

Technology Plan 2022 - 2025

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SCHOOL of KENYA

Updated: May 2022

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Vision, Mission, and AIMS

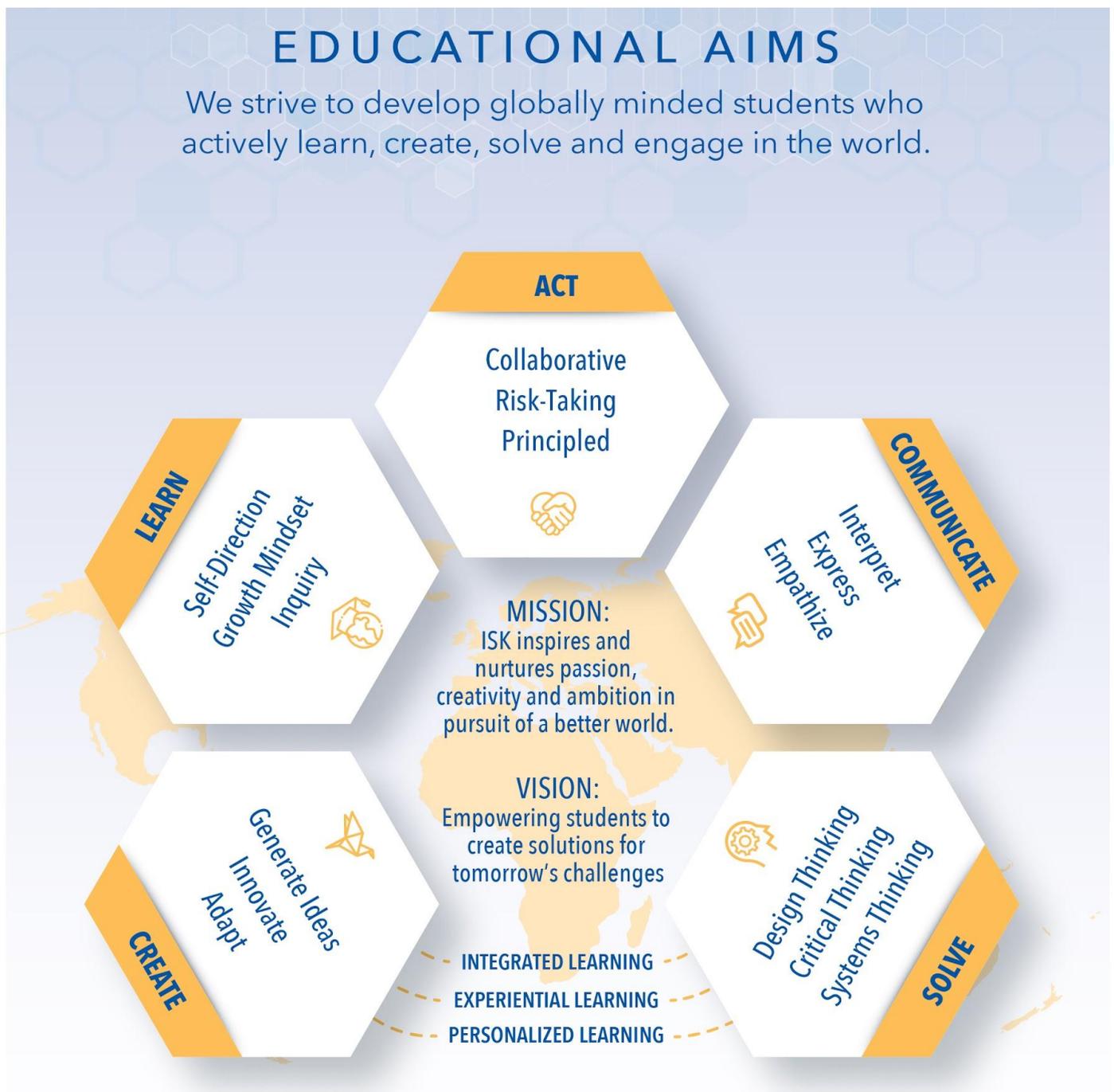
ISK Mission:

ISK inspires and nurtures passion, creativity and ambition in pursuit of a better world.

ISK Vision:

Empowering students to create solutions for tomorrow's challenges

ISK AIMS



Each of the above Aims will be referenced throughout this document in abbreviated form:

- **L** - Learn
- **S** - Solve
- **A** - Act
- **CR** - Create
- **C** - Communicate

Information Communication Technology (ICT) Capability

Introduction

At ISK, students develop lifelong ICT capability as they learn to use ICT effectively and responsibly in their learning. Students use ICT to:

- competently access, communicate, remix, and create knowledge and concepts;
- investigate and solve relevant problems;
- work collaboratively in all learning areas at school and in their lives beyond school;
- explore and innovate using design and computational thinking;
- participate ethically and responsibly in a digital environment and learn to contribute to the Global Society;
- understand ICT systems and contribute to new ways of doing things as technologies evolve.

Recognizing that technology is multidisciplinary by nature and has applications in any environment, ISK promotes lifelong success by integrating technology throughout the teaching and learning processes.

Standards for ICT Capability

ICT capability is based on the assumption that technologies and digital tools enable the student to create learning pathways to carry out tasks, solve problems, and generate new processes and products. Students perceive ICT systems as adaptive tools that they use and remix creatively to accomplish learning tasks, rather than systems that require following rigid, standard procedures.

ISK combines the strengths of International ICT Standards and the ISK AIMS to provide authentic contexts in which students build ICT capability. The five ICT Standards for ISK are stated in the language of a learner's ambitions and goals:

- **Creator and Innovator**
- **Investigator and Problem-Solver**
- **Communicator and Collaborator**
- **Computational Thinker**
- **Global Digital Citizen**

ICT Capability across the curriculum and within Technology Curriculum

Learning areas across the curriculum provide the content and contexts within which students develop and apply the knowledge, skills, behaviors, and dispositions that comprise ICT capability.

- Students develop the ability to transfer these across environments and applications.
- Students learn to use ICT with confidence, while understanding its possibilities, limitations, and impact on individuals and communities.
- Students learn to innovate with ICT, creating new ideas and generating unique processes for the future.

HS STEM Courses and MS Elective Courses provide specialized instructional opportunities for students who desire exploration and mastery of more advanced technological proficiencies required for future careers.

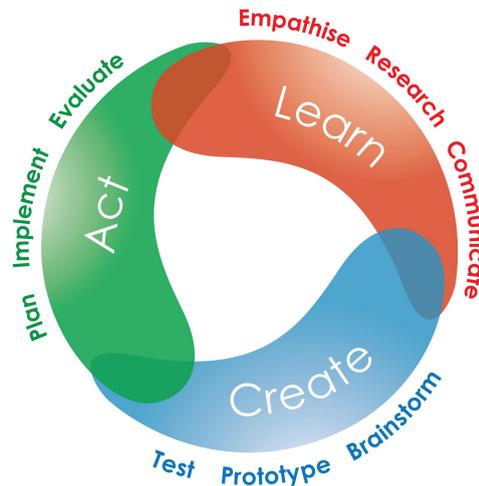
HS STEM Pathways is an opportunity for students to design an integrated, personalized and experiential learning experience in which, guided by a mentor teacher, they leverage knowledge and skills from STEM disciplines to engineer a solution to a real world problem.

STEM co-curriculars are offered in each division. These are revised according to student interest, and are usually listed in the Timeline.

ICT opportunities will be reviewed and revised regularly to ensure that there is alignment and consistency in opportunities for all students, and to respond to the demands for increased involvement with emerging technologies.

Information and Communication Technology Standards for Students

The ISK Design Cycle is the foundational process used to achieve ICT Standards.



Five interrelated standards that are linked to the ISK Educational Aims guide learning with ICT:

- Creator and Innovator **(CR) (A)**
- Investigator and Problem-Solver **(L) (S)**
- Communicator and Collaborator **(C) (S)**
- Computational Thinker **(L) (S)**
- Global Digital citizen **(L) (A)**

Creator and Innovator

Students use a variety of technologies within a design process to create and innovate. Students:

- Generate original ideas, designs, processes and solutions;
- Evaluate and use a variety of devices, software, and online tools;
- Prototype and present alternative solutions;
- Implement solutions innovatively across various disciplines.

Investigator and Problem-Solver

Students use technology to identify authentic problems, research responsibly, synthesize learning, and develop possible solutions. Students:

- Empathize and communicate with various stakeholders;
- Plan and execute focused information/data searches for investigations;
- Generate, organize, analyze and evaluate validity of research and data;
- Explain and implement solutions in tasks and challenges.

Communicator and Collaborator

Students use digital tools to broaden their perspectives, increase empathy, and work effectively in teams. Students:

- Select, plan, and participate in technology-facilitated communications;
- Exchange ideas and solve problems in collaborative learning communities;
- Learn, explain thinking, and/or teach through communications technologies;
- Participate in collaborative online ventures that create and share group learning.

Computational Thinker

Students employ algorithmic thinking to propose and automate solutions to authentic problems and systems. Students:

- Recognize patterns and break down complex problems into steps (decomposition);
- Apply fundamental principles and concepts of computer science, including synthesis, abstraction, logic, algorithms, and data representation;
- Analyze problems in computational terms, and have repeated experience of designing and writing computer programs to solve and automate them;
- Use technology to create models and simulations to investigate and/or explain systems.

Global Digital Citizen

Students act in ways that are safe, legal, and ethical while learning and working in an interconnected digital world. Students:

- Use systems, such as Copyright and Creative Commons, to acknowledge intellectual property rights for all media and to share own work;
- Apply personal and digital information security protocols routinely;
- Create and monitor a positive personal digital footprint responsibly;
- Identify the impacts of current and emerging ICT in society.

Integration Planning Technology References

ACARA | The Australian Curriculum. Australian Curriculum, Assessment and Reporting Authority (ACARA)
<https://www.australiancurriculum.edu.au/f-10-curriculum/technologies/> The Australian Curriculum is licensed under Creative Commons
Gov. UK. Department of Education (2013). *National curriculum in England: design and technology programmes of study*:
<https://www.gov.uk/government/publications/national-curriculum-in-england-design-and-technology-programmes-of-study/national-curriculum-in-england-design-and-technology-programmes-of-study> (accessed 4 October 2013)

International Society for Technology in Education (2016). *National Educational Technology Standards (NETS) and Performance Indicators for Students*: <http://www.iste.org/standards/standards/for-students> (accessed 2016)

ISK Digital Citizenship Program



The infographic is titled "Digital Citizenship at ISK" and features the ISK Learning Designs logo. It is divided into four main themes, each with a central icon, a title box, a quote in a cloud, and a list of related topics.

Respect	Educate	Protect	Self-Balance
Relationships and Communication	News & Media Literacy	Privacy and Security	Media Balance & Well-Being
"We know the power of words and actions."	"We are critical thinkers and creators."	"We care about everyone's privacy."	"We find balance in our digital lives."
Cyberbullying, Digital Drama & Hate Speech	Digital Footprint & Identity		
"We are kind and courageous."	"We define who we are."		

Learn, Practice, Lead
by thinking critically, participating, collaborating, and contributing!

ISK's Digital Citizenship Program is based on the well-researched [Common Sense Media new curriculum](#) (CSM), which was designed and developed in partnership with **Project Zero at the Harvard Graduate School of Education**.

- Teachers create a free account to access all materials.
- All lessons have been cross-walked to the ISK's four themes of Digital Citizenship, for which students created meaningful logos.
- [This ISK resource shows](#) how the CSM lessons match to ISK's four themes, **and has direct links for teachers**.
- Some lessons may be incorporated into curricular units.
- These lessons may also be combined within ISK's Wellness Program as it develops.

Working ISK Tech Characteristics and Digital Strategies by Grade Spans

Characteristics or profiles of students in a Grade Span are followed by Digital Strategies being developed for inclusion in unit plans. Strategies are based on ISTE standards and emphasize how to achieve tech standards.

- **Teachers and Integration Coaches intentionally plan units with appropriate digital strategies.**
- Definitions of terms will be added to a platform containing this information so that teachers and students can use the tool.
- Students begin to identify the digital strategies that they utilize in learning.
- Exemplars, such as ISK teaching videos or examples of student work at ISK, that demonstrate the different strategies will be linked within this tool to illustrate the specific meaning to each strategy. This tool is meant to be built over time by the ISK community.
- **Teachers can record observations of students using strategies, and students can document their accomplishments in portfolios.**
- **We begin with the list of Characteristics and Digital Strategies for Global Digital Citizens by the end of Grade 12, followed by Grade Span suggestions to achieve the Grade 12 Portrait of a Global Digital Citizen.**

Portrait of a Grade 12 Global Digital Citizen:

A Global Digital citizen leverages technology to build understanding of one's identity in a multicultural world and to actively and ethically contribute to local and global solutions and innovation efforts, building community in pursuit of a fair and sustainable world.



ISK definitions: A global citizen understands one's identity and actively contributes to building community in pursuit of a fair and sustainable world.

Characteristics of a Global Digital Citizen

Problem-Solver and Investigator	Creator and Innovator	Communicator and Collaborator	Computational Thinker	<u>Global Digital Citizen</u> <u>Link to ISK DC</u> <u>Program</u>
<i>Students use technology to identify authentic problems; research responsibly; synthesize, analyze, and represent data; develop possible solutions through using a cyclic Design Process; and</i>	<i>Students leverage a variety of technologies in a cyclic Design Process to generate new ideas; test theories; ethically build on the work of others; design and construct new solutions; get feedback;</i>	<i>Students use technology to gain multiple perspectives through networking with peers and professionals; assume various roles in collaborative learning communities and teams; and seek out diverse</i>	<i>Students employ logic and algorithmic thinking to ideate, design, test, iterate, visually represent, and automate solutions to authentic problems and systems using coding skills and other software.</i>	<i>Students recognize the rights, responsibilities, and opportunities of living in an interconnected digital world. They actively seek and practice routines to participate in the Global World safely, legally,</i>

<i>publish their evidence-based conclusions to authentic audiences.</i>	<i>and implement their innovations locally and globally.</i>	<i>viewpoints to solve local or global issues.</i>		<i>ethically, and innovatively.</i>
Digital Strategies	Digital Strategies	Digital Strategies	Digital Strategies	Digital Strategies
By 12th Grade, I Can:	By 12th Grade, I Can:	By 12th Grade, I Can:	By 12th Grade, I Can:	By 12th Grade, I Can:
<ul style="list-style-type: none"> * Understand and utilize the cyclic nature of a design process as they * identify authentic and increasingly complex problems and * demonstrate persistence in finding solutions; 	<ul style="list-style-type: none"> * Leverage technology devices and tools to communicate the design process steps and to get feedback to improve products and systems; * Use the Design Cycle to brainstorm, define problems, build prototypes, test, make improvements, and implement solutions. 	<ul style="list-style-type: none"> * Routinely and ethically interact, communicate, and publish with peers and experts, * employing a variety of digital environments * and media formats. 	<ul style="list-style-type: none"> * Break down complex problems into specific steps, * recognize patterns, and * apply algorithmic thinking routines. 	<p>RESPECT myself and my community relationships by:</p> <ul style="list-style-type: none"> * consciously attend to the power and intent of words while contributing and in the multicultural digital world; * develop my own strategies to lead when confronted with inappropriate digital behaviors.
<ul style="list-style-type: none"> * Leverage technology to plan, execute, and curate resources in focused research, * evaluating sources for accuracy, bias, perspective, credibility and relevance; 	<ul style="list-style-type: none"> * Plan and manage a design process that considers a client's purposes and needs; * Recognize and communicate design constraints; * Persevere in handling greater ambiguity. 	<ul style="list-style-type: none"> * Prepare and practice communicating complex ideas clearly and effectively; * create a variety of digital media including slide deck pitches, visualizations, models or simulations to explaining my viewpoints and learning. 	<ul style="list-style-type: none"> * Apply fundamental principles and concepts of computer science, including syntheses, abstraction, logic, algorithms, and data representation to solve complex problems. 	<p>EDUCATE myself and others in:</p> <ul style="list-style-type: none"> * developing critical thinking for powerful news and media literacy, * acknowledging the work of others; * utilizing strategies to define who I am by building a positive and productive online presence.
<ul style="list-style-type: none"> * Choose technology tools to help generate, organize, analyze, and represent data * in order to construct knowledge across disciplines * and support conclusions with evidence; 	<ul style="list-style-type: none"> * Produce, publish, and implement creative works and innovative projects * that target particular audiences * using appropriate media * and citing sources. 	<ul style="list-style-type: none"> * Cohesively collaborate in local and global project teams, assuming various roles and responsibilities to investigate issues and accomplish common goals. 	<ul style="list-style-type: none"> * Analyze problems in computational terms and * have repeated experience in writing and debugging computer programs and other software to * automate solutions. 	<p>PROTECT my digital privacy and security, by:</p> <ul style="list-style-type: none"> * managing my personal data; * identifying digital scams; and * being aware of

				data-collection technology used to track my navigation and life online.
* Clearly explain and models, systems, or solutions to authentic problems , using technology that suits the particular audience .	* Transfer learning to create products and solutions innovatively across multiple disciplines ; * Persevere and handle greater ambiguity in open-ended problems.	* Communicate and collaborate by: * documenting learning processes to reflect on and improve work, * receiving and utilizing feedback from varied audiences, * curating evidence of learning, and * sharing with others as part of dynamic learning communities .	* Explore forums and other computer science opportunities to collaborate and extend your own programming and problem-solving skills, including open source sites .	BALANCE my digital activities by: * engaging in other healthy pursuits and interests and * deliberately creating human connections and * maintaining a sense of well-being , * opening opportunities for fulfilling and connected lives .

The following are suggestions for Pre-K to Grade 8 in Grade Spans. This can be built to include ISK examples as the program grows.

ISK definitions: A global citizen understands one's identity and actively contributes to building community in pursuit of a fair and sustainable world.

Pre-K to K Characteristics

Problem-Solver and Investigator	Creator and Innovator	Communicator and Collaborator	Computational Thinker	Global Digital Citizen Link to Kindergarten DC Slide
<i>With the help of a teacher, I can explore problems and explain or visualize solutions.</i>	<i>With the help of a teacher, I can learn to create by taking things apart, tinkering, and building new things.</i>	<i>With the help of a teacher, I can share my work and get feedback for learning.</i>	<i>With the help of a teacher, I can break down problems into simple steps and solve a challenge.</i>	<i>With the help of a teacher, I can practice ways to keep safe online and balance my online and offline life.</i>
Digital Strategies: Pre-K -K	Digital Strategies: Pre-K -K	Digital Strategies: Pre-K -K	Digital Strategies: Pre-K -K	Digital Strategies: Pre-K -K
* With the help of my teacher, I can use technology for simple inquiry.	* With the help of my teacher, I can tinker and create new things .	* I share my work in Seesaw and use feedback .	* I can describe steps to follow for simple problems.	PROTECT: * I can use the internet and show that I practice online safety strategies .

* With the help of my teacher, I can show data that I collect to solve a problem.	* With the help of my teacher, I can take things apart to learn how things are made.	* With the help of my teacher, I can write, record audio or video to reflect on my work.	* With the help of my teacher, I can program simple devices such as Beebots or use apps to solve challenges.	SELF-BALANCE: * I can describe, act out, draw, sing or show some of the ways I balance my online and offline life.
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Grades 1- 2

ISK definitions: A global citizen understands one's identity and actively contributes to building community in pursuit of a fair and sustainable world.

Grades 1 to 2 Characteristics

Problem-Solver and Investigator	Creator and Innovator	Communicator and Collaborator	Computational Thinker	Global Digital Citizen Link to ISK Program. Click on Grade.
<i>With some guidance, I can use technology to research about my inquiries; collect and analyze data; and present my findings when solving problems.</i>	<i>With some guidance, I can select digital and non-digital tools to learn by taking things apart, tinkering, remixing, and innovating using the Design Cycle</i>	<i>With some guidance, I can use technology to share my work; use feedback; communicate clearly; and collaborate on projects with a partner.</i>	<i>With some guidance, I can communicate how to break down problems into smaller steps, and use technology to show the patterns I see.</i>	<i>With some guidance, I understand how to learn and live in an interconnected digital world in ways that are safe, legal, and ethical.</i>
Digital Strategies: G 1-2	Digital Strategies: G 1-2	Digital Strategies: G 1-2	Digital Strategies: G 1-2	Digital Strategies: G 1-2
* With guidance, I can: * find topics of interest * use digital tools in the research process. * collect and visually represent data. * use age-appropriate criteria to evaluate the digital content	* With guidance, I can: * follow the design process by taking things apart, tinkering, remixing or creating; * create step-by-step directions to create something simple.	* With guidance, I can: * share my work in Seesaw and use feedback and become more independent: * use feedback to improve my work.	* With guidance, I can look for similarities in data to identify patterns and categories. * With guidance, I can break down a problem by drawing or writing instructions that use repeated patterns.	RESPECT: * I can pause and think when I am online so that I am respecting myself and my community; * I can be an upstander by finding ways to stop meanness and other negative online behaviors.

<ul style="list-style-type: none"> * With guidance, I can : * ask questions and suggest solutions for problems around me; * use a design process to investigate, test, and solve problems. 	<ul style="list-style-type: none"> * With guidance, I can draw simple plans of my designs and * make and test prototypes to create new artifacts. 	<ul style="list-style-type: none"> * With guidance, I can safely share and exchange information and ideas with age-appropriate audiences: * respect and seek out different perspectives. 	<ul style="list-style-type: none"> * With guidance, I can use simple coding directions unplugged or in apps and * sometimes create simple programs. * use Lego WeDo or Beebots to demonstrate an idea. 	<p>EDUCATE:</p> <ul style="list-style-type: none"> * I know what is good to have in my digital footprint; * I know what digital ownership is and give credit to other people's work.
		<ul style="list-style-type: none"> * With guidance, I can use tools to collaborate with a partner. 		<p>PROTECT:</p> <ul style="list-style-type: none"> * I can protect my privacy and security and that of others online.
				<p>SELF-BALANCE:</p> <ul style="list-style-type: none"> * I can balance my digital time with device-free moments and family time.

Grades 3 - 5

ISK definitions: A global citizen understands one's identity and actively contributes to building community in pursuit of a fair and sustainable world.

Grades 3 to 5 Characteristics

Problem-Solver and Investigator	Creator and Innovator	Communicator and Collaborator	Computational Thinker	Global Digital Citizen Link to ISK Program. Click on Grade.
<i>I can choose tools for the research process, evaluate resources with guidance, and practice perseverance using the design cycle to solve problems.</i>	<i>I can use the Design Cycle to generate new ideas and consider solutions, leveraging technology to manage and share the process and artifacts.</i>	<i>I can use technology to share my work using a variety of tools, communicate clearly with others, and collaborate in different roles in a team.</i>	<i>I can use digital and non-digital strategies to explore patterns, represent data, simplify problems into smaller parts, and use algorithmic thinking to simplify.</i>	<i>With increasing independence, I can practice how to live and learn in a digital environment and interact safely, legally, ethically, and innovatively.</i>

Digital Strategies G 3-5	Digital Strategies G 3-5	Digital Strategies G 3-5	Digital Strategies G 3-5	Digital Strategies G 3-5
<p>With increasing independence, I can:</p> <ul style="list-style-type: none"> * identify and clearly state real problems in the school and my world; * practice searching techniques; * evaluate sources for accuracy, perspective, and credibility; 	<p>With increasing independence, I can:</p> <ul style="list-style-type: none"> * generate ideas and explore ways to try to implement them; * choose digital and non-digital tools to design possible plans when solving problems in a team. 	<p>With increasing independence, I can:</p> <ul style="list-style-type: none"> * curate my work, explaining my thinking; * show evidence of my learning goals; * seek feedback, reflect, and improve; * share my portfolio in a platform (Seesaw, etc.) 	<p>With increasing independence, I can:</p> <ul style="list-style-type: none"> * Break down complex problems into steps, * recognize and explain patterns; * create directions for finding digital solutions of similar problems routinely. 	<p>RESPECT:</p> <ul style="list-style-type: none"> * I can use strategies to be positive and helpful in my online interactions, and also help others to do so; * I can recognize meanness and cyberbullying, and can use strategies to be an upstander.
<p>With increasing independence, I can:</p> <ul style="list-style-type: none"> * choose tools to gather, classify and display information and data in meaningful ways. 	<p>With increasing independence, I can:</p> <ul style="list-style-type: none"> * use the Design Cycle to help me with time management for projects; * cyclically build prototypes, test, and improve them with perseverance. 	<p>With increasing independence, I can:</p> <ul style="list-style-type: none"> * collaborate with a partner or in a team, gaining new viewpoints; * learn strategies to ethically remix or create new artifacts with team members. 	<p>With teacher guidance I can:</p> <ul style="list-style-type: none"> * use algorithmic thinking to describe patterns that I see; * begin to understand the role of digital tools in automation. 	<p>EDUCATE:</p> <ul style="list-style-type: none"> * I can identify important parts of digital content to verify authenticity; * I pay attention to possible stereotypes; * I recognize a creator's rights; * With the guidance of a teacher, I create a positive digital footprint.
<p>With increasing independence, I can</p> <ul style="list-style-type: none"> * follow the Design Cycle to test hypotheses, model solutions, and solve problems. 	<p>With increasing independence, I can:</p> <ul style="list-style-type: none"> * Choose tools to display, present, and explain my innovations. * Collaborate on projects that might improve the school or the world. 	<p>With support of a teacher, I can</p> <ul style="list-style-type: none"> * build a network of experts and peers, within the school policy; * give and receive constructive feedback in order to improve; 	<p>With teacher guidance I can:</p> <ul style="list-style-type: none"> * explore computer programming to create models or robots, tell stories, show how something works, or make learning games. 	<p>PROTECT:</p> <ul style="list-style-type: none"> * I am careful not to put personal information on the internet; * I use strong passwords & never share; * I avoid sites that collect information.
				<p>SELF-BALANCE:</p> <ul style="list-style-type: none"> * I can make healthy media choices to lead a balanced life; * I use strategies to avoid getting hooked on media.

* I make time for family and friends

Grades 6 - 8

ISK definitions: A global citizen understands one's identity and actively contributes to building community in pursuit of a fair and sustainable world.

Grades 6 to 8 Characteristics

Problem-Solver and Investigator	Creator and Innovator	Communicator and Collaborator	Computational Thinker	Global Digital Citizen Link to ISK Program. Click on Grade.
<i>I can use technology to research responsibly; develop possible solutions to authentic problems through using a cyclic Design Process; and publish my evidence-based conclusions to authentic audiences.</i>	<i>I can choose technology throughout the Design Cycle to generate new ideas; design plans; prototype and test new solutions; and implement my innovations locally or globally.</i>	<i>I can use technology to gain multiple perspectives through networking with peers and professionals within school policy; assume various roles in collaborative learning teams; and seek out diverse viewpoints.</i>	<i>I can employ logic and algorithmic thinking to ideate, design, test, iterate, visually represent systems, and automate solutions through using coding skills and other software.</i>	<i>I can use strategies to help me live and work in an interconnected digital world in ways that are safe, legal, ethical, and productive.</i>
Digital Strategies G 6-8	Digital Strategies G 6-8	Digital Strategies G 6-8	Digital Strategies G 6-8	Digital Strategies G 6-8
I can:	I can:	I can:	I can:	I can:
<ul style="list-style-type: none"> * Effectively use research strategies to support inquiry; * Evaluate resources for bias, accuracy, perspective, credibility, and relevance; * Organize resources and assets into collections that others can also use. 	<ul style="list-style-type: none"> * Use a Design Cycle to plan and manage an innovative project; * Realize that setbacks are part of the process and are potential opportunities; * Persevere. 	<ul style="list-style-type: none"> * Select appropriate tools and platforms to share and communicate my work effectively; * Responsibly remix digital resources into new works with a different perspective; 	<ul style="list-style-type: none"> * Break down complex problems into smaller steps; * List steps and look for patterns or repetitions; * Connect mathematical algorithms with efficiency in solving problems; 	<p>RESPECT</p> <ul style="list-style-type: none"> * Build a responsible social media presence that honors each person's life and relationships * Use strategies to be an upstander in handling meanness and cyberbullying.

<ul style="list-style-type: none"> * Explore and define problems relevant to school or the larger community; * Use a Design Cycle to investigate possible solutions for open-ended problems; * Design simulations or models to explain possible solutions. 	<ul style="list-style-type: none"> * Cyclically design prototypes, test, get feedback, and redesign products; * Choose tools to produce and implement creative works and innovative projects; * Develop strategies to handle increasingly complex and open-ended challenges. 	<ul style="list-style-type: none"> * Responsibly create a network of experts and peers, within school policy; * Select appropriate collaborative technology to work with others to solve local or global challenges; * Assume responsibility for my role in a team. 	<ul style="list-style-type: none"> * Explore computer programming to automate solutions, control a robot, or to create games; * Practice debugging systems that are not working as expected. 	<p>EDUCATE</p> <ul style="list-style-type: none"> * Find and use only credible resources; * Follow copyright laws and know what fair use means; * Use strategies to create a positive digital footprint; * Know how social media affects a digital footprint.
<ul style="list-style-type: none"> * Choose tools to generate, organize, analyze and represent data; * Transfer skills with digital tools to learn new technology; 	<ul style="list-style-type: none"> * Transfer learning to create products and solutions for new problems; * Reach out to share products or solutions locally or globally. 	<ul style="list-style-type: none"> * Document my learning processes; * Seek feedback and reflect to improve my work, * Curate evidence of my learning in a portfolio; * Share learning and resources in dynamic learning communities. 	<ul style="list-style-type: none"> * Explore and practice applying concepts of computer science, including logic, algorithms, and data representation to solve complex problems: 	<p>PROTECT:</p> <ul style="list-style-type: none"> * Only post information that does not identify me or anyone else; * Keep passwords strong and secret; * Recognize scams such as phishing; * Know how companies can collect personal data.
				<p>SELF-BALANCE:</p> <ul style="list-style-type: none"> * Engage in non-digital healthy pursuits and interests * Deliberately create human connections and a sense of well-being,

ICT Program Implementation Timeline Information

	2022-2023	2023-2024	2024-2025
<p>Program Development and Tech Integration</p>	<p>Summary: 2022-2023</p> <ul style="list-style-type: none"> • Creation of a Technology Planning Committee to meet regularly. This committee will be tasked with: 	<p>Goals and details will be adjusted based on the new Technology Plan from 2022-2023</p>	<p>Goals and details will be adjusted based on the new Technology Plan from 2022-2023</p>

	<ul style="list-style-type: none"> ○ Overhaul and reconsider all elements of this Technology Plan ○ Consider appropriateness of current devices for all levels ○ Assist the TLC with ISK's Journey to Teacher and Student Portfolios ○ Consider elements not included within this document from the Tech Transformation Team discussions held during 2020-21 ○ How might technology support PBL? ○ Shared coaching vision to develop ISK Coaching Model? ● Tech Integrators (coaches) attend CPTs <ul style="list-style-type: none"> ○ Help select Digital Strategies for the Unit Plans (same structure as selecting academic standards). ○ Examine and collect exemplars of the digital strategies ● Continue to upskill teachers in tech <ul style="list-style-type: none"> ○ Build essential training into the IMPACT menu. ○ Continue to add resources to the Technology Help Intranet site; ● Continue to upskill admin in tech <ul style="list-style-type: none"> ○ Decide what skills are needed for jobs; ○ Central place for training resources; ○ Time to train. (Is there an admin 2 admin scheme?) ● Survey of teachers and admin to determine current levels of tech and focus for the year? ● Progress on building digital 	<ul style="list-style-type: none"> ● Continue the Technology Planning Committee to review progress and set goals. ● Survey of teachers and admin to determine current levels of tech and focus for the year? ● Continued upskilling of all staff; ● Implement Coaching Model; ● PBL and cross-divisional projects documented throughout the year; ● Digital Citizenship Program implemented; ● Presentations of learning become routine celebrations; ● We have a vertically aligned progression of technology skills and a device plan that matches; ● Work with teachers in mapping Digital Strategies and begin tracking strategies using Chalk and Toddle ● Continue to collect exemplars 	<ul style="list-style-type: none"> ● Continue the Technology Planning Committee to review progress and set goals. ● Survey of teachers and admin to determine current levels of tech and focus for the year? ● Continued upskilling of all staff; ● Implement Coaching Model; ● PBL and cross-divisional projects documented throughout the year; ● Digital Citizenship Program implemented; ● Presentations of learning become routine celebrations; ● We have a vertically aligned progression of technology skills and a device plan that matches; ● Work with teachers in mapping Digital Strategies and begin tracking strategies using Chalk and Toddle ● Continue to collect exemplars
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	<ul style="list-style-type: none"> ● strategies and exemplars; ● Continued work posting student work in various platforms and events; ● Review of Digital Citizenship Program; 		
Assessment / Tracking System	<ul style="list-style-type: none"> ● Evidence-based reports on progress and growth of technology infusion through: <ul style="list-style-type: none"> ○ Exemplars collected; ○ Skills tracked through certificates; 	<ul style="list-style-type: none"> ● Evidence-based reports on progress and growth of technology infusion through: <ul style="list-style-type: none"> ○ Exemplars collected and assessed through rubrics; ○ Skills tracked through formalized process; ○ Student portfolio evidence 	<ul style="list-style-type: none"> ● Evidence-based reports on progress and growth of technology infusion through: <ul style="list-style-type: none"> ○ Exemplars collected and assessed through rubrics; ○ Skills tracked through formalized process; ○ Student portfolio evidence
Materials / Resources Needed	<ul style="list-style-type: none"> ● Time to share Digital Strategies with all teachers ● Digital Strategies inserted and used within curriculum tracking platforms 	<ul style="list-style-type: none"> ● Time to train and share information regarding exemplars ● Time to share Digital Strategies and how they can be demonstrated 	<ul style="list-style-type: none"> ● Time to train and share information regarding exemplars ● Time to share Digital Strategies and how they can be demonstrated
Co Curricular Options	<p>ES:</p> <ul style="list-style-type: none"> ● Minecraft ● Robotics and Coding ● 3D Design and Printing ● Movie Making <p>MS:</p> <ul style="list-style-type: none"> ● Independent STEM Projects ● Computer Programming ● Robotics & MS First Lego League partnership with Children's Garden ● Plastiki Rafiki ● Design Club ● Minecraft Club <p>HS:</p> <ul style="list-style-type: none"> ● ISSEA STEM Robotics, Science and Math 	<p>ES:</p> <ul style="list-style-type: none"> ● Previous year's offerings reviewed and new to be determined by ES. <p>MS:</p> <ul style="list-style-type: none"> ● Previous year's offerings reviewed and new to be determined by MS. <p>HS:</p> <ul style="list-style-type: none"> ● Previous year's offerings reviewed and new to be determined by HS. 	<p>ES:</p> <ul style="list-style-type: none"> ● Previous year's offerings reviewed and new to be determined by ES. <p>MS:</p> <ul style="list-style-type: none"> ● Previous year's offerings reviewed and new to be determined by MS. <p>HS:</p> <ul style="list-style-type: none"> ● Previous year's offerings reviewed and new to be determined by HS.

	<ul style="list-style-type: none"> • Construction by Design • Design Studio • 3D Fundi • Plastiki Rafiki • Independent STEM Projects 		
Resources Needed for Co-curricular	<ul style="list-style-type: none"> • Funding for supplies to develop rich tech co-curricular experiences. 	<ul style="list-style-type: none"> • Funding for supplies to develop rich tech co-curricular experiences. 	<ul style="list-style-type: none"> • Funding for supplies to develop rich tech co-curricular experiences.
Integration Training / Professional Learning (PL)	<ul style="list-style-type: none"> • Ongoing training in curricular platform and inclusion of digital strategies; • Continue to evaluate the inclusion and use of the ISK Digital Strategies in curricula and transdisciplinary units; • Continue support for Faculty using Google Shared Drives. 	<ul style="list-style-type: none"> • Ongoing training in curricular platform and inclusion of digital strategies; • Portfolios as part of assessment; • Continue to evaluate the inclusion and use of the ISK Digital Strategies in curricula and transdisciplinary units; 	
Materials/ Resources Needed	<ul style="list-style-type: none"> • Scheduled time for training with curricular system and portfolio platforms • Time during divisional meetings to share 	<ul style="list-style-type: none"> • Scheduled time for training with curricular system and portfolio platforms • Time during divisional meetings to share 	<ul style="list-style-type: none"> • Scheduled time for training with curricular system and portfolio platforms • Time during divisional meetings to share

Technology Plan Implementation Timeline

	2022-2023	2023-2024	2024-2025
School-wide Equipment and Infrastructure	<ul style="list-style-type: none"> Scheduled Equipment Replacement Begin the upgrade of ISK's WIFI network to WIFI 6 Replace indoor fiber cable connections between server room and Library switching cabinets with an armored fiber cables to reduce rodent damage 	<ul style="list-style-type: none"> Scheduled Equipment Replacement Continue the upgrade of ISK's WIFI network to WIFI 6 Evaluate backbone switching equipment and consider replacement timeline Rewire ES classrooms to remove the join introduced during construction 	<ul style="list-style-type: none"> Scheduled Equipment Replacement Implement plan to replace backbone switching equipment
School-wide Technology support	<ul style="list-style-type: none"> 1 helpdesk technician elevated to be the Information Systems Specialist Consider a position / or a change of position to create a Network Security Specialist 	<ul style="list-style-type: none"> 1 helpdesk technician elevated to be the Network Security Specialist 	<ul style="list-style-type: none"> No Change in ISK contracted employees
School-wide Instructional Staffing	<ul style="list-style-type: none"> New Director of Technology Job Profile implemented to reduce systems management roles and increase focus on educational roles 	<ul style="list-style-type: none"> Work with TLC to consider how Technology Integrators fit within a coaching model. 	<ul style="list-style-type: none"> No Change
School-wide technology software and resources	<ul style="list-style-type: none"> Whole school software licensing / annual subscription renewals Classroom / Department Resources (software, online resources, & texts) as per Classroom / Departmental Budgets iPad / Chromebook Apps support for whole school Resources to support Design Lab learning 	<ul style="list-style-type: none"> Whole school software licensing / annual subscription renewals Classroom / Department Resources (software, online resources, & texts) as per Classroom / Departmental Budgets iPad / Chromebook Apps support for whole school Resources to support Design Lab learning 	<ul style="list-style-type: none"> Whole school software licensing / annual subscription renewals Classroom / Department Resources (software, online resources, & texts) as per Classroom / Departmental Budgets iPad / Chromebook Apps support for whole school Resources to support Design Lab learning
Design Lab Initiatives	<ul style="list-style-type: none"> Consider further improvements to the outdoor space around the DNA center 	<ul style="list-style-type: none"> No Change 	<ul style="list-style-type: none"> No Change

Tech Plan Estimated Budget Summary

	2022-2023	2023-2024	2024-2025
Human Resources	<p>Instructional Staff:</p> <ul style="list-style-type: none"> • Director of Technology • ES ICT Teacher/ Specialist with TA • MS ICT Teacher / Integration Specialist • HS ICT Teacher • HS IT Teacher / Integration Specialist • Design / Fab Lab Technician / TA • Innovation Studio TA <p>Support Staff:</p> <ul style="list-style-type: none"> • Network Systems Manager • 1 Information Systems Specialist • 2.5 Technicians Level 1- (Systems, ISK Database Management and Servers) • 2 Technicians Level 2 – Support, Ipad Management) • 2.5 AV Technicians – Events, Peripherals, Multimedia 	<p>Instructional Staff:</p> <ul style="list-style-type: none"> • Director of Technology • ES ICT Teacher/ Specialist with TA • MS ICT Teacher / Integration Specialist • HS ICT Teacher • HS IT Teacher / Integration Specialist • Design / Fab Lab Technician / TA • Innovation Studio TA <p>Support Staff:</p> <ul style="list-style-type: none"> • Network Systems Manager • 1 Information Systems Specialist • 1 Networking Security Specialist • 2.5 Technicians Level 1- (Systems, ISK Database Management and Servers) • 2 Technicians Level 2 – Support, Ipad Management) • 2.5 AV Technicians – Events, Peripherals, Multimedia 	<p>Instructional Staff:</p> <ul style="list-style-type: none"> • Director of Technology • ES ICT Teacher/ Specialist with TA • MS ICT Teacher / Integration Specialist • HS ICT Teacher • HS IT Teacher / Integration Specialist • Design / Fab Lab Technician / TA • Innovation Studio TA <p>Support Staff:</p> <ul style="list-style-type: none"> • Network Systems Manager • 1 Information Systems Specialist • 1 Networking Security Specialist • 2.5 Technicians Level 1- (Systems, ISK Database Management and Servers) • 2 Technicians Level 2 – Support, Ipad Management) • 2.5 AV Technicians – Events, Peripherals, Multimedia
Costs			
Operational Summary	<ul style="list-style-type: none"> • Communications (Internet) • Licenses and Software • Renewal of 3 year Internet Filter license (\$12,000/year) • Spares/ Tools • Consumables • Freight • Maintenance • Maintenance contracts 	<ul style="list-style-type: none"> • Communications (Internet) • Licenses and Software • Renewal of 3 year Internet Filter license (\$12,000/year) • Spares/ Tools • Consumables • Freight • Maintenance • Maintenance contracts 	<ul style="list-style-type: none"> • Communications (Internet) • Licenses and Software • Renewal of 3 year Internet Filter license (\$12,000/year) • Spares/ Tools • Consumables • Freight • Maintenance • Maintenance contracts

Costs	\$400,000	\$410,000	\$420,000
Capital	<ul style="list-style-type: none"> ● Computer equipment ● Network upgrades <ul style="list-style-type: none"> ○ Begin conversion to WIFI 6 ● Server upgrades ● Classroom technology 	<ul style="list-style-type: none"> ● Computer equipment ● Network upgrades <ul style="list-style-type: none"> ○ Finish conversion to WIFI 6 ○ ES Classroom rewiring ● Server upgrades ● Classroom technology 	<ul style="list-style-type: none"> ● Computer equipment ● Network upgrades <ul style="list-style-type: none"> ○ Backbone switching and cabling upgrades ● Server upgrades ● Classroom technology
Costs	\$326,000	\$335,000	\$350,000
Budget Totals	\$726,000	\$745,000	\$770,000

ISK One to One Program

Vision

A 1-to-1 program is an essential element for the success of our technology visions of how students learn in the 21st century. The opportunities for our students to increase access to information, collaborate through social interaction, and create and share digital content exponentially increase in a 1-to-1 environment.

The High School Device

The ISK technology team recommends the adoption of the MacBook Pro or Macbook Air as the recommended model for our BYOD HS 1-to-1 program. Basis for this decision is as follows:

Rationale:

- ISK predominantly uses “Mac” throughout the school
- Technology support is already trained in supporting Macs
- Teachers all are issued MacBooks and are familiar with the operating system and applications
- A uniform device will facilitate ease in planning lessons and supporting students during classes
- Students who choose to use a different device will be excluded from taking the following courses due to course requirements; IB Design Technology, STEM Engineering, STEM Product Design, STEM Digital Design, STEM Game Design and Motion Graphics and Animation

Requirements and procedures for student laptop:

- A minimal required package of software will be required.
- Families will purchase devices, giving the students an added incentive to be responsible and accountable for their laptop.
- Provisions will be put in place for students joining ISK during the school year, such that we will have some loaners available or a student may use a PC computer while a Mac is sourced.
- During school hours and whenever connected to the ISK network students will be required to adhere to all ISK related student policies and the ISK Responsible Use Agreement.

Required Software:

- Standard [package that comes with MacBooks](#)
- Adobe reader
- Safari, Firefox and Chrome Browsers
- Java
- Additional software may be required for specific courses (particularly the courses mentioned above)

The Elementary School Device

The ISK Technology Integration Specialists have recommended iPads as a 1-to-1 device, since iPads are an ideal tool for our younger students to be creative. iPads are easy for students to manage, they have a built in camera for video and still pictures, microphone, and tools that allow for rapid remixing. iPads also allow the user to freehand draw, print / write directly into applications. They are compact, durable and have long battery life. iPad apps also offer a wide variety of educational software suitable for all ES levels.

The Middle School Device

The ISK Technology Integration Specialists in consultation with the MS Teachers, have recommended Chromebooks as a 1-to-1 device for the following reasons:

- Chromebook cameras and tools, as well as the ability to flip to act like a tablet have vastly improved useability;
- Passion Projects require more access to a keyboard;
- Some of the G Suite applications work better on a Chromebook than on an iPad;

- Many of the apps available on the iPad are also available on the Chromebook;

Device Ownership

ISK provides ES and MS students access to iPads or Chromebooks and a suite of educational apps.

Device Insurance

Families of ES and MS Students who take home their devices are offered an optional insurance program at the start of every year or upon joining ISK. Information will be sent home at the start of each year. This is an ISK self-insurance program in which any premiums not used during the year for fixing or replacing devices will be used to lower future insurance costs or increase availability of items such as spare chargers in the classrooms.

Software (Apps)

A complete [list of current Apps can be found here](#).

Appendix One: Classroom Standard Tech Equipment

Classrooms Standard

- **Display device, LCD projector and Screen or TV**
- **Document Camera**
- **Speakers** - mix of desktop speakers and portable bluetooth speakers appropriate for the classroom environment
- **Computer or Laptop**
- **Wireless Access** (Campus Wide)
- Convenient Access to a **Printer** – one network printer within each pod/block of classrooms
- Ability to Control and Annotate Projected Desktop (This may be done through Apple TV, AirServer software, iPad app or other emerging technologies)
- Multiple Connection Points (in classrooms)

Appendix Two: Current Hardware Summary

All Classrooms

Projector/TV, Document Camera, Speakers, Desktop Computer or Laptop

Commons Level 0

- 1 Computer Lab area with 16 iMacs and 1 Projector
- 7 Computers in General Area
- 4 OPAC Stations (MacBooks)
- 2 Projectors in Common Area (ES Library area and Picture Room)
- 1 Projector in Study Room
- 1 TV in the Faculty Resource Room
- Kindles - Inventory by Library (approx 80)

iPads

- ES, ES-SSS and ES Teachers (approx. 500)
- HS teachers - 5
- MS teachers - 4

Chromebook and iPad Carts

- 3 ES Chromebook Carts
- 1 MS Chromebook Carts for students to charge their devices
- 14 ES ipad/Chromebook Carts
- Tech Help Desk Carts - 7 Units

Laptops / Chromebooks

- Student Use – 361 Chromebooks,
- TA Checkout - 15 Chromebooks
- Loaners - 50 Chromebooks
- Staff Assigned - 205 Macbooks,

Desktop iMacs

- Total for both Staff Assigned and Student Use 260

Mac Minis

- Support Staff - 3

Servers

- MAC Servers(X server) - 6
- MAC Minis (as servers) - 12
- Windows based servers - 4
- Mac Pro Servers - 2
- Linux Based Servers - 1

Printer and Copiers

- Networked Printers - 52 (B/W - 41, Color - 10)
- Small Office Printers - 13 (B/W - 12, Color - 1)

Digital Cameras Recorders Projectors

- Digital Cameras - 21
- Audio Recorders - 8
- Document Cameras - 80
- LCD Projectors - 116
- TVs - 38