
	Printer	1
	Locking file cabinet, 4 drawer	1 to 2
	Bulletin board	4LF
	Clock	1
<b>DOORS &amp; WINDOWS</b>	Door: view panel	Yes
	Windows: no special considerations	
<b>SPECIAL CONSIDERATIONS</b>	Bright, soft lighting	Yes
	Carpeted flooring	Yes

## Welcome Center / Administration Space Descriptions

### Health Clinic

HEALTH CLINIC	
ACTIVITIES	PERSONS
Treating students with illnesses	School nurse
Preventative health measures	School staff
	Parents
	Students

HEALTH CLINIC		QTY
<b>MECHANICAL</b>	Exhaust fan	Yes
<b>PLUMBING</b>	Restrooms	2
	Sinks with hot and cold water	2
	One sink should be larger than standard to accommodate eye flush adapted faucet	Yes
<b>ELECTRICAL / LIGHTING</b>	Duplex electrical outlets on each wall	Yes
<b>TECHNOLOGY</b>	Telephone/intercom/voicemail port	Yes
	Video and data ports	Yes
	Quad outlet adjacent to each data port	Yes

**Welcome Center / Administration Space Descriptions**  
**Health Clinic**

<b>HEALTH CLINIC</b>		<b>QTY</b>
<b>FURNITURE / EQUIPMENT</b>	Casework to include: - Countertop with sink - Base and wall cabinets - Wardrobe cabinet - Locking file cabinet [minimum of 3] - Student clothing storage with drawers - Locking medicine cabinets	Yes
	Desk and chair	Yes
	Side chairs and table	Yes
	Fax and copy machine	Yes
	Cots	Yes
	Rolling carts	Yes
	Lamps	Yes
	Refrigerator	Yes
	Networked computer	Yes
	Magnetic marker board	Yes
	Tack board	Yes
	Cubicle curtains with track	Yes
	Clock	Yes
	Medical sharps waste disposal	Yes
	Defibrillator	Yes
	Biohazard disposable can	Yes
<b>DOORS &amp; WINDOWS</b>	Door: narrow or view panel with blinds	Yes
	Windows: with blinds for privacy	Yes
	Window between office clinic	Yes
<b>SPECIAL CONSIDERATIONS</b>	Auditory/visual privacy	Yes
	Health clinic to include restroom, nurse's office, exam room	Yes
	Tile flooring	Yes

**Welcome Center / Administration Space Descriptions**
**Vault**

<b>VAULT</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Storage	Staff

<b>VAULT</b>	<b>QTY</b>
<b>MECHANICAL</b>	No special requirements
<b>PLUMBING</b>	No special requirements
<b>ELECTRICAL / LIGHTING</b>	Duplex electrical outlets on each wall
<b>TECHNOLOGY</b>	No special requirements
<b>FURNITURE / EQUIPMENT</b>	Fireproof storage cabinet
<b>DOORS &amp; WINDOWS</b>	Solid, lockable door
<b>SPECIAL CONSIDERATIONS</b>	Tile flooring
	Optimize layout for storage

**Welcome Center / Administration Space Descriptions**
**Career Center**

<b>CAREER CENTER</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Research colleges and careers	Media Specialist
	Guidance Counselor
	Media Assistant
	Students

<b>CAREER CENTER</b>		<b>QTY</b>
<b>MECHANICAL</b>	No special requirements	
<b>PLUMBING</b>	No special requirements	
<b>ELECTRICAL / LIGHTING</b>	Duplex electrical outlets on each wall	Yes
<b>TECHNOLOGY</b>	Telephone/intercom/voicemail port	Yes
	Wireless lab cart	Yes
	Video and data ports	Yes
	Quad outlet adjacent to each data port	Yes
<b>FURNITURE / EQUIPMENT</b>	Conference table	Yes
	Conference chairs	Yes
	Side chairs	Yes
	Magnetic marker board	Yes
	Tack board	Yes
	Clock	Yes
	DVD compatible projection or flat screen	Yes
	Lockable cabinets	Yes
	Pamphlet rack	Yes
<b>DOORS &amp; WINDOWS</b>	Door: solid	Yes
	Windows: large view panel	Yes
<b>SPECIAL CONSIDERATIONS</b>	Carpet flooring	Yes



## Welcome Center / Administration Space Descriptions

### Counselors' Offices

COUNSELORS' OFFICES	
ACTIVITIES	PERSONS
Counseling of students with concerns	Counselors
Conferencing with parents, students, and staff	School staff
	Parents
	Students
	Visitors

COUNSELORS' OFFICES		QTY
<b>MECHANICAL</b>	Air conditioning	Yes
<b>PLUMBING</b>	No special requirements	
<b>ELECTRICAL / LIGHTING</b>	Duplex electrical outlets on each wall	Yes
	Quad outlet at each data port	1
<b>TECHNOLOGY</b>	Telephone/intercom/voicemail port	Yes
	Video and data ports	Yes
	Quad outlet adjacent to each data port	Yes
	Telephone	1
	Intercom	Yes

## Welcome Center / Administration Space Descriptions

### Counselors' Offices

COUNSELORS' OFFICES		QTY
FURNITURE / EQUIPMENT	Lockable storage cabinets	Yes
	Flexible surfaces	Yes
	Legal size file lateral drawer	Yes
	Desk with return	1
	Desk chair	1
	Guest chairs	4
	Storage closet/wardrobe	Yes
	Lamps	Yes
	Bookshelves	18LF
	Marker board	4LF
	Laptop computer	1
	Printer	1
	Locking file cabinet, 4 drawer	1 to 2
	Bulletin board	4LF
	Clock	1
DOORS & WINDOWS	Door: narrow or view panel with blinds	Yes
	Door: to the conference room	Yes
	Windows: no specific requirements	Yes
SPECIAL CONSIDERATIONS	Auditory/visual privacy	Yes
	Carpeted flooring	Yes

## Welcome Center / Administration Space Descriptions

### School Improvement Specialist Storage

SCHOOL IMPROVEMENT SPECIALIST STORAGE	
ACTIVITIES	PERSONS
Storage	School Improvement Specialist

SCHOOL IMPROVEMENT SPECIALIST STORAGE		QTY
MECHANICAL	No special requirements	
PLUMBING	No special requirements	
ELECTRICAL / LIGHTING	Duplex electrical outlets on each wall	Yes
TECHNOLOGY	No special requirements	
FURNITURE / EQUIPMENT	Fireproof storage cabinets	Yes
DOORS & WINDOWS	Solid, lockable door	Yes
SPECIAL CONSIDERATIONS	Tile flooring	Yes
	Optimize layout for storage	Yes



## Cafeteria/Food Services

The Cafeteria / Student Union will serve as a center where students, staff, and visitors can obtain a quick, desirable, economical snack or meal. The facility should be comfortable, inviting, and cheerful and can also serve as a banquet facility, meeting room, or hold other after school activities.

The Cafeteria/Kitchen area will consist of a large student eating area, kitchen where meals are prepared, storage areas, and an area for trucks delivering supplies for food service.

The physical layout should permit efficient movement and storage of tables and chairs so that the facility may be quickly converted from a dining area to large group meeting/instruction spaces and a large open area for dances and other reception activities.

The Cafeteria should be available for public use with:

- Parking nearby
- Easy access
- Ability to be separated
- Ability to secure
- Restroom availability
- Serving lines organized for efficient traffic flow and multi-item service

As the main dining area will likely serve as a meeting area and location of social events after school hours, it should be near adequate public parking and have the ability to be closed off from areas of the school that may need to avoid unsupervised foot traffic during certain times.

The purpose of the Cafeteria / Student Union is to provide a pleasant atmosphere for students to eat meals and to provide a flexible meeting space for groups if needed.

The pages that follow contain a list of spaces and drawings illustrating the relationship between various program areas, and the individual spaces within the program area. Additionally, a description of the activities, persons to accommodate, and items to be considered is included.

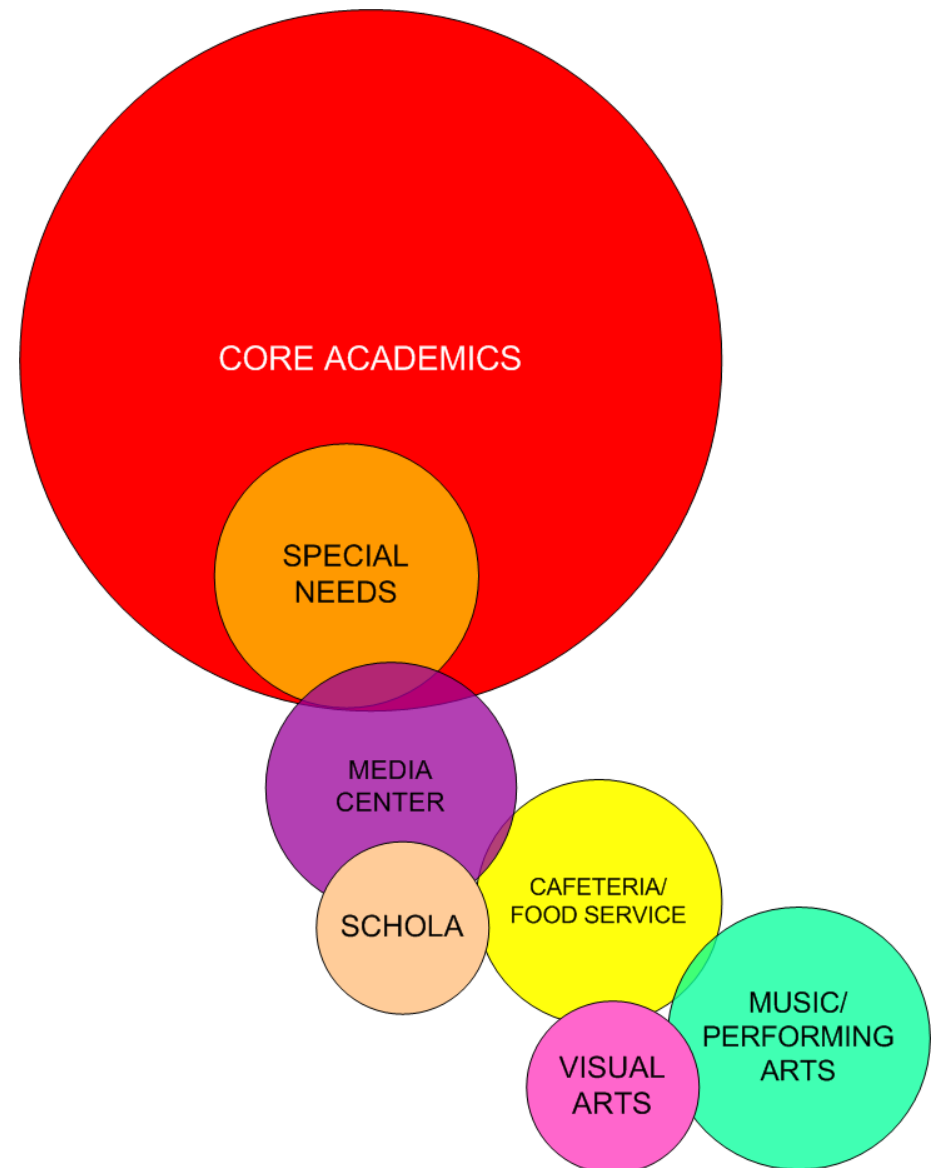
## Cafeteria / Food Services Space Requirements

Cafeteria / Food Service	Suggested			
	TS	Quantity	SF	Total
Kitchen		1	3,500	3,500
Preparation Area				
Serving Area				
Dry Food Storage				
Cooler/Freezer				
Ware Washing				
Kitchen Mgr Office				
Restroom				
Lockers				
Cafeteria / Student Union		1	8,000	8,000
Table & Chair Storage		1	300	300
Staff Dining w/Vending		1	600	600
School Store		1	700	700
Club Areas		1	500	500
<b>Food Service Sub-Total</b>				<b>13,600</b>

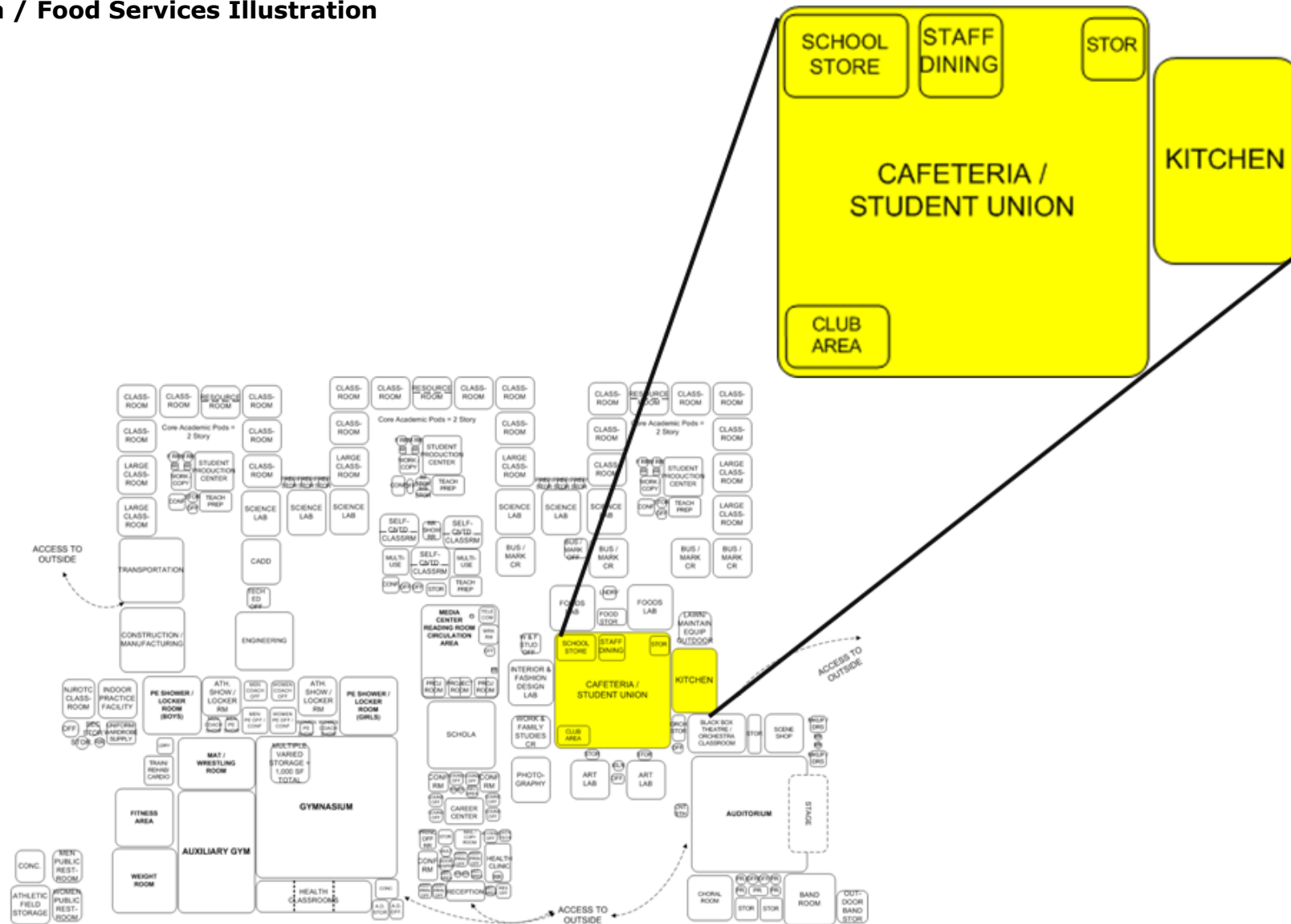
## Cafeteria / Food Services Spatial Relationships

Cafeteria / Food Services spaces will be shared by each learning community. Members of the community will use the cafeteria / student union before, after, and possibly during school hours. For this reason, there should be access to the outside, a separate secured entry, and a location near the loading dock. The pages that follow describe in more detail each program area space listed in the space requirements table above.

The Cafeteria / Student Union should be located adjacent to the Food Service Area, the Custodial & Maintenance Area, and the Auditorium. The Cafeteria / Student Union should also be located in an area that is easily accessible to community members.



## Cafeteria / Food Services Illustration





**Cafeteria / Food Service Space Descriptions:**
**Preparation Area**

<b>PREPARATION AREA</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Warming & cooking food	Food service personnel

<b>PREPARATION AREA</b>		<b>QTY</b>
<b>MECHANICAL</b>	65-70 Degrees year round temperature	Yes
	MUA unit capable of heating and cooling [evaporative or air conditioning]	Yes
	Mechanical [cable operated] gas shut-off valve for hood fire suppression system	Yes
	Surface mounted gas manifold under hood for cooking equipment gas supply	Yes
<b>PLUMBING</b>	Multiple sinks	Yes
	Waste disposal	Yes
	Trough drain at cook line	Yes
	Floor sinks and drains	Yes
	Garbage disposals & pre-rinse	Yes
<b>ELECTRICAL / LIGHTING</b>	Duplex electrical outlets on each wall	Yes
	Other electric based on equipment requirements	Yes
<b>TECHNOLOGY</b>	Data ports	Yes
	Telephone	Yes

**Cafeteria / Food Service Space Descriptions:**  
**Preparation Area**

<b>PREPARATION AREA</b>		<b>QTY</b>
<b>FURNITURE / EQUIPMENT</b>	Special equipment needs for food preparation to be determined by Kitchen Consultant	Yes
<b>DOORS &amp; WINDOWS</b>	Door: view panel	Yes
	Windows: none	Yes
	Security system	Yes
	Double doors to Storage, Loading/Receiving, and Serving Area	Yes
<b>SPECIAL CONSIDERATIONS</b>	Quarry tile flooring	Yes
	Locate near dock	Yes
	Grease traps	Yes
	Acoustical separation between kitchen and multi-purpose room so functions can occur in the multi-purpose room while kitchen is in use	Yes

**Cafeteria / Food Service Space Descriptions:**  
**Serving Area**

<b>SERVING AREA</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Serving food	Food personnel
Serving lines or distributed food serving	Student workers
	Students -- multiple serving lines

<b>SERVING AREA</b>		<b>QTY</b>
<b>MECHANICAL</b>	65 - 70 Degrees year round temperature	Yes
<b>PLUMBING</b>	Floor drains	Yes
<b>ELECTRICAL / LIGHTING</b>	Duplex electrical outlets on each wall	Yes
	Cord drops for serving equipment and POS equipment – dedicated circuits	Yes
<b>TECHNOLOGY</b>	Cash register/computers for food check-out	Yes
	Multi-lane POS system	Yes
	Data drops from T-bar ceiling	Yes
<b>FURNITURE / EQUIPMENT</b>	Point-of-sale cash registers	Yes
	Other special equipment needs for food serving	Yes
<b>DOORS &amp; WINDOWS</b>	Door: view panel	Yes
	Security system	Yes
	Serving windows to outdoor dining areas	Yes
<b>SPECIAL CONSIDERATIONS</b>	Tile flooring	Yes
	Locate near dock and kitchen	Yes
	Special opening to enable multiple serving areas for community use	Yes

**Cafeteria / Food Service Space Descriptions:**
**Dry Food Storage**

<b>DRY FOOD STORAGE</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Storage for dry food and paper	Food service personnel

<b>DRY FOOD STORAGE</b>		<b>QTY</b>
<b>MECHANICAL</b>	65-70 Degrees year round	Yes
<b>PLUMBING</b>	No special requirements	
<b>ELECTRICAL / LIGHTING</b>	Duplex electrical outlets on each wall	Yes
<b>TECHNOLOGY</b>	No special requirements	
<b>FURNITURE / EQUIPMENT</b>	Rust resistant 24" deep shelving and dunnage racks	Yes
	Other special equipment needs for food storage	Yes
	Shelving to maximize storage	Yes
<b>DOORS &amp; WINDOWS</b>	Windows: none	Yes
	Door: view panel	Yes
	Security system – locks keyed for food service personnel access only	Yes
	Double doors to kitchen	Yes
	Double doors to Receiving	Yes
<b>SPECIAL CONSIDERATIONS</b>	Tile flooring	Yes

**Cafeteria / Food Service Space Descriptions:**
**Cooler / Freezer**

<b>COOLER / FREEZER</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Storage	Food service personnel

<b>COOLER / FREEZER</b>		<b>QTY</b>
<b>MECHANICAL</b>	See manufacturer's specifications	Yes
	Separate condensing units for each box [cooler and freezer]	Yes
<b>PLUMBING</b>	Freezer-heated condensate	Yes
	Hose bib	Yes
<b>ELECTRICAL / LIGHTING</b>	Duplex electrical outlets on each wall	Yes
	Coordinate power requirements with equipment manufacturer	Yes
	Fluorescent lighting	Yes
	Emergency lighting	Yes
<b>TECHNOLOGY</b>	Radio controlled temperature monitoring or similar devise	Yes
	Locate remote, hard wired	Yes
<b>FURNITURE / EQUIPMENT</b>	Walk-in freezer and cooler	Yes
	Rust-proof shelving, 18' deep with additional 24" deep dunnage racks in freezer and refrigerator	Yes
	Open wall space for utility racks	Yes
<b>DOORS &amp; WINDOWS</b>	Door: view panel, safety latch	Yes
	Gravity closing hinges	Yes
	Snubber-type door closer	Yes
<b>SPECIAL CONSIDERATIONS</b>	Quarry tile or sealed concrete flooring	Yes
	Located next to delivery door, close to supervisor's office	Yes
	Floor drain	Yes

**Cafeteria / Food Service Space Descriptions:**
**Ware Washing**

<b>WARE WASHING</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Washing of preparation equipment	Food service personnel
Sanitizing	

<b>WARE WASHING</b>		<b>QTY</b>
<b>MECHANICAL</b>	Exhaust fan over utensil sink	Yes
<b>PLUMBING</b>	Large sinks and sprayers [pre-rinse]	Yes
	Garbage disposal	Yes
	Floor drain	Yes
<b>ELECTRICAL / LIGHTING</b>	Duplex electrical outlets on each wall	Yes
	Coordinate power requirements with	Yes
	Fluorescent lighting	Yes
<b>TECHNOLOGY</b>	No special requirements	
<b>FURNITURE / EQUIPMENT</b>	Rust-proof shelving	Yes
	Drying racks	Yes
<b>DOORS &amp; WINDOWS</b>	Door: no special requirements	Yes
	Windows: none	Yes
<b>SPECIAL CONSIDERATIONS</b>	Tile flooring	Yes
	Rubber flooring	Yes

**Cafeteria / Food Service Space Descriptions:**  
**Kitchen Manager Office**

<b>KITCHEN MANAGER'S OFFICE</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Scheduling	Food service manager
Staff evaluations/discipline/small meetings	
Customer Service	
Ordering Supplies	

<b>KITCHEN MANAGER'S OFFICE</b>		<b>QTY</b>
<b>MECHANICAL</b>	Air conditioning	Yes
<b>PLUMBING</b>	No special requirements	
<b>ELECTRICAL / LIGHTING</b>	Quad electrical outlets on each wall	Yes
	Overhead lighting	Yes
<b>TECHNOLOGY</b>	Access to voice, video, data ports, and electrical outlets	Yes
	Quad outlets adjacent to each data port	Yes
	Telephone	Yes
	Cable access to IDF	Yes



**Cafeteria / Food Service Space Descriptions:**  
**Kitchen Manager Office**

<b>KITCHEN MANAGER'S OFFICE</b>		<b>QTY</b>
<b>FURNITURE / EQUIPMENT</b>	Lockable storage cabinets	Yes
	Flexible surfaces	Yes
	Portable work stations	Yes
	Desk with return	1
	Desk chair	1
	Credenza	1
	Bookshelves	18LF
	Marker board	4LF
	Laptop computer	1
	Printer	1
	File cabinet, 4 drawer	1 to 2
	Bulletin board	4LF
	Safe	Yes
	Wall-mounted bin boxes above desk/work surface	Yes
	First-Aid kit	Yes
	Clock	1
<b>DOORS &amp; WINDOWS</b>	Door: large view panel	Yes
	Windows: operable with ½ glass looking into serving area, food prep area, and receiving/storage areas	Yes
	Door keyed for food service personnel access only	Yes
	Security system	Yes
<b>SPECIAL CONSIDERATIONS</b>	Located to view both delivery and production areas	Yes

**Cafeteria / Food Service Space Descriptions:**
**Restroom**

<b>RESTROOMS</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Personal hygiene	Food service personnel

<b>RESTROOMS</b>		<b>QTY</b>
<b>MECHANICAL</b>	Exhaust fan	Yes
<b>PLUMBING</b>	Sink with hot and cold water	Yes
	Toilet	Yes
<b>ELECTRICAL / LIGHTING</b>	Duplex electrical outlets on each wall	Yes
<b>TECHNOLOGY</b>	No special requirements	
<b>FURNITURE / EQUIPMENT</b>	Casework to include: - cabinet with mirror	Yes
	Soap dispenser	Yes
	Towel dispenser	Yes
<b>DOORS &amp; WINDOWS</b>	Door: no view panel	Yes
	Windows: none	Yes
<b>SPECIAL CONSIDERATIONS</b>	Adjacent to locker room	Yes

**Cafeteria / Food Service Space Descriptions:**
**Lockers**

<b>LOCKERS</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Food service personnel storage	Food service personnel

<b>LOCKERS</b>		<b>QTY</b>
<b>MECHANICAL</b>	Ventilation	Yes
<b>PLUMBING</b>	No special requirements	
<b>ELECTRICAL / LIGHTING</b>	Duplex electrical outlets on each wall	Yes
<b>TECHNOLOGY</b>	No special requirements	
<b>FURNITURE / EQUIPMENT</b>	Lockers – sloped tops	Yes
	Benches	Yes
	Locking storage cabinet	Yes
<b>DOORS &amp; WINDOWS</b>	Door: no special requirements	Yes
	Windows: none	Yes
<b>SPECIAL CONSIDERATIONS</b>	Adjacent to food service restroom	Yes

**Cafeteria / Food Service Space Descriptions:**  
**Cafeteria / Student Union**

<b>CAFETERIA / STUDENT UNION</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Student dining	Staff members
School and community program, meetings, and activities	Community – primarily after school hours
Performances	Parents
	Students

<b>CAFETERIA / STUDENT UNION</b>		<b>QTY</b>
<b>MECHANICAL</b>	No special requirements	
<b>PLUMBING</b>	Drinking fountain	Yes
<b>ELECTRICAL / LIGHTING</b>	Duplex electrical outlets on each wall	Yes
	Adequate sound / lighting system for multiple use of facility including audience & staging ca	Yes
	Variable lighting levels	Yes
	Special stage lighting or performances	Yes
<b>TECHNOLOGY</b>	Telephone/intercom/voicemail port	Yes
	Video and data ports	Yes
	Quad outlet adjacent to each data port	Yes
	Audio enhancement system	Yes
	Sound system with portable or wireless microphones	Yes
	POS capability for remote serving carts for rainy days	Yes

**Cafeteria / Food Service Space Descriptions:**
**Cafeteria / Student Union**

<b>CAFETERIA / STUDENT UNION</b>		<b>QTY</b>
<b>FURNITURE / EQUIPMENT</b>	Round, fold up tables	Yes
	Stackable, free standing chairs and chair dolly	Yes
	CD/DVD player	Yes
	Equipment rack in control closet	Yes
	Computer projector	Yes
	Large, retractable projection screen	Yes
<b>DOORS &amp; WINDOWS</b>	Door: double doors with access to outside courtyard/dining area	Yes
	Door: double doors to table storage	Yes
	Windows: operable, with blinds to allow for controlled natural lighting	Yes
	Room darkening capabilities	Yes
<b>SPECIAL CONSIDERATIONS</b>	Good sight lines to all areas of the room for supervision	Yes
	Acoustic sound panels	Yes
	Control closet with light and sound control box	Yes
	Tile flooring with various colors to show table placement	Yes
	Special consideration needs to be given to multiuse of cafeteria [i.e., auditoria, cafetorium, etc.]; this is to be a presentation area as well as dining area; this will have a major impact on ceiling heights, windows, wall treatment, lighting, etc.	Yes

**Cafeteria / Food Service Space Descriptions:**
**Table & Chair Storage**

<b>TABLE &amp; CHAIR STORAGE</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Storage	Custodial/Maintenance staff

<b>TABLE &amp; CHAIR STORAGE</b>		<b>QTY</b>
<b>MECHANICAL</b>	No special requirements	
<b>PLUMBING</b>	Sink with hot & cold water	Yes
<b>ELECTRICAL / LIGHTING</b>	Duplex electrical outlets on each wall	Yes
<b>TECHNOLOGY</b>	No special requirements	
<b>FURNITURE / EQUIPMENT</b>	Table and chair racks	Yes
	Shelving above tables and chairs	Yes
<b>DOORS &amp; WINDOWS</b>	Door: solid, double doors to cafeteria	Yes
	Windows: none	Yes
<b>SPECIAL CONSIDERATIONS</b>	No special requirements	

**Cafeteria / Food Service Space Descriptions:**  
**Staff Dining with Vending**

<b>STAFF DINING WITH VENDING</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Staff dining	Faculty
	Staff

<b>STAFF DINING WITH VENDING</b>		<b>QTY</b>
<b>MECHANICAL</b>	No special requirements	
<b>PLUMBING</b>	Counter and sink	Yes
<b>ELECTRICAL / LIGHTING</b>	Duplex electrical outlets on each wall	Yes
<b>TECHNOLOGY</b>	Telephone/intercom/voicemail port	Yes
	Video and data ports	Yes
	Quad outlet adjacent to each data port	Yes
<b>FURNITURE / EQUIPMENT</b>	Casework to include: - Countertop with sink, base, and wall cabinets	Yes
	Microwave oven	Yes
	Table and chairs	Yes
	Magnetic marker board	Yes
	Tackboard	Yes
<b>DOORS &amp; WINDOWS</b>	Door: view panel	Yes
	Windows: operable, allow controlled natural lighting	Yes
<b>SPECIAL CONSIDERATIONS</b>	Carpet and partial vinyl tile flooring	Yes
	Lounge capability	Yes
	Vending machines	Yes



**Cafeteria / Food Service Space Descriptions:**  
**Teacher Lounge with Kitchenette**
**TEACHER LOUNGE WITH KITCHENETTE**

ACTIVITIES	PERSONS
Dining Area	Staff members
Serving Area	
Small meetings	
Mini Coffee Bar	

TEACHER LOUNGE WITH KITCHENETTE		QTY
<b>MECHANICAL</b>	No special requirements	
<b>PLUMBING</b>	Hand wash sink/sanitizing station	Yes
<b>ELECTRICAL / LIGHTING</b>	Duplex electrical outlets on each wall	Yes
<b>TECHNOLOGY</b>	Telephones/intercom/voicemail port	Yes
	Video and data ports	Yes
	Quad outlet adjacent to each data port	Yes
	Mounted television monitor	Yes
	Sound system	Yes
<b>FURNITURE / EQUIPMENT</b>	Casework to include countertop with sink, base, and wall cabinets	Yes
	Microwave oven	Yes
	Refrigerator with icemaker	Yes
	Table and chairs	Yes
	Magnetic marker board	Yes
	Tack board	Yes
	Telephone	Yes
	Combination of tables, chairs, and informal furniture such as couches and over-stuffed chairs	Yes
	Workstations for staff to access computers, e-mail, etc.	Yes
<b>DOORS &amp; WINDOWS</b>	Windows	Yes
	Outside courtyard access	Yes
<b>SPECIAL CONSIDERATIONS</b>	Vinyl tile or carpet flooring	Yes

**Cafeteria / Food Service Space Descriptions:**  
**School Store**

<b>SCHOOL STORE</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Sell school merchandise and supplies	Students
	Staff

<b>SCHOOL STORE</b>		<b>QTY</b>
<b>MECHANICAL</b>	No Special Requirements	
<b>PLUMBING</b>	No Special Requirements	
<b>ELECTRICAL / LIGHTING</b>	Quad outlets at each data port	Yes
<b>TECHNOLOGY</b>	Data ports	Yes
	Computer	Yes
<b>FURNITURE / EQUIPMENT</b>	Slat wall displays	Yes
	Lockable storage closet	Yes
	Chairs	2
	Networked printer	Yes
	Free Standing displays	Yes
	Counter top with lockable roll up window for sales	Yes
	Shelving	Yes
<b>DOORS &amp; WINDOWS</b>	Door with view panel	Yes
<b>SPECIAL CONSIDERATIONS</b>	Equipment for financial transactions	Yes

**Cafeteria / Food Service Space Descriptions:**  
**Club Areas**

<b>CLUB AREAS</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Club meetings	Students
	Club Advisors

<b>CLUB AREAS</b>		<b>QTY</b>
<b>MECHANICAL</b>	No special requirements	
<b>PLUMBING</b>	Hot and cold water for sink	Yes
<b>ELECTRICAL / LIGHTING</b>	Quad outlet at each data port	Yes
<b>TECHNOLOGY</b>	Data ports	Yes
	Wireless access points	Yes
<b>FURNITURE / EQUIPMENT</b>	Tables and chairs	Yes
	Counter top with sink with upper and base cabinets for storage	Yes
	Tall lockable storage cabinets	Yes
	Bulletin board	Yes
	White board	Yes
<b>DOORS &amp; WINDOWS</b>	Door with view panel	Yes
	Windows to outdoors with blinds for lighting control	Yes
<b>SPECIAL CONSIDERATIONS</b>	No Special Requirements	



## Custodial/Building Services

The Custodial/Maintenance operations are two distinct units. The custodial staff will provide a quality, cost-effective service to ensure a safe and clean environment that promotes the educational process. Custodians will be responsible for the care, cleaning, and light maintenance of the facility; provide daily cleaning of facility; and coordinate with all building users, administration, teaching staff, and community users to ensure a safe and climate controlled environment that will allow uninterrupted use of the facility. Custodians will maintain storage of materials to readily service the operation of the school and maintain necessary janitorial equipment and supplies to ensure that occupants' needs are met. They will also inspect, report, and correct

safety-related issues and maintain trained personnel on site to ensure that proper inspection, maintenance, and corrective measures are implemented so facility users are aware of the Division's commitment to safety.

The maintenance staff will, at the request of the Division coordinator, provide the "heavy maintenance" service to ensure that the school is safe, operational, and properly maintained in order to promote the learning environment. The maintenance staff will conduct routine maintenance and perform repair of major physical systems within the school.

The pages that follow contain a list of spaces and drawings illustrating the relationship between various program areas, and the individual spaces within the program area. Additionally, a description of the activities, persons to accommodate, and items to be considered is included.

## Facility Considerations

Listed below are various items that should be considered during the design of the new facility.

### Exterior:

- Outside hose bibs every 200 feet around perimeter of building and on roof (to clean rooftop units)
- Concrete pad sized for dumpster storage with outside trash compactor and recycling dumpster, including sewer drain and hose bib (hot and cold water) near trash area; trash compactor accessible from inside building if not inside
- Road access (separate from vehicular and student traffic and from play areas)
- Outside storage to have electricity
- Direct access from building near dumpsters only
- Centralized delivery for food service and supply deliveries/ share loading dock space
- Mini loading dock connected to building

### Interior:

- Electrical outlets in corridors 12' max separation
- Chemical dispensing system—area on wall for rack
- Service closets spread throughout the building with floor drain, recessed mop sink, and storage shelving; dam 6-8" high + floor drain
- All restrooms to have floor drains, outlets, and hose bibs
- Electrical and lighting for science and art and any location with a sink shall have GFCI protected circuits
- Storage
- Window blinds / cords not accessible to students; shades in double pane windows

### Dock:

- Dock area height to match Division delivery truck lift height
- Hand dolly ramp with adjustable dock plate
- Dock shared by food service – near food service area
- Lockable doorways that separate dock area from hallways
- Staging area for deliveries
- Outside lighting for early/late deliveries
- Sealed concrete
- Recessed docks shall have pumps and drains

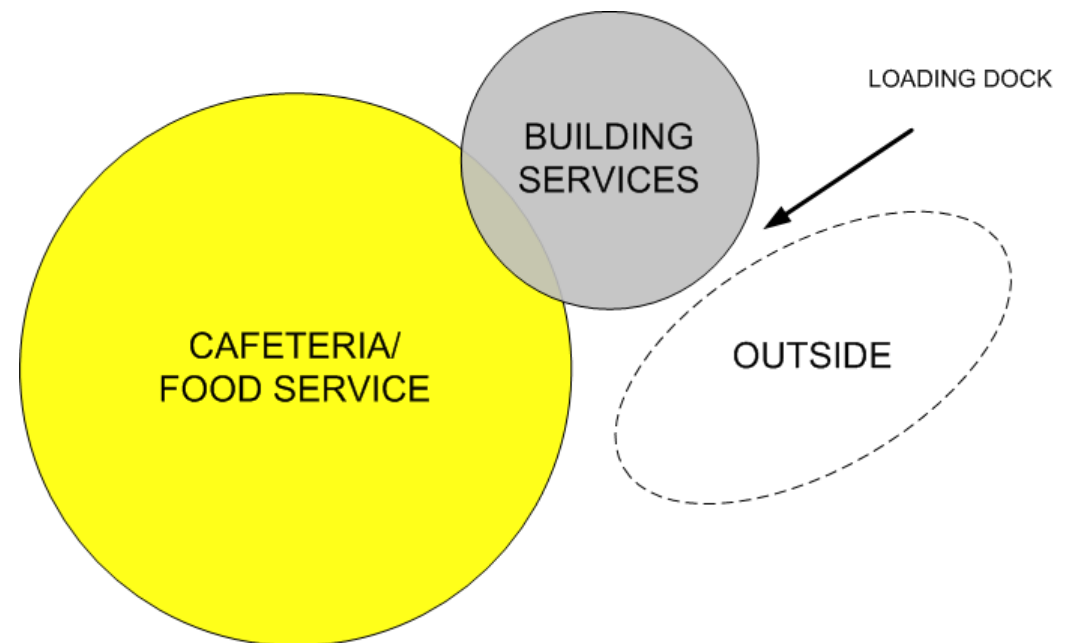
## Custodial / Building Services Space Requirements

Custodial / Building Services	Suggested			
	TS	Quantity	SF	Total
Receiving/Storage		1	1,000	1,000
Maintenance/Repair Area		1	600	600
Office/Planning/Meeting Area/Break Room		1	300	300
Locker Room/Toilets		2	200	400
Lawn/Maintenance Equipment (Outdoor Storage)		1	750	750
Loading Area		Outside		
<b>Custodial / Building Services Sub-Total</b>				<b>3,050</b>

## **Custodial / Building Services Spatial Relationships**

Building Services will be utilized by each learning community and should be located near the Cafeteria/Food Services area and the loading dock.

The Custodial & Building Services Area should be located adjacent to Food Services, Cafeteria / Student Union, and the Loading Dock.





**Custodial / Building Services Space Descriptions:**  
**Receiving / Storage**

<b>RECEIVING / STORAGE</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Delivery area for bulk commodities, supplies, materials, and equipment	Custodial and Maintenance personnel
Loading and unloading	Food service personnel
Storage connected to building and secure	

<b>RECEIVING / STORAGE</b>		<b>QTY</b>
<b>MECHANICAL</b>	No special requirements	
<b>PLUMBING</b>	Hot and cold water	Yes
<b>ELECTRICAL / LIGHTING</b>	Wiring for roll up door	Yes
<b>TECHNOLOGY</b>	Voice/video/data	Yes
<b>FURNITURE / EQUIPMENT</b>	Step ladders	Yes
	Dollies	Yes
	Lifts	Yes
	Shelving optimized for storage cleaning supplies, equipment, and school deliveries	Yes
	Pallet jack	Yes
<b>DOORS &amp; WINDOWS</b>	Oversized Doors for all custodial equipment: electric roll-up door to loading dock	Yes
	Double doors with removable mullions to hallway	Yes
<b>SPECIAL CONSIDERATIONS</b>	Located adjacent to the Custodial and maintenance area and Food Service area	Yes
	Proper lighting and ventilation	Yes

**Custodial / Building Services Space Descriptions:**  
**Maintenance / Repair Area**

<b>MAINTENANCE / REPAIR AREA</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
General maintenance	Custodial/ maintenance personnel
Painting	
Repair of small electrical items, equipment, furniture, doors, blinds, fixtures, etc.	
Preventative maintenance	

<b>MAINTENANCE / REPAIR AREA</b>		<b>QTY</b>
<b>MECHANICAL</b>	Exhaust fan	Yes
	HVAC	Yes
<b>PLUMBING</b>	Sink with hot and cold water	Yes
	Hot and cold water hose bib	Yes
	Floor drains	Yes
<b>ELECTRICAL / LIGHTING</b>	Duplex electrical outlets on each wall, spaced 12' max	Yes
	20 amp outlets in workroom	Yes
<b>TECHNOLOGY</b>	Telephone/intercom/voicemail port	Yes
	Video and data ports	Yes
	Quad outlet adjacent to each data port	Yes

**Custodial / Building Services Space Descriptions:**  
**Maintenance / Repair Area**

<b>MAINTENANCE / REPAIR AREA</b>		<b>QTY</b>
<b>FURNITURE / EQUIPMENT</b>	Work bench with built-in electrical outlets	Yes
	Peg boards for bench work	Yes
	Hazmat storage	Yes
	Locking shelving for tools	Yes
	Compressor	Yes
	Eye wash	Yes
	Soap dispenser	Yes
	Paper towel holder	Yes
	Built in vise	Yes
	Ladder	Yes
	Fire extinguisher	Yes
	Shelving optimized for storage of cleaning supplies and equipment	Yes
<b>DOORS &amp; WINDOWS</b>	Door: for moving large equipment	Yes
<b>SPECIAL CONSIDERATIONS</b>	Soundproofing between workroom and instruction areas	Yes
	Adjacent to loading dock	Yes

**Custodial / Building Services Space Descriptions:**  
**Office / Planning / Meeting / Break Room**

<b>OFFICE / PLANNING / MEETING / BREAK ROOM</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Telephone calls	Maintenance and Custodial personnel
Paperwork	
Scheduling	
Training	

<b>OFFICE / PLANNING / MEETING / BREAK ROOM</b>		<b>QTY</b>
<b>MECHANICAL</b>	Air conditioning	Yes
<b>PLUMBING</b>	No special requirements	
<b>ELECTRICAL / LIGHTING</b>	Duplex electrical outlets on each wall	Yes
<b>TECHNOLOGY</b>	Telephone/intercom/voicemail port	Yes
	Video and data ports	Yes
	Quad outlet adjacent to each data port	Yes
	HVAC controls	Yes
	Data ports or e-mail (hand held) access and charging ports in custodial office	Yes

**Custodial / Building Services Space Descriptions:**  
**Office / Planning / Meeting / Break Room**

<b>OFFICE / PLANNING / MEETING / BREAK ROOM</b>		<b>QTY</b>
<b>FURNITURE / EQUIPMENT</b>	Casework to include: - Filing cabinet - Bookcase	Yes
	Tack board	Yes
	Desk with return	Yes
	Desk chair	Yes
	Small conference table with chairs	Yes
	Ergonomic task chairs	Yes
	Networked computer	Yes
	Printer	Yes
	File cabinet, 4 drawer	Yes
	Bulletin board	Yes
	Clock	Yes
<b>DOORS &amp; WINDOWS</b>	Door: view panel	Yes
	Windows: window with a view of workroom and loading dock	Yes
<b>SPECIAL CONSIDERATIONS</b>	No special requirements	

**Custodial / Building Services Space Descriptions:**
**Locker Room / Toilets**

<b>LOCKER ROOM / TOILETS</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Custodial personnel storage	Custodial personnel

<b>LOCKER ROOM / TOILETS</b>		<b>QTY</b>
<b>MECHANICAL</b>	Ventilation	Yes
<b>PLUMBING</b>	Toilet	Yes
<b>ELECTRICAL / LIGHTING</b>	Duplex electrical outlets on each wall	Yes
<b>TECHNOLOGY</b>	Telephone/intercom/voicemail port	Yes
	Video and data ports	Yes
<b>FURNITURE / EQUIPMENT</b>	Lockers	Yes
	Bench	Yes
	Locking storage cabinet	Yes
<b>DOORS &amp; WINDOWS</b>	No Special Requirements	
<b>SPECIAL CONSIDERATIONS</b>	Should be combined with receiving and storage area	Yes

**Custodial / Building Services Space Descriptions:**
**Loading Area**

LOADING AREA		
ACTIVITIES	PERSONS	
Delivery area for bulk commodities, supplies, materials, and equipment	Custodial and Maintenance personnel	
Loading and unloading	Food service personnel	

LOADING AREA		QTY
MECHANICAL	No special requirements	
PLUMBING	No special requirements	
ELECTRICAL / LIGHTING	Wiring for roll-up door	Yes
TECHNOLOGY	No special requirements	
FURNITURE / EQUIPMENT	Step ladders	Yes
	Dollies	Yes
	Lifts	Yes
DOORS & WINDOWS	Door: electric roll-up door to loading dock	Yes
	Double doors with removable mullions to hallway	Yes
	Windows: no special requirements	Yes
SPECIAL CONSIDERATIONS	Located adjacent to the Custodial and maintenance area and Food Service area	Yes
	Proper lighting and ventilation	Yes





## NJROTC

The NJROTC Program is administered by the Chief of Naval Education and Training (CNET) located at Naval Air Station, Pensacola, Florida, and locally supervised by the NJROTC AREA FIVE Manager located at Norfolk Naval Base, Virginia. Naval Science (NJROTC) is an elective course with one credit earned for each year of Naval Science completed.

### Program Mission

The mission of the NJROTC program is to instill in students the values of citizenship, service to the United States, personal responsibility and a sense of accomplishment.

### Program Goals

The following are goals of the program as established by the Chief of Naval Education and Training.

- Promote patriotism.
- Develop informed and responsible citizens.
- Promote habits of orderliness and precision.
- Develop a high degree of personal honor, self-reliance, self-discipline, and leadership.
- Promote an understanding of the basic elements and requirements for national security.
- Develop respect for an understanding of the need for constituted authority in a democratic society.
- Provide incentives to live healthy and drug-free lives.
- Develop leadership.
- Promote high school completion.
- Provide information on military services as a possible career.

### Curriculum Topics

A few of the areas of NJROTC classroom study include leadership, seamanship, communications, sea power, naval history, naval weapon systems, oceanography, astronomy, weather, and strategy. Other out-of-class activities include physical readiness training, parades, special ceremonies, drill meets, rifle competitions and athletics competitions, and field trips.

## **Field Trips and At-Sea Cruise**

A cornerstone of the NJROTC program is the opportunity for cadets to visit naval units, military installations, museums, and other interesting destinations.

## **Enrollment Requirements**

To be eligible for enrollment in the NJROTC Program, a student must:

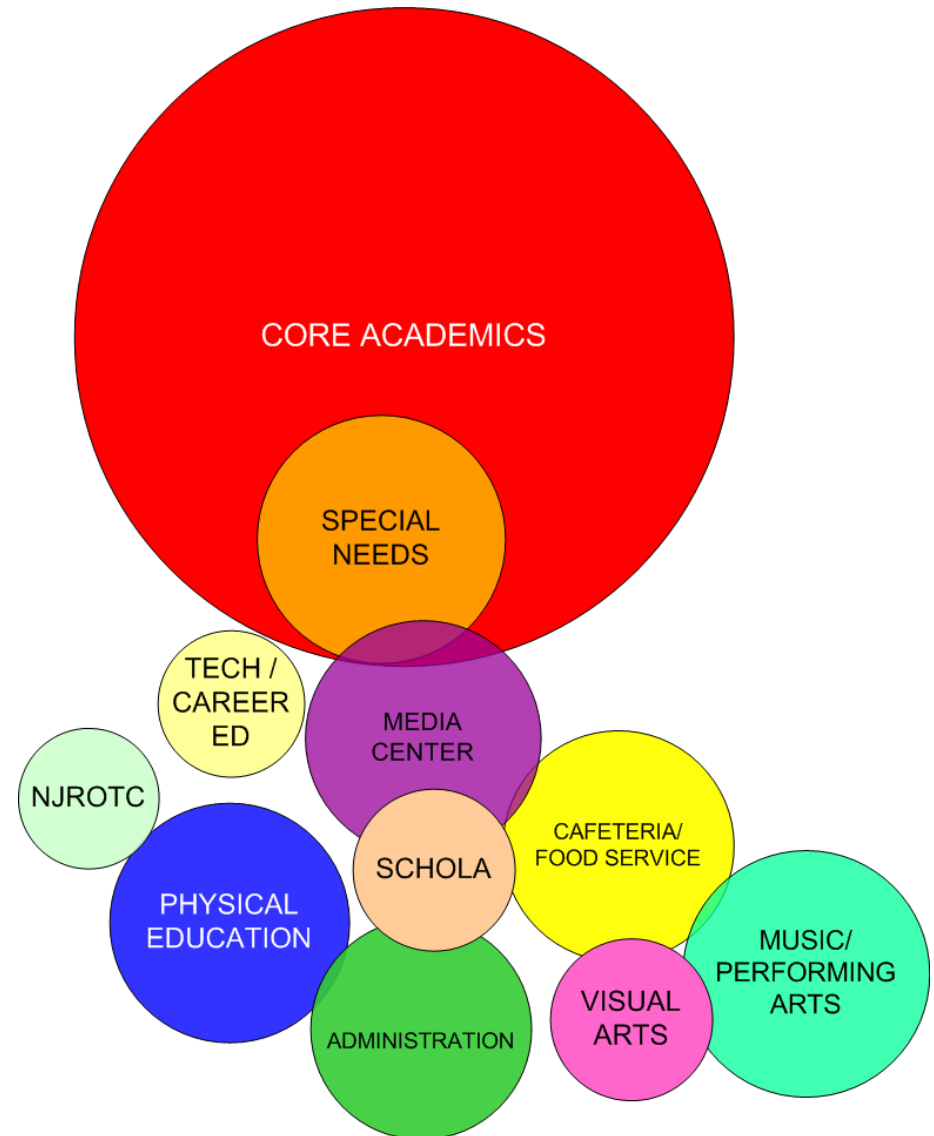
1. Be enrolled in and attending a regular course of instruction at the school in a grade 9 through 12.
2. Be a United States citizen or national, or alien lawfully admitted to the U. S. for permanent residence.
3. Be physically qualified to participate fully in the school's physical education program.
4. Be selected by one of the Naval Science Instructors with the approval of the school Principal.
5. Maintain acceptable standards of academic achievement and an academic standing that warrants normal progression leading to graduation.
6. Maintain acceptable standards of conduct.
7. Comply with personal grooming standards as promulgated in the "NJROTC Cadet Field Manual;" NAVEDTRA 37116.

## NJROTC Space Requirements

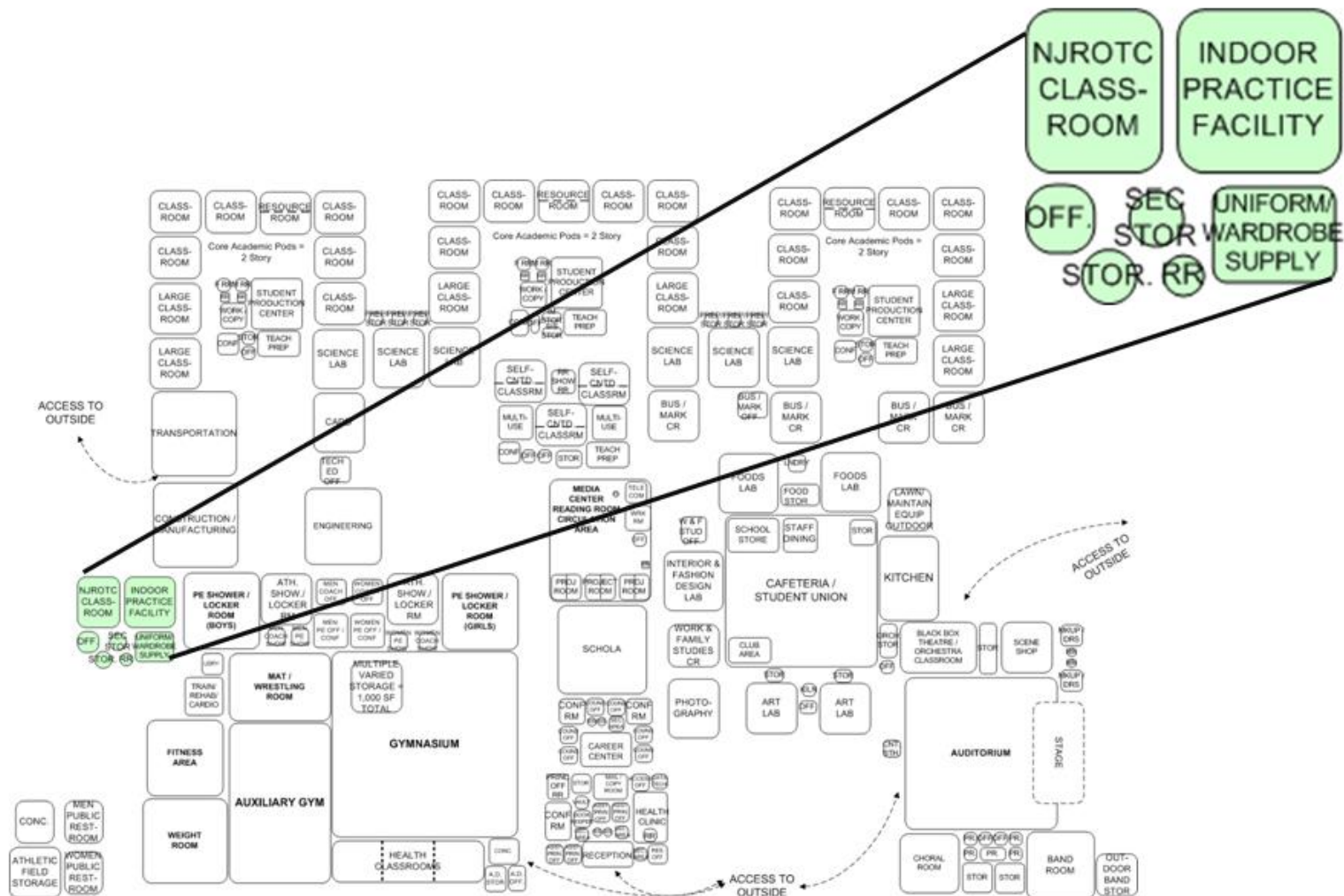
NJROTC	Suggested			
	TS	Quantity	SF	Total
Indoor Practice Facility	1	1	1,200	1,200
Classroom	1	1	850	850
Uniform / Wardrobe Supply		1	600	600
Office		1	200	200
Secure Armory Storage		1	100	100
General Storage		1	100	100
Restroom		1	50	50
<b>NJROTC Sub-Total</b>	<b>2</b>			<b>3,100</b>

## NJROTC Spatial Relationships

NJROTC should be located near the gymnasium and locker rooms and have access to the core academics area. NJROTC should have outdoor access.



## NJROTC Illustration



## NJROTC Space Descriptions:

### Indoor Practice Facility

#### INDOOR PRACTICE FACILITY

ACTIVITIES	PERSONS
Individual, small, and large group activities	Students
Demonstrations	Teachers
Project work	Aides
	Volunteers
	Paraprofessionals
	Staff

INDOOR PRACTICE FACILITY		QTY
<b>MECHANICAL</b>	Quiet air conditioning	Yes
<b>PLUMBING</b>	Water fountain	Yes
<b>ELECTRICAL / LIGHTING</b>	Duplex outlet	1 per wall
	Quad outlet @ each data port	1
	Overhead lighting	Yes
	Room darkening capability - dimmer switches	Yes
	Controlled day lighting, banked lighting	Yes
	Front row of light, dimmable	Yes
<b>TECHNOLOGY</b>	Voice, data, video outlets at teacher desk	1
	6 data drops with double, triple, or quad Communications Network Outlets	6
	2 data drops at teacher desk area	2
	Single data drop dedicated to wireless, high on wall	1
	Telephone	1
	Intercom	Yes
	Interactive whiteboard with integral computer projector	1
	Ceiling mounted computer projector with retractable screen	Yes
	Laptop computers with carts, shared	26
	Access to voice, video, data ports, and electrical outlets	Yes
	Teacher data port separate from student data ports	Yes
	Audio enhancement	1 system
	Document cameras for each class	Yes

## NJROTC Space Descriptions:

### Indoor Practice Facility

INDOOR PRACTICE FACILITY		QTY
FURNITURE / EQUIPMENT	Comfortable ergonomic student chairs that allow movement	Yes
	Magnetic marker board with tack strips above whiteboard	Yes
	Collapsible, storable work tables	Yes
	Bulletin board	Yes
	Shelving	Yes
	Locking storage cabinet	Yes
	All in One Computer Device	Yes
	Retractable projection screen	Yes
	Built in trophy cases	
	Flexible or multiple display surfaces	Yes
	Adjustable, lockable, and mobile storage cabinets and shelving	Yes
DOORS & WINDOWS	Door with windows or view panel	Yes
	Locking mechanism	Yes
	Large energy efficient windows to outdoors with blinds	Yes
	Windows to corridor and / or Learning Community	Yes
SPECIAL CONSIDERATIONS	Climate control	Yes
	Own security system, a way to close off access to remainder of building	Yes
	Access to P.E. showers in locker rooms	Yes
	Vinyl tile, no scratch flooring	Yes
	Acoustical privacy	Yes
	Walls painted with warm and cool colors	Yes

## NJROTC Space Descriptions:

### Classroom

CLASSROOM	
ACTIVITIES	PERSONS
Individual, small, and large group activities	Students
Computer-based instruction	Teachers
Project-based learning	Aides
Demonstrations	Volunteers
	Paraprofessionals
	Staff

CLASSROOM		QTY
<b>MECHANICAL</b>	Quiet air conditioning	Yes
<b>PLUMBING</b>	No Special Requirements	
<b>ELECTRICAL / LIGHTING</b>	Duplex outlet	1 per wall
	Quad outlet @ each data port	1
	Overhead lighting	Yes
	Room darkening capability - dimmer switches	Yes
	Controlled day lighting, banked lighting	Yes
	Mobile tables need variety of ways to set electricity [floor or fixed table]	Yes
	Front row of light, dimmable	Yes
<b>TECHNOLOGY</b>	Voice, data, video outlets at teacher desk	1
	6 data drops with double, triple, or quad Communications Network Outlets	6
	2 data drops at teacher desk area	2
	Single data drop dedicated to wireless, high on wall	1
	Telephone	1
	Intercom	Yes
	Interactive whiteboard with integral computer projector	1
	Ceiling mounted computer projector with retractable screen	Yes
	Laptop computers with carts, shared	26
	Access to voice, video, data ports, and electrical outlets	Yes
	Teacher data port separate from student data ports	Yes
	Audio enhancement	1 system
	Document cameras for each class	Yes



## NJROTC Space Descriptions:

### Classroom

CLASSROOM		QTY
FURNITURE / EQUIPMENT	Student work tables, 2 students each	Yes
	Comfortable ergonomic student chairs that allow movement	Yes
	Countertop over base cabinets	Yes
	Overhead cabinets	Yes
	Magnetic marker board with tack strips above whiteboard	Yes
	Bulletin board	Yes
	Shelving	Yes
	Locking storage cabinet	Yes
	All in One Computer Device	Yes
	Retractable projection screen	Yes
	Flexible or multiple display surfaces	Yes
	Adjustable, lockable, and mobile storage cabinets and shelving	Yes
	Flexible furniture: can be used as individual desks or fit together to make tables	Yes
DOORS & WINDOWS	Door with windows or view panel	Yes
	Large energy efficient windows to outdoors with blinds	Yes
	Windows to corridor and / or Learning Community	Yes
SPECIAL CONSIDERATIONS	Climate control	Yes
	Vinyl tile, no scratch flooring	Yes
	Walls painted with warm and cool colors	Yes
	Carpeted area for alternative setting	Yes

**NJROTC Space Descriptions:**
**Uniform / Wardrobe Supply**

<b>UNIFORM / WARDROBE SUPPLY</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Storage of uniforms	Teachers
	Students

<b>UNIFORM / WARDROBE SUPPLY</b>		<b>QTY</b>
<b>MECHANICAL</b>	Climate controlled	Yes
<b>PLUMBING</b>	No Special Requirements	
<b>ELECTRICAL / LIGHTING</b>		Yes
		Yes
		Yes
<b>TECHNOLOGY</b>		Yes
		Yes
<b>FURNITURE / EQUIPMENT</b>		
<b>DOORS &amp; WINDOWS</b>	Door: view panel	
<b>SPECIAL CONSIDERATIONS</b>		

## NJROTC Space Descriptions:

### Office

OFFICE	
ACTIVITIES	PERSONS
Teacher planning and collaboration	Teachers
Team meetings	Staff
Professional development	Paraprofessionals
Recordkeeping	
Preparation of teaching materials	
Faculty lunch	
Storage	

OFFICE		QTY
<b>MECHANICAL</b>	Quiet air conditioning	Yes
<b>PLUMBING</b>		
<b>ELECTRICAL / LIGHTING</b>	Duplex outlet	Yes
	Quad outlet @ each data port	Yes
	Controlled day lighting	Yes
<b>TECHNOLOGY</b>	Access to voice, video, data ports, and electrical outlets	Yes
	Intercom	Yes

**NJROTC Space Descriptions:**
**Office**

<b>OFFICE</b>		<b>QTY</b>
<b>FURNITURE / EQUIPMENT</b>	Teacher desk	2
	Lockable storage cabinets and closets	Yes
	Flexible surfaces	Yes
	Adequate counter top space for small appliances and production equipment	Yes
	Computer station with Internet access	Yes
	Work tables	2
	Conference chairs	4
	Conference table	1
	Abundant shelving	Yes
	Layout of shelving to maximize efficiency	Yes
	File cabinet, 4 drawer	1
	Laptop computer	2
	Printer	1
	Magnetic Marker board	1
	Bulletin board	4 LF
	Clock	1
<b>DOORS &amp; WINDOWS</b>	Door: view panel	Yes
	Windows: open to Classroom	Yes
<b>SPECIAL CONSIDERATIONS</b>	Small parent / reception area with seating	Yes

**NJROTC Space Descriptions:**
**Secure Armory Storage**

<b>SECURE ARMORY STORAGE</b>	
<b>ACTIVITIES</b>	<b>PERSONS</b>
Storage of rifles, swords, and air rifles	Teachers

<b>SECURE ARMORY STORAGE</b>		<b>QTY</b>
<b>MECHANICAL</b>	No Special Requirements	
<b>PLUMBING</b>	No Special Requirements	
<b>ELECTRICAL &amp; LIGHTING</b>	Duplex outlets on each wall	Yes
	Overhead lighting	Yes
<b>TECHNOLOGY</b>	No Special Requirements	
<b>FURNITURE / EQUIPMENT</b>		
<b>DOORS &amp; WINDOWS</b>	Solid door	Yes
	Keypad access	Yes
<b>SPECIAL CONSIDERATIONS</b>	Vinyl tile	Yes

## NJROTC Space Descriptions:

### General Storage

GENERAL STORAGE	
ACTIVITIES	PERSONS
Storage of instructional team materials	Teachers
	Staff

GENERAL STORAGE		QTY
MECHANICAL	No Special Requirements	
PLUMBING	No Special Requirements	
ELECTRICAL & LIGHTING	Duplex outlets on each wall	Yes
	Overhead lighting	Yes
TECHNOLOGY	No Special Requirements	
FURNITURE / EQUIPMENT	Casework to include:	
	Countertop with base and wall cabinets	Yes
	Lockable storage cabinets	Yes
	Abundant wall shelving	Yes
DOORS & WINDOWS	Lockable solid door	Yes
SPECIAL CONSIDERATIONS	Vinyl tile	Yes

## NJROTC Space Descriptions:

### Restroom

RESTROOMS	
ACTIVITIES	PERSONS
Personal hygiene	Teachers
	Administrators

RESTROOMS		QTY
<b>MECHANICAL</b>	Exhaust fan	Yes
<b>PLUMBING</b>	Sink with hot and cold water	Yes
	Toilet	Yes
<b>ELECTRICAL / LIGHTING</b>	Duplex electrical outlets on each wall	Yes
<b>TECHNOLOGY</b>	No special requirements	
<b>FURNITURE / EQUIPMENT</b>	Casework to include cabinet with mirror	Yes
<b>DOORS &amp; WINDOWS</b>	Solid door	Yes
<b>SPECIAL CONSIDERATIONS</b>	Hands-free dispensers	Yes

## **Technology Resource Requirements for Secondary Schools**

### **Updating of Classroom Technology Standards**

As current school standards are reviewed and revised to meet new industry standards and new evolving trends in education, the Department of Technology should provide continuous updated infrastructure recommendations to the Office of Facilities Planning and Construction.

Representatives from both Technical Services and Instructional Technology within the Department of Technology should revalidate these standards on an annual basis and submit all changes to the Office of Facilities Planning and Construction for incorporation into the programs/scope of work associated with VBCPS's plans for new construction and school renovation projects.

Construction documents (drawings and specifications) should be submitted to the Department of Technology for all new school construction and renovation projects early in the design process for review and comment. The Department of Curriculum and Instruction should be included in this review process. Final plans should also be submitted to the Department of Technology for their review and final equipment planning purposes.

The Department of Technology should be considered a partner in the construction of new or renovated facility and as such should receive copies of any design modifications associated with the project if the technology infrastructure is affected.

### **Description of Ceiling Mounted Projector System**

- Ceiling mounted projector
- Speakers shall be ceiling mounted with an amplifier to power speakers at a sufficient DB level
- Teacher panel should provided connectivity for
  - 1 x RCA Video - (VCR, DVD)
  - 2 x RCA Audio (Left, Right) - (VCR, DVD)
  - 1 x DVI-D Video - (Computer)
  - 1 x VGA Video - (Computer, Document camera)
  - 2 x RJ45 - (Data)
  - 2 x USB (A Type) – (1 for Smartboard, 1 for projector mouse control)
  - 1 x 3.5mm Stereo Audio - (Computer Audio)
  - 1 x “F” coax connector - (Local Origination, CATV)

**(A 20A, 120V quad receptacle outlet shall be located adjacent to the teacher's plate to support the various pieces of technology equipment which can interface with the monitor.)**

- 1 data outlet in the ceiling next to the mounting for the projector
- 1 TV tuner
- 1 projector/tuner mount



- Electrical outlet in ceiling next to the mounting for the projector
- 1 Digital Interactive WhiteBoard (between 64" and 94")
- 1 laptop with case, that meets or exceeds the teacher laptop specs on the current "What to Buy List"

## **Data Network Drop Requirements:**

### **Wiring Standard**

All network wiring should be CAT-6 rated to handle at least 1Gbit Ethernet traffic. All switches must also be able to support 1Gbit Ethernet via copper wire as well as fiber. All switches must provide power-over-Ethernet (PoE).

There will no separate 'phone' drops as voice and data are integrated. All 'phone' drops are replaced with normal network data drops,

### **Wireless Access in Schools**

All schools will be configured with ubiquitous wireless access. Any inhabitable room in the school will have wireless access sufficient to support the expected capacity of the room. In most instances, this will mean one wireless access point per room. (Exceptions will be very large areas: cafeteria, gym, auditoriums, etc. These rooms will require more than one.) Ceiling mounted data outlets will be required to support the wireless access points.

### **Classrooms**

- 5 data outlets for student instructional multimedia stations
- 1 data outlet for a networked printer
- 1 teacher panel with 2 data drops
- 2 data outlets for laptop carts
- 1 ceiling mounted projector system with 1 additional data outlet in the ceiling
- 1 ceiling mounted network drop for wireless access point (near center of room)
- 1 data outlet wall plate for RJ45 for IP or Digital phone (See Exhibit A (Typical Telephone Classroom Installation))
- 1 USB connection to be linked to the teacher plate for the connection to the mounted Digital Interactive WhiteBoard

**A total of 13 network drops required for each Classroom, plus 1 USB connection for mounted Digital WhiteBoard.**

Built-in casework for student workstations is preferred. The data outlets and receptacles should be provided below the work surface with an adequate number of slotted openings provided for cable pass-through. The slotted opening is better suited for the large connectors on video cable than a grommetted hole.

## **Computer Resource Lab**

- 30 data outlets to support multimedia workstations for students
- 4 data outlets for networked printers
- 1 teacher plate with 2 data outlets
- 1 ceiling mounted projector system with 1 additional data outlet in the ceiling
- 1 ceiling mounted network drop for wireless access point (near center of room)
- 5 additional data outlets for use with other technology equipment
- 1 data outlet wall plate for RJ45 for IP or Digital phone (See Exhibit A (Typical Telephone Classroom Installation))

**A total of 44 network drops are required for each Computer Resource Lab.**

- **Layout of the Computer Resource Lab**
  - Peripheral three to four-sided layout utilizing all walls in the room. Instructors in the middle school environment prefer all monitors be readily viewable.
- **Lighting in the Computer Resource Labs**
  - Should be circuited for multiple levels of control. Light fixtures should be provided with multiple ballasts allowing for 1/3, 2/3, and 3/3 illumination levels. Additionally, the light in the front 1/3 of the classroom (nearest the projection screen) should be controlled from different switches than the remainder of the space.
- **Storage Cabinets**
  - Locking overhead cabinets should be mounted on both side walls. The cabinets should be at least 36" in height [*clear, inside*] with adjustable shelving in order to accommodate two 14" deep shelves, 1" thick.
  - 36" deep, 36" high cabinetry with adjustable shelving and locking doors should be installed at the rear of the computer lab on the wall opposite the interactive board or screen. Network and electrical outlets would need to be placed above the top of the cabinets for easy access.
  - A wardrobe type cabinet should be installed in the computer lab. There should be adjustable shelving with locking doors. This would be placed in one of the corners of the lab.

## **Computer Resource Lab Office**

- The computer resource specialist office should be located adjacent to or in close proximity to the computer resource lab.
- There should be a minimum of 8 data outlets located on at least two walls of the office area with 12 electrical outlets spread out on all walls to accommodate plugging in 2 computers and monitors, 1 networked printer, scanner, laptop and alpha smart carts, and other electrical equipment.
- Built-in upper and lower cabinetry with locked, adjustable shelving should be placed on one wall.
- Owner furnished modular furniture should be designed into the office area allowing for access to network and electrical outlets. This furniture should provide a conference area for meeting with teachers.
- 1 data outlet for desk phone (IP or digital)

**A total of 9 network drops are required for each Computer Resource Lab Office.**

### **Curricular Computer Lab**

- 30 data outlets to support multi-media workstations for students
- 2 data outlets for networked laser printers
- 1 teacher panel for ceiling mounted projector with 2 data outlets
- 1 ceiling mounted projector system with 1 additional data outlet in the ceiling
- 1 ceiling mounted network drop for wireless access point (near center of room)
- 1 data outlet wall plate for RJ45 for IP or Digital phone (See Exhibit A (Typical Telephone Classroom Installation))

**A total of 37 network drops are required for each Curricular Computer Lab.**

### **Library Media Center Suite**

#### Library Media Center Main Floor

- 20 data outlets are required to accommodate 20 computers and 1 networked printer on the main floor of the library.
- 1 ceiling mounted network drop for wireless access point (near center of room)
- Sufficient electrical outlets should be provided to accommodate 20 computers and monitors, 3 printers, and other electrical devices.
- The electrical and network access should be configured with the island (short wall) configuration (see computer lab specifications for elementary school computer labs). This island(s) should be centrally located and easily accessible from both instructional areas of the library. DOT should be consulted with regard to the placement of the island(s).
- Owner furnished tables should be located in the area of the island(s).
- 8 additional data outlets and sufficient electrical outlets should be placed around the LMC for use of laptop carts and other electrical devices.
- Two ceiling mounted digital projector systems with two electrically operated projection screens should be provided in the media center. These screens should be located in an area which will support a reasonable concentration of 25 to 50 students.
- The teacher plates (one per projector) should be placed in each of these two areas.
- Furniture for the media center should be wooden furniture designed for library media centers. The Department of Technology does not endorse the use of plastic and metal furniture in the library media center.

#### Library Circulation Desk Area

- A minimum of 5 data outlets are required at the circulation desk.
- Data and electrical outlets should be installed under the circulation desk for easy access.
- 1 data outlet for phone (IP or digital)
- If circulation desk is included in CIP, DOT recommends that the desk be purchased from a recognized vendor as opposed to being custom-built.

#### Library Media Specialist's Office

- Sufficient space should be allowed to house two library media specialist and one library media assistant.
- A minimum of 9 data outlets are required in the Library Media Specialist's office.
- 1 ceiling mounted network drop for wireless access point (near center of room)
- Built-in, adjustable shelving and cabinetry should be placed in a manner that maximizes room usability.
- 1 data outlet for phone (IP or digital)
- Owner furnished modular furniture allowing for access to network and electrical outlets should be designed into the office area.

#### Audio-visual Workroom

- A minimum of 6 data outlets are needed in the audio-visual workroom.
- 1 ceiling mounted network drop for wireless access point (near center of room)
- Sufficient floor area should be provided for audio-visual equipment storage, laptop storage, AlphaSmart storage, area for additional equipment, and a work table area.
- Sufficient electrical outlets need to be provided. In the areas of built-in cabinetry, the electrical outlets should be above the cabinetry. It is recommended that 1 quad electrical outlet be placed every 4 feet around the perimeter of the room.
- Owner furnished shelving should be provided for storage in this area.

#### Television Production Room

- A room matching the dimensions of the regular instructional classroom should be provided for television production studio.
- 1 ceiling mounted network drop for wireless access point (near center of room)
- Closed circuit television access/setup (see requirements listed under television distribution system)
- 7 data outlets to accommodate computers.
- A minimum of 16 electrical outlets
- Adequate ceiling mounted lighting and acoustical tile should be provided.

#### Professional Library

- A minimum of 3 data outlets are needed in this area.
- 1 ceiling mounted network drop for wireless access point (near center of room)
- Sufficient electrical outlets should be provided on all four walls of this area.
- Sufficient built-in book shelving should be provided.
- A pull-down screen should be provided in this area.
- 1 data outlet for phone (IP or digital)

#### Conference Room

- A minimum of 3 data outlets are needed in this area.
- 1 ceiling mounted network drop for wireless access point (near center of room)
- Sufficient electrical outlets should be provided on all four walls of this area.
- A pull-down screen should be provided in this area.
- Ceiling-mounted multimedia projector system.

- 1 data outlet for phone (IP or digital)

#### Library Media Center Lighting

- The lighting in the library media center should be circuited for multiple levels of control. Light fixtures should be provided with multiple ballasts allowing for 1/3, 2/3, and 3/3 illumination levels.
- Zoned individual lighting should be provided to allow individual control of lighting in various and separate areas, (i.e., stacks, circulation desk, and instructional areas).
- Architects should keep skylights, windows, and emergency lights in mind when determining the placement of projector screens.

**A total of 71 network drops are required for the Library Media Center Suite.**

#### Faculty Work Area

- 5 data outlets for workstations
- 1 data outlet for a networked printer
- 1 ceiling mounted network drop for wireless access point (center of room)
- 2 additional network drops for future workstations
- 1 data outlet for phone (IP or digital)

**A total of 10 network drops are required for each Faculty Work Area.**

#### Auxiliary Areas

Each space within a school facility must be reviewed for its functionality not only at completion of construction but for its potential in the future. What may be a book storage room today may be an office tomorrow. There should be very few spaces in any school facility without at least two data outlets (computer and phone)

#### **Auxiliary area data outlet requirements are as follows:**

- A minimum of 2 data outlets should be placed in each office. Offices designed as shared spaces should receive a number of data outlets which should be at least double the number of staff scheduled to occupy the space. Data outlets should be placed in pairs (phone and computer) on multiple walls.
- Any room that is designed to be occupied by students, teachers or administrators must be wired to support wireless access points. As a rule, there should be one ceiling mounted data drop per 30 people. The calculation should be based on maximum occupancy of each room. If multiple drops are put in the ceiling of a room for wireless access, they should be distributed throughout the room, not installed side-by-side.
- The data outlet requirements for resource rooms is the same as for instructional classrooms.

- Each conference room should receive a minimum of 4 data outlets; 1 data outlet at each end of the room, 1 data outlet for a networked printer and 1 for a phone.
- Data outlets should be provided in pairs (computer and phone) in spaces, such as the clinic, parent resource rooms, the custodial office, the dietician's office, and at each serving line cash register location.
- Facilities provided with combination cafeteria/multi-purpose rooms with teaching platforms (stages) and auditoriums should have data outlets provided in two locations on the rear stage wall and a data outlet on the stage side of each wall forming the stage opening. Data outlets should be provided in a minimum of 3 additional locations throughout the cafeteria space. One data outlet for phone and a loud bell ringer should be provided in the serving area of the cafeteria.
- The auditorium should be equipped with a ceiling mounted projector system and 2 teacher panels. 1 teacher panel should be located in the center of the front stage and 1 teacher panel should be located in the control/projection room.
- 2 data outlets with video capability should be provided in the gymnasium and should be located in diagonal corners of the space approximately 15 feet from the end wall or at the end of the extended bleachers. One data wall jack for phone to be connected to a loud bell ringer. A cage should be mounted to protect the phone from damage during athletic events.
- At least 3 data outlets (2 for computers 1 for phone) should be located in the main entrance lobby. There should also be a ceiling mounted wireless access point.
- Special classrooms, such as art, chorus, band, and special education classrooms, should be provided with the same standards as a regular classroom. All practice rooms should have at least 2 data outlets for computer and phone.
- Large group instructional spaces, such as KIVAs and SCHOLAs, should be provided with a ceiling mounted projector system and extra ceiling data drop for wireless access point. A teacher's panel should be located on the rear wall for access to the multi-media projector.
- 1 network data outlet for phone to be installed in the administrative counter area for visitor and student use.
- 1 network data outlet for phone to be installed in the athletic field press box area for analog phone connection.
- 4 network data drops are needed to support the attendance modems in the office area.

- 4 network data outlets to support connecting the paging system to the phone MDF to be cross connected to the phone system for analog trunk ports.
- 4 network data drops in the phone system equipment area to be used to connect the phone system to the main MDF.
- Network data outlets are also needed for each fax machine and credit card machine, where previously served by 'phone' drops.
- 3 regular **phone** drops of the 'old' analog kind are required for emergency power outage situations. One in the Principal's office, and two in the main administrative office area centrally located in opposite sides.
- 1 regular **phone** drops of the 'old' analog kind is required in the main MDF room for technology support.

**NOTE:** These auxiliary spaces should also be provided with a video outlet for connection of a camera to enable the broadcasting of events within the room throughout the school on the video distribution cabling.

### **Other Design Considerations:**

- In spaces with large concentrations of computers, such as Business Labs and Curriculum Computer Labs, a multi-level lighting system should be provided to enhance viewing of monitor screens.
- Rooms with large concentrations of computers may also require more cooling than an average room.

### **Foundation Level Equipment needs**

#### **ARS Scanner**

- 1 data outlet per school to serve an ARS Scanner. This data outlet should be located in a general area accessible by all staff for the purpose of scoring pre and post tests. The location of this outlet should be as directed by the Building Administrator or CRS.

#### **AlphaSmart Carts**

Storage space is required for this piece of technology equipment.

- The cart is approximately 4' long by 2' wide. It houses up to 30 AlphaSmart units (wireless keyboards with mini-screens).
- The cart requires a 20A-120V receptacle for overnight battery charging. When in use, the cart plugs into a standard 20A-120V receptacle.

The Computer Resource Specialist at each facility should be consulted concerning the number of carts that will be required.

## **StarPanel**

- 1 panel per classroom

## **Scanner**

- 1 scanner per Computer Resource Lab

## **Document Camera**

- 1 per classroom
- 1 per Computer Resource Lab
- 2 per Library Media Center

## **Network Printers**

In addition to the networked printers previously identified as dedicated to particular instructional spaces,

- 2 data outlets for networked color laser printers and
- 2 data outlets for flatbed scanners.

The Computer Resource Specialist should be consulted concerning the desired location for each.

## **Wireless Keyboard and Mouse**

- 1 per classroom
- 1 per Computer Resource Lab
- 2 per Library Media Center

Wireless keyboards should have multiple RF options.

## **Television Distribution System Requirements:**

**NOTE: Input needs to be provided from Wendall Jenkins, School Plant and Susan Richard, Department of Technology.**

The functionality of the television distribution system should provide for in house broadcasts and in house playback on at least 5 channels.

- Broadcast distribution is required throughout every school facility. All instructional spaces and most auxiliary spaces are to receive video outlets.
- Teacher panels, which include a video outlet, are to be provided in all instructional spaces and selected other spaces.
- Other auxiliary spaces, as specified below, in need of video outlets.
  - The main entrance lobby. The number of video outlets in this space shall be determined by the design of the school and specifically the size of this space. The purpose of this outlet is to provide a video bulletin board of school activities to the school staff as well as visitors to the school.



- Cafeterias are to be provided with a minimum of two video outlets located strategically in the main space. Additionally, a teacher panel should be provided on the backside of the stage wall.
- Additional video outlet locations include all administrative offices (Principal, Assistant Principal, Guidance Counselors), the Library Media Specialist's Office, the Computer Resource Specialist's Office, teacher workrooms, office waiting area, clinic, and other spaces as deemed necessary by the Department of Technology.
- Head-end equipment should be located in the library media center for easy access by the Library Media Specialist. The television distribution system shall provide for five channels and access to channels provided by franchised cable TV systems, such as Cox. The incoming Cox cable shall terminate in the head-end equipment room where the TV distribution equipment is located.
- Two data outlets should be installed close to the head-end of the video distribution system to allow computer access to video distribution.

### **Technology Power Considerations:**

**NOTE: Information in this section needs to be reviewed by electrical contractor.**

#### **General rule:**

**1 quad electrical outlet is required per 2 data outlets**

#### **Exceptions to the rule include:**

**Teacher panels**

**Other equipment requiring electrical outlets**

In order to adequately support the technology systems provided in VBCPS schools, careful consideration needs to be given to the branch circuitry design such that the facilities are provided with sufficient electrical distribution enabling all technology equipment to be used simultaneously.

Generally, a 20A-120V circuit will support 4-5 multi-media stations using 17" monitors. When designing branch circuitry serving printers, the type of printer being must be identified and the appropriate branch circuitry be provided. Laser printer locations should be provided with dedicated 20A circuits. A single 20A circuit can serve multiple inkjet printers. Consideration should be given, however, to providing dedicated 20A circuits for all printers in anticipation that laser printers are likely to be provided at those locations in the future. All printer locations shall be provided with network drops.

Dry-type transformers provided for service to the technology equipment in the facility should be K-4 rated. Consideration should be given to future additions to the technology

infrastructure within each building with anticipation that virtually every 120/208V panelboard may at some point in time serve a technology load. Only those transformers serving loads, such as mechanical and kitchen equipment, should be of the standard rating type. The project electrical designer should avoid to the degree possible serving mechanical equipment loads from the same panel serving computer workstations.

Panelboards provided to serve technology equipment loads should be specified with full-sized, double neutrals. Branch circuitry serving computer loads should be provided with individual neutrals per phase. The sharing of neutrals by circuits serving computer loads is not acceptable. No more than three individual phases (A phase, B phase, and C phase) plus three neutrals are to be installed in a single conduit. It is recommended that this practice be employed for all general receptacle circuits throughout the facility.

Each 120/208V panelboard serving or likely to serve technology equipment should be provided with a panel-type surge suppression device (TVSS). This device should be installed in accordance with the manufacturer's recommendations with particular attention paid to the length of conductor between the TVSS and the circuit breaker which protects it. Panelboard-type TVSS devices are generally provided with approximately 18" of conductor connected thereto. These conductors should not be extended. Depending on budget availability, TVSS devices with audible alarms should be specified.

The main service entrance equipment should also be provided with a Service Entrance Rated TVSS device to protect the facility from incoming surges and spikes as well as surges caused by large mechanical equipment which may be connected at this location.

Receptacles designed for use with technology equipment shall be grey in color. General purpose receptacles for non-technology loads shall be ivory in color. All receptacle coverplates shall be ivory in color.

No "master disconnect" or "push button" controlling a main line contactor shall be provided in the circuitry serving technology equipment loads.

Docking stations shall be provided for overnight charging of laptop carts. Each cart will seat 20 laptops. There will be three carts in each facility. The exact electrical requirements for these carts should be obtained from the Department of Technology. The docking location should be coordinated with the Computer Resource Specialist.

### **Network Configuration**

All cabling shall comply with the following standards:

- ANSI/TIA/EIA-568-A "Commercial Building Telecommunication Cabling Standard"
- ANSI/EIA/TIA-569-A "Commercial Building Standard for Telecommunication Pathways and Spaces"

- Contractor shall utilize installation methods as recommended in the “Building Industry Consulting Services International (BICSI) Telecommunications Distributions Methods Manual”
- The data network and cabling design shall provide IEEE-compliant CAT 6 plenum cabling from each activated data\phone port to an IDF or MDF. These cables shall terminate in 24-port or 48-port patch panels installed in full height, floor-mounted racks with side panels and lockable front and back doors. Patch panels should be provided in a quantity that provides a minimum of 10 spare ports in each IDF location and 20 spare parts in an MDF location. The facility should be provided with a 12' long jumper cable (computer to data\phone outlet) and a 5' long patch cable (patch panel to switch) for each activated data\phone port in the building. The data cabling, patch panels, and floor racks are supplied and installed by the Contractor.
- Cable organizers need to be installed in each rack, between patch panels and/or switches
- The jumper cables and patch cables should be turned over to the facility for their use.
- Cable Trays are to be used in ceilings, where this is not accessible J hooks are to be used ABSOLUTELY no acute angles to be run on fiber. (wrapped around the walls) Service loops of 10' to be applied at all terminations.
- Telecommunications cabling is also CAT 6 plenum
- Cables should be labeled to match rooms and IDF/MDF locations. Fiber should be labeled.
- Fire stop all cable and conduit to meet all national and local fire codes. All walls must maintain their fire rating.
- Electrical and Voice/Data drops installed must be at least 5” apart as stated by industry standards.
- All fiber optic cable is to be connected through a rack-mount fiber termination cabinet (Superior Fiber Optic XP/N TRC-18 or equivalent). A 10' service loop must exist and be neatly wrapped within cabinet. Hazardous warning labels are to be permanently attached where applicable. Cable is to be properly labeled at each end with room/rack location. Fiber cords are to be left attached to the fiber enclosure.
- Conduit must meet or exceed requirements as stated in EIA/TIA-569 standards. Conduit shall be reamed throughout and bushed at both ends. There shall be no more than two 90-degree bends between pull points. Pull strings are to be left in conduits that are not filled to maximum capacity. Conduit must be uniformly installed and firmly. Cable Trays shall have an electronic zinc galvanized finish and installation shall comply
- Cable-bend radii shall not be less than four times the cable diameter for horizontal cable." This applies to termination on the back of the patch panel and outlet location where the horizontal cables terminate and bend-radius stability can occur due to securing the cables in place by tie wraps or other means.

## **MDF/IDF Room Standards:**

**These standards are to set forth the minimum requirements for file server rooms (MDF-Main Distribution Frames) and patch panel rack locations (IDF-Intermediate Distribution Frames).**

IDF Rooms (size, cooling, and electrical requirements may change in proportion to the amount of equipment needed)

- IDF locations should be provided throughout school facilities in order to limit the total cable length between a data network drop and the patch panel to which the cable connects to a maximum of 290 feet. IDF locations should be individual spaces, not a space within a space shared by others or other equipment.
- The IDF room should be nominally 9 foot by 9 foot in size and be provided with a lockable door which opens out of the space. Each IDF location should be provided with 2 30A, 120V twistlock receptacles, each fed from a dedicated rack mounted UPS. The UPS should be fed from a grounded circuit. The circuits **MUST** emanate from a power panel supported by an emergency generator since power to the phones are fed from these closets. (Safe Schools)
- Patch panels and enclosures shall be mounted in a floor mounted rack securely fastened and free from vibration and workspace clearance around the rack of 3 ft. The rack shall be grounded.
- The IDF room should have sufficient cooling and airflow to maintain a temperature between 60°F and 70°F with a heat load of approximately 4,000 watts, 12,000 BTU/H. Relative humidity can maintained within a range of 5 to 95% at 30C non-condensing. The cooling system must be connected to the school generator to prevent overheating conditions during power outages.
- Each IDF location should connect to the MDF location using a 8-strand multi-mode fiber. All fiber should terminate in a fiber enclosure. The fiber termination should be a Type SC, with SC-SC 6-foot zip-cords.
- Location of Patch panels and electronics shall be installed in the rack as indicated in Exhibit B

MDF Rooms (size, cooling, and electrical requirements may change in proportion to the amount of equipment needed)

- An MDF location shall be provided in each school facility. The MDF location must be an individual space, not a space within a space shared by others or

other equipment. The MDF room will be the location for all file servers, racks, WAN equipment, Telephony, and network equipment at the facility.

- The MDF room should be nominally 10 foot by 12 foot in size and be provided with a lockable door which opens out of the space. The MDF room should be provided with 4 20A, 120V quad receptacles, and 4 30A 120 V twist-lock outlets; each fed from a dedicated circuit. The circuits should emanate from a power panel supported by an emergency generator if a generator is included in the project.
- The MDF room should have sufficient cooling and airflow to maintain a temperature between 60°F and 77°F with a heat load of approximately 12,000 watts, 37,000 BTU/H. Relative humidity can maintained within a range of 5 to 95% at 30C non-condensing and should not be conducive to generating electrostatic energy. The cooling system must be connected to the generator to cool the room during extended power-outages.
- The room should be clean, dust free, and all ceiling tiles present. While lighting should be conducive to permit work on equipment, direct sunlight is not allowed to shine on the electronics
- Liquid carrying pipes shall not be located directly above the racks.
- Fire protection should be installed that meets NFPA 75 specifications.
- Telephony equipment shall be mounted in a 19" floor mounted rack securely fastened and free from vibration and workspace clearance around the rack of 3 ft.
- A  $\frac{3}{4}$ " plywood backboard shall be mounted on the sufficient to carry the minimum weight of 300 lbs
- The telephony and data racks shall be located 12 feet away from electromagnetic, electrostatic, or Radio frequency sources.
- All racks shall be grounded and supplied with rack mounted UPS systems. This should be single point ground reference installed in the AC service panel and should measure no more than 5 ohms. Ground connections shall be clearly marked with instruction not to remove. All supply conductors in the AC service panel are installed in the same raceway (phase, neutral ,ground wires). The ground conductor in the service panel should not measure more than .5 amps and should not be smaller than any phase conductor in the same conduit. The difference of potential between the isolated neutral bus and the ground bus (IG or ACEG) in the service panel should measure no more than .5 Vrms. Neutral to ground bonding must be performed at the serving transformer.

- Power wiring must not be installed parallel to data\phone cabling.
- Servers, routers, and switches shall be supported on contractor furnished data equipment floor standing racks of 42U; model HP 10642 or Dell 4210 or equivalent HP or Dell racks. Racks must include heavy duty lockable wheels, have closed side panels, lockable front and back doors; top mounted heat exhaust fans and open bottom for cable access. Side panels and doors must provide adequate ventilation.
- Racks must also include 1U LCD display/keyboard/trackball assembly and an IP accessible 16 port KVM switch.
- Racks must include dual UPS systems and dual redundant electrical wiring. The UPSs require dual industrial 30 amps power supplies for a total of 4 30A 120 V outlets as mentioned above.
- The MDF room will also serve as the landing location for school incoming fiber optic cabling and the incoming telephone cabling. There must be 4 physical entrances for data through Contractor-provided, underground conduits of minimum 3 inches in diameter following 2 separate physical paths in two pairs. These building data cabling entrances must be spaced separately from any electrical power entrances by at least 18 inches apart.
- A detailed floor plan of the MDF to include wiring and electrical diagram shall be provided.
- Racks must also include two 24-port gigabit copper switches and dual fiber ports, pre-wired to provide dual redundant network connectivity. Each network wiring system must be of different color (not black, white or red) and must be placed on a different side of the rack. All switches must support power over Ethernet (PoE)

#### Network Servers

- All servers should be located in the Main Distribution Frame (MDF) room, rack which is discussed elsewhere in this document.
- The servers anticipated to be required in an secondary school are as follows:
  - 1 Windows 2003 server for applications and SOL caching
- The Department of Technology should be consulted as to the number of servers that are required at a specific site.

#### Main School Fiber WAN routers

- All routers should be located in the Main Distribution Frame (MDF) room, rack which is discussed elsewhere in this document.

- The routers anticipated to be required in an elementary school are as follows:
  - 2 CISCO 3570G (or equivalent) with enhanced image, 4 SFP
- Cisco RPS 675 (model PWR675-AC-RPS-N1=) to provide redundant power to the 3560
- The Department of Technology should be consulted as to the exact type of WAN equipment that is required at a specific site.

#### Telecom Equipment

Sample listing of equipment to be installed in the Telephone Equipment Room 19' Rack:

- |   |   |
|---|---|
| 1 | CS1000M Chassis with up to 2 Expansion Cabinets         |
| 1 | Nortel Signaling Server                                 |
| 1 | Baystack 470  |
| 1 | APC 2200 UPS  |
| 1 | SEB Modem (Netsend Modem)                               |
| 1 | Music source storage device                             |
| 1 | Environmental Monitoring Cards and Switch               |
| 1 | 19", 7 foot floor mount rack to support above equipment |

#### Other Design Considerations:

- Consideration should be given to providing a separate air-conditioning system to support the spaces containing the Main Distribution Frame, any head-end equipment associated with the technology systems provided in the facility, and the main building servers. This equipment should be provided with emergency power.

**Exhibit A**  
**(Typical Classroom**  
**Telephone Installation)**

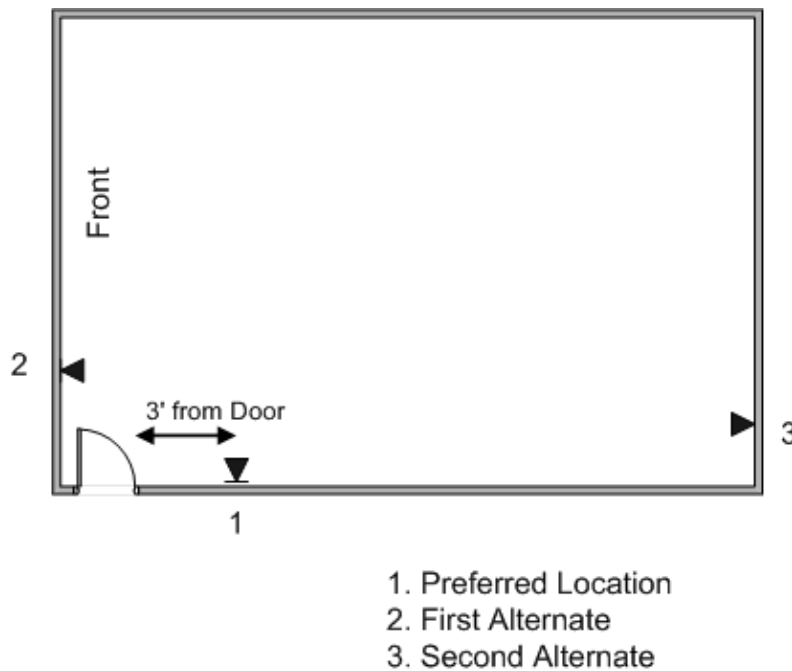
The below diagram notes the standard position of the installation of all new telephone sets that are to be installed by DOT for the replacement program. This standard was designed and is supported by the Department of Administrative Support Services, Security and Safe Schools.

Technicians have been instructed to install an RJ45 wall outlet to support the phone (IP or Digital) in the follow order:

- The standard installation, as designated on the diagram as preferred, will be a wall phone installed 3' foot from the door jam as designated on the diagram. This distance will reduce the risk of student access from the hall.
- If this is not feasible, the first alternative as designated on the diagram, will be utilized. This is approximately 3' from the doorjamb. This distance is necessary to avoid staff from being injured when utilizing the phone.
- The second alternative as designated on the diagram, has been identified to avoid line of site from the door.

These standards will support DOT objectives to standardize the installation for all schools, support safe school initiative, reduce cost and provide for timely installations. All voice outlets to be installed at the level to meet ADA requirements.

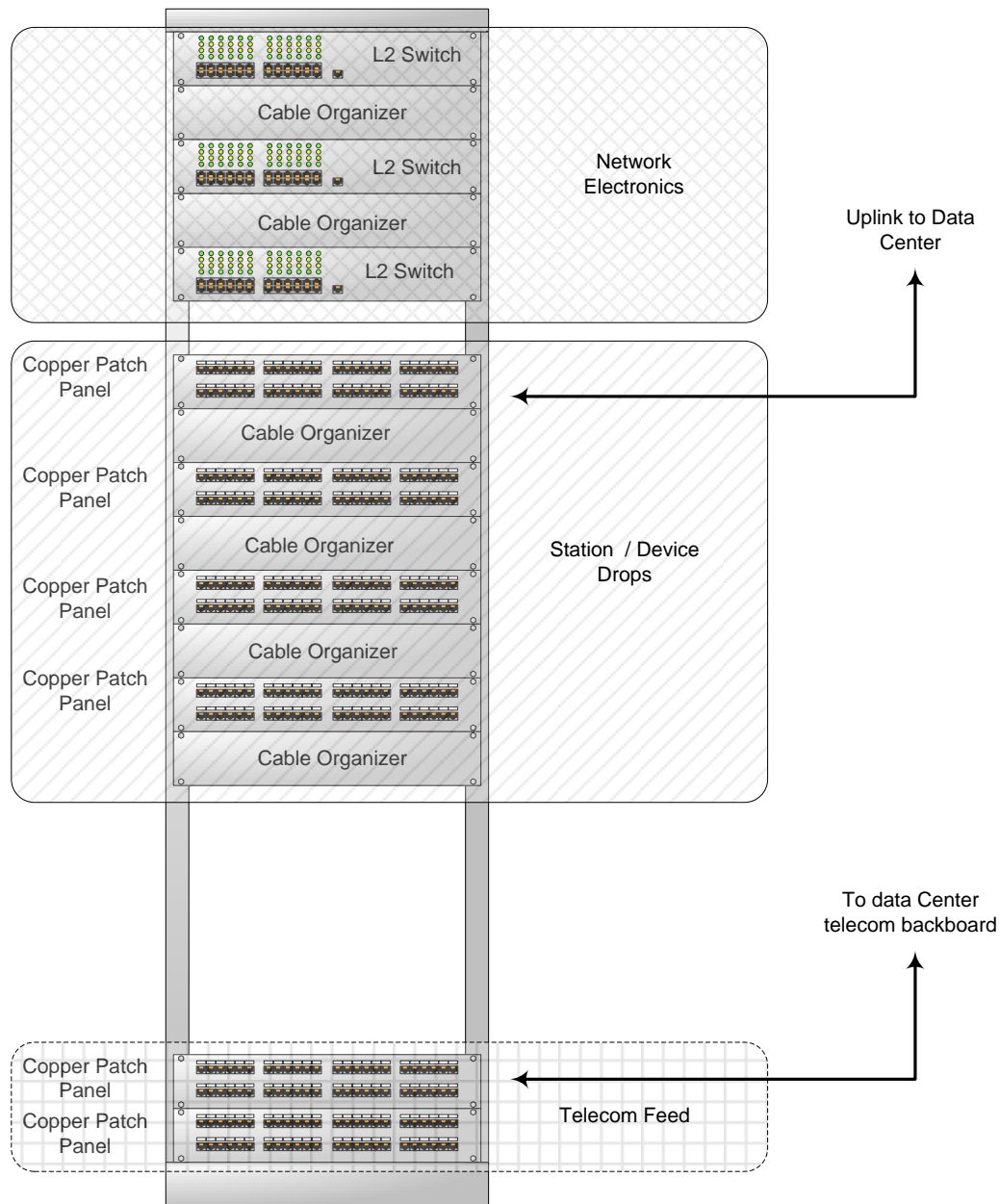
Typical Classroom  
Telephone Installation



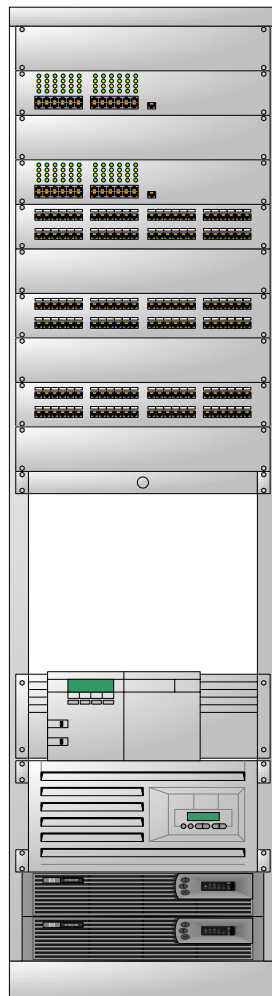


## Exhibit B

### IDF Rack Cabling Distribution



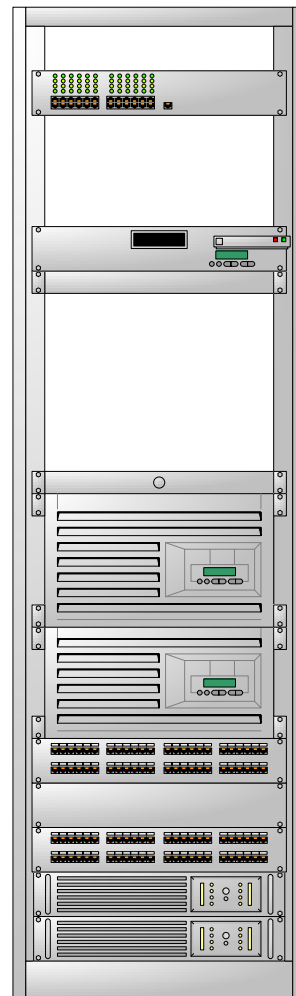
## MDF



Fiber Enclosure  
Layer 2 Switch  
Cable Organizer  
Layer 2 Switch  
Patch Panel  
Cable Organizer  
Patch Panel  
Cable Organizer

Router

Server



Telecom

1000M