**2024 – 2025 Geometry**

**Period 5A (11:50 AM – 12:43 PM)**

**ROOM #37**

**Mrs. Traci Bernardy, Instructor**

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**Book:** Geometry; Larson, R. & Boswell, L.; Big Ideas in Learning, LLC ©2022

Online on Schoology.

**Prep:** Period 1 (8:05 – 8:58 AM) **Home #:** 507/747-2545

**Study Hall:** Period 7 (2:12 – 3:05 PM) **School #:** 507/342-5114 ext. 143

Knowledge of Mathematical concepts is essential in many real-life situations. Since many of these concepts are based on geometry, the goal of this class is to give the student a solid base on which to build and develop mathematical skills. Geometry centers on the deductive process supported by intuition and common sense. During this course, the student will gain a thorough knowledge of the fundamentals of geometry and will apply many of the skills learned in Algebra I.

The course will implement a mixture of instructional techniques. Students will often work in random small groups to develop their mathematical thinking about geometric topics. After completing the tasks, the teacher will help summarize the information, and students will be encouraged to record what they have discovered. Exercises to check the student’s understanding – and the answers for those exercises - will be provided. Students will be expected to check their answers before coming to class and ask follow-up questions the next day if they have questions. Other times, a lecture/student practice format will be used. Students will still be expected to check exercises for which answers are available.

There may be a time when you have trouble with a unit or assignment. Please feel free to use all your resources to get help with these items. Ask a parent, classmate, or me if you are having trouble. I am available during my prep time, before school at 7:45 am (or earlier by appointment), and after school until 3:30 pm – but usually later. If you cannot make it during any of these times, let me know, and we’ll try to find a time that works.

Satisfactory completion of this course counts as 1 credit toward graduation math requirements. No credit will be given to a student who is continually absent from the class as per the Wabasso HS attendance policy. The following is a tentative outline of the subjects we will cover during this course. We may add or remove items as we progress through the school year.

**Learner Outcomes**  - The following outcomes are expected to be met by each student who completes this course.

1. Students will be able to use and apply the vocabulary specific to Geometry.
2. Deductive reasoning is the formal application of facts, rules, definitions, and properties to reach logical conclusions. Students will know and use this strategy in the formulation of geometric concepts.
3. Students will be able to construct formal & informal proof and know their application to geometry.
4. Students will conduct basic constructions of geometric relationships.
5. Students will know how to use & apply Coordinate Geometry on the coordinate plane. Their knowledge will include slope, distance & midpoint, and applications of these concepts.
6. Students will know the relationships between parallel and perpendicular lines, their transversals, the angles they form, and the equations of these lines using coordinate geometry.
7. Students will be able to identify the congruency of polygons & complete proofs of congruent triangles.
8. Students will be able to identify & use the special relationships within parts of triangles, including the inequalities relating to their measures.
9. Students will be able to apply the use of proportion & similarity of polygons to solve problems.
10. Students will know & be able to use the special relationships of right triangles, including geometric mean, Pythagorean Theorem, and trigonometric ratios.
11. Students will be able to recognize and apply the properties of quadrilaterals, their sides & angles.
12. Students will be able to name, draw, & recognize figures under transformation and classify types of tessellations created.
13. Students will be able to apply the definition of a circle and its special relationships to find missing measures.
14. Students will be able to identify and use the formulas for calculating the area of polygons & circles, and the surface area & volume of three-dimensional figures. (Prisms, cylinders, pyramids, cones, & spheres.)

**Course Outline**  - The following is a rough timeline for the completion of the course.

A chapter test will be given at the end of each chapter. A cumulative final exam will be given at the end of each quarter.

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|  | **Focus of Lessons** | **Major Assessment** | **Time (in days)** |
| *Introduction to a Thinking Classroom* | Provide an introduction to the processes and expectations of the classroom during the year. |  | 4 |
| *Chapter 1*  *Basics of Geometry* | Learn precise definitions of *line segment* and *angle*, which are based on the undefined notions of *point* and *line*. Make formal geometric constructions and find perimeters and areas of polygons in the coordinate plane. Use geometric shapes, their measures, and their properties to describe objects. | Lesson Quizzes  Chapter Test | 9 |
| *Chapter 2*  *Reasoning & Proof* | Basic concepts and symbols of logic, conjectures & truth values. The use of deductive reasoning and the introduction of formal and informal proof with precise definitions to prove geometric theorems. | Lesson Quizzes  Chapter Test | 13 |
| *Chapter 3*  *Parallel & Perpendicular Lines* | Identify & describe angle relationships that occur with parallel lines and a transversal – and the converse. Write equations of parallel and perpendicular lines. Prove theorems involving parallel and perpendicular lines. | Lesson Quizzes  Chapter Test | 11 |
| ***End Quarter 1*** | **(Tentative)** | **Quarter Final** | **Oct 31** |
| *Chapter 4 Transformations* | Understand congruence and similarity. Identify transformations. Perform, describe, and solve problems using translations, reflections, rotations, and dilations. | Lesson Quizzes  Chapter Test | 14 |
| *Chapter 5*  *Congruent Triangles* | Classify triangles by sides and angles. Prove theorems to show that two triangles are congruent. Use congruence and similarity criteria for triangles to solve problems and to prove relationships in geometric figures. Use coordinate geometry to prove theorems algebraically. | Lesson Quizzes  Chapter Test | 15 |
| *Chapter 6*  *Relationships within Triangles* | Prove theorems about lines, angles, and triangles. Identify & use perpendicular bisectors, angle bisectors, medians, and altitudes of triangles to solve problems. Compare measures within triangles and between two triangles. | Lesson Quizzes  Chapter Test | 14 |
| ***End Quarter 2*** | **(Tentative)** | **Cumulative Final** | **Jan 9** |

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| *Chapter 7*  *Quadrilaterals and Other Polygons* | Find angles of polygons. Describe, use properties, and prove properties of parallelograms. Identify special quadrilaterals such as trapezoids and kites and use properties to find measures. | Lesson Quizzes  Chapter Test | 13 |
| *Chapter 8*  *Similarity* | Identify corresponding parts, find and use a scale factor, of similar polygons. Prove that triangles are similar. Use proportionality theorems to solve problems. | Lesson Quizzes  Chapter Test | 11 |
| *Chapter 9*  *Right Triangles and Trigonometry* | Prove and use theorems involving similarity. Define trigonometric ratios and solve problems involving right triangles | Lesson Quizzes  Chapter Test | 14 |
| *Chapter 10*  *Circles* | Identify lines and segments that intersect circles. Find angle and arc measures. Use the circle properties to solve and model real-life problems. | Lesson Quizzes  Chapter Test | 16 |
| ***End Quarter 3*** | **(Tentative)** | **Qtr 3 Final** | **Mar 18** |
| *Chapter 11*  *Circumference and Area* | Explain and use the formulas for the circumference and area of a circle and parts of a circle (arc length & sectors). Find areas of polygons. Apply geometric concepts in modeling situations to solve real-life problems involving area. | Lesson Quizzes  Chapter Test | 10 |
| *Chapter 12*  *Surface Area & Volume* | Describe attributes of solids. Explain and use surface area & volume formulas for cylinders, pyramids, cones, and spheres. Find missing dimensions of solids. Solve real-life problems involving surface area and volume. | Lesson Quizzes  Chapter Test | 14 |
| *Chapter 13*  *Probability* | Define theoretical and experimental probability. Use two-way tables to find probabilities. Compare independent and dependent events. Use probability to interpret data, and use probability rules to find probabilities of compound events. | Lesson Quizzes  Chapter Test | 16 |
| ***End Quarter 4*** | **(Tentative)** | **Cumulative Final** | **May 23** |

**CLASS PROCEDURES**

**All Scenarios:**

* A weekly Lesson Plan will be posted on Schoology.
* The lesson we covered and Check Your Understanding problems will be posted as a Discussion on Schoology.
* SMART Board work/presentations will be posted as a .pdf in Schoology.
* The textbook and any supplemental materials are available on Schoology.
  + The text is in a folder identified as such and sorted by chapter.
  + Supplemental materials (worksheets, notes, videos, links to quizzes/exams etc.) are located in Schoology sorted into the folder for the current chapter.
* Watch both Schoology & your SCHOOL email for communication from me.
* 5-Minute Quizzes will be given as a paper quiz or online– utilizing Schoology or the Quizizz app.
* Question of the Week will be posted and collected via a Schoology.

**Hybrid Learning – Scenario 2**

* If you are not present, will be expected to connect via Zoom during your class period for instruction and question/answer sessions. I will require that I can see &/or hear you to be given attendance credit.
* Zoom sessions will be recorded and posted in Schoology for review later as needed.
* Assignments given will be treated the same as if everyone was present.
* Tests that are scheduled will, for the most part, still be given in class to those students present as scheduled and to the other group on the next day they are present.
* Sometimes, an exam may be switched to a Schoology online exam, and you may be asked to present via flip-grid or some combination.
* For any online exam, a picture of your work must be submitted with your exam to receive credit.

**Distance Learning – Scenario 3**

* You will be expected to connect via Zoom during your class periods assigned time for instruction and question/answer sessions. I will require that I can see &/or hear you to be given attendance credit.
* Zoom sessions will be recorded and posted in Schoology for review later as needed.
* Assignments given will be treated the same as if everyone was present.
* Tests that are scheduled will be adjusted to an online exam. The format may change depending on the section we are covering at the time.
* You may be asked to present via flip-grid, do a Schoology exam, or some combination.
* For any online exam, a picture of your work must be submitted with your exam to receive credit.

**E-Learning Days**

* The E-Learning Assignment will be posted on Schoology by 9 AM and is due the next day in class unless otherwise noted on the assignment post. Assignments ARE COLLECTED as proof of attendance as per the school policy.
* Watch your SCHOOL EMAIL and SCHOOLOGY for communications from me.
* I will be available for questions during the normal school day hours. I can be contacted by email or my home phone. Zoom sessions can be arranged as necessary. The link to Zoom is found in Schoology.

Grades are calculated based on total points earned in a grading period & are determined by 5 major factors:

***Test Scores.*** You may retake any test throughout the grading period within 2 weeks of the original test date. If you would like to take advantage of this option, you need to contact me to schedule a time outside of class. If your score improves, your recorded score will be the average of the retake and original test. If your score does not improve, you will receive your original score. Your grade cannot go down by retaking a test.

***Cumulative Final.*** This is a tentative exam which may be given at the end of each quarter. Total points will be used to calculate the score. It will be approximately 10% of the quarter grade. A cumulative final will be given at the end of the course & will cover the entire year.

***5-min Check.*** Quizzes with 5-6 questions on the previous lesson(s) will be given the day following the completion of a lesson. Your score on these quizzes will be recorded and calculated as part of your total grade.

**Grading**

100 - 95% A

94 – 90% A-

89 – 87% B+

86 – 84% B

83 – 80% B-

79 – 77% C+

76 – 74% C

73 – 70% C-

69 – 67% D+

66 – 64% D

63 – 60% D-

59 & below F

***Homework*.** If I plan to grade an assignment, you will be notified in advance. They are graded as points toward your total score. Late assignments will be penalized 10% per day. They will no longer be accepted after 5 days. Late homework is any paper not handed in when requested – even if it is handed in later that class period. When a project that requires more time for completion is assigned, a due date will be given and the late penalty will also apply.

***Effort.*** Your effort in-class activities and attitude will affect your final grade. Points for effort will be awarded at mid-term and at the end of the quarter

***Extra Credit*** will be available from the “Question of the Week.” Each correct answer turned in with work shown, name, course name, period, and date will receive 2 points extra credit. These will be posted and turned in via Schoology. The answer must be turned in by 8:05 AM Monday.

Classroom Expectations: All class members are to meet these expectations, working to the best of their ability to make this a great learning experience.

1. Be an Active Listener.

Do not socialize or disrupt while the teacher is instructing.

1. Do your BEST work.
2. Be ready to start class when the bell rings.

Be quiet. Be physically & mentally ready for class to begin. Bring necessary materials and completed assignments.

1. Respect everyone & everything in the room.

Definition of Respect: NO groaning (etc) when assigned a partner you may not like. Keep hands, feet etc to yourself, clean up after yourself and others, no graffiti or defacing property, and no use of offensive language or symbols.

1. NO POP OR FOOD! Water only. This is a classroom, not a social cafe.
2. No Backpacks are allowed in the classroom.
3. Electronic Devices are not allowed to be used in the classroom unless you request & are given permission to use them for a specific school work activity each time you want to use them. Devices must be turned off & put away while in the classroom.
4. Phones may not be used and should be placed in the pouches upon entering the classroom. Smart Watches are not to be used and may not be worn during testing.

Consequences when our Classroom Expectations are not met:

* **First offense - Verbal Warning**: A discussion with the student to be reminded of the classroom expectations individually (during or after class). The parent will be emailed.
* **Second offense**: The student will receive a second verbal warning, and a phone call will be made to their parent/guardian about the offense.
* **Third offense:** The student will be asked to remain after class, where he/she will be issued an after-school detention with Mrs. Bernardy and reminded of the classroom expectations and discuss solutions to the issues. An email or phone call about the offense will be made to their parent/guardian.
* **Fourth offense**: The student will be referred to the administration. A parent(guardian)/student/ teacher/counselor/administration meeting will be held to develop a behavior plan to address the offense.
* **Subsequent Violations**: Students who continue to exhibit negative behavior after the third violation will be dealt with individually.

**\*\*Please note:** If necessary, this series of consequences may be adjusted to meet the needs of each individual student.

**Severe Clause:** Any student who severely disrupts class by fighting, destroying property, refusing to follow directions, talking back to the teacher, or any other behavior not conducive to a positive learning environment will be removed immediately from the classroom and sent to administration.