Parrottsville Elementary School

8th Grade Math
Syllabus

Part 1: Course Information

Instructor Information

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Part 1: Course Information

Standards: Link to State Standards

Part 2: Student Learning Outcomes

The Number System

- Know the difference between rational and irrational numbers.
- Approximate irrational numbers by rational numbers.

Expressions and Equations

- Write equivalent expressions between exponents and fractions.
- Use scientific notation to estimate very large or small quantities.
- Perform operations with scientific notation.
- Understanding the connection between proportional relationships, lines, linear equations.
- Graph proportional relationships.
- Use similar triangles to explain slope.
- Know and derive the equations y = mx and, y = mx + b.
- Know and graph linear inequalities.
- Solve linear equations in one variable.
- Analyze and solve linear equations and systems of two linear equations.
- Solve real-world problems leading to two linear equations in two variables.

Functions

- Compare properties of two functions written in different ways.
- Construct a function to model a linear relationship between two quantities.
- Determine and interpret the rate of change.
- Define, evaluate, and compare functions.
- Describe qualitatively the functional relationship between two quantities by analyzing a graph.

Geometry

- Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.

● Use informal arguments to establish facts about angles.
● Explain proof of the Pythagorean Theorem and its converse.
● Apply the Pythagorean Theorem.
● Solve real-world problems involving volume of cylinders, cones, and spheres.
Statistics and Probability
● Construct and interpret scatter plots.

Part 3: Topic Outline/Schedule

1st 9 Weeks

Unit 1: Rational and Irrational Numbers (8.ns.1, 8.ns.2, 8.ee.2)

● Squares and Square Roots ● Estimating Square Roots ● Classifying Real Numbers ● Comparing and Ordering Real Numbers

Unit 2: Exponents of Scientific Notation (8.ee.1, 8.ee.2, 8.ee.3, 8.ee.4)

● Properties of Exponents ● Square Roots and Cube Roots ● Estimating Square Roots ● Writing numbers in Scientific Notation ● Operations with Scientific Notation

Unit 3: Functions (8.f.1, 8.f.2, 8.f.3, 8.f.4)

● Identifying and comparing functions ● Linear vs. nonlinear functions ● Writing equations from Tables and Ordered Pairs ● Analyzing Functions and Graphs

2nd 9 Weeks

Unit 4: Linear Relationships (8.ee.5, 8.ee.6, 8.f.4, 8.f.5)

● Slope and rate of change ● Slope and similar triangles ● Slope formula ● Proportional / Nonproportional relationships ● Graphing equations on coordinate grid ● Representing linear relationships as graphs, tables, ordered pairs ● Know and understand solutions to linear inequalities.

Unit 5: Linear Equations (8.ee.7a, 8.ee.7b)

● Review: Simplifying Expression, Distributive property, one and two step equations ● Multi-step equations with distributive property ● Equations with variables on both sides ● Writing equations that have variables on both sides ● No solution and infinite/many solution equations.

Unit 6: System of Equations (8.ee.8.a, 8.ee.8.b, 8.ee.8.c)

● Review: Graphing linear equations ● Solving systems by graphing ● Solving systems by substitution ● Graphing systems by elimination

Unit 7: Pythagorean Theorem (8.g.6, 8.g.7, 8.g.8)

● $A^2 + B^2 = C^2$ ● Pythagorean theorem converse ● Applying the Pythagorean theorem to the real world ● Distance on the coordinate plane ● Pythagorean theorem in 3D

3rd 9 Weeks

Unit 8: Volume (8.g.9)

● Volume of cylinders ● Volume of cones ● Volume of spheres ● Applying the volume of cylinders, cones, and spheres to the real world

Unit 9: Angle Relationships (8.g.5)

● Parallel lines and transversals ● Angle relationships (vertical, alternate exterior, ect…)
● Interior angles ● Exterior angles ● Angles in similar triangles

Unit 10: Transformations (8.g.1, 8.g.2, 8.g.3, 8.g.4)

● Translations ● Reflections ● Rotations ● Scale factor/Dilations ● Transformation rules

Unit 11: Bivariate Data (8.sp.a.1, 8.sp.a.2, 8.sp.a.3, 8.sp.b.4)

● Scatter plot association ● Constructing scatter plots ● Trend lines ● Review: Probability of simple events ● Probability of compound events

4th 9 weeks

TNReady Review

Part 4: Grading Policy

Grading Policy:

Grades will not be weighted in this class. All tests, quizzes, homework, classroom assignments and projects will be on a 100 point scale. Below is the complete grading scale.

A= 90-100
B= 80-89
C=70-79
D=60-69
F=0-59

Viewing Grades in ASPEN (optional)

Points you receive for graded activities will be posted to the ASPEN GradeBook in a timely manner. Click on the My Grades link on the left navigation to view your points.

Part 5: Course Policy

Attend Class

Students are expected to attend all class sessions as listed on the course

calendar.

Participate

Students are expected to participate in classroom discussions, group activities, etc. Students will be held accountable by group rubrics.

Build Rapport

If you find that you have any trouble keeping up with assignments or other aspects of the course, make sure you let your teacher know as early as possible. As you will find, building rapport and effective relationships are key to becoming a successful student. Make sure that you are proactive in informing your teacher when difficulties arise during the school year so that they can help you find a solution.

Academic Dishonesty Policy

1. Academic dishonesty includes such things as cheating, inventing false information or citations, plagiarism and helping someone else commit an act of academic dishonesty. It usually involves an attempt by a student to show possession of a level of knowledge or skill that he/she does not possess.

2. Teachers have the initial responsibility for detecting and dealing with academic dishonesty. Teachers who believe that an act of academic dishonesty has occurred are obligated to discuss the matter with the student(s) involved. Teachers should possess reasonable evidence of academic dishonesty. However, if circumstances prevent consultation with student(s), teachers may take whatever action (subject to student appeal) they deem appropriate.

3. Teachers who are convinced by the evidence that a student is guilty of academic dishonesty shall assign an appropriate academic penalty. If the teachers believe that the academic dishonesty reflects on the student's academic performance or the academic integrity in a course, the student's grade should be adversely affected.

Student Testing Code of Ethics and Security

It is important for you as a student to know that the following guidelines are to be strictly followed. This year the TNReady test will count at least 10% of your final semester grade. Your work on this test is very important and it deserves your best effort.

I understand that during testing on the days of the assessment, I am responsible for:

- Not having any electronic devices on me or in my purse/backpack/pockets
  - Including but not limited to cell phones, smart phones, smart watches, etc. **during testing or during breaks.**
  - Best practice is for students to leave devices at home or in their lockers on the day of testing.
  - If I am caught with a device during testing or during breaks, my test may be nullified, resulting in a zero as at least 10% of my final semester grade, and any school level disciplinary action as deemed appropriate by the administration.
- Trying my best on the test
  - If I do not attempt to test (I give **no answers or randomly answer** questions) my test score may be nullified, resulting in a zero as at least 10% of my final semester grade, and any school level disciplinary action as deemed appropriate by the administration.
  - The testing administrators and proctors in the testing environment will determine if no answers or random answering is taking place.
  - I will focus and put forth effort on the test.
- Being honest and not cheating
  - If I am caught cheating (taking pictures of the test, writing down and passing answers, talking to other students, looking on other computers, using software outside the testing platform), my test may be nullified, resulting in a zero as at least 10% of my final semester grade, and any school level disciplinary action as deemed appropriate by the administration.

Course policies are subject to change. Any changes will be posted on the website.