

Barnegat High School

Geometry H - Syllabus

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| **Course Information** | **Teacher Information** |
| Geometry H  | Name(s): Ms. Emily Cherry, M.A. |
| Full Year | Phone: (609) 660 - 7510  |
| Class Location: Room A211 | Email: echerry@barnegatschools.com |
|  | Teacher Website: Barnegatschools.com |

**Course Description:**

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| Effective mathematics education provides students with a balanced instructional program.  In such a program, students become proficient in basic computational skills and procedures, develop conceptual understandings, and become skilled at problem solving.  Standards-based mathematics instruction starts with basic material and increases in scope and content as the years progress. The curriculum is aligned to the NJSLS for Mathematics.  Activities outlined in this curriculum infuse the Standards for Mathematical Practice.  In alignment to the content and practice standards, Algebra 2 students will extend their knowledge of mathematics as they learn to represent and compare complex numbers, polynomials, periodic models and inference making. Students use functions to model real world applications and their knowledge of their properties to explain the world around them. They will summarize, represent and interpret data to make inferences and justify conclusions. Students will use numerical, graphical, and algebraic models to solve problems. |

**Course Competencies/ Learning Objectives**

Students who successfully complete Geometry Honors will be competent in the following areas:

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| * Students will be able to:
	+ recognize, name, draw sketch, label and communicate geometric figures.
	+ find and compare lengths of segments with and without a coordinate grid.
	+ use the midpoint and distance formula.
	+ measure angles using a protractor and classify angles.
	+ observe patterns leading to making conjectures.
	+ solve equations giving their reasons for each step and connect this to simple proofs.
	+ prove geometric relationships using given information, definitions, properties, postulates and theorems.

 * Students will be able to:
	+ find slopes of lines, identify parallel and perpendicular lines and write the equations of those lines.
	+ Define and use inductive reasoning in problem solving
	+ Define and use deductive reasoning in problem solving
	+ Define and solve problems on parallel and perpendicular lines
	+ Define and solve problems on points, lines, and planes
	+ Define angles including supplementary, complementary and right angle relationships
	+ Use math modeling to solve problems utilizing symmetric, reflexive, and transitive postulates
* Students will be able to :
	+ To identify and prove theorems about parallel lines
	+ To identify and prove theorems about perpendicular lines
	+ Model real life situations using lines and angles
	+ Find the distance from a point to a line
	+ Identify and solve problems using pairs of angles formed by transversals
	+ Use slope to partition line segments on the coordinate plane
* Students will be able to:
	+ Perform translations
	+ Reflect images on the coordinate plane
	+ Use the rules for transformations
	+ Identify congruent transformations
	+ Reflect an image over multiple parallel lines
	+ Reflect an image over multiple intersecting lines
	+ Identify congruent figures
	+ Identify and perform dilations
	+ Identify and perform coordinate dilations
	+ Prove figures are similar
* Students will be able to :
	+ Use the midpoint formula to partition a line
	+ Use the distance formula to find the length of the side of a coordinate figure
	+ Utilize triangle congruence shortcuts including SSS, SAS, ASA, SAA, and HL
	+ Utilize CPCTC to help prove parts of triangles congruent
	+ Use the coordinate plane to prove geometric relationships
	+ Classify triangles by their side lengths to include isosceles, scalene and equilateral triangles
	+ Construct congruent angles
* Students will be able to:
	+ Prove triangle congruency using median, perpendicular bisector, altitude, angle bisectors, and medians
	+ Use special lines in triangles such as median, perpendicular bisector, centroid, incenter, and midsegment to prove triangles congruent
	+ Use the triangle inequality theorem to determine restrictions on triangle side lengths
	+ Use midsegment to find lengths of sides of a triangle
* Students will be able to:
	+ Find patterns in perimeters of polygons
	+ Use similarity statement to prove multiple triangles similar
	+ Find corresponding lengths of similar polygons
	+ Find patterns in perimeters and area of similar polygons
	+ Prove polygons similar by using similarity shortcuts
* Students will be able to :
	+ Use the Pythagorean Theorem and its converse
	+ Find the side lengths in both 45-45-90 and 30-60-90 triangles
	+ Use geometric means to write proportions of similar right triangles
	+ Use tangent, sine, and cosine ratios to find the length of a leg of hypotenuse of right triangles.
	+ Use inverse trigonometric ratios to find angles measures of right triangles
	+ Solve right triangles using the Pythagorean Theorem and inverse trig ratios.
	+ Use the Pythagorean Theorem to determine whether triangles are right, acute, or obtuse.
* Students will be able to:
	+ Find and use the interior and exterior angle measures of polygons
	+ Use properties of parallelograms, rhombi, rectangles, squares, trapezoids, and kites
	+ Determine properties of quadrilaterals that ifentify them as parallelograms
	+ Use coordinate geometry to identify special types of parallelograms
	+ Identify quadrilaterals by their most specific characteristics
* Students will be able to:
	+ Identify radii, chords, diameters, and tangents that intersect circles.
	+ Use chords of circles to find lengths and arc measures in circles
	+ Use inscribed angles and circumscribed angles to find angle and arc measures in circles
	+ Use inscribed polygons to find angle measures in polygons
	+ Use segments of chords, tangents of circles to find lengths of line segments
	+ Write and graph equations in the coordinate plane
* Students will be able to:
	+ Classify and describe solids and describe cross sections of solids
	+ Find and use volumes of prisms, cylinders, pyramids, cones, spheres, and composite figures
	+ Find surface areas of right cones and spheres
* Students will be able to:
	+ Find theoretical and experimental probabilities
	+ Find probabilities of compound events
	+ Use formulas for the number of permutations and the number of combinations
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**Course Texts / Online Resources**

Our text book is Big Ideas Geometry.

* The Textbook and resources are available online at bigideasmath.com
	+ Students can create an account or many students already have an account from Algebra I. Once student chromebooks have been distributed, we will sign up for online textbook access.

All assignments and information will be posted on Google Classroom.

There is parent access to Google classroom as well.

**Required Materials**

* Geometry textbook
* 3-Ring Binder & Lined Paper
* Geometric Tools: Protractor, Compass, Ruler
* Pencil and eraser
* Suggested materials:
	+ Graph Paper
	+ Calculator (preferably TI-83)

**Attendance Policy**

Regular and prompt class attendance is an essential part of the educational experience. The Barnegat Township School District expects students to be responsible and exercise good judgment regarding attendance and absences. Students accept full responsibility for ensuring that they complete any/all work missed due to absences.

**Course Topic Outline**

 Please find a list of the units for this course:

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| **Content Area: Math** |
| **Course Title: Geometry Honors** | **Grade Level: 9/10** |
| Unit 1: Building Blocks/Reasoning in Geometry | 15 days/7.5 teaching days |
| Unit 2: Reasoning and Proofs | 13 days/6.5 teaching days |
| Unit 3: Parallel & Perpendicular Lines | 14 days/7 teaching days |
| Unit 4: Transformations | 12 days/6 teaching days |
| Unit 5: Congruence in Triangles | 13 days/6.5 teaching days |
| Unit 6: Indirect Proofs | 12 days/6 teaching days |
| Unit 7: Similarity | 8 days/4 teaching days |
| Unit 8: Right Triangles/Trigonometry | 13 days/6.5 teaching days |
| Unit 9: Quadrilaterals and Other Polygons | 13 days/6.5 teaching days |
| Unit 10: Circles | 15 days/7.5 teaching days |
| Unit 11: Surface Area/Volume | 11 days/5.5 teaching days |
| Unit 12: Probability | 9 days/4.5 teaching days |

**Student Grades**

The grading system for this course is based on the category weights listed in each department’s policy. For this course, those weights are listed below. Each marking period, students will have a minimum of three (3) Major Assessments and five (5) Minor Assessments (explained below). Homework is graded for completion, and Class Participation is assessed using the district rubric.

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| **Major Assessments** | - | 55% of marking period grade |
| **Minor Assessments** | - | 30% of marking period grade |
| **Course Participation** | - | 10% of marking period grade |
| **Benchmark**  | - | 5% of marking period grade |

Please note: the above areas are used as the basis for 80% of your grade for the course; the midterm and/or final exam will constitute the remaining 20% of your grade.

* Examples of Major Assessments include items that are summative in nature, such as: tests, projects, or any other type of assessment used to capture evidence of learning at the culmination of a unit of study.
* Examples of Minor Assessments include items that are formative in nature, such as: quizzes,, exit tickets, in class worksheets, or any other type of assessment that is diagnostic in nature and used to guide instruction and provide ongoing feedback to students.
* Note: grades for individual assignments are entered into Genesis for the marking period in which the assignment is assigned and collected, and not a subsequent marking period.
* Extra Credit will only be available for assignments that have been approved ahead of time by the teacher and department supervisor.
* In this course, it is expected that students will submit only their best work, and teachers reserve the right not to accept work that is substantially below what a student is capable of producing.
* *Opportunities for Second chances on certain Major Assessments will be available and will be discussed.*

**Course Participation Rubric**

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|   | **Academic Social Skills** | **Readiness to Learn / Study Skills** | **Class** **Discussions** | **Classwork** | **21st Century College and Career Readiness** |
| **Meeting** **Expectations** | **20 points** * Takes initiative in completing tasks in the online classroom.
* Communicates needs to the teacher in an appropriate manner.
* A role model for others in the online classroom.
* Appropriately seeks support and/or assistance from the teacher.
 | **20 points** * Produces notes and other materials that demonstrate effort and insight.
* Is motivated and takes ownership of his/her learning.
* Takes steps to better himself/herself through Google Meets, emailing, etc.
 | **20 points** * Consistently completes the assigned discussion questions and rarely misses a question, if at all.
* Responses consistently reflect high levels of care and pride in work.
* Replies and interacts with peers in a meaningful manner.

  | **20 points*** Consistently completes assigned tasks in a timely manner.
* Actively participates in classroom activities on a daily basis.
* Contributes to class discussions in a meaningful way (asking questions or adding to class discussion).
 | **20 points** **Student consistently shows the following:*** Responsible and contributes to our online community.
* Clearly and appropriately communicates with the teacher via email.
* Understands the consequences of actions.
* Responsibly uses technology.
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| **Approaching** **Expectations** | **15 Points** * Completes tasks in the online classroom.
* Sometimes communicates needs to the teacher.
* Frequently on-task, but may need some redirection from the teacher.
 | **15 Points*** Often produces notes and other materials that demonstrate effort, but may also require direction.
* Is mostly motivated and takes ownership of his/her learning.
* Often takes steps to better himself/herself through Google Meets, emailing, etc.

  | **15 Points*** Frequently completes the assigned discussion questions, but may have missed a few.
* Responses sometimes reflect high levels of care and pride in work, but not always.
* Replies and interacts with peers.
 | **15 Points*** Usually completes assigned classwork tasks.
* Frequently participates in classroom activities but sometimes requires re-direction.
* Usually contributes by responding, and/or asking questions.

   | **15 Points****Student frequently demonstrates the following**:* Responsible and contributes to our online community.
* Clearly and appropriately communicates with the teacher via email.
* Understands the consequences of actions.
* Responsibly uses technology.
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| **Not Meeting** **Expectations** | **10 Points*** Rarely completes tasks in the online classroom.
* Does not communicate needs to the teacher.
* Frequently needs re-direction from the teacher.

 | **10 Points*** Produces notes and other materials that lack effort to learn.
* Unmotivated and does not take ownership of his/her learning.
* Does not take appropriate steps to better himself/herself.
 | **10 Points*** Rarely completes the assigned discussion questions.
* Responses do not reflect care and pride in work.
* Little to no replies and interactions with peers.
 | **10 Points*** Rarely completes assigned tasks and does not produce his/her best work.
* Usually does not participate in classroom activities and often requires teacher re-direction
* Usually does not contribute by responding and/or asking questions.
 | **10 Points****Student rarely demonstrates the following**:* Responsible and contributes to our online community.
* Clearly and appropriately communicates with the teacher via email.
* Understands the consequences of actions.
* Responsibly uses technology.
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**Plagiarism, Cheating, and Academic Integrity**

The Barnegat Township School District places a strong emphasis on students’ integrity, and the district will not tolerate instances of academic dishonesty. Plagiarism is the practice of copying words, sentences, images, or ideas for use in written or oral assessments without giving proper credit to the source. Cheating is defined as the giving or receiving of illegal help on anything that has been determined by the teacher to be an individual effort. Both are considered serious offenses and are subject to consequences described in the Student Handbook and Board Policy #5701.

**Honor Code**

The purpose of this Honor Code is to communicate the meaning and importance of academic integrity to all members of the school community and to articulate and support the interest of the community in maintaining the highest standards of conduct in student learning. Barnegat High School embodies a spirit of mutual trust and intellectual honesty that is central to the very nature of learning, and represents the highest possible expression of shared values among the members of the school community. The core values underlying and reflected in the Honor Code are:

**Academic honesty** is demonstrated by students when the ideas and the writing of others are properly cited; *students submit their own work for tests and assignments without unauthorized assistance; students do not provide unauthorized assistance to others; and students report their research or accomplishments accurately.*

**Respect** for others and the learning process to demonstrate academic honesty.

**Trust** in others to act with academic honesty as a positive community-building force in the school,

**Responsibility** is recognized by all to demonstrate their best effort to prepare and complete academic tasks.

**Fairness and equity** are demonstrated so that every student can experience an academic environment that is free from the injustices caused by any form of intellectual dishonesty.

**Integrity** of all members of the school community as demonstrated by a commitment to academic honesty and support of our quest for authentic learning.

This Honor Code summarizes the Honor Policy, which defines the expected standards of conduct in academic affairs. The student body and faculty at Barnegat High School will not tolerate any violation of the Honor Code.

Any violation of the Honor Code will result in Administrative Consequences and be detrimental to student grade.

**Classroom Expectations** All school rules and policies apply to this class.

The expectations for classroom behavior are reflected in **BHS P.R.I.D.E.**

1. **P**rofessional - Treat school like it is your job. Show up on time and focus on your work.
2. **R**espectful - Treat others the way you want to be treated.
3. **I**ntegrity - Give an honest effort in class; you will get out of it what you put in. Be accountable for your own learning.
4. **D**etermination - Stay positive and keep trying even if it gets difficult. Do not allow the attitudes or behaviors of others distract you from your goals.
5. **E**xcellence - Do your best work. Push yourself to achieve more. Don’t settle for just getting by.
6. Cell phones, smart watches, or any other personal electronic devices are prohibited in class at any time. This is particularly important during assessments

**Extra Help and Support**

If you need additional help, there are a variety of options for you, including:

* After school help sessions with me – There is a calendar posted with my extra help days – see me to schedule other days/times as necessary. Please let me know if you are coming for help
* Peer tutoring from NHS students
* Free online tutoring with Brainfuse (available from the Barnegat Library website)

**Absences:**

Following school policy, when you miss school you will have **two** days for every day that you are absent to make up your work with all work due within a maximum of ten days from your return to school. If you are absent, go to my website to get the notes, check the class folder by the window for anything that might have been handed out, then speak to me about what needs to be made up. All notes are posted to google classroom after the last section is taught. If you are absent on the day of a test/quiz, it is your responsibility speak to Ms. Cherry about when you are going to make it up.

I can be reached by phone, by e-mail, or by message on google classroom.

As your teacher, I am committed to your success. If you need help, please ask!

#### Student Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period: \_\_\_\_\_\_\_\_\_\_\_\_

#### Geometry Honors Classroom Policies Agreement

I have read and reviewed Ms. Cherry’s classroom policies with my student. We understand and agree to the expectations, rules, consequences, and procedures as described above.

 Parent/Guardian (Print):\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Parent/Guardian Signature *X*\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Date\_\_\_\_\_\_\_\_\_\_\_\_

 Student Signature *X*\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Date\_\_\_\_\_\_\_\_\_\_\_\_

Parent/Guardian email address:

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Parent/Guardian phone number

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*Please return this slip by Tuesday/Wednesday September 14/15*

***Students – Remember to complete the survey on Google classroom as well!!!!***