Welcome to Halsey Annex

Teacher: Ms. De Mayo, Ms. Adachi & Mrs. Augustine
Subject: Geometry
School Year: 2025-2026
Email: demayosh@epsnj.org
adachith@epsnj.org
augustinest@epsnj.org

Brief Course Description

This course builds upon students' prior knowledge of transformations, linear equations, constructions, and angle relationships developed in earlier grades. Students will explore similarity and right triangle relationships using proportions, deepen their understanding of circles and volume, and make meaningful connections between algebra and geometry.
Instruction in Geometry is centered around a blended learning approach using Carnegie Learning's comprehensive program, which combines classroom collaboration with adaptive digital practice to develop both conceptual understanding and procedural fluency—fully aligned to the New Jersey Student Learning Standards (NJSLS-M).

🔄 Blended Learning Components
1. MATHbook (Print + Digital)
- A collaborative, inquiry-based textbook used during classroom instruction.
- Focuses on reasoning, discourse, and real-world applications.
- Consumable format supports active student engagement with written responses, diagrams, and models.

2. MATHia (Adaptive Software)
- An AI-powered digital platform that provides individualized practice aligned with the MATHbook structure.
- Offers real-time, step-by-step support and feedback.
- Teachers receive actionable insights on student progress through dashboards aligned to standards and skills.

🧩 **Course Structure & Modules**
The Geometry course is structured into four coherent modules, each designed to develop deeper mathematical reasoning, support progression across standards, and foster the Mathematical Practices outlined in the NJSLS-M.

Module 1: Reasoning with Shapes
Students transition from informal to formal reasoning by exploring the properties of shapes such as triangles, squares, and circles. They are introduced to transformations—translations, reflections, and rotations—and use them to establish triangle congruence criteria. Students begin verifying geometric theorems using algebra and constructions, laying the foundation for formal proof writing.

Module 2: Establishing Proof
Students formalize their geometric reasoning by learning how to construct valid logical arguments and formal proofs. They define key properties and relationships and begin proving congruence relationships using triangle congruence theorems. This module deepens their understanding of how to justify geometric conclusions systematically.

Module 3: Investigating Proportionality
This module focuses on extending students' understanding of proportional relationships to geometry. Students explore similarity through dilations and properties of similar figures, then apply proportional reasoning in right triangles to develop trigonometric ratios (sine, cosine, tangent, and their reciprocals) for solving problems involving unknown side lengths and angles.
Module 4: Connecting Geometric and Algebraic Descriptions
Students explore how geometric relationships can be represented algebraically. They work with arc length, radian measure, and sector area, and apply proportional reasoning to solve volume problems. Students also examine the structure of quadratic functions and use coordinate geometry to investigate circles and parabolas, bridging the gap between algebra and geometry.

🧠 Key Concepts and Topics

1. Language of Geometry
   – Points, lines, planes, angles, and their relationships
2. Reasoning and Proof
   – Paragraph, two-column, flow, indirect, and coordinate proofs
3. Parallel and Perpendicular Lines
   – Theorems involving angles formed by transversals
4. Congruent Triangles
   – Congruence criteria (SSS, SAS, ASA, AAS, HL) and corresponding proofs
5. Applications of Congruent Triangles
   – Triangle inequalities, special segments, and practical applications
6. Quadrilaterals
   – Classification, properties, and coordinate-based investigations
7. Similarity
   – Properties of similar figures, proportionality, and dilations
8. Right Triangles and Trigonometry
   – Pythagorean Theorem, special right triangles, and trigonometric ratios
9. Circles
   – Arcs, chords, tangents, inscribed angles, and equations of circles
10. Polygons and Area
    – Regular and irregular polygons, composite figures, and area formulas
11. Surface Area and Volume
    – Solids including prisms, pyramids, cones, cylinders, and spheres
12. Coordinate Geometry
    – Midpoint, distance, slope, and proof using coordinates
13. Transformations
    – Translations, reflections, rotations, dilations, symmetry, and composition of transformations

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🎯 Instructional Goals

The Geometry curriculum is designed to:

- Promote deep understanding through mathematical reasoning, communication, and application.
- Leverage the blended learning model to support all learners through differentiated pathways.
- Develop mastery of NJSLS-M Geometry standards, including congruence, similarity, right triangle trigonometry, coordinate geometry, and modeling with mathematics.

- **Develop Geometric Reasoning:** Strengthen students' ability to reason logically and use geometric principles to solve problems.
- **Build Conceptual Understanding:** Help students understand key geometric concepts such as congruence, similarity, transformations, and properties of shapes.
- **Apply Geometry to Real-World Problems:** Encourage application of geometric knowledge in practical contexts, including measurement, construction, and design.
- **Improve Mathematical Communication:** Promote precise use of vocabulary and notation in both written and oral explanations of geometric reasoning.
- **Use Technology and Tools Strategically:** Incorporate tools such as compasses, protractors, and digital platforms like MATHia to explore and deepen understanding of geometry.
- **Speaking & Listening**
  - Participate in collaborative discussions, expressing ideas clearly and building on others' points.
  - Listen actively and critically to peers, audio materials, and presentations.
- **Language Skills in Math (Including Math Talk)**

  Developing strong **mathematical language skills** is essential for deep understanding and long-term success in math. In this classroom, we will focus on building vocabulary, explaining reasoning clearly, and using precise language when solving problems and discussing concepts.

  A key part of this is **Math Talk**—intentional conversations about math where students:

  - Use appropriate mathematical vocabulary
  - Justify their thinking and explain their problem-solving processes
  - Ask clarifying questions and respond respectfully to peers
  - Build on one another's ideas to deepen understanding

Students will regularly engage in **partner discussions, group tasks, and whole-class conversations** where they will be encouraged to speak, listen, and write about math using complete sentences and accurate terminology. This focus on language supports not only communication skills but also strengthens conceptual understanding and critical thinking.

Requirements:

You are expected to come to class every day with the following items:

- Two One-Subject Notebook/composition notebook
- 1- 2in 3 rings binder
- Folder
- District issued laptop and charger
- Pencil and a highlighter
- Calculator

Attendance Policy:

Attendance is very important because when you miss class, you're missing new material. Students will have two days to make up missing assignments. If a student is absent on a test or quiz day, the student must schedule the retake with their teacher.

- If you arrive late, you will be marked late- unless you have a pass.
    - Tardiness Consequences:
        - Verbal Warning
        - Parent Contact & Administrative Action

- As per the district policy: A student must be in attendance for 171 of the 180-day school year (95%). To be considered to have successfully completed the instructional program requirements of the grade/course to which he/she is assigned, the student shall be allowed no more than a total of nine (9) absences
    - Absences, early dismissals, nor suspensions do not make you "exempt" from classwork/projects/essays/tests. If you are absent without a doctor's note you will be required to make up for all the missed work on your own time. Exemptions for work will be given at my discretion.

AI Policy/Cheating

- First Offense: zero on assignment, re-do of assignment allowed, verbal warning.
- Second Offense: zero on assignment, parental contact and administrative action.

Class Procedures, Routines, & Norms

- Uniforms will be checked at the door- violation will result in administrative contact.
- Uniforms consist of a navy-blue polo shirt with the Halsey logo, khaki pants (no jeggings, sweats pants, joggers, or cargo pants), and black shoes or sneakers. Sweatshirts, hoodies, and gym uniform components should **NOT** be brought to class.
- When you enter the room, turn off your cell phone, retrieve your assigned calculator from the designated pouch, place your turned-off cell phone into the same pouch you took your calculator from, then sit in your assigned seat.
- Begin Do Now.
- No passes will be given during the first 10 minutes of each period, during the daily lesson, or the last 10 minutes of period. There is only one hallway pass, plan your bathroom breaks accordingly.

Classroom Policies:

- Disruptions during the lesson or being off task instead of completing work will result in after-school detention or assigned after-school tutoring.
- **The due dates for your assignments are not a suggestion.** If an assignment is due "at the end of the period" then that is when it is due and may not be taken home to be completed.

- This is to help me understand your proficiency in a skill and for students to maximize their time in class to complete their work. Being off-task or wasting time in class will not be rewarded with extra time to complete your work!

- Yes, you will have homework- you will be given **daily assignments** to reinforce the concepts taught in class. The purpose of homework is to give students independent work to review the lesson taught and prepare for the following lesson. You are expected to attempt every problem and show all work for the entire assignment. Credit will be given based on correct answers and partial credit for effort. In addition, there will be **weekly MATHia assignments** that align with the current unit of study. **Any MATHia work not completed during class time must be completed at home as homework.** It is your responsibility to stay on track with your MATHia progress
- All students and their parents/guardians are encouraged to check PowerSchool for missing assignments. **Parents & guardians, please check your child's PowerSchool every day to monitor grades in class.**

Grading Policy:

Student's assignments will be graded on a100- point/percentage system for the year.

- Classwork/Homework: 40%
  The purpose of homework is to give students independent work to review the lesson taught and prepare for the following lesson. Students are expected to attempt every problem and show all work for the entire assignment. Credit will be given based on correct answers and partial credit for effort.

- Tests/Quizzes: 20%
  Tests will be administered at the **end of every chapter**. A review session will be provided before each test to help students prepare. **An absence on review day does not excuse a student from taking the test on the next day they are present.**

  Quizzes/Tests:

  Tests will be given at the end of every chapter. Before every test there will be a review. **An absence on review day does not exempt the student from taking the test the next present day.** Quizzes will be given at various times throughout the chapter to check for understanding and inform instruction. All tests and quizzes will be announced, although a pop-quiz may be given when appropriate.

Unit Assessments will be graded in two ways:

1. **SchoolNet Grade**– This represents the score students receive on the digital assessment.
2. **Work Shown on Paper** – This score reflects the quality of written work, including showing your work and explanation of your answer.

- Projects 20%
  Projects will be given at various times throughout the school year. All projects must be completed and handed in on time.

- Benchmarks: 20% -- **You will only be given 90 minutes to complete your benchmark and you are not able to complete your benchmark outside of my classroom.**

* Please note that I will ensure you are as **prepared as possible** for every assignment, quiz, test, and benchmark assessment through instruction, review, and guided practice.
No adjustments will be made to benchmark scores. Therefore, it is essential that you complete and submit your **classwork, MATHia assignments, and projects**, as these will help you build the skills and confidence needed to perform successfully.

(Q1) Marking Period 1- 20%
(Q2) Marking Period 2- 20%
(Q3) Marking Period 3- 20%
(Q4) Marking Period 4- 20%
(E1) Final Exam- 20% = (Y1) Your grade for the year that determines GPA & if you receive credit!

Late/Missing Assignments:

- Please check PowerSchool regularly and pay close attention to the due dates listed for each assignment.
- If classwork or homework assignments are not submitted, you will receive a grade of 0% and be marked with an 'M' (Missing) in PowerSchool.
- You have 7 days from the date the grade is entered to submit the missing work
- After 7 days, the assignment can still be submitted any time during the marking period, but the highest possible grade will be 70%.
- **Projects may also be submitted after the 7-day period**. However, once 7 days have passed, the maximum grade you can earn on a late project is 80%.
- **I understand that you have other classes, responsibilities, and personal commitments. That's why class time is provided for most assignments. You are expected to use this time wisely and productively to stay on track**.

Classroom Expectations:

- Students who enter class without the appropriate school uniform will be sent to the main office.
- Always be respectful to everyone.
- There is absolutely no food or drink allowed in the classroom.
- Students are expected to come into class on time, prepared and attentive.
- Cell phones must be powered off and placed in the assigned pouch for the entire duration of the class.

Support & Resources

- Lunch time Math Tutoring (Monday through Friday)
- After school Math Tutoring (Monday through Friday, 2:30pm-3:30pm)

Open communication is the key to our success. For questions and concerns, I am available through email and will reply within 24 hours.

By signing and returning this sheet, you acknowledge that you have read the class syllabus and agree to the rules and expectations that were explained.

Student Name (Print)	Student Signature
Parent/Guardian Name (Print)	Parent/Guardian Signature
Parent/Guardian Email	Date