# 3DE Business & STEM Magnet at Banneker Cognia Certification SY23-24 (STEM Standards Self-Assessment and STEM Certification Portfolio) - Due Date: February 1, 2024.

STEM Leadership Team Members: Dr. Smith, Mrs. Lenz, Dr. Mcfarlane, Dr. Fingall, Mr. Summerour, Ms. Laster, Mrs. SmithMitchell, Dr. Comegys, Dr. Bolden, Dr. Weir

Portfolio Assignments Created by Dr. Comegys

SHARONLSMITH1228 11/30/23 5:01PM

Portfolio Assignments

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Sign in to your account

3DE Business & STEM Magnet Goal

SHARONLSMITH1228 1/12/24 5:25PM

Program Goal

3DE at Banneker High School is a Cognia-certified B-STEM magnet program. This program is designed to meet the graduation requirements for STEM-based postsecondary college and career prep programs. For more information on general graduation requirements, go to fultonschools.org.

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ANONYMOUS 1/21/24 11:35PM

Information Page

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3DE B-STEM Information Sheet

SHARONLSMITH1228 1/12/24 5:28PM

1. Program prepping for students to enter a 4-year accredited college/university or vocational school/technical school entering STEM pathways or careers.
2. Program prepping for Air Force Military Branch (advanced content/STEM) coursework.

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STEM Certification Portfolio Instructions

SHARONLSMITH1228 10/11/23 1:19AM

Upload of evidence is required, with a focus on analyzed results rather than raw data. You may attach documents or links to documents in other locations accessible to the team. You may also add comments that will help the team understand why you included or did not include certain documentation.

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> **Anonymous** 10/30/23 6:52PM
> website

SHARONLSMITH1228 11/9/23 11:59PM

B-Town Morning Announcements (STEAM)

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SHARONLSMITH1228 10/11/23 1:36AM

PLTW (Project Lead the Way) Grants
Computer Science
Engineering

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SHARONLSMITH1228 10/11/23 1:35AM

AP Capstone

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> **Anonymous** 10/30/23 6:33PM
> Application sent

SHARONLSMITH1228 10/11/23 1:35AM

Business Spanish

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SHARONLSMITH1228 10/11/23 1:35AM

Podcast Team

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> **Anonymous** 10/30/23 6:34PM
> Used in morning announcements

> **Anonymous** 10/30/23 6:35PM
> Sponsor - Ms. Criss

SHARONLSMITH1228 10/11/23 1:33AM

Greenhouse

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> **Anonymous** 10/30/23 6:29PM
> Greenhouse Planning Projects.docx

SHARONLSMITH1228 10/11/23 1:33AM

Music Studio

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SHARONLSMITH1228 10/11/23 1:38PM

Upward Bound Math and Science Program
The Community Teen Coalition Upward Bound Program is still in our recruitment period of interested students becoming an Upward Bound participant! We are asking for your assistance in identifying students that would meet the criteria listed below. I have provided a link for our application and some additional information about our program and services .

Students who are eligible:
9th-12th grade students who attend Banneker High School
§ Willing to take college prep classes.
§ Have obtained at a minimum 2.5 GPA.
§ Low income and/or (please see income section in application)
§ First-generation college bound. (Parents can have an Associates degree, but not a Bachelors)

Dion Stokes, MA, LPC, NCC
Director of Banneker Upward Bound and
Upward Bound Math and Science Programs
Community Teen Coalition, Inc.
678-994-5694
dionstokesctc@gmail.com
www.communityteencoalition.org

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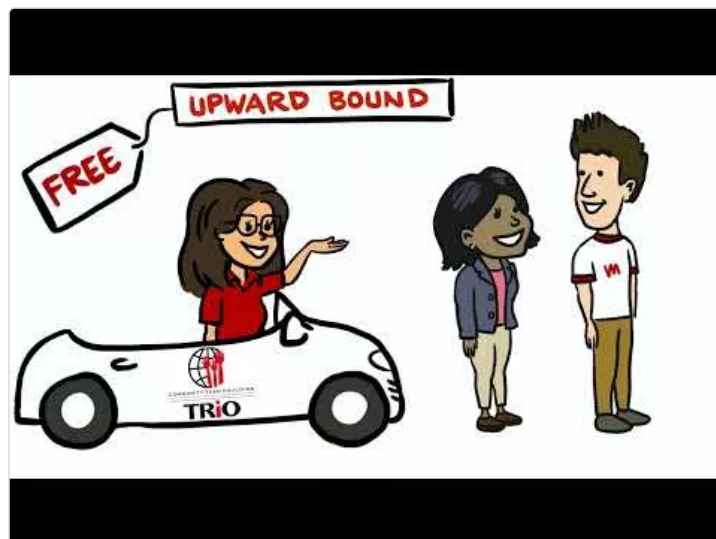
## 1. Student Performance

SHARONLSMITH1228 10/11/23 12:39AM

Upload documentation of or links to results specific to Mathematics, Science, and STEM-specific courses, including achievement, graduation, attendance, disciplinary information, etc. over the past 2 to 3 years.

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> **Ms. Comegys** 11/13/23 6:42PM
> https://forms.gle/ykiajLnGRub8zGtF9

♡ 0 ☐ 0

3DE_Year_End_Data_Summary.pdf

Impact Data

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2023_3DE_Fulton_County_Preliminary_Data.pdf

WIG Scoreboard Data

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BHS_WIG_Scorecards_Fall_23.pptx

3DE Business & STEM Magnet Banneker Impact Data

♡ 0 ⬭ 0

SY22_23_Banneker_Impact_Data.pdf

Disciplinary Intervention Plan

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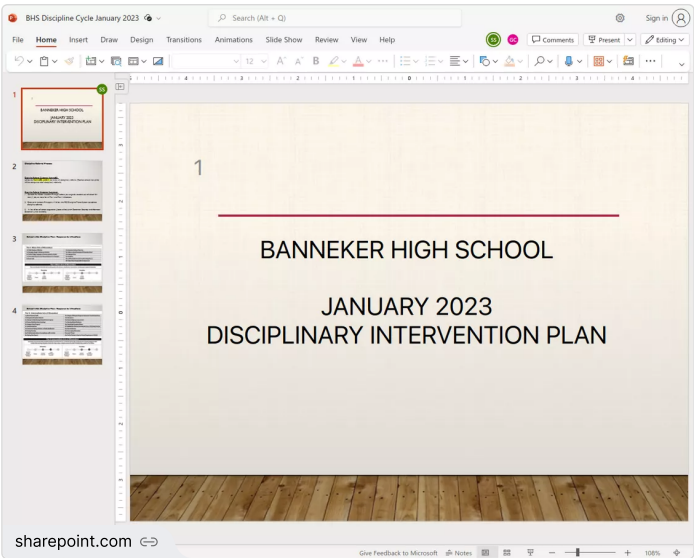
BHS Discipline Cycle January 2023.pptx

2. STEM Improvement Goals

Upload documentation of or links to improvement goals or a strategic plan that include major STEM-specific initiatives of the institution (including goals, strategies) and documented results to date.

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Banneker Explore

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Banneker Explore

SHARONLSMITH1228 12/12/23 2:43PM

Sprint 1 and Sprint 2

Sprint 1 site visit agenda 9.20.23.docx

Sprint 2 site visit agenda - Banneker.docx

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> **Ms. Comegys** 1/23/24 2:59PM
> This is a impact report for the $10000 PPG STEM Grant.

The B-STEM program at Banneker High School benefited 484 magnet scholars (9th – 12th) by using the $10,000 to implement a multi-grade level (9th – 12th) cross curricula interdisciplinary project that will result in designing and building a greenhouse on campus using tower gardeners, B-STEM Day, 3DE Empowered Podcast/Recording Studio. A plethora of supplies were purchased with the grant including: a computer, photo printers, scanners, docking station, cables, cameras, arts/crafts, easel, flip charts, wireless mouse, extension cords, and various office supplies for the B-STEM project. The PPG grant was meaningful to the B-STEM Program at Banneker because it enabled resources to be provided for the Cognia International Recertification in 2024. This grant made it possible to provide resources to the teachers and scholars for higher engagement and student impact. Having the added resources made it possible for scholars to use analytical thinking to make the Greenhouse a reality on campus for scholars to maintain. Teachers were able to print high quality photos for bulletin board displays and decorating 3DE Business & STEM Magnet hallways. Testimonials one-ninth grader saying, "Attending the Illuminarium was the best field trip experienced in high school.". An 11th-grader stated, "Being involved in an engaging STEM project with agriculture has been fulfilling, knowing that the community will benefit from the fruits/vegetables." A 12th-grade student stated, "I've always wanted to record music in a real studio and talk about issues that impact my neighborhood." include Sustainable Development Goals (SDG) were prescribed to each grade level and tasked with developing STEM solutions in the global impact phase. Additionally, each grade level used the Design Thinking Model, Integration of CTAE, and the Define Learning platform to provide Banneker students with unique and authentic instructional experiences in STEM-related to their projects.

Padlet Drive 🔗

B_STEM_Banneker_Impact_Report.pdf

SHARONLSMITH1228 1/8/24 2:11AM

STEM Day

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MS. COMEGYS 1/23/24 3:07PM

STEM Day Artificat

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SHARONLSMITH1228 1/8/24 3:05PM

3DE, SOAR, STEM Board Configuration, STEM PBL, Tier I Instructional Framework

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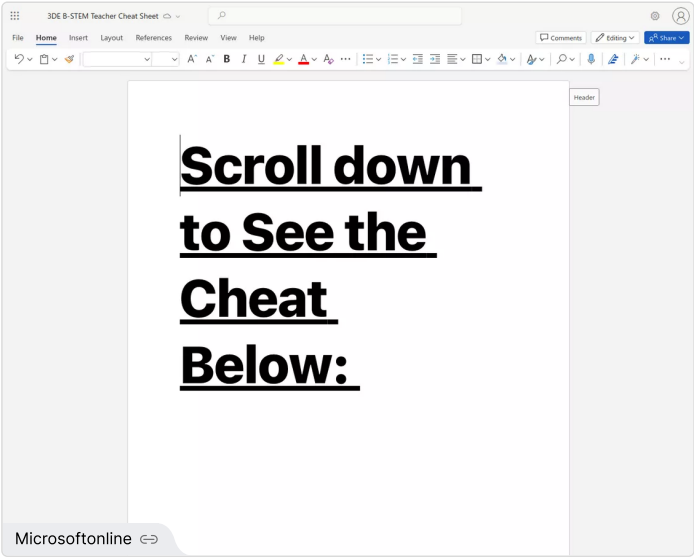
Sign in to your account

SHARONLSMITH1228 1/8/24 4:50PM

3DE B-STEM Magnet Approved Pathways & EOPA 3rd Year Courses SY24-25

3DE BUSINESS-STEM MAGNET APPROVED PATHWAYS

3DE Pathways and EOPAs | *Career Pathways are state-approved career enhancement programs defined as a coherent, articulated sequence of rigorous academic and career-related courses. End-of-Pathway Assessments (EOPAs) are taken at the end of completion of the third course in the pathway course sequence.*

3DE Business Required Pathways
·   Business and Technology
·   Financial Services
·   Entrepreneurship

3DE STEM Pathway (Optional)
·   AP Capstone
·   Game Design
·   Computer Science
·   Engineering

Business, Management, and Administration Career Cluster

Business & Technology Pathway
·   Introduction to Business & Technology
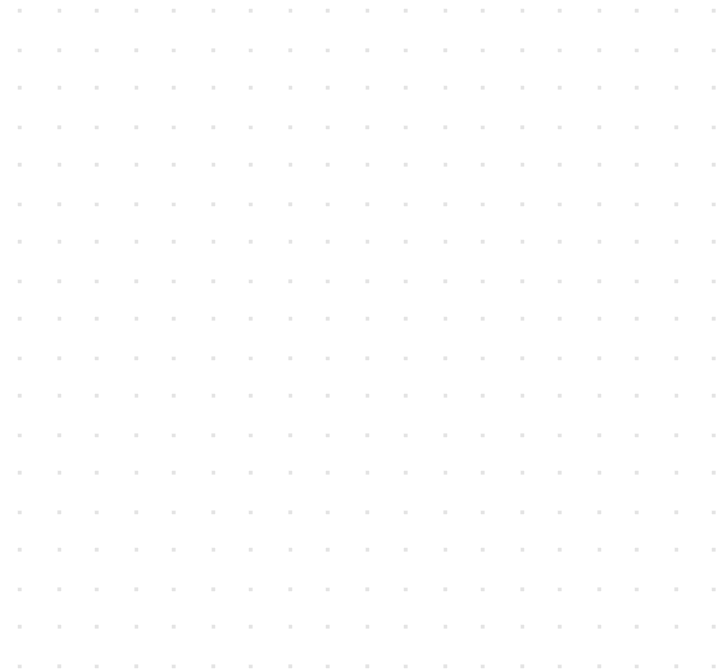
- · Business & Technology
- · Business Communications

Entrepreneurship Pathway
- · Introduction to Business & Technology
- · Legal Environment of Business
- · Entrepreneurship

Financial Services Pathway*
- · Introduction to Business & Technology
- · Financial Literacy
- · Banking, Investing, and Insurance

Information Technology Career Cluster
Game Design Pathway
- · Introduction to Software Technology
- · Computer Science Principles or AP Computer Science Principles
- · Game Design: Animation and Simulation

Computer Science Pathway
- · Introduction to Software Technology
- · Computer Science Principles or AP Computer Science Principles
- · AP Computer Science

Science, Technology, Engineering, Mathematics Career Cluster
Engineering and Technology Pathway
- · Foundations of Engineering and Technology
- · Engineering Concepts
- · Engineering Applications

AP Capstone
- · AP Seminar
- · AP Research

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STEM PATHWAYS OFFERED AT BANNEKER HIGH SCHOOL
OUTSIDE OF MAGNET via Banneker Proper or Career Academy
- Film
- Animation
- Drone Flight (Aviation)
- Engineering and Technology
- Therapeutic Services-Allied Health
- Therapeutic Services-Patient Care

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Career and Technical Student Organization (CTSO) and Sports - 3DE B-STEM students must participate in either one CTSO or sports within the program

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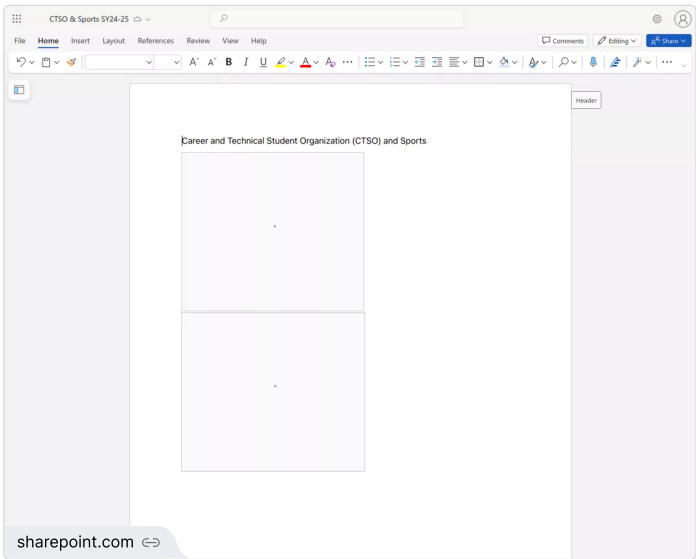
Sign in to your account

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3DE B-STEM Pathway Completers

Pathway Completers | *if students complete all courses in the pathway and pass the EOPA, students receive:*
1. EOPA Certificate
2. Cord representing each pathway
3. Medal representing each pathway completed.
4. Distinguished Red Core with CTE

**If students score 70% above on the Entrepreneurship NOCTI EOPA will receive college credit.
Students will also receive special recognition for Senior Consultancy, Dual Enrollment, Fulton College & Career Academy
3DE B-sTEM Stole Distinguished & Regular Seal Criteria
1. Students must take the 12th WBL Consultancy and complete at least one 3DE B-STEM approved pathway to receive a 3DE Stole for graduation.
2. 3DE B-STEM Diploma Seals and their meanings:
· Gold – Distinguished: Students must complete all 3 Business pathways and pass all EOPA's.
· Silver – Regular: Students must complete all 3 Business pathways and pass at least one EOPA.

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3DE B-STEM SY24-25 Updated Course Progressions to reflect all courses either Honors/AP courses to reflect STEM rigor.

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Sign in to your account

3DE B-STEM Student/Parent Contract

3DE BUSINESS-STEM Magnet Student/Parent Contract

We, the undersigned, understand and agree to uphold the
following expectations and guidelines for 3DE B-STEM students:

For Students:

As a 3DE B-STEM student, I understand that I am expected to be a
model student within the school. I commit to displaying exemplary
behavior both inside and outside the classrooms. To achieve this, I will:

1.   Follow the prescribed course progression for all grade
levels within the 3DE B-STEM program, including all core
classes and CTAE courses (9th – 12th). (See Course Progression)

2.   Maintain passing grades of 80% or higher for all my classes.

3.   Students must join an organization, sport or CTSO.

4.   NO cellphones or earbuds during instruction in your
classrooms, culminating events, guest speakers, or class meetings.
A cellphone caddy will be in all teacher's classrooms for student use.

5.   Wear business attire or the 3DE B-
STEM shirt during culminating events.

6.   Show respect and courtesy to all individuals, using
appropriate language and tone. I will refrain from arguing, talking
back, swearing, rude gestures, crude teasing, or put-downs.

7.   Be punctual, avoiding any passes to other
teachers' classrooms or during culminating events.

8.   Wait to be dismissed by the teacher,
remaining in my seat until instructed otherwise.

9.   Not use any headphone-operated device in the
classroom unless specifically instructed by the teacher.

10.   Listen attentively to instructions and lessons, staying on task.

11.   Remain silent during all announcements and broadcasts.

12.   Support and actively participate in the learning
process, respecting the right of every student to learn.

13.   Submit all work to my teachers neatly and professionally.

14.   Make every effort to attend class every day,
understanding that absences can lead to academic challenges.

15.   Refrain from cheating, understanding that giving or receiving
information, in any form, relating to a graded experience, either inside
or outside the class, is considered cheating. Such actions will result in
a zero (0) on the assignment and referral to the administration.

16.   In the event a teacher is absent, I will wait at the door
until a substitute arrives or follow instructions posted on the
door, avoiding wandering in the hallway, or skipping class.

17.   Be prepared for class by bringing my school device
charged daily for learning. I will not leave my device in other
teachers' classes, as passes will not be issued to retrieve it.

For Parents/Guardians:

As a parent/guardian of a 3DE B-STEM student, I support and
endorse the expectations and guidelines outlined above. I will
actively engage with my child to ensure they uphold these
standards and maintain their commitment to their education.
By signing below, we acknowledge our commitment to
the 3DE B-STEM program's expectations and guidelines.

Student's Name:

_____

Parent/Guardian's Name:

_____

Date: _____

Thank you for your commitment to the 3DE B-
STEM program. Please ensure that both the student
and parent/guardian sign and date the contract.

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3DE B-STEM Grading Policy SY24-25

Amnesty

There is no amnesty for 3DE B-STEM students. All work must be completed and submitted on time for all classes. Students are encouraged to attend school daily. It's the responsibility of the parent/student to contact the teacher if student is absent to make-up work.

Recovery

Administered throughout a unit to students who have failed to demonstrate mastery of the standards. Recovery should cover the standards that the student has not mastered.

Teachers should provide opportunities for each student K-12 to continue learning material that has not yet been mastered even if the student's grade is not replaced.

· Students in K-12 should be afforded the opportunity to recover all major assessments if they score below a 75% on the assessment.
· Students are limited to one recovery attempt per major assessment that meets the threshold for recovery.
· Recovery of a major assessment should occur before the next major is given.
· Students are eligible to earn a replacement grade on a recovery that is no higher than 75%.
· If a student's recovery is below the original score, the original score should stand in the grade book.
· Before recovery, the teacher should work with the student to complete missing work and/or ensure delivery of the content through reteaching and relearning.
· The original score should be noted in the comment section of the grade book if a student recovers a major assessment.

Missing/Late Work
· Schools and teachers will make a good faith effort to have structures in place to clear late/missing assignments before grades are impacted.
· When a student has missed instruction, the teacher should work with the student to ensure the delivery of content before the student is assessed.
· Should there be an extenuating circumstance for a prolonged absence and/or missing assignments/assessments and/or tasks, the teacher and student will create an appropriate plan to deliver content and assess student learning.

Student Misses Work Due to Absence (Excused/Unexcused)
· Upon return to school, students will have an equal number of days as they were absent to complete any late/missing assignment, assessment, and/or task(s) for full credit.
· After the deadline of an equal number of days a student was absent, teachers may begin deducting points from a late/missing assignment, assessment, and/or task(s) (maximum 25% deduction).
· If a student fails to turn in a late/missing assignment, assessment, and/or task(s), then a zero may be entered in the grade book.

Student Present but Fails to Turn in Assignment, Assessment, and/or Task(s)
· Teachers may begin deducting points from a late/missing assignment, assessment, and/or task(s) (maximum 25% deduction).
· If a student fails to turn in a late/missing assignment, assessment, and/or task(s), then a zero may be entered in the grade book.

Incompletes
At the conclusion of a semester, with the approval of the principal, teachers may give students who are absent for extended periods of time an "Incomplete" grade (I). The student will be given the opportunity to make up the work and have the Incomplete grade changed to a numerical grade.
· All Incompletes should be cleared within 30 school days of the start of the next semester.
o If the Incomplete was given in the Spring semester, the student should clear the Incomplete during Summer School
o Exceptions can be made for students with a 504, IEP, or other health plans
· Students can also clear Incompletes during a school-provided intersession, summer school, or through another school/district-provided credit recovery strategy.
· Students must clear all Incompletes for credit-bearing courses or courses required for graduation.

- For students taking noncredit-bearing courses, students are only required to clear Incompletes for reading and math.
- Failure to clear the Incomplete in one of these opportunities can result in the grade reverting to a withdrawal failure (WF).

Homework Expectation

Purpose: Homework in our STEM magnet program serves several important purposes:

1. Reinforce Learning: Homework helps reinforce concepts learned in class and provides students with the opportunity to practice and apply their knowledge.
2. Develop Critical Thinking: Homework assignments are designed to promote critical thinking, problem-solving skills, and creativity.
3. Time Management: Completing homework assignments teaches students time management skills and responsibility in meeting deadlines.
4. Preparation: Homework prepares students for classroom discussions, projects, and assessments.

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3DE B-STEM Magnet Application Process for SY24-25

Magnet Application Process

3DE Business & STEM Magnet has its own application process. The application (once available) and other information about Fulton County Schools Magnet Programs can be found on the county's magnet website along with visiting Banneker's website for the 3DE Business STEM Magnet Program. The initial application is from November 15, 2023 – January 15, 2024. In addition to completing 3DE Banneker Business & STEM, Banneker applicants are required to submit an essay (information below) and provide supporting documentation. Late or incomplete applications will not be considered.

Magnet Program Application Requirements and Qualifications

To be considered for the 3DE Business & STEM Magnet Program, students must meet the following qualifications. **Students must complete both steps 1 & 2 to be considered for the program.**

1. Complete the FCS Magnet Application (Link will be posted on FCS and 3DE B-STEM websites).
2. Upload an 8–10-minute video. See below for video details.

Application checklists are available below and on our website.

9th Graders

- Applicant must be a current 8th grader (High School Class of ......)
- Live within the Fulton County School attendance zone. To check if you live within the required
- area, click here. Check Fulton County Schools website.
- Present an 80% (B) or higher in all academic subjects based on first semester of 8th grade
- Submit the online application for Banneker by accessing Banneker's application via the Banneker website or Fulton County Magnet Application. (Available from November 15, 2023 – January 15, 2024)
- Submit all required supporting documentation including resume, transcript, test scores, and discipline records before January 15, 2024.

10th Graders

- Applicant must be a current 9th grader (High School Class of ......)
- Must be enrolled in or have completed one year of a Social Studies course AND a World Language
- Live within the Fulton County School attendance zone. To check if you live within the required
- area, click here. Check Fulton County Schools website
- Present an 80% (B) or higher in all academic subjects based on first semester of 9th grade
- Submit the online application for Banneker by accessing Banneker's application via the Banneker website or Fulton County Magnet Application. (Available from November 15, 2023 – January 15, 2024)
- Submit all required supporting documentation including resume, transcript, test scores, and
- discipline records before January 15, 2024.

Please have the following information ready when completing your application

- Applicant's First and Last Name
- Applicant's Current Grade Level
- Applicant's Fulton County ID/Lunch
Number (only if current FCS Student)
- Applicant's Current School
- Applicant's Zoned school for 2023-2024 (unsure? click here)
- Parent/Guardian First and Last Name
- Applicant's Current Address
- Phone Number
- Parent E-Mail (this will be our primary source of contact)

Must complete online application and video by January 15, 2024.
Acceptance decisions will be emailed to the parent's email address

from the FCS Magnet application on Feb 15th. Items Required for Video

**MAGNET APPLICATION PROCESS: Students must
complete both steps 1 & 2 to be considered for the program.**
1. Click the link and complete the FCS Magnet application.
2. Upload an 8–10-minute video. See below for video details.
Step 1: Complete the Magnet Application
https://tinyurl.com/FCS2023magnet
Step 2: Video Submission Information
·   1. Click the link or scan the QR code to join the Flip group.
Scholars must create an account with Flip. Upload an 8-10-
minute video. The scholar should prepare responses in advance,
practice delivery, dress professionally, and ensure the video is
well-lit and has clear audio. Scholars should be confident in
recording themselves by answering all eight topics below.
Good luck with your application!
https://flip.com/84097928

·   This is ONLY for scholars having difficulty joining the group to upload
a video. You can email the video to: 3deBannekerMagnet@fultonschools.org
Video Guidelines: ALL 8 steps must be discussed in the video.
1. Introduction:
- Introduce yourself, including your name, grade, and current school.
- Explain your interest in Business and STEM and why you want to join the
magnet program.

2. Academic achievements and strengths:
- Highlight any relevant coursework or projects you have completed in
math, science, or business subjects.
- Discuss any extracurricular activities or competitions where you have
demonstrated your skills and passion.

3. Personal experiences:
- Share any real-world experiences or internships related to Business or
STEM that you have participated in.
- Explain how these experiences have influenced your career interests and
motivated you to pursue the magnet program.

4. Goals and aspirations:
- Discuss your long-term goals and how the magnet program can help you
achieve them.
- Explain how the program's curriculum, resources, and opportunities align
with your interests and ambitions.

5. Problem-solving and critical thinking:
- Describe your problem-solving skills and explain how you have applied
them to overcome challenges.
- Explain how you think critically and approach complex problems in
business and STEM settings.

6. Collaboration and leadership:
- Discuss your ability to work in teams and your experience in leadership
roles.
- Share examples of projects or initiatives where you have led a group and
achieved positive outcomes.

7. Motivation and dedication:
- Explain your commitment to learning and willingness to put in the effort
required to excel in the magnet program.
- Discuss any additional steps you have taken to expand your knowledge
and skills in Business and STEM fields.

8. Conclusion:
- Summarize why you believe you are a strong candidate for the 3DE
Business & STEM Magnet Program and express your enthusiasm for joining.
-Thank the selection committee for considering your application.

·   Academic Records and Discipline Files will be
provided through the county's Infinite Campus System.

Please send Required Additional Documents to 3DE
Banneker STEM Magnet using one of the following methods:
Option 1: Email documents to 3deBannekerMagnet@fultonschools.org
Option 2: Physically Mail to-
3DE Banneker Business STEM Magnet Program
Attention: Dr. Sharon Smith
6015 Feldwood Road
Atlanta, GA 30349

Transportation Information
Transportation is provided to all students
living within the Banneker Attendance Zone.
Students who live outside of the Banneker Attendance Zone can
ride the Fulton County Schools Magnet Bus. Students will be picked
up by the magnet bus at their home school at a designated time.
These times are published in the summer leading up to the school
year and can be found on the county's transportation website:
·   https://www.fultonschools.org/transportation
Sweep buses are not offered to students
who live outside the attendance zone.

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⊝ **SHARONLSMITH1228** 1/8/24 5:17PM
Dr. Smith Recruitment PPT for 3DE B-STEM uprising 9th & 10th graders

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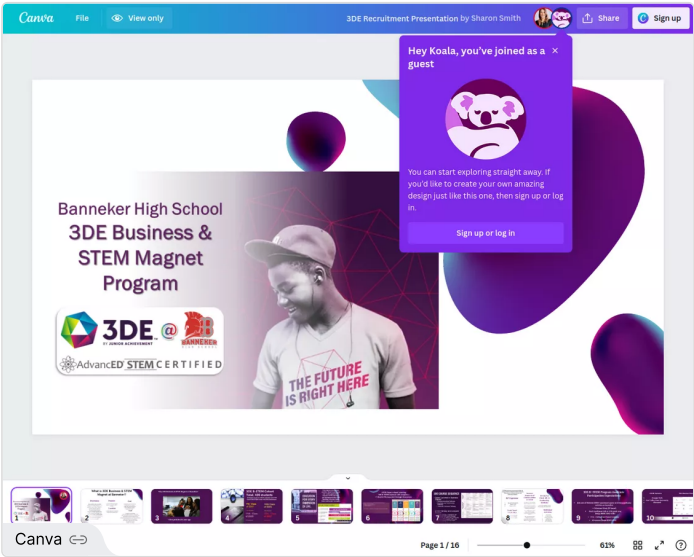
3DE Recruitment Presentation

⊝ **SHARONLSMITH1228** 1/8/24 5:46PM
STEM Day
Need a picture

♡ 0   ◯ 0

⊝ **SHARONLSMITH1228** 1/8/24 6:15PM
Summer Assignments using Canvas
This course has enabled open enrollment. Students can self-
enroll in the course once you share with them this URL:
https://canvas.instructure.com/enroll/DJXMAB. Alternatively,
they can sign up at **https://canvas.instructure.com/register**
and use the following join code: **DJXMAB**

SHARONLSMITH1228 1/8/24 7:22PM

3DE B-STEM Tag Requirements

The district has updated the requirements for the TAG internship
course for Fall 2024 to be in compliance with the state. This process
starts next week. Current interns will maintain their eligibility.

1. Must be a Junior or Senior
2. Must have a GPA of 90 or above
3. Must be TAG (They changed it back.)
   (Banneker's Rule Exception- Students who are not TAG can
   participate only if they have one of the following: above
   average achievement score (PSAT, SAT, ACT, etc.), participated
   in a district or state competition, or scored a 3 on an AP exam.
4. Students will have to apply and will then be interviewed.
   A final list of selected students will be sent in February.

3. Curriculum and Assessment

SHARONLSMITH1228 10/11/23 1:20AM

Upload documentation of or links to STEM-specific curriculum samples,
including projects, units, lessons, etc., from across courses/grade levels
in the institution. The evidence should also include the institution's
identified STEM literacy objectives and metric for measuring outcomes.

> **sharonlsmith1228** 1/8/24 2:18AM
> Upload all grade level 3DE case studies

SHARONLSMITH1228 1/8/24 5:26PM

**3DE Business & STEM Magnet STEM PBL
Curriculum at Banneker High School**

Purpose

The purpose of the STEM Project-Based Learning (PBLs) curriculum for 9th
through 12th graders is to foster critical thinking, problem-solving,
innovation, and interdisciplinary collaboration while addressing real-world
challenges that will take place over seven months beginning in September
and ending in May. Students will meet once per month with their grade
level homeroom peers to work on the STEM PBLs. This curriculum aims to
provide students with hands-on experiences, equipping them with
essential STEM knowledge and skills that are not only academically
rigorous but also applicable to their daily lives and future careers. Through
a series of progressively challenging PBLs, students will develop a deep
understanding of various STEM disciplines and gain confidence in their
ability to contribute to solving complex global issues. Students will be
introduced to the 17 Sustainable Development Goals (SDGs). By employing
these strategies, students will not only be introduced to the SDGs but will
also develop a deeper understanding of the global challenges they address
and a sense of responsibility to contribute to a more sustainable future.
Duration: September, October, November,
December, January, February, March, May

**Goals and Objectives of the STEM PBLs Curriculum
Foster Inquiry and Exploration (9th
Grade - Science Fair Project/Housing)**
Goal: Encourage students to explore their scientific
curiosity and engage in scientific methods.
Objectives:

- Develop research skills and scientific inquiry.
- Foster a passion for science and discovery.
- Prepare students for scientific
  investigations in future STEM endeavors.

Promote Environmental Stewardship (10th Grade - Water Preservation)
Goal: Raise awareness about the importance of water
conservation and sustainable water management.
Objectives:

- Understand the global and local significance of water preservation.
- Implement practical strategies for water conservation.
- Encourage responsible water use within the community.

Address Food Security and Agriculture Challenges
(11th Grade - Agriculture/Food Deserts/Zero Hunger)
Goal: Tackle food insecurity, agricultural
sustainability, and the issue of food deserts.
Objectives:
- Analyze the global food supply chain and its challenges.
- Explore sustainable agricultural practices.
- Propose solutions to reduce food deserts and hunger.

Develop Multimedia and Communication Skills (12th Grade - Podcasting)
Goal: Enhance students' ability to communicate
complex STEM concepts effectively.
Objectives:
- Learn multimedia production techniques, including podcasting.
- Develop critical thinking skills through content creation.
- Share STEM knowledge with a wider audience through podcasting.

♡ 0 ◯ 0

SHARONLSMITH1228 10/11/23 1:33AM

9th - 12th STEM PBL

♡ 0 ◯ 2

Anonymous 10/30/23 6:28PM
Grade STEM PBL Planning Form 11th Grade.docx

**Lenz, Debbie** 10/30/23 6:32PM
3DE STEM PROJECT PLANNING FORM_ 10th.docx

SHARONLSMITH1228 1/8/24 2:09AM

Grade Level STEM PBLs

♡ 0 ◯ 1

sharonlsmith1228 1/8/24 6:23PM
STEM PBL Gradelevel Currciulum.docx

Publish	⋮
9th STEM PBL Curriculum	
Housing	
9th Grade	

Publish	⋮
10th STEM PBL Curriculum	
Water Preservation	
10th Grade	

Publish	⋮
11th STEM PBL Curriculum	
Food Deserts/Agriculture	
11th Grade	

Publish	⋮
12th STEM PBL Curriculum	
Podcasting	
12th Grade	
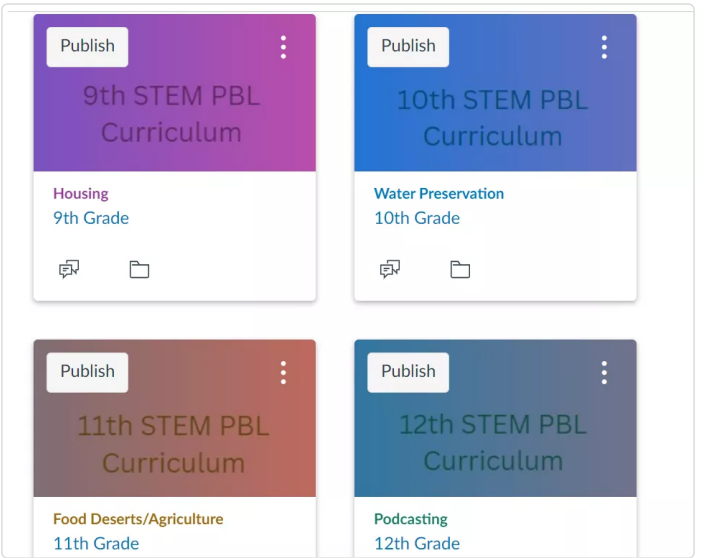
Design Thinking Model & 3DE Connections

♡ 0 ⬚ 0

Georgia Tech (LEAP) Course Supply Chain & Logistics by Mr. Easley

♡ 0 ⬚ 0

LEAP_Presentation_Supply_Chain.pptx

Summer Assignments Canvas Join Information
This course has enabled open enrollment. Students can self-enroll in the course once you share with them this URL: **https://canvas.instructure.com/enroll/DJXMAB**. Alternatively, they can sign up at **https://canvas.instructure.com/register** and use the following join code: **DJXMAB**

♡ 0 ⬚ 0

SHARONLSMITH1228 1/8/24 11:33PM

STEM PBL Canvas Join Codes

How to join grade-level STEM PBLs

9th Grade
This course has enabled open enrollment. Students can self-enroll in the course once you share with them this URL: **https://canvas.instructure.com/enroll/GAN6GK**. Alternatively, they can sign up at **https://canvas.instructure.com/register** and use the following join code: **GAN6GK**

10th Grade
This course has enabled open enrollment. Students can self-enroll in the course once you share with them this URL: **https://canvas.instructure.com/enroll/LNETYK**. Alternatively, they can sign up at **https://canvas.instructure.com/register** and use the following join code: **LNETYK**

11th Grade
This course has enabled open enrollment. Students can self-enroll in the course once you share with them this URL: **https://canvas.instructure.com/enroll/YYB48L**. Alternatively, they can sign up at **https://canvas.instructure.com/register** and use the following join code: **YYB48L**

12th Grade
This course has enabled open enrollment. Students can self-enroll in the course once you share with them this URL: **https://canvas.instructure.com/enroll/HMEDXF**. Alternatively, they can sign up at **https://canvas.instructure.com/register** and use the following join code: **HMEDXF**

♡ 0 ◯ 0

sharepoint.com

Microsoft

STEM PBL Gradelevel Currciulum.docx

4. Work Samples

SHARONLSMITH1228 10/11/23 1:21AM

Upload documentation of or links to STEM-specific student work samples or portfolios from across courses/ grade levels in the institution (e.g., projects with rubrics and/or criteria list).

♡ 0 ◯ 0

SHARONLSMITH1228 10/11/23 1:32PM

New RAND Arroyo Center Research // The Impact of
**Army JROTC Participation on School and Career Outcomes**

Specifically regarding STEM, Cadets from across Fulton and South
Gwinnett counties will travel to Fort Benning GA to participate in
a weeklong adventure camp and STEM-related activities.

They will reside on Columbus State University campus where
orientation tours, dorm living, and exposure to college life firsthand
is designed to inspire Cadets to explore post-secondary options.

Events and activities for the week include piloting drones,
building robots and "carbots," competitions and races, as well
as obstacle courses, rappelling, and water safety training.

The culminating event is a tour of Lockheed Martin where Cadets will be
exposed to STEM applications in action. Sponsored by U. S. Army Cadet
Command, participants are housed, fed, and trained for the nominal fee of
$35 per Cadet. We are extremely proud to be able to impact the leaders of
our future through hands on opportunities such as the JROTC STEM Camp.

♡ 0 ◯ 0
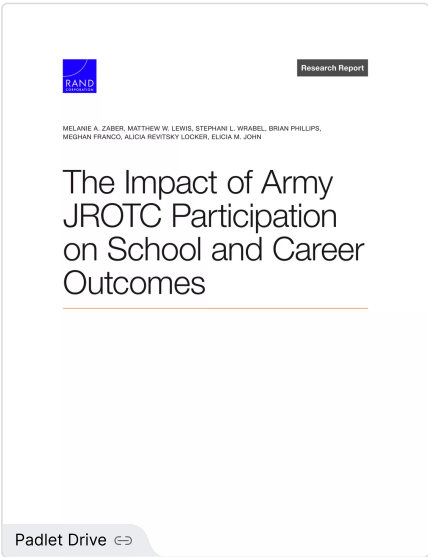
RAND_JROTC.pdf

SHARONLSMITH1228 12/12/23 2:31PM

Research Methods (Wireless Communication Tower)

STEM Challenge PPT Rubric.docx

Wireless Communication Tower Challenge.pdf

https://flip.com/463d7064

♡ 0 ◯ 0
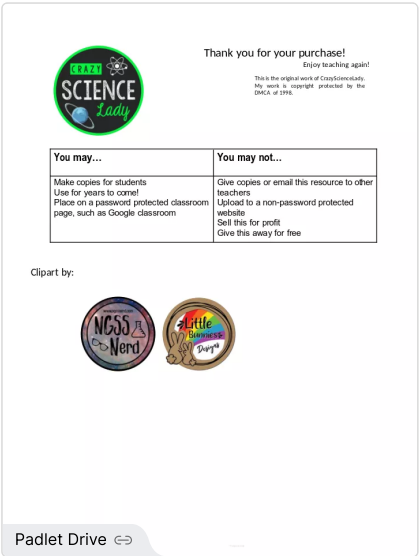
EngineeringDesignProcessGuidedProcessingSheetsandRubricforAnyProject

---

SHARONLSMITH1228 1/8/24 5:19PM

Using Canvas as a technology learning managment system tool,
students are able to plan, work individually and collaborate.

Need a work sample from all launch teachers

♡ 0 ◯ 0

SHARONLSMITH1228 1/8/24 5:20PM

STEM PBL Student samples

♡ 0 ◯ 0

MS. COMEGYS 1/23/24 3:32PM

STEM PBL & YLP

♡ 0 ◯ 0

SHARONLSMITH1228 1/8/24 5:22PM

AP Computer science students describe their prototype for an interactive hall pass as part of a design challenge for Honeywell and Georgia Tech CEISMC.

♡ 0 ◯ 0

SHARONLSMITH1228 1/8/24 5:23PM

Students created IDs that could serve as a "hall pass." The purpose of the IDs was to shift accountability to the students from the teachers. Students became involved in the design and implementation of the ID project.

♡ 0 ◯ 0

SHARONLSMITH1228 1/8/24 5:25PM

LEARNING EXPERIENCES FOCUSED ON REAL WORLD PROBLEMS
Upload a case study sample

♡ 0 ◯ 0

SHARONLSMITH1228 1/8/24 5:30PM

Students use USDA data and community demographics to do their own research on the cause and effects of living in a food desert. Students also MAP OUT THEIR OWN DRIVES TO SUPERMARKETS to determine if their research could help their own communities!

♡ 0 💬 0

SHARONLSMITH1228 1/8/24 5:35PM

This picture shows a flipped classroom session in our Algebra 1 classes (double-blocked). Students were able to guide through review and practice sessions during class with aide from their teacher as they completed tasks. This include work through the online platfrom IXL; card sorts that were given based on the level of mastery; and remediation videos featuring the math teacher.

♡ 0 💬 0
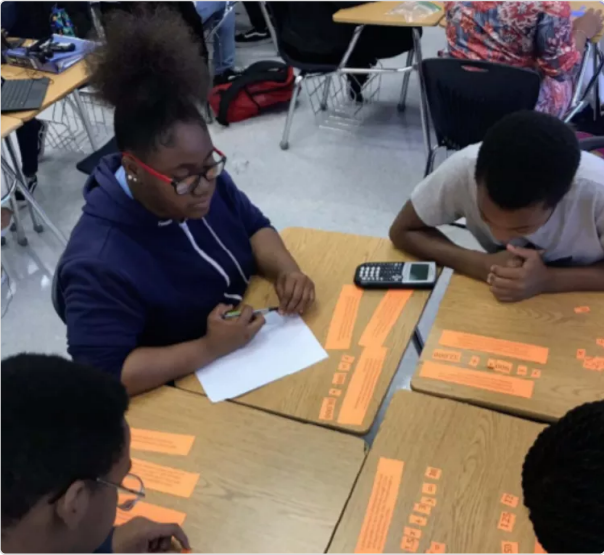
SHARONLSMITH1228 1/8/24 5:37PM

High-dosage Tutorial Algebra

♡ 0 💬 0

SHARONLSMITH1228 1/8/24 5:43PM

SELF-MANAGEMENT AND METACOGNITIVE SKILLS: 11th Students utilized the design thinking process to identify a need and develop a business to fulfill that need. Students were able to sale their items at the Pop Up Shop. Items featured were smoothies, cake cups, customized clothing, protective phone pouches, beauty care products, and photo shoots.

Need a pic

♡ 0 💬 0

STEM Atlanta Hawks

♡ 0 💬 0

10th Mercedes Benz STEM Field trip

Need a picture

♡ 0 💬 0

STEM Georgia Tech 9th Graders Presentation
to encourage scholars about ISyE careers.

What is ISyE?

Industrial and System Engineering; blends mathematics, physical sciences, and business applications to improve complex processes, systems, and organizations by formulating and analyzing abstract models to optimize performance.

♡ 0 💬 0

THE H. MILTON STEWART SCHOOL OF INDUSTRIAL AND SYSTEMS ENGINEERING (ISyE)

Padlet Drive
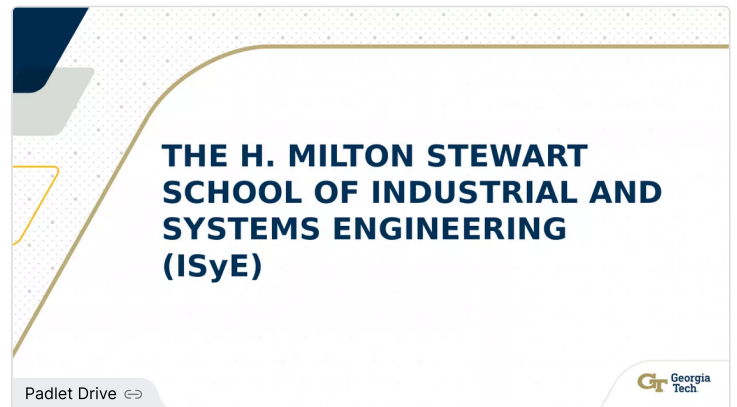
Banneker High School x Georgia Tech Presentation

3DE Seniors Georgia Tech (LEAP) Presentation

Mr. Easly spoke with seniors about the LEAP course to taken at Georgia Tech for free. We found funding for 3DE B-STEM schoalrs to take STEM courses and continue their post-secondary education STEM careers/pathways.

♡ 0 💬 0

Logistics Education And Pathways (LEAP) Overview for Google Scholars Banneker HS 2023-24

BE THE TALENT EMPLOYERS ARE LOOKING FOR.

www.scl.gatech.edu/leap

Georgia Tech Supply Chain & Logistics Institute

Padlet Drive

LEAP Presentation_Supply Chain

5. Policies and Governance

SHARONLSMITH1228 11/10/23 8:04PM

Policies and Governance

Upload documentation of or links to policies specific to STEM governing the institution. Especially important are documents from leadership and the governing authority concerning commitment to the STEM program.
Evidence Included
No evidence available
Comments

♡ 0 ◯ 0

SHARONLSMITH1228 1/8/24 2:55PM

3DE and STEM Partners

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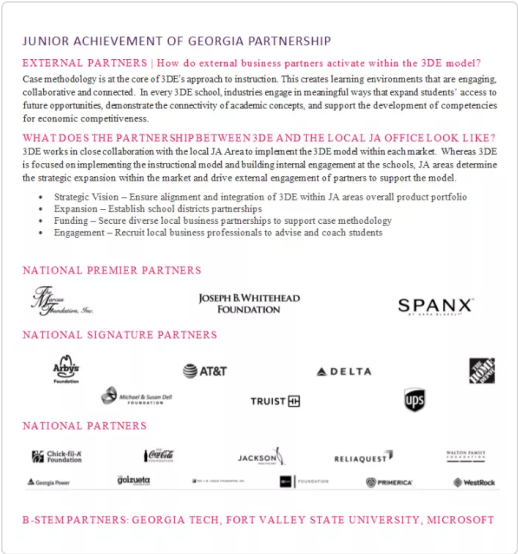
ANONYMOUS 10/30/23 3:04PM

3DE and Fulton County Memorandum of Agreement

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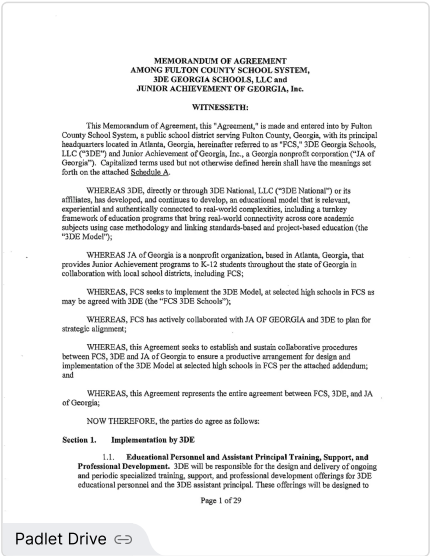
3DE MOU 2019 Fulton County

3DE Overview

♡ 0 ⟲ 0

3DE Overview_June 2023

6.Organizatonal Practices and Procedures

Organizational Practices and Procedures
Organizational Practices and Procedures
Upload documentation of or links to organizational
practices and procedures (e.g., handbooks) associated with
implementation and management of the STEM program.
Evidence Included
No evidence available
Comments
Attachments

♡ 0 ⟲ 0

♡ 0 ⟲ 0

STEM – 3DE Connections 010424

1/2/24 7:11PM

3DE B-STEM Handbook SY24-25

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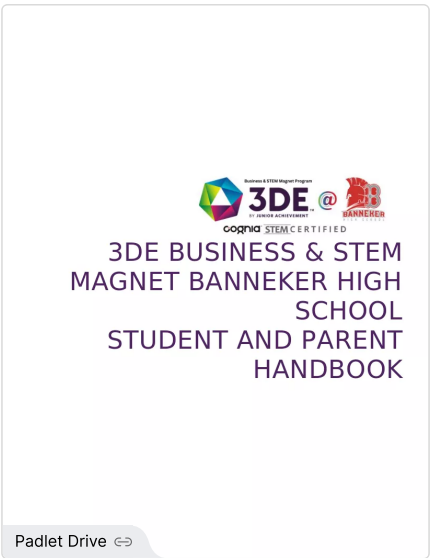
3DE Student Handbook SY24-25 Updated 010524

1/8/24 2:49PM

Magnet Application November 15 - January 15
Magnet Directors have to send acceptance letters beginning Feb 15th.

♡ 0 ◯ 0
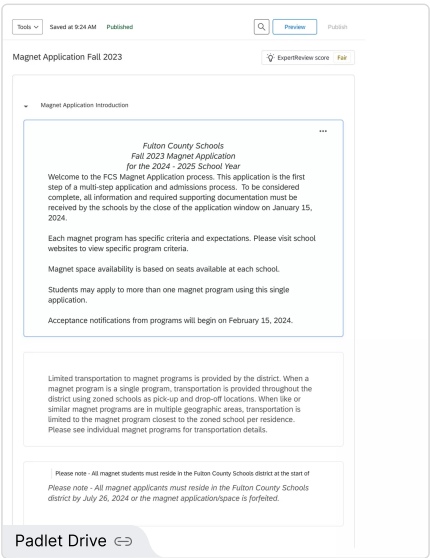
FCS_Fall_2023_Magnet_Application_Final_Draft_11_14_23.pdf

10/11/23 1:27PM

3DE B-STEM Padlet

♡ 0 ◯ 0

3DE Business & STEM Magnet Weekly Newsletter (January 22nd - 26th)

MS. COMEGYS 1/23/24 3:46PM

Example of Interdisciplinary Professional Learning Community

♡ 0 ◯ 0

Padlet Drive ⇔

January_22_2024_plc.pdf

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7. Professional Learning Plan and Schedule

SHARONLSMITH1228 11/10/23 8:08PM

Professional Learning Plan and Schedule
Professional Learning Plan and Schedule
Upload a description of or links to the institution's STEM-specific
professional learning plan and schedule, including strengths and limitations.
Evidence Included
No evidence available
Comments
Attachments

♡ 0 ◯ 0

SHARONLSMITH1228 1/8/24 2:57PM

3DE B-STEM Gradelevel PLC Agenda
- Team Lead (5 minutes) - Check on your teammates (Positive Mental and physical health is essential as we push through this year)
- Instructional Strategy (5 minutes) - Share out if nobody has one; keep moving 🙂
- Academic/Student Behavior Concerns (5 minutes) - Use the spreadsheet for parent contact/discuss scholars that need to be removed from the program and transitioned into Banneker Proper for SY24-25. I will send a spreadsheet soon to highlight these scholars.
- 3DE Planning (Case cadence) - 20 minutes
- STEM PBL (grade level) - 20 minutes
- Data Dig - 5 minutes (Bring your most recent data from an assessment. Assessment can be exit ticket, formative, summative, etc.)

As you prepare to give your assessments or look at the assessments given, please be ready to answer the following questions in PLCs:
- What parts of this data catch your attention?
- What does the data tell you? NOT tell you?
- What good news is there to celebrate?
- What are the key conclusions?
- What will be your next steps for instruction based on the data?

♡ 0 ◯ 0

SHARONLSMITH1228 1/8/24 3:13PM

3DE B-STEM Teacher Resource

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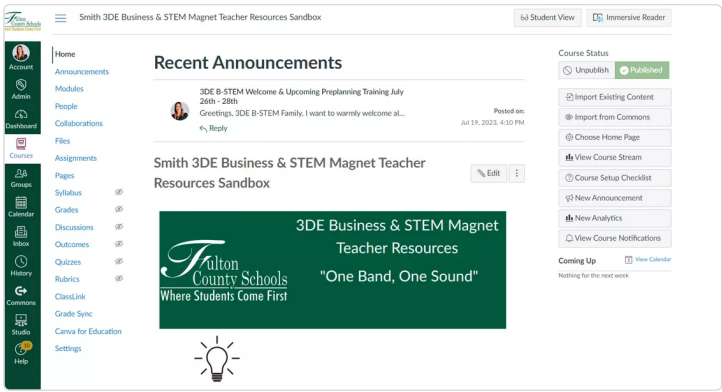
SHARONLSMITH1228 1/8/24 3:18PM

Launch Teachers Case Professional Development

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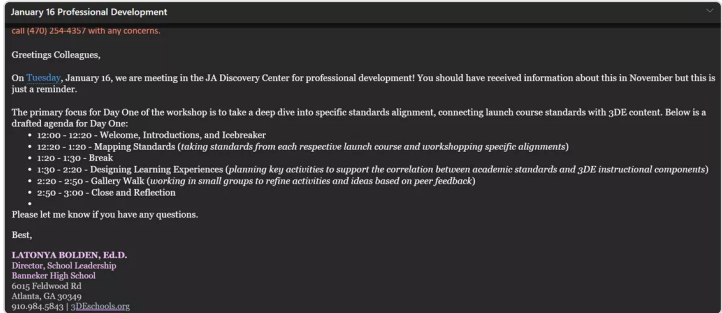
SHARONLSMITH1228 1/8/24 4:41PM

Dr. Smith 3DE B-STEM Recruitment Schedule

♡ 0 ⬤ 0

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8. Quality Assurance and Oversight Process

SHARONLSMITH1228 10/11/23 1:24AM

ONLY FOR SYSTEMS: upload a description of or links to the quality assurance and oversight process for STEM education in all schools within the system. All other institutions select **N/A – Not Applicable**.

♡ 0 ⬤ 0

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9. Other (optional)

SHARONLSMITH1228 11/10/23 8:10PM

Other (optional)

Upload or provide links to any additional targeted information/documentation that would support the Engagement Review Team in evaluating the institution's adherence to standards. If no further evidence, select N/A – Not Applicable.
Evidence Included
N/A – Not Applicable
Comments
Attachments

STEM Certification Portfolio

🔗 **SHARONLSMITH1228** 11/10/23 7:57PM

Instructions

Select **Evidence Included** or **N/A** where evidence is not applicable to complete the Certification Portfolio.

Upload of evidence is required, with a focus on analyzed results rather than raw data. You may attach documents or links to documents in other locations accessible to the team. You may also add comments that will help the team understand why you included or did not include certain documentation.

♡ 0 💬 0

STEM Standards Self Assessment

🔗 **SHARONLSMITH1228** 10/11/23 1:17AM

Dr. Smith

♡ 0 💬 1

> **sharonlsmith1228** 10/13/23 1:20AM
> Add PLTW Grant, Recruitment Agenda, STEM Curriculum, STEM Pahtways outside of 3DEB-STEM

🔗 **SHARONLSMITH1228** 10/30/23 9:39PM

Leadership Presentation
Leadership Presentation

Your Lead Evaluator will schedule a leadership presentation with you prior to the on-site portion of the review to expand on information shared in your submitted STEM Self-Assessment diagnostics . The leadership presentation should begin with a brief overview of the institution community and demographics (approximately five minutes) and then address the following questions:

 • What are the current strategic priorities and/or key goals for the institution related to the STEM education model?
 • What data was used to identify the priorities and goals?
 • How are you addressing these priorities and goals?
 • What results do you have that measure your progress in meeting these priorities and goals?

The leader's overview should last no more than 30 minutes for institutions and 45 minutes for systems . It is helpful to provide the Lead Evaluator with a copy of the leader's comments (slide deck or notes) for reference .

♡ 0 💬 0

The 3DE Business & STEM Magnet Academy at Benjamin Banneker High School (BHS) was developed to address the growing role that science, technology, engineering, and mathematics (STEM) play in the nation's economy. Fulton County School System launched the 3DE Magnet, formally named the Junior Achievement Magnet Business Academy (JAMBA) at BHS in Fall 2015. The JAMBA was developed through a partnership between Fulton County Schools and Junior Achievement of Georgia as a reform initiative to positively impact the academic, behavioral, and social outcomes at Banneker High School. Historically, BHS was one of the lowest performing schools in the state of Georgia, was identified as a school with the highest number of discipline infractions in the school district and had a graduation rate of less than 50%. Junior Achievement of Georgia partnered with Fulton County Schools to improve the overall student experience, provide a rigorous and relevant curriculum, and allow students to apply their learning through case study challenges and job site visits.

During the 2016-2017 school year, BHS applied for a School Improvement Grant and explored workforce development initiatives that align with STEM career clusters. Upon receiving the School Improvement Grant award, BHS hired a consultant to assess the career and technical education (CTAE) offerings and recommended career pathways aligned to the local workforce. It was determined that BHS STEM students would concentrate on two pathways in the Information Technology Career Cluster, Computer Science and Programming, and continue supporting the growth and development of the STEM Career Clusters' Engineering and Technology Pathway.

The STEM program was the logical next phase to expanding the BHS 3DE magnet, which infuses the concepts of business, marketing, technology, and entrepreneurship into all core classes. Students are allowed to apply their learning through real-world, problem-based activities. STEM programming complimented the rigorous course offerings required of magnet students and provided additional concentrations that align with the long-term career goals of many students. During the 2017-2018 school year, BHS began to offer three options for magnet students. Students were allowed to concentrate on Business Career Pathways, STEM Career Pathways, or both. All 3DE magnet students are required to complete the Business and Technology, Financial Services, and Entrepreneurship Pathways regardless of the option chosen; this is done to facilitate the alignment of the monthly case studies and job site visits. From 2019 to the present, the core identity of the 3DE Business & STEM Magnet Program at Benjamin Banneker High School is centered around providing a comprehensive and innovative educational experience that merges Business and STEM disciplines using the Design Thinking Model, 3DE core competencies and 3DE Case Cycle Process. Students must complete the primary 3-pathways in addition to students taking Introduction to Software Technology in the 9th grade and continue the optional STEM pathway Game Design, Computer Science, AP Capstone and Civics pathways. Additionally, to meet the B-STEM requirement in the program, students are required to complete a grade-level STEM PBL for each grade level. Each grade level has a focus, which is as follows: 9th-Science Fair through Research Methods class, 10th-Water Preservation, 11th- Food Deserts/Agriculture, and 12th- Podcasting. 3DE B-STEM also offers the AP Capstone course for scholars interested in furthering their writing knowledge. Added extracurricular activities within the program are the Garden Club, Greenhouse, and Music Studio. The academy aims to equip students with a strong science, technology, engineering, and mathematics foundation while integrating real-world business concepts. Students are encouraged

Padlet Drive 🔗

Program Narrative 120123

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edit

Response

As of the current academic year, the 3DE Business & STEM Magnet Academy at Benjamin Banneker High School has established the following strategic priorities and key goals related to the STEM education model:

1. Enhancing Equity and Inclusion:
   Priority: Ensure that STEM education is accessible and equitable for all students, regardless of their background.
   Data: Enrollment data, achievement data, and feedback from students, families, and educators.
   Addressing: Implementing targeted programs and initiatives to address achievement gaps, providing resources for underrepresented students, and offering professional development on inclusivity and diversity in STEM education.
   Results: Monitoring changes in enrollment demographics, narrowing achievement gaps, and evaluating the success of inclusivity initiatives.
2. Expanding Industry Partnerships:
   Priority: Foster and expand partnerships with local businesses and industry stakeholders.
   Data: Partnership engagement, feedback from industry partners, and student participation in industry-related experiences.

Addressing: Actively seeking new collaborations, strengthening existing partnerships, and providing industry-relevant experiences and internships for students.

Results: Increasing the number of industry partners, measuring the impact of industry experiences on student readiness for STEM careers, and assessing feedback from industry stakeholders.

3. Ongoing Professional Development:

Priority: Ensure that educators receive continuous professional development to stay updated on STEM pedagogy and best practices.

Data: Educator feedback, professional development participation, and student outcomes.

Addressing: Offering regular workshops, training sessions, and opportunities for educators to collaborate and share best practices.

Results: Monitoring changes in teaching methods, student engagement, and achievement as a result of professional development initiatives.

4. Student Performance and Preparedness:

Priority: Continuously improve student performance and preparedness for post-secondary education and STEM careers.

Data: Student assessments, standardized test scores, graduation rates, and post-secondary enrollment data.

Addressing: Implementing data-driven interventions, adjusting curriculum as needed, and providing academic support for struggling students.

Results: Analyzing changes in student performance, post-secondary enrollment rates, and success in STEM-related courses and careers.

5. Integration of Technology:

Priority: Integrate emerging technologies and digital tools into the STEM curriculum.

Data: Technology adoption rates, student feedback on tech integration, and outcomes related to technology-enhanced learning.

Addressing: Providing training for educators on technology integration, assessing the impact of technology on learning outcomes, and continuously updating the tech infrastructure.

Results: Measuring improvements in student engagement, critical thinking, and problem-solving through technology integration.

The institution uses a combination of quantitative and qualitative data to identify these priorities and goals, including student performance data, enrollment demographics, feedback from stakeholders (students, families, educators, industry partners), and ongoing assessment of program outcomes.

To address these priorities and goals, the institution has developed action plans that involve targeted initiatives, resource allocation, staff development, and ongoing monitoring and evaluation. These plans include specific strategies, timelines, and responsible parties for each priority area.

Results are regularly measured and assessed through key performance indicators and metrics related to each priority and goal. Progress is tracked and reported periodically, and adjustments are made to strategies and initiatives as needed to ensure that the institution is making meaningful progress toward its STEM education model objectives.

♡ 0 ◯ 0

Theory of Action

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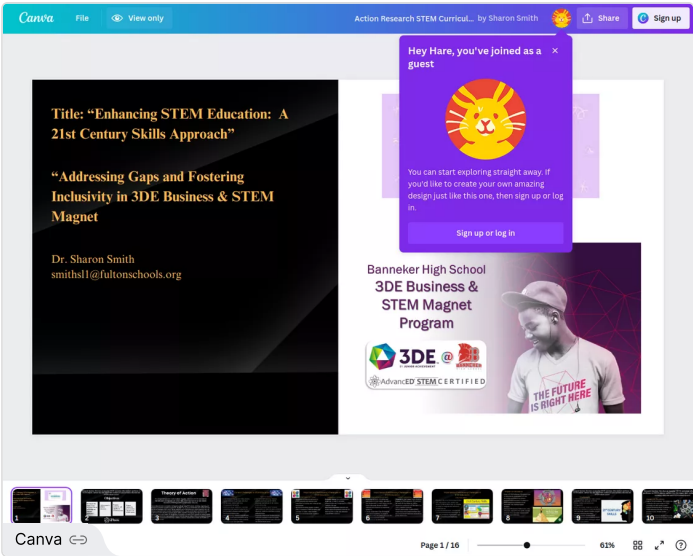
Action Research STEM Curriculum

STEM Pathways Outside of 3DE B-STEM

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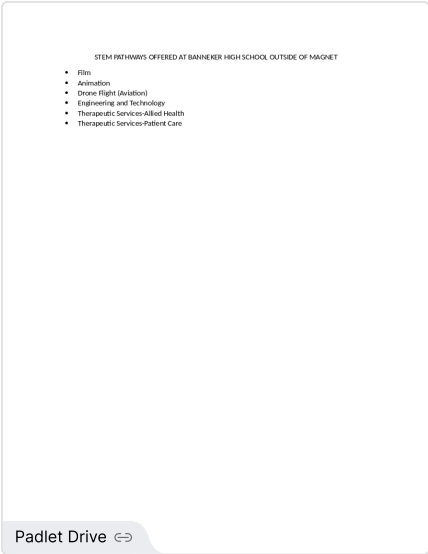
STEM_PATHWAYS_OFFERED_AT_BANNEKER_HIGH_SCHOOL_OUTSIDE_OF

Culture of Learning Standards

Standards 1-2

A good institution nurtures and sustains a healthy culture for learning. In a healthy culture, learners, parents, and educators feel connected to the purpose and work of the institution as well as behave in alignment with the stated values and norms. The institution also demonstrates evidence that reflects the mission, beliefs, and expectations of the institution (e.g., student work; physical appearance of the institution; participation in institution activities; parents' attendance at institution functions).

Keys to A Culture of Learning

A healthy culture is evident where:
- Stakeholders are actively engaged and supportive of the institution's mission
- Learners' academic and non-academic needs and interests are the focal point
- Stakeholders are included and supported

♡ 0   💬 0

Standard 1

SHARONLSMITH1228 10/11/23 12:54AM

Standard 1: Learners engage in STEM learning experiences that integrate all STEM disciplines with an emphasis on processes and practices associated with STEM.

3 - Learners regularly engage in curriculum that formally integrates content across all STEM disciplines*. Learners routinely participate in STEM processes and practices (e.g., Design Thinking Process, NGSS STEM Practices, engineering design). *Curriculum may include additional content disciplines in schools that have adopted other inclusive models of integrated learning, such as the arts for STEAM schools.

♡ 0 ◯ 0

MS. COMEGYS 1/22/24 9:02PM

STEM PBL Meetings
There is protected time, once a month, to allow students to meet and enagege in STEM work. Students are able to work in their groups and meet certain milestones. Teachers are able to give intentional STEM instruction.

♡ 0 ◯ 0

MS. COMEGYS 1/23/24 4:04PM

STEM in the Classroom: 10th World History
World History 10th Grade

Current standard: SSWH6
Learning Target : I can describe the
development and decline of Sudanic kingdoms.
We will investigate the development of Mali, Songhai, and Ghana
We will also study leaders like Sundiata and the pilgrimage of Mansa Musa

Case Study Implementation-
Theme: Creativity and Innovation
Tool: Design thinking process
1. The students will use the design thinking model to create a plan for how the kingdom of Songhai could be saved from the impending attack from the Portuguese.
2. Students will use the design thinking model to create a plan of how they could expand the gold salt trade beyond its existing routes.

♡ 0 ◯ 0

MS. COMEGYS 1/23/24 4:07PM

STEM in the Classroom: Intro to Research Methods

Agenda: Week of 01/17/24-01/19/24
Standards: NGSS
HS-LS3-2 Heredity: Inheritance and Variation of Traits
Make and defend a claim based on evidence that inheritable genetic variations may result from (1) new genetic combinations through meiosis, (2) viable errors occurring during replication, and/or (3) mutations caused by environmental factors.
Biology SB2 b. Construct an argument based on evidence to support the claim that inheritable genetic variations may result from new genetic combinations through meiosis (crossing over, nondisjunction); non-lethal errors occurring during replication (insertions, deletions, substitutions); and/or heritable mutations caused by environmental factors (radiation, chemicals, and viruses).
Learning Targets:
I CAN.
- Defend my claim identifying a mutation based on my knowledge of inheritable genetic variation based on the three factors identified in the standard.

- Make a claim based on the evidence that is discovered
  in the ADI (Argument-Driven Investigation).

ADI (Argument-Driven Investigations) Investigations
·   The scholars were introduced to Argument-Driven
Investigations (ADI). Each science investigation allows students
to interact with their peers as they make sense of a natural
phenomenon. The students will continue to work through
their investigation of the DNA association of Cystic Fibrosis.
We will also use the ADI Learning Hub and their STEM journals.

♡ 0 ◯ 0

🔗 **MS. COMEGYS** 1/23/24 4:09PM

STEM in the Classroom: Physics
eacher will Model Problem solving strategies when given different variables.
Physics /AP Physics – **Unit 2 Dynamics**
**Standard: SP2. Obtain, evaluate,and communicate information about how
forces affect the motion of objects.**
SP2a. ; SP2b. & SP2c,d Students will continue working with Physics Skills
working with base units for 1D and 2Dimensional Analysis.
Instruction:
* Students will understand that Inertia and mass are directly related and
proportional.
* Students will set up models to show the directionof net force vectors
corresponds to the direction of the acceleration of n object.
* Students will understand that acceleration are directly proportional and
the mass of an object resists acceleration.
Students will PRACTICE & MODEL activities.

♡ 0 ◯ 0

Standard 2

🔗 **SHARONLSMITH1228** 10/11/23 12:44AM

Dr. Fingall and Mrs. Lenz

♡ 0 ◯ 0

🔗 **SHARONLSMITH1228** 10/11/23 12:44AM

**Standard 2: Professional staff members implement high
quality STEM courses and curriculum aligned to recognized
standards and organized into interdisciplinary frameworks.**

4 – Professional staff members implement a formal, systematic process for
aligning courses to adopted and recognized sets of standards and/or
benchmarks. A rigorous STEM curriculum is consistently organized around
multiple real-world, interdisciplinary, problem-based and/or project-based
units of study.

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🔗 **SHARONLSMITH1228** 1/3/24 7:01PM

Additional Reponse to Standard 2
The culture of STEM learning at the 3DE Business & STEM Magnet
Academy at Benjamin Banneker High School is critical to our program's
success. A positive culture fosters enthusiasm for STEM education,
encourages collaboration, and ensures that learners, families, and
educators are aligned with the program's values and purpose. Our data
analysis and synthesis provide insights into the culture of STEM learning
and how stakeholders feel connected to the program's mission and
consistently adhere to its values and norms.

1. Connection to Purpose and Work: Evidence illustrates that learners, families, and educators feel deeply connected to the purpose and work of the STEM program. This connection is evident in various ways: High student participation rates in extracurricular STEM activities, such as the Garden Club, Greenhouse projects, and Music Studio, show students' enthusiasm for the program's mission. Parental involvement in STEM-related events, meetings, and initiatives reflects a strong connection and support from families. Educators' active participation in professional development and STEM-related workshops indicates their commitment to the program's goals and objectives. Student presentations, project demonstrations, and successful participation in STEM competitions showcase learners' engagement and alignment with the program's purpose.

2. Alignment with Values and Norms: Evidence also illustrates that learners, families, and educators consistently behave in alignment with the stated values and norms of the STEM program. This alignment is demonstrated through: Respect for diversity and inclusion: Inclusive practices, equitable access to STEM education, and efforts to close achievement gaps highlight alignment with these values. Collaboration and teamwork: Students' participation in interdisciplinary collaboration, group projects, and industry partnerships reflects the program's emphasis on teamwork and collaboration. Ethical behavior and integrity: The program's focus on critical thinking, problem-solving, and ethical considerations is evident in students' project work and presentations. Innovation and growth mindset: Learners' willingness to take risks, embrace challenges, and demonstrate innovation aligns with the program's values and norms.

In summary, our analysis and synthesis reveal a positive culture of STEM learning at the 3DE Business & STEM Magnet Academy. Learners, families, and educators are deeply connected to the program's purpose and consistently behave in alignment with its stated values and norms. These aspects align with the Cognia STEM Certification Standards, emphasizing the importance of a positive program culture that fosters engagement, alignment with values, and a commitment to the program's mission. This positive culture is a cornerstone of our program's success and contributes to learners' enthusiasm for STEM education, collaboration, and ethical conduct. The evidence suggests that the culture of STEM learning is a key characteristic and a significant contributor to our program's growth and improvement.

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SHARONLSMITH1228 10/11/23 12:45AM

Describe the Key Characteristic: Culture for STEM Learning

Write a narrative in three parts:

Analysis and synthesis: Using the evidence you have collected and analyzed related to the culture of STEM learning in your institution, write an organized description of your data results. Make sure to cite your sources of evidence in your narrative. Include references to your rating of any standards you find applicable. In addition to your analysis of the standards and relevant evidence, consider the following:

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SHARONLSMITH1228 10/11/23 12:47AM

- What evidence illustrates that the learners, families, and educators feel connected to the purpose and work of the STEM program?

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Lenz, Debbie 10/30/23 5:57PM
Banneker Blooms Garden Club is a direct result of the connection students feel to the purpose of the STEM program. Grade level STEM projects focus on issues related to

sustainability – housing, water, and food. During the 22-23 SY a group of students were inspired to create a garden club at Banneker.

Within the greater community, parents at our feeder as well as other middle schools see Banneker's 3DE BSTEM as the premier HS STEM program in the south district. Interest in attending Banneker is growing because of the positive reputation of our program.

🔗 **SHARONLSMITH1228** 10/11/23 12:48AM

- What evidence illustrates that learners, families, and educators consistently behave in alignment with the stated values and norms of the STEM program?

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Lenz, Debbie 10/30/23 6:05PM

· *Experiential Learning: Emphasizing hands-on experiences, real-world challenges, and practical application of STEM knowledge.*
Each grade level participates in STEM projects based on the overall theme of sustainability. Students follow the engineering design process model beginning with empathy. In each grade, students begin by being exposed to situations and people who have experienced real-world issues related to housing, water, and food scarcity. Unfortunately, many of these themes are close to home, students have first-hand experience or close family/friends who have. While these hands-on experiences are often negative, students can use these experiences to solve problems.
· *Innovation and Creativity: Encouraging creative thinking and exploring innovative solutions.*
Students are encouraged to engage in problem solving across the entire school body. Our Career Technical Student Organizations (CTSOs) for example encourage students to think critically about problems that they identify either within their schools or communities and then create projects to address them. One such example is the project currently being undertaken by the Future Business Leaders of America (FBLA) where the members of FBLA are currently researching the impact of the most popular food dyes in America Red 40, Yellow 5 and Yellow 6. The students developed a natural drink with the exclusion of any dyes. In demonstration of their innovative thinking, the FBLA members took their findings to the feeder middle schools in the district to enlighten them on the effects of the food dyes and provide them with the opportunity to sample the natural drinks made from locally grown products. The members in their research took a comparative look at the regulation of food dye usage in European countries and America. The members then selected an organization in their local community that they could donate part of the proceeds from the selling of the natural drink. (Homeless) During the project students were also able to research bottling for the drink which would be recycled.

· *Interdisciplinary Collaboration: Promoting collaboration across various disciplines.*
STEM projects are an integral part of all curricula. In 10th grade, the project is introduced with a video in social studies (World History). Civilizations began by people finding suitable areas for development, finding water sources was fundamental. One activity completed in 10th grade requires students to determine mathematically how much water they use daily. In 11th grade as part of their study of food sustainability, students use math skills to evaluate garden spaces for amount of light available. Reading and writing is inherent in all projects, vocabulary and writing skills are emphasized at every grade level.
Another project that was implemented in 9th grade, Students were challenged to create a model that would improve the experience of passengers waiting at the gate for their flights. Students had to take into account the full experience from passengers with special needs, cell phone and device charging, accessible beverages and snacks/meals, information displays and extended wait. Students also considered children and pets and any other concerns that they brainstormed. Students addressed multiple cross curricula standards in the unit. They surveyed travelers (IBT CTAE), Use measuring and converting measures as they created a math model for their lounge experience design (Math). Students created their written statements to support their design pitch (ELA), reviewed passenger travel patterns by ethnicity (Social Studies). The design of their prototype for the lounge experience included planned 3D printed/virtual spatial design (Engineering CTAE)
Standards included:
Math : MGSE9-12.N.Q.1 Use units of measure
Science: SAP2.
English: ELACC9-10SL2
CTAE: IBT BMA-IBT-2
CTAE: BMA-IBT-6
Students also addressed each of the 5 phases of the Design Thinking Model Empathize, Define, Ideate, Prototype, and Test. Students had to integrate technology on a variety of levels. Electronic survey creation, QR code generation, Adobe Express, AES Customer service unit, Microsoft Excel (data analysis) Zoom/Teams – virtual meetings, and Spatial Design software.

· *Partnerships: Establishing connections with industry partners and community stakeholders.*
Podcast/Recording Studio -
To connect students to more relatable STEM concepts, Banneker identified a local music studio that educates students about various aspects of music production. The goal of this partnership is to bring in intellectual capital, community resources, and pathways into the music business that would otherwise be non-existent. Our partner, Legacy Music Studios, will also assist in building an on-campus studio that will serve as

a hub for connection and creativity. According to Michigan State researchers, most successful scientists have musical hobbies than those with less success. Because of these findings, we will use the studio to teach students real life lessons utilizing STEM. Mr. Summerour has laid out several initiatives to bring this approach into fruition:

1. Problem solving- building complex structures such as beats and songs require a certain level of rigor and focus. Based on research conducted by the National Bureau of Economic Research, schools in lower income communities provide fewer opportunities to practice thinking for continuous stretches. This studio provides a place where students can work on cognitive endurance and solve difficult problems in the process. Multiple problem-solving strategies can be taught and deployed in real time. These strategies can also be used in other disciplines.

2. Collaboration-Making music is a collaborative effort between people with similar and different backgrounds. Students can take a universal theme, music, and learn how deep collaboration can lead to an enriched experience. More than 80% of published music is the result of collaboration which is also a big piece in STEM.

3. Creativity and Innovation- Because we live in an increasingly digital world, music can be created electronically without a complex understanding of traditional music theory. Instruments and sounds can be created from 0's and 1's which means students can learn about sound programming, shaping sound waves(equalizing), compression, and other sound manipulating techniques that foster creativity and are valued in the music business.

4. Time management- Working on large scale STEM projects requires an intense understanding of time awareness and management. The same can be said for working in a studio environment. Money and resources are spent to acquire and use the space. According to Patchwerk studio's website, one room can cost up to $700 to rent out. Having a game plan prior to entering the session ensures that time is spent efficiently and effectively. Again, these skills can be implemented across curriculum.

5. Social and emotional awareness- We will use the studio to perform deep dives into the effects of song lyrics and how people's dispositions change after they listen to a song. According to Pfizer.com, music is perceived through the limbic system. Moods can change without one even noticing. If over 60%(studyinternational.com) of students listen to music while studying, how can that play a part in their behavior at school? Their interpersonal relationships in school and the connected community?

Implementing and monitoring these initiatives throughout the school year will ensure that the studio provides a positive learning environment and enhances the STEM experience of our students.

· *Equity and Inclusion: Ensuring that STEM education is accessible to all students.* The JROTC, NextGen, and Upward Bound programs at Banneker are accessible to all students and actively involved in STEM education. JROTC activities follow the emphasis the military has on STEM readiness; cadets use STEM principles in the classroom as well as off-campus activities. NextGen closes the opportunity gap for under-resourced students in Atlanta through exposure and support. Students are routinely taken to exposure opportunities such as the Georgia Tech College of Engineering, the Robotorium.
Continuous Improvement: Committed to refining and enhancing STEM education practices.
Faculty regularly participate in professional development opportunities, formal and informal related to STEM education practices. Some examples include participation in Advanced Placement Summer Institute (APSI), membership in professional organizations (AACT, NSTA, ACS), work in school-based PLCs, collaboration with district and beyond subject matter groups (i.e. AP communities)

SHARONLSMITH1228 10/11/23 12:48AM

- Describe activities, initiatives, and other engagements that reflect the mission, beliefs, and expectations of the institution and STEM program.

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SHARONLSMITH1228 10/11/23 12:49AM

Findings, interpretations, and prioritization: Describe the areas within culture where your institution's STEM program is performing well, and areas within culture where your institution's STEM program is performing not so well. Write one or more "findings statements" that describe your conclusions. State whether maintaining high performance or addressing poor performance in this area is a high priority or not.

**Action: Based on your findings, write a conclusion to your narrative describing your theory of action. Write your narrative in the box below.

Findings and Prioritization:

Finding Statement 1: The 3DE Business & STEM Magnet Academy excels in cultivating a positive culture where learners, families, and educators feel deeply connected to the purpose and work of the STEM program. The evidence indicates strong engagement, participation in extracurricular activities, parental involvement, and educator commitment to the program's goals. Maintaining this high level of performance is a high priority to sustain enthusiasm and alignment with the program's mission (High Priority).

Finding Statement 2: The program performs well in fostering a culture where learners, families, and educators consistently align with the stated values and norms. The evidence reflects respect for diversity, collaboration, ethical behavior, and a growth mindset among stakeholders. Maintaining this alignment with values and norms is a high priority to preserve the positive program culture (High Priority).

Conclusion and Theory of Action:
Based on our findings, the culture of STEM learning at the 3DE Business & STEM Magnet Academy is performing exceptionally well. Learners, families, and educators are deeply connected to the program's purpose and consistently adhere to its values and norms. These aspects are critical to the program's success and should be maintained as high priorities.

Our theory of action centers on sustaining and enhancing our strengths in program culture. We will continue prioritizing and nurturing positive connections among stakeholders, fostering a sense of purpose and engagement. Strategies to maintain alignment with values and norms, such as promoting diversity, collaboration, ethical behavior, and a growth mindset, will be further emphasized.

Additionally, we will actively seek opportunities for continuous improvement in areas where there may be room for growth, such as equity and inclusion. By ensuring that all learners, families, and educators are equally connected and aligned with the program's values, we aim to create an even more inclusive and supportive STEM culture. In conclusion, our program's culture is vital to its success. Our theory of action focuses on maintaining and enhancing our strengths while addressing any areas that may need improvement, all with the ultimate goal of providing a comprehensive and innovative STEM education that prepares our students for the future.

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Standards 3-5

🔗 **SHARONLSMITH1228** 10/11/23 1:14AM

Leadership for Learning Standards

The ability of a leader to provide leadership for learning is a key attribute of a good institution. Leaders who engage in their own learning while tangibly supporting the learning process for learners and teachers have a significant positive impact on the success of others. Leaders must also communicate the learning expectations for all learners and teachers continuously with consistency and purpose. The expectations are embedded in the culture of the institution, reflected by learners', teachers', and leaders' behaviors and attitudes toward learning.

Keys to Leadership for Learning

Leadership for learning is demonstrated when school leaders:
- Communicate expectations for learning
- Influence and impact the culture in positive ways
- Model and engage in learning while supporting others to do so

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Standard 3

🔗 **SHARONLSMITH1228** 10/11/23 12:55AM

Standard 3: Professional staff members and leaders participate in an ongoing system of STEM-specific professional learning.

4 - Professional staff members and leaders engage in a regular and frequent formal program of professional learning for specific areas of responsibility such as STEM disciplinary content knowledge or instructional coaching. The program of STEM professional learning consistently results in school-wide improvements in STEM instructional practices.

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> **Anonymous** 10/30/23 6:39PM
> D. Lenz - APSI Advanced Placement Summer Institute; Modeling Instruction Institute;

> **Anonymous** 10/30/23 6:39PM
> Need- Request for Professional Learning

> **Dr Sandra Fingall** 10/30/23 6:40PM
> Fingall - Online Teaching Endorsement, STEM endorsement

> **Lenz, Debbie** 10/30/23 6:41PM
> Lenz - membership in AACT, ACS, NSTA, active in national PLC for Chemistry and AP Chemistry teachers, participated in AP Chemistry Peer Mentorship program as a mentee

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🔗 **MS. COMEGYS** 1/23/24 4:32PM

Professional Learning

Our partnership with 3DE includes consistent professional learning including summer training. It ranges from 2 to 3 days and includes collaborative planning with other teachers across the 3DE netwrok. CTAE teachers receive follow up trainings from the 3DE partners in best practices to use learning tools and follow case study methodology.

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Padlet Drive 🔗

3DE Summer Training

🔗 **MS. COMEGYS** 1/23/24 4:38PM

STEM Instructional Coach

For this school year, we have an instructional coach, Ms. Smith - Mitchell to support STEM teachers. The coach is a school employee who is dedicated to helping teachers problem solve and think creatively about ways toi implement the intructional framework with fidelity. Her role includes observations to improve instructional practice.

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Standard 4

🔗 **SHARONLSMITH1228** 10/11/23 12:55AM

Standard 4: Leaders engage a diverse network of community partners and stakeholders in order to support and sustain STEM programs and initiatives.

4 - Leaders demonstrate a systematic approach to partnership with a diverse group of community organizations, including local businesses, STEM practitioners, and institutions of higher education. Leaders proactively seek, and consistently receive, resources and support from STEM partners to improve STEM teaching and learning.

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> **Anonymous** 10/30/23 6:41PM
> Advisory Board

SHARONLSMITH1228 1/3/24 7:04PM

Advisory Board

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BHS_Advisory_Board_Welcome_Letter_SY23_24.pdf

SHARONLSMITH1228 1/3/24 7:05PM

Board Members

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3DE_STEM_Advisory_Board_Members_SY2324.docx

SHARONLSMITH1228 1/3/24 7:13PM

Advisory Agenda

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MS. COMEGYS 1/23/24 4:56PM

Advisory Meeeting

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Standard 5

SHARONLSMITH1228 10/11/23 12:56AM

Dr. Smith

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SHARONLSMITH1228 10/11/23 12:56AM

**Standard 5: Leaders ensure that all stakeholders
have ongoing opportunities to access information
and learn about STEM implementation.**

4 - Leaders engage a formal process to share and communicate STEM
vision, mission, goals, outcomes, responsibilities, roles, events, and
activities to internal and external stakeholders. Leaders consistently plan
for and facilitate STEM events and activities for the school community
during and beyond the regular school day.

♡ 1 ◯ 1

> Anonymous 10/30/23 6:42PM
> https://bstembanneker.weebly.com/

SHARONLSMITH1228 10/11/23 12:57AM

**Describe the Key Characteristic: Leadership for STEM Learning Write a
narrative in three parts: Analysis and synthesis: Using the evidence you
have collected and analyzed related to leadership of your STEM program,
write an organized description of your data results. Make sure to cite
your sources of evidence in your narrative. Include references to your
rating of any standards you find applicable. In addition to your analysis of
the standards and relevant evidence, consider the following:**
How do leaders communicate expectations for learning in the STEM
program and monitor progress toward meeting such expectations?

Describe examples of behaviors and actions by leaders that influence
and have a positive impact on the culture of the STEM program.

In what ways do leaders model and engage in
STEM learning while supporting others to do so?

How is leadership distributed throughout your
institution in support of the STEM program?

Leadership for STEM Learning is a crucial element in the success of
the 3DE Business & STEM Magnet Academy at Benjamin Banneker
High School. Effective leadership sets the tone for the program's
culture, communicates clear expectations for learning, and ensures
that STEM education remains a top priority. Based on our data and
analysis, the following key characteristics and findings emerge:

Clear Communication of Expectations: Our leaders consistently
communicate clear expectations for learning within the STEM program.
They use various channels to convey the program's academic standards
and goals, including meetings, newsletters, and parent-teacher
conferences. Evidence includes documented communication plans and
regular updates to stakeholders. This aligns with the Cognia Standard 1.1,
which emphasizes clearly communicating academic expectations.

Monitoring Progress: Leaders actively monitor progress toward
meeting expectations by regularly reviewing student data, such as

standardized test scores, attendance records, and course performance. This data-driven approach allows leaders to identify areas for improvement and make informed decisions regarding curriculum adjustments and support for struggling students (Cognia Standard 1.3).

Positive Impact on Program Culture: Leaders' behaviors and actions have a profound and positive impact on the culture of the STEM program. They actively engage with students, attend STEM-related events, and celebrate students' achievements. This visible support fosters a culture of enthusiasm and commitment to STEM learning. Leaders also prioritize inclusivity and equity, ensuring all students feel valued and supported (Cognia Standard 1.4).

Modeling and Engagement in STEM Learning: Leaders model STEM learning by participating in professional development, attending STEM-related workshops, and engaging in ongoing learning experiences. This demonstrates their commitment to STEM education and sets an example for educators and students. Leaders actively support teachers implementing innovative STEM teaching methods (Cognia Standard 1.2).

Distributed Leadership: Leadership for STEM learning is distributed throughout our institution. While our school has designated STEM program leaders, administrators, teachers, and support staff share leadership roles and responsibilities. This collaborative approach ensures that STEM education remains a collective effort, and everyone plays a part in its success. Our distributed leadership aligns with the Cognia Standard 1.5, emphasizing shared leadership and collaboration.

Our analysis and synthesis reveal a solid commitment to Leadership for STEM Learning within the 3DE Business & STEM Magnet Academy. Leaders effectively communicate expectations, monitor progress, positively influence program culture, model STEM learning, and distribute leadership responsibilities. This concerted effort ensures that STEM education is a priority and continues to thrive within our institution. Our leaders are instrumental in fostering a culture of excellence and innovation in STEM education, and their ongoing dedication is vital to the success of our program. The evidence suggests that leadership for STEM learning is a key characteristic and a driving force behind our program's growth and improvement.

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SHARONLSMITH1228 10/11/23 1:00AM
Findings, interpretations, and prioritization:
Findings, interpretations, and prioritization: Describe the areas within leadership where your institution's STEM program is performing well, and areas within leadership where your 's STEM program is performing not so well. Write one or more "findings statements" that describe your conclusions. State whether maintaining high performance or addressing poor performance in this area is a high priority or not.

Action: Based on your findings, write a conclusion to your narrative describing your theory of action. Write your narrative in the box below.

Finding Statement 1: The 3DE Business & STEM Magnet Academy demonstrates strong performance in clearly communicating expectations for STEM learning. Our leaders consistently communicate academic standards and goals to stakeholders, ensuring transparency and alignment with program objectives. Maintaining this high level of performance is a priority to sustain a shared understanding of STEM education's expectations (High Priority).

Finding Statement 2: Leaders effectively monitor progress toward meeting expectations for STEM learning through data-driven approaches. Regular review of student data allows for informed decisions and support for student success. This aspect of leadership is performing well and should be maintained as a high priority (High Priority).

Finding Statement 3: The positive impact of leaders on the culture of the STEM program is evident. Their visible support, engagement with students, and celebration of achievements contribute to a culture of enthusiasm and commitment to STEM learning. This aspect of leadership is performing excellently and should be prioritized for continued success (High Priority).

Finding Statement 4: Leaders model and engage in STEM learning themselves while actively supporting educators and students. This commitment to ongoing learning and innovative teaching methods is a significant asset to the program and should be maintained as a high priority (High Priority).

Finding Statement 5: Leadership for STEM learning is distributed effectively throughout the institution, fostering a collaborative approach. Various stakeholders share leadership responsibilities, including administrators, teachers, and support staff. This distributed leadership model aligns with the program's success and should be maintained as a high priority (High Priority).

Conclusion and Theory of Action:
Based on our findings, the Leadership for STEM Learning within the 3DE Business & STEM Magnet Academy is performing remarkably well in several critical areas, including clear communication of expectations, monitoring progress, positive program culture impact, modeling STEM learning, and distributed leadership. These aspects are instrumental in the program's growth and success and must remain high priorities. Our theory of action is clear: We will prioritize and maintain high performance in leadership areas where the program excels. This includes ensuring transparent communication, data-driven monitoring, fostering a positive program culture, modeling STEM learning, and upholding distributed leadership.

In areas where there may be opportunities for improvement, such as data-driven decision-making or further enhancing inclusivity, we will take proactive steps to address these issues. By continuously aligning our leadership practices with the Cognia STEM Certification Standards and emphasizing ongoing professional development for our leaders, we will strive for excellence in all Leadership for STEM Learning facets. In conclusion, our leadership's commitment to STEM education is fundamental to the program's success. Our theory of action centers on maintaining and enhancing our strengths while addressing any areas that may need improvement, all with the ultimate goal of providing a comprehensive and innovative STEM education to prepare our students for the future.

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Standards 6-8

🔗 SHARONLSMITH1228 10/11/23 1:16AM

Engagement of Learning Standards
A good institution ensured that learners are engaged in the learning environment. Learners who are engaged in the learning environment participate with confidence and display agency over their own learning. A good institution adopts policies and engages in practices that support all learners being included in the learning process.

Keys to Engagement of Learning

Engagement is demonstrated when all learners:
- Are included in the learning process
- Participate with confidence
- Have agency over their learning

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Student Feedback

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Student Feedback

⊖ MS. COMEGYS 1/23/24 6:11PM
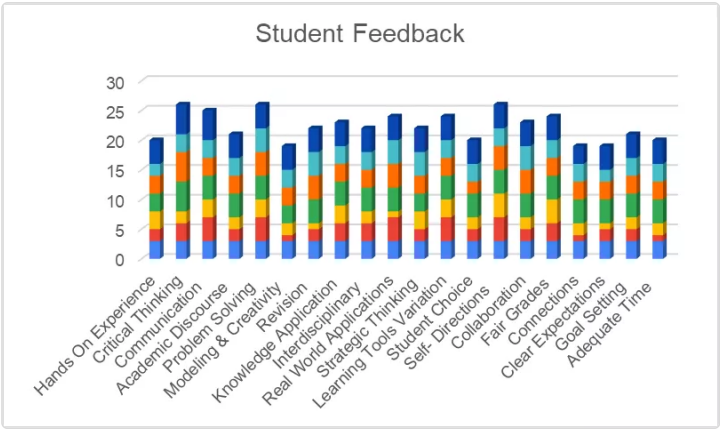
STEM YLP

11th grade students collaborate in a year long project in which they define a problem, develop a solution to solve the problem, and develop a product to sell from their solutions.

Padlet Drive

YLP_Documents.zip

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Standard 6

⊖ SHARONLSMITH1228 10/11/23 1:00AM

Standard 6: Learners engage collaboratively in authentic inquiry during ongoing units of study.

4 - Learners continually engage in authentic inquiry through systematically planned and implemented project- based units of study. Learners consistently work collaboratively to complete rigorous tasks, including problem identification, investigation, and analysis. (Homeroom meetings; 3DE curriculum, Instructional framework through the school, Trojan Time, Research Methods; Inquiry in all science classes/3DE).

♡ 0 ⬭ 4

Anonymous 10/30/23 6:43PM
Pictures of lesson plans

Anonymous 10/30/23 6:44PM
Pictures of Homeroom/Written plans teachers have for each meeting

Anonymous 10/30/23 6:44PM
Journals/Lessons

Lenz, Debbie 10/30/23 6:45PM
Add lesson plans that match - Lenz to add examples of POGIL and other inquiry activities in Chemistry and Biology from Williams et al

Standard 7

⊖ SHARONLSMITH1228 10/11/23 1:01AM

Standard 7: Learners engage in self-directed STEM learning guided by professional staff members who are effective facilitators of learning.

4 - Learners consistently have opportunities to be critical and creative thinkers and are encouraged to be owners and managers of their own STEM learning experiences. Professional staff members continually serve as facilitators who provide guidance and support for learners to be self-directed. (Do choice board per case challenge, grade-level PBLs)

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Anonymous 10/30/23 6:43PM
PBLS

Standard 8

Dr. Comegys/Dr. Smith

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Standard 8: Learners benefit from a formal structure of within-school and extracurricular opportunities to extend STEM learning.
4 – The institution consistently provides a variety of STEM-specific extracurricular and extended day opportunities for learners (e.g., clubs, competitions, summer camps). Leaders implement a systematic process to ensure that learners have multiple formal, age-appropriate opportunities to engage with STEM practitioners, community experts, and/or other STEM partners.

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Describe the Key Characteristic: Engagement of STEM Learning Write a narrative in three parts:
Describe the Key Characteristic: Engagement of STEM Learning Write a narrative in three parts:
Analysis and synthesis: Using the evidence you have collected and analyzed related to engagement of stakeholders in the STEM program, write an organized description of your data results. Make sure to cite your sources of evidence in your narrative. Include references to your rating of any standards you find applicable. In addition to your analysis of the standards and relevant evidence, consider the following questions:

Describe the areas within engagement where your institution's STEM program is performing well, and areas within engagement where your institution's STEM program is performing not so well. Write one or more "findings statements" that describe your conclusions. State whether maintaining high performance or addressing poor performance in this area is a high priority or not. Action: Based on your findings, write a conclusion to your narrative describing your theory of action. Write your narrative in the box below.

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Findings, interpretations, and prioritization:

Describe the areas within engagement where your institution's STEM program is performing well, and areas within engagement where your institution's STEM program is performing not so well. Write one or more "findings statements" that describe your conclusions. State whether maintaining high performance or addressing poor performance in this area is a high priority or not. Action: Based on your findings, write a conclusion to your narrative describing your theory of action. Write your narrative in the box below.

Findings and Prioritization:

Finding Statement 1: The 3DE Business & STEM Magnet Academy excels in actively engaging learners in STEM education. The program effectively implements hands-on, experiential learning, provides opportunities for students to participate in real-world STEM challenges actively, and fosters a culture of active engagement. Maintaining this high level of performance is a high priority to continue promoting student involvement and enthusiasm for STEM (High Priority).

Finding Statement 2: Learners participate in the STEM program with confidence. The evidence indicates that students

demonstrate confidence in their abilities, readily present their work, and take on leadership roles in STEM-related activities. The strategies employed to build learners' confidence are effective and should be maintained as a high priority (High Priority).

Finding Statement 3: The program successfully provides learners agency over their learning in the STEM program. Students have opportunities to select and design projects, set goals, and make decisions about their learning path. This aspect of the program aligns well with learner agency principles and should remain a high priority (High Priority). Conclusion and Theory of Action:

Based on our findings, the Engagement of STEM Learning within the 3DE Business & STEM Magnet Academy is performing exceptionally well. Learners are actively engaged, confident in their abilities, and have agency over their learning. These aspects are critical to the program's success and should be maintained as high priorities. Our theory of action centers on sustaining and enhancing our strengths in learner engagement, confidence-building, and learner agency. We will continue to prioritize active engagement through hands-on experiences and real-world challenges. Strategies to build learners' confidence, such as providing a supportive learning environment and emphasizing a growth mindset, will be further emphasized.

Additionally, we will ensure that learners continue to have agency over their learning by offering flexibility in choosing projects and courses that align with their interests and career goals. We will provide ongoing opportunities for students to take ownership of their learning journeys, promoting a sense of autonomy and empowerment. In conclusion, our program's commitment to learner engagement, confidence-building, and agency over learning is fundamental to its success. Our theory of action is to maintain and enhance these strengths while continually seeking ways to improve and innovate in these areas. This approach will allow us to provide a comprehensive and innovative STEM education that prepares our students for the future.

♡ 0 ◯ 0

🔗 **MS. COMEGYS** 1/22/24 9:10PM
STEM Curriculum Day & Parent Night
Each grade will have students present their best STEM work for the year. 9th and 10th will showcase in the big gym 11th will be in the small gym; and Seniors will showcase in the main hall. Teachers wil help students choose the best showcase and with each receiving an official invitation to parents. During the 3rd period lunches, teachers can sign up for their classess to view the student's work. During that evening, parents are invited will be able to see their students present their work.

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🔗 **MS. COMEGYS** 1/23/24 4:43PM
College Board Recognition
Banneker High School has been recognized with the AP College Science Female Diversity Award.

♡ 0 ◯ 0

Standards 9-10

🔗 **SHARONLSMITH1228** 10/11/23 1:17AM
Growth in Learning Standards
A good institution positively impacts learners throughout their journey of learning. A positive impact on the learner is reflected in readiness to engage in and preparedness for the next transition in their learning. Growth in learning is also reflected in learners' ability to meet expectations in knowledge and skill acquisition.

Keys to Growth in Learning

Growth is evident when

- Learners possess non-academic skills that ensure readiness to learn
- Learners' academic achievement reflects preparedness to learn
- Learners attain knowledge and skills necessary to achieve goals for learning

♡ 0 ◯ 0

Standard 9

⇔ SHARONLSMITH1228 10/11/23 1:04AM

Standard 9: Learners demonstrate their learning through performance-based assessments and have opportunities to develop self-assessment and self-monitoring skills.

4 - Learners consistently engage in STEM-specific performance assessments that provide opportunities for public demonstrations of learning. Learners continually participate in activities that develop metacognitive skills, such as goal setting, formative self-assessment, and reflections on learning. (STEM notebooks,

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> **Anonymous**   10/30/23 6:46PM
> STEM journal excerpts

> **Anonymous**   10/30/23 6:47PM
> Form rubrics

> **Lenz, Debbie**   10/30/23 6:49PM
> Need a formative self assessment reflection form for all students

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Banneker High School Financial Literacy Night Flyer
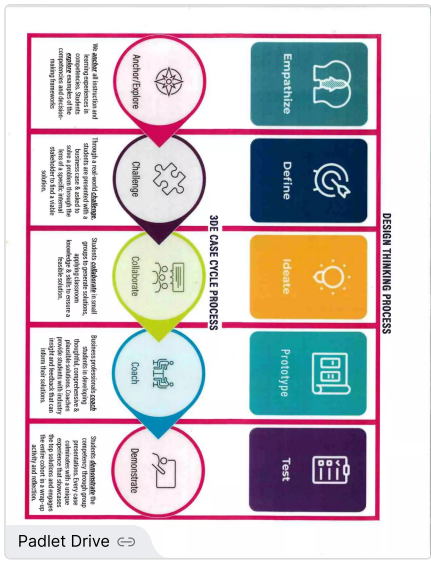
Design Thinking Process Sheet

⊖   **MS. COMEGYS** 1/23/24 6:44PM

Journaling

Students write across the curriculum and have STEM and content specific journals. This has allowed students to organize the information as well as see the need for written communication. Students are able to collaborate using their journals and have used them to guide descision making.

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Standard 10

⊖   **SHARONLSMITH1228** 10/11/23 1:05AM

Dr. Smith and Dr. Comegys

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⊖   **SHARONLSMITH1228** 10/11/23 1:04AM

Standard 10: Learners demonstrate STEM literacy outcomes that prepare them for the next level of learning and work.

3 - Learners regularly progress through the STEM curriculum based on mastery of identified learning outcomes for each of the STEM disciplines, as well as content areas included in the institution's integrated model (e.g., STEAM, STREAM). Learners and professional staff routinely collaborate in using assessment results in a meaningful way to ensure future success.

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> **Anonymous** 10/30/23 6:50PM
> Exemplar of annotated research articles

⊖   **SHARONLSMITH1228** 10/11/23 1:05AM

Write a narrative in three parts:

Write a narrative in three parts:

Analysis and synthesis: Using the evidence you have collected and analyzed related to growth and improvement in STEM learning, write an organized description of your data results. Make sure to cite your sources of evidence in your narrative. Include references to your rating of any standards you find applicable. In addition to your analysis of the standards and relevant evidence, consider the following:

- Are learners ready to engage in their next transition in STEM learning? What evidence supports this belief?
- Are learners academically prepared to transition to the next level of STEM learning? What evidence supports this belief?
- Are learners meeting expectations in STEM knowledge and skill acquisition? What evidence supports this belief?

As we delve into the analysis and synthesis of our data related to growth and improvement in STEM learning at the 3DE Business & STEM Magnet Academy at Benjamin Banneker High School, it becomes evident that our program has made significant strides in preparing learners for their following transitions in STEM education and beyond. We have systematically evaluated our progress against established standards, identified areas of excellence, and recognized opportunities for improvement, all while keeping a keen eye on our students' readiness for future STEM challenges.

1. Learners' Readiness for Transition in STEM Learning: Evidence supports our belief that learners are well-prepared and ready to engage in their next transition in STEM learning. Our students consistently demonstrate high engagement, enthusiasm, and commitment to their STEM studies. This is reflected in the exceptional attendance rates in our STEM classes and the participation and active involvement in extracurricular STEM-related activities, such as the Garden Club, Greenhouse Projects, and Music Studio. Our partnership with Junior Achievement and industry stakeholders also provides students with real-world exposure and experiences that enhance their readiness for future STEM pathways. Our students' performance in monthly case studies and job site visits underscores their eagerness to apply their STEM knowledge to practical challenges, mirroring the Key Characteristics of the Cognia STEM Certification Standards (Cognia Standard 2.3).

2. Academic Preparedness for STEM Transition: Our learners are academically prepared to transition to the next level of STEM learning. Our curriculum emphasizes rigorous and relevant STEM education, and our students have consistently demonstrated strong academic performance. Data on standardized test scores, class grades, and assessments indicate that our students excel in STEM knowledge acquisition. For example, our participation in the Science Fair during the 9th grade introduces students to research methods and scientific inquiry, setting a solid academic foundation. Implementing advanced courses such as Computer Science and AP Capstone in the upper grades further illustrates our commitment to academic preparedness (Cognia Standard 2.2).

3. Meeting Expectations in STEM Knowledge and Skill Acquisition: Our learners meet and often exceed expectations in STEM knowledge and skill acquisition. This can be seen in completing the primary 3-pathways, ensuring all students acquire a comprehensive foundation in STEM subjects. Furthermore, introducing STEM pathways such as Game Design and Computer Science allows students to specialize and delve deeper into specific areas of interest. Completing grade-level STEM PBLs, such as the Science Fair, Water Preservation, Food Deserts/Agriculture, and Podcasting, demonstrates the application of critical thinking and problem-solving skills, aligning with the Cognia STEM Certification Standards (Cognia Standard 2.1). Additionally, our program offers the AP Capstone course, further enhancing scholars' writing and research skills. Extracurricular activities like the Greenhouse and Garden Club showcase students' hands-on skills and entrepreneurial spirit, providing practical experiences beyond the classroom (Cognia Standard 2.4).

In conclusion, our analysis and synthesis of the data highlight the remarkable growth and improvement in STEM learning at the 3DE Business & STEM Magnet Academy. Learners are well-prepared for following transitions in STEM education, demonstrating academic readiness and exceeding expectations in STEM knowledge and skill acquisition. Our program's commitment to meeting the Cognia STEM Certification Standards and fostering a dynamic and engaging STEM education remains steadfast, ensuring that our students are well-equipped for the challenges and opportunities in STEM fields and beyond.

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Findings, interpretations, and prioritization:

Findings, interpretations, and prioritization: Describe the areas within growth where your institution's STEM program is performing well, and areas within growth where your institution's STEM program is performing not so well. Write one or more "findings statements" that describe your conclusions. State whether maintaining high performance or addressing poor performance in this area is a high priority or not.

Action: Based on your findings, write a conclusion to your narrative describing your theory of action. Write your narrative in the box below.

Findings and Prioritization:

Finding Statement 1: The 3DE Business & STEM Magnet Academy at Benjamin Banneker High School excels in providing experiential learning opportunities and integrating business and STEM disciplines. The high student engagement, real-world experiences, and interdisciplinary collaboration demonstrate the program's success in these areas. Maintaining this high performance is a high priority, as it aligns with the program's core identity and contributes to students' readiness for STEM careers.

Finding Statement 2: While the program performs well in preparing students for academic transitions in STEM and ensuring their academic preparedness, there is room for improvement in collecting and utilizing data for data-driven decision-making. Strengthening this aspect is a priority to further enhance the program's effectiveness and proactively address challenges.

Finding Statement 3: The program's commitment to equity and inclusion is commendable, ensuring that STEM education is accessible to all students. However, it is crucial to continue monitoring and addressing any disparities that may arise, making equity and inclusion an ongoing high-priority focus.

Finding Statement 4: Successful partnerships with industry stakeholders and businesses significantly contribute to students' readiness for future STEM pathways. Maintaining and expanding these partnerships should remain a high priority to offer students real-world exposure and experiences.

Action:
Based on these findings, our theory of action is clear. We will continue prioritizing and maintaining high performance in areas where the program excels, such as experiential learning, interdisciplinary collaboration, and integration of business and STEM disciplines. This includes nurturing student engagement, providing real-world experiences, and fostering student collaboration.

Additionally, we will take proactive steps to address areas that require improvement, particularly in data-driven decision-making. By enhancing our data collection and analysis processes, we aim to understand our students' needs and challenges better, enabling us to make informed adjustments and improvements to our STEM program. Equity and inclusion will remain a top priority, with a commitment to ensuring that STEM education is accessible to all students, regardless of their backgrounds. We will continuously monitor and address disparities and work towards creating an inclusive learning environment. Lastly, we will actively maintain and expand our industry partnerships, as these collaborations significantly contribute to our students' readiness for future STEM pathways. These partnerships will continue to offer our students real-world exposure and experiences, aligning with our core identity. In conclusion, our theory of action is grounded in maintaining and enhancing our program's strengths while addressing areas of improvement. By focusing on these priorities, we will continue to provide a comprehensive and innovative STEM education that prepares our students for success in STEM fields and beyond.

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Reflections

SHARONLSMITH1228 10/11/23 1:07AM

Dr. Smith and Mrs. SmithMitchell

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> **Anonymous** 10/30/23 6:51PM
> Working draft of success areas

SHARONLSMITH1228 10/11/23 1:07AM

During your group discussion of your data and the resulting analyses, you reflected on the areas you were most proud of about your STEM program, areas you wished to improve, and challenges your institution is facing or you felt it will be facing in coming years related to STEM education. You recorded your reflections in brief narratives (500 words or less).

In our recent group discussion about our STEM program at the 3DE Business & STEM Magnet Academy at Benjamin Banneker High School, we took a moment to reflect on what makes us proud, where we want to improve, and the challenges we anticipate facing in STEM education.

Areas of Pride:

- Experiential Learning: We are immensely proud of our commitment to experiential learning. Our program thrives on providing students with hands-on, real-world experiences, allowing them to apply their STEM knowledge practically. This approach deepens their understanding and fosters a genuine passion for STEM subjects.
- Integration of Business and STEM: The seamless integration of business and STEM disciplines is a unique strength of our program. Our students gain technical expertise and business acumen, preparing them for diverse career paths. This holistic approach sets us apart.
- Interdisciplinary Collaboration: We take pride in our emphasis on interdisciplinary collaboration. In an era where teamwork and communication skills are crucial, our students benefit from working across disciplines developing valuable soft skills that enhance their readiness for STEM careers.
- Industry Partnerships: Our successful partnerships with local businesses and organizations enrich our curriculum and offer our students real-world exposure. Internships and consultancy projects provide invaluable experiences that prepare our graduates for the job market.
- Equity and Inclusion: We are dedicated to ensuring that STEM education is accessible to all students, regardless of their backgrounds. Our ongoing commitment to equity and inclusion is a source of pride as we work to close achievement gaps in STEM.

Areas for Improvement:

- Graduation Rates: While we've made significant progress, we recognize the need to continue improving graduation rates. Ensuring that every student who enters our program graduates successfully remains a top priority.
- Curriculum Enhancement: The STEM field evolves rapidly, and we must keep our curriculum aligned with the latest developments and standards. Continuous refinement and updating are necessary to stay ahead.
- Teacher and Parent Involvement: We further aspire to engage our teachers in curriculum and professional development. Additionally, we want to enhance our communication with parents, ensuring they understand the benefits of the STEM program.
- Data-Driven Decision-Making: While we have collected and analyzed data proactively, we aim to strengthen our data-driven decision-making processes. This will help us fine-tune our program to meet our students' needs better.

Challenges Ahead:

- Technological Advancements: The pace of technological change is relentless. Adapting to emerging technologies and integrating them effectively into our curriculum is a challenge we anticipate, but it's crucial for preparing students for the future.
- Global Competition: Our program must prepare students to compete internationally as STEM careers become increasingly globalized. Meeting this challenge means ensuring our curriculum aligns with global standards.

- Shifting Workforce Needs: We anticipate changes in the job market's demands, particularly in emerging STEM fields. Staying agile and adjusting our curriculum to align with these evolving needs will be an ongoing challenge.
- Remote and Blended Learning: In a post-pandemic world, we must continue addressing the challenges of remote and blended learning. Leveraging technology effectively for STEM education remains a priority.
- Teacher Shortages: The shortage of qualified STEM teachers is a concern. We need to continue efforts to attract and retain skilled educators in our program.
- Budget Constraints: As competition for funding intensifies, managing budget constraints while securing resources for STEM education initiatives will remain challenging.
- Shifting Educational Policies: Navigating changes in educational policies and standards can impact our STEM curriculum and assessment requirements. We must remain adaptable to these shifts.
- Mental Health and Well-being: Supporting our students' mental health and well-being, particularly as they face the pressures of STEM education, is a concern we take seriously.

In our group discussion, we reaffirmed our commitment to addressing these challenges and building on our areas of pride. Our dedication to providing a comprehensive and innovative STEM education remains unwavering, and we look forward to our program's continued growth and success.

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🔗 **SHARONLSMITH1228** 10/11/23 1:08AM

Based on the prompts below, you have identified areas of excellence and areas for improvement: What areas are you most proud of in terms of STEM education and related student academic and non-academic performance? What areas of the STEM program need improvement?
Overall, we are proud of our program's achievements and are dedicated to addressing areas that need improvement. Our commitment to providing a comprehensive and innovative STEM education remains unwavering, and we look forward to continued growth and success in preparing our students for the future.

Areas of Excellence:
- Experiential Learning: We are proud of our commitment to experiential learning in our STEM program. Our students engage in hands-on, real-world experiences, allowing them to apply their STEM knowledge to practical challenges. This approach has led to a deeper understanding of STEM concepts and fosters a genuine passion for these subjects.
- Integration of Business and STEM: The seamless integration of business and STEM disciplines is a distinctive feature of our program. Our students gain technical expertise and develop strong business acumen, making them well-rounded and prepared for diverse career paths in STEM-related fields.
- Interdisciplinary Collaboration: We take pride in fostering interdisciplinary collaboration among our students. In an increasingly interconnected world, our emphasis on teamwork and communication skills equips our graduates with valuable soft skills that enhance their readiness for STEM careers.
- Industry Partnerships: Our program has successfully partnered with local businesses and organizations. These collaborations enrich our curriculum and provide students with real-world exposure. Internships and consultancy projects offer invaluable experiences that enhance our student's readiness for the job market.
- Equity and Inclusion: We are dedicated to ensuring that STEM education is accessible to all students, regardless of their backgrounds. Our ongoing commitment to equity and inclusion is a source of pride as we work to close achievement gaps in STEM and provide opportunities to underserved populations.

Areas for Improvement:
- Graduation Rates: While we have made significant progress, we acknowledge the need to continue improving graduation rates. Ensuring that every student who enters our program graduates successfully remains a top priority.
- Curriculum Enhancement: The STEM field evolves rapidly, and we must keep our curriculum aligned with the latest developments and standards. Continuous refinement and updating are necessary to stay at the forefront of STEM education.
- Teacher and Parent Involvement: We further aspire to engage our teachers in curriculum and professional development. Additionally, we want to enhance our communication with parents to ensure they understand the benefits of the STEM program and actively support their children's education.
- Data-Driven Decision-Making: While we have collected and analyzed data proactively, we aim to strengthen our data-driven decision-making processes. This will help us fine-tune our program to meet the needs of our students better and make informed adjustments.

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🔗 **SHARONLSMITH1228** 10/11/23 1:08AM

Based on prompts below, what challenges did you identify? What future STEM trends may impact the community you serve? What governmental, political, or social changes might lend support or create challenges? What do demographic and enrollment trends suggest?

While our STEM program has identified challenges, we are also attentive to future STEM trends, potential governmental and societal changes, and demographic and enrollment shifts in our community. Adapting to these factors and proactively addressing challenges will allow us to continue providing a high-quality STEM education that meets the evolving needs of our students and community.

Challenges Identified:
- Teacher Shortages: One of the challenges we identified is the shortage of qualified STEM teachers. Attracting and retaining skilled educators in our program is essential to maintain the quality of our STEM education.
- Technological Advancements: Keeping up with rapid technological advancements and effectively integrating them into our curriculum can be challenging. Staying current with emerging technologies is crucial to prepare our students for future STEM careers.
- Budget Constraints: Managing budget constraints while securing adequate funding and resources for STEM education initiatives remains challenging. Competition for resources in education can limit our program's growth.
- Remote and Blended Learning: In a post-pandemic world, addressing the challenges associated with remote and blended learning is crucial. Leveraging technology for effective STEM education and ensuring equitable access for all students is an ongoing concern.

Future STEM Trends:
- Emerging Technologies: Future STEM trends may include technological advancements such as artificial intelligence, robotics, and biotechnology. Our program must adapt to integrate these technologies into the curriculum and prepare students for careers in these fields.
- Sustainability and Environmental Sciences: A growing emphasis on sustainability and environmental sciences may impact our community. Incorporating these topics into our STEM curriculum can align with broader societal trends.

Governmental, Political, or Social Changes:
- Education Policies: Changes in educational policies and standards can influence our STEM curriculum and assessment requirements. We must remain adaptable to potential shifts in education policy at the state or federal level.
- Funding Initiatives: Governmental support through funding initiatives aimed at STEM education can provide valuable

resources for our program. We should actively engage with policymakers to advocate for STEM education funding.

- Equity and Inclusion: Social changes and movements highlighting the importance of equity and inclusion may lead to increased support for programs like ours that aim to provide accessible STEM education to diverse student populations.

Demographic and Enrollment Trends:

- Population Growth: Demographic trends indicating population growth in our community may lead to increased enrollment in our program. Preparing for potential growth is essential to meet the demand for STEM education.
- Diverse Enrollment: Reflecting demographic shifts, our program may experience a more diverse student enrollment. Ensuring inclusivity and culturally responsive education will be vital.
- Specialized Interests: Enrollment trends may also reflect students' specialized interests within STEM fields. We should remain flexible in offering diverse STEM pathways that cater to various interests.

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Reflections

🔗 **SHARONLSMITH1228** 10/11/23 1:08AM

Dr. Smith and Dr. Comegys

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🔗 **SHARONLSMITH1228** 10/11/23 1:09AM

Areas for Improvement: What areas have been identified for improvement for the STEM program?

3DE Business & STEM Magnet is committed to continuous improvement and aligning with Cognia STEM Certification Standards and Key Characteristics to provide a dynamic and engaging STEM education for its students. Graduation Rates: Although the program has significantly improved academic outcomes, there is room for improvement in increasing graduation rates among 9th-12th graders, particularly those who may face challenges.

- Equity and Inclusivity: While the program aims to be inclusive and culturally responsive, continuous efforts should be made to ensure that STEM education is accessible to all students, regardless of their background, and to close any achievement gaps within Banneker.
- Curriculum Enhancement: Continuously refining and enhancing the STEM curriculum to align with college and career readiness standards and stay updated with evolving STEM fields is essential.
- Data-Driven Decision-Making: Further improving data collection and analysis regarding student performance, engagement, and outcomes will help make informed decisions for program improvement.
- Teacher and Parent Involvement: Encouraging and supporting teacher involvement in curriculum development and professional development and effectively communicating with parents about the benefits of the STEM curriculum can contribute to program success.
- 21st Century Skills Development: Ensuring that the curriculum effectively incorporates 21st-century skills like collaboration, communication, creativity, and technology integration will better prepare students for the demands of the modern workforce.
- Community Partnerships: Expanding and strengthening partnerships with local businesses, organizations, and universities can provide students with more diverse and real-world experiences in STEM.
- Passion for STEM Learning: Continuously fostering a genuine passion for STEM subjects among students is crucial for sustained academic excellence and lifelong interest in STEM fields.
- Curriculum Progression: Regularly updating and enhancing the rigorous course progression within the 3DE B-STEM program to reflect the latest developments in STEM education and industries.
- Outreach Activities: Expanding outreach activities and engagement with industry partners to provide students with more hands-on experiences and exposure to real-world challenges.

- Interdisciplinary Learning: Continue emphasizing interdisciplinary collaboration and integration across STEM disciplines through project-based learning and transdisciplinary projects.

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SHARONLSMITH1228 10/11/23 1:09AM

Challenges: What challenges does your STEM program currently face? What challenges might your STEM program face in the coming years?

3DE Business & STEM Magnet Academy at Benjamin Banneker High School may currently face the following challenges:

- Equity and Inclusion: Ensuring that STEM education is accessible to all students, regardless of their background, and addressing any existing achievement gaps can be an ongoing challenge.
- Graduation Rates: While there have been improvements, maintaining and further increasing graduation rates, especially for students who may face academic challenges, could still be challenging.
- Curriculum Enhancement: Keeping the STEM curriculum aligned with evolving college and career readiness standards and staying current with rapidly advancing STEM fields can be a continuous challenge.
- Teacher and Parent Involvement: Sustaining teacher involvement in curriculum development and professional development and effectively communicating with parents about the benefits of the STEM program may require ongoing efforts.
- Data-Driven Decision-Making: Continuously collecting and analyzing data on student performance, engagement, and outcomes to inform program improvements can be resource-intensive.
- Funding: Maintaining adequate funding and resources for STEM education, including equipment, materials, and technology, can be challenging.
- Interdisciplinary Learning: Ensuring that interdisciplinary collaboration and integration across STEM disciplines remain a core part of the curriculum may require ongoing attention and support.
- Teacher Professional Development: It can be challenging to provide ongoing professional development for teachers to keep them updated with the latest teaching methods and STEM trends.
- Community Partnerships: Maintaining and expanding partnerships with local businesses, organizations, and universities to provide students with diverse experiences and resources may require ongoing relationship management.
- Student Engagement: High student engagement in STEM subjects and maintaining a passion for learning can be challenging as students progress through their academic journey.

In the coming years, the STEM program may also face additional challenges, such as:

- Technological Advancements: Keeping up with rapidly evolving technology and integrating it effectively into the curriculum to prepare students for future STEM careers.
- Global Competition: Preparing students to compete in a global job market, where STEM skills are in high demand, can become more challenging as international competition increases.
- Changing Workforce Needs: Adapting the curriculum to align with shifting demands in the job market and emerging STEM fields.
- Remote and Blended Learning: Addressing the challenges associated with remote and blended learning and leveraging technology for effective STEM education.
- Teacher Shortages: Ensuring enough qualified STEM teachers and retaining them in the program can be an ongoing concern.
- Budget Constraints: Managing budget constraints and securing funding for STEM education initiatives in an increasingly competitive funding landscape.
- Shifting Educational Policies: Navigating changes in educational policies and standards that may impact STEM curriculum and assessment requirements.

- Mental Health and Well-being: Supporting students' mental health and well-being in light of the pressures associated with STEM education.

Addressing these current and potential challenges will require ongoing dedication, collaboration, and strategic planning to ensure the continued success of the STEM program at Benjamin Banneker High School.

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Areas of Excellence: What does your STEM program do well? What areas of pride are identified for your institution's STEM program?
3DE Business & STEM Magnet Academy at Benjamin Banneker High School takes pride in providing a comprehensive and innovative STEM education that prepares students for success in STEM fields, promotes critical thinking, and equips them with valuable skills for the future. These areas of excellence reflect the program's dedication to continuous improvement and holistic STEM education.

- Experiential Learning: The program emphasizes hands-on, real-world experiences for students, allowing them to apply STEM knowledge to practical challenges and projects. This experiential learning approach fosters more profound understanding and engagement.
- Integration of Business and STEM: The program successfully merges business and STEM disciplines, providing students with a unique and holistic educational experience that prepares them for various careers and opportunities.
- Interdisciplinary Collaboration: The emphasis on interdisciplinary collaboration promotes teamwork and communication skills, essential in STEM fields and the modern workforce.
- Partnerships with Industry: Collaborations with local businesses and organizations expose students to real-world challenges and provide them with internships and consultancy project opportunities, enhancing their preparation for STEM careers.
- Equity and Inclusion: The program is committed to ensuring that STEM education is accessible to all students, irrespective of their backgrounds, and works to close achievement gaps in STEM education.
- Curriculum Innovation: The program continuously refines and updates its curriculum to align with college and career readiness standards, preparing students for the demands of the modern STEM workforce.
- Student Engagement: The focus on engaging students through relevant and practical STEM experiences contributes to higher student interest and motivation in STEM subjects.
- Community Engagement: The program actively involves the community, including parents and local stakeholders, in supporting STEM education and enhancing students' learning experiences.
- Data-Driven Decision-Making: The program collects and analyzes data on student performance, engagement, and outcomes, allowing for informed decisions to improve and tailor the STEM curriculum.
- Passion for STEM Learning: The program fosters a genuine passion for STEM subjects among students, leading to academic excellence and a lifelong love for STEM learning.
- Cognia STEM Certification Alignment: The program aligns well with Cognia STEM Certification Standards and Key Characteristics, demonstrating its commitment to meeting rigorous STEM education standards.

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