
Challenger Geometry Program

— Presentation to the School Committee —
May 25, 2021

Challenger Geometry Program

- **Who:** The program is open to:
 - All rising 8th graders who will take Algebra 1 and
 - All current 8th graders in Algebra 1 (for 2021-22 school year only)
- **When and Where:**
 - **Summer:** Online work through Khan Academy
 - **During the year:** Online course work through Edgenuity and 1 weekly meeting after school with a teacher
- **How to sign up:**
 - **Google Form registration form** will be emailed to all current 7th grade students after family information night and class visits (more details on slide 8)

Note: Students who opt into this program will participate in addition to taking the Algebra 1 course in school (for 8th graders) and the Algebra 2 course in school (for 9th graders).

Program Overview

- Students who choose to participate will be given summer work through Khan Academy
- In the fall, they will meet with the program instructors to set up Edgenuity accounts and go over course expectations, requirements, discuss meeting times, and other specifics.

Summer work on Khan Academy

- Students will be given an access code for a Google Classroom and they will be assigned summer Khan Academy work through Classroom
- The work assigned will help students review essential concepts necessary for Honors Geometry.
- Expected amount of time: 2-3 hours per week
 - Students will work independently during the summer.
 - Mid Summer Check-In: All work will be reviewed the week of August 1st.
 - All work must be submitted by 3 PM on September 3.
 - The instructor will be available to answer questions during the summer.
 - Completion of the summer work is required in order to participate in the September-June course.
- Work will be reviewed regularly by the Instructor and individual feedback will be provided to students and families, as needed
- Data collected throughout the summer will be used to inform any instruction at the beginning of the course

Summer work on Khan Academy

- Goal is to build and reinforce content and skills that are foundational to Geometry.
- Topics covered include:
 - Proportional reasoning
 - Congruence and similarity
 - Pythagorean Theorem
 - Angle relationships
 - Area and circumference of circles
 - Volume and surface area
 - Transformations

Identify scale factor in scale drawings

Figure B is a scaled copy of Figure A.

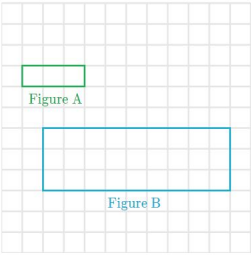


Figure A

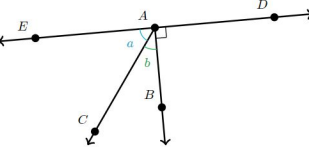
Figure B

What is the scale factor from Figure A to Figure B?

Get 3 of 4 questions to level up to Familiar ○○○○ Check

Identifying supplementary, complementary, and vertical angles

What is the relationship between $\angle a$ and $\angle b$?



Choose 1 answer:

(A) Vertical angles

(B) Complementary angles

(C) Supplementary angles

Get 7 of 7 questions to level up to Proficient ○○○○○○ Check

During the school year

- **Edgenuity** = online course-specific platform
 - Aligned with MA Curriculum Framework
 - Honors level course
 - Videos, assignments, progress monitoring tools, high quality content
 - Instructors will select the Edgenuity content to align with BHS Honors Geometry course
- **Weekly online work:** Instructor will...
 - assign work each week, 4-5 hours per week
 - monitor students' progress
 - communicate with families
- **Weekly Meetings:**
 - Once a week, synchronous & remote, for 90 minutes
 - Students will meet with the Instructor as a group to go over new content, and work on activities and projects intended to extend their learning.
 - Time will also be dedicated for students needing extra support

Euclidean Geometry
Instruction Active

Euclidean Geometry

Euclid, who lived around 330 BCE, created a comprehensive study of geometry based on **deductive reasoning** using **postulates**, definitions, and **theorems**.

Postulate	Definition	Theorem
Mathematical statement taken as true but not proven (also called axiom)	Formal statement declaring the meaning of a word	Conditional statement containing a hypothesis and conclusion

2 of 14

Identifying Objects

Which statements are true based on the diagram? Check all that apply.

- Points A, B, and D are on both planes.
- Point H is not on plane \mathcal{R} .
- Plane \mathcal{P} contains point F.
- Points C, D, and A are noncollinear.
- The line containing points F and G is on plane \mathcal{R} .
- The line containing points F and H is on plane \mathcal{R} .

Intro Done

12 of 14

Course Selection for 2022-23

- At the end of the school year, students will take the Geometry final exam
- During the course selection process in February/March
 - 8th grader students will choose Algebra 2 for their 9th grade math course
 - 9th grade students will choose PreCalculus for their 10th grade math course

Program Costs

Program instructors	\$4,000 stipend x 2	\$8,000
Edgenuity licenses	\$100 license fee x <u># of student participants</u>	\$5,000 (estimate)

Next Steps, short term

- Hire two program instructors
- Meeting for all Parents/Guardians of current 7th graders and 8th graders, May 26
- Presentations to 7th and 8th graders in their math classes, Week of June 1
- Sign-up form sent to all students and their parents, June 4
- Deadline to sign up, June 11
- Information meeting for students to set up summer work, June 14

Next Steps, longer term

To address the issue of disproportionate underrepresentation of black and brown students in 7th grade compacted math and the accelerated math program, we will

- Develop a program to support students who will be entering 7th grade math (not compacted) so that they master the content and skills necessary to be recommended for 8th grade compacted, making them eligible for the Challenger Geometry Program
- Implement the program in summer 2022 (and perhaps in future years start earlier)
- Continue to advocate for math specialists to provide support to elementary students not meeting benchmarks in math