



Township of Ocean Schools

Assistant Superintendent
Office of Teaching and Learning

SPARTAN MISSION:

Meeting the needs of all students with a proud tradition of academic excellence.

DEPARTMENT: Mathematics

COURSE: Mathematics, Grade 7

Curriculum Development Timeline

School: Township of Ocean Intermediate School

Course: Mathematics Grade 7

Department: Mathematics

Board Approval	Supervisor	Notes
January 2009	Janet Bluefield	Born Date/Alignment to NJCCCS
July 2012	Janet Bluefield	Revisions
August 2016	Amanda Maltese	Revisions
July 2017	Nichole Kerney	Revisions/Alignment to NJSIS
August 2018	Nichole Kerney	Revisions
March 2019	Nichole Kerney	Review
August 2022	Gerard Marrone	Alignment to Standards
August 2025	Greg Colón	Alignment to Standards/Minor Revisions

Home of the Spartans!
#spartanlegacy





Township of Ocean Schools

Assistant Superintendent
Office of Teaching and Learning

SPARTAN MISSION:

Meeting the needs of all students with a proud tradition of academic excellence.

DEPARTMENT: Mathematics

COURSE: Mathematics, Grade 7

Township of Ocean Pacing Guide			
Week	Marking Period 1	Week	Marking Period 3
1	The Number System	21	Rates & Proportional Reasoning
2	The Number System	22	Rates & Proportional Reasoning
3	The Number System	23	Rates & Proportional Reasoning
4	The Number System	24	Fractions, Decimals, & Percentages
5	The Number System	25	Fractions, Decimals, & Percentages
6	The Number System	26	Fractions, Decimals, & Percentages
7	Expressions, Equations & Inequalities	27	Fractions, Decimals, & Percentages
8	Expressions, Equations & Inequalities	28	Fractions, Decimals, & Percentages
9	Expressions, Equations & Inequalities	29	Fractions, Decimals, & Percentages
10	Expressions, Equations & Inequalities	30	Fractions, Decimals, & Percentages
Week	Marking Period 2	Week	Marking Period 4
11	Expressions, Equations & Inequalities	31	Fractions, Decimals, & Percentages
12	Expressions, Equations & Inequalities	32	Geometry
13	Expressions, Equations & Inequalities	33	Geometry
14	Expressions, Equations & Inequalities	34	Geometry
15	Expressions, Equations & Inequalities	35	Geometry
16	Expressions, Equations & Inequalities	36	Geometry
17	Rates & Proportional Reasoning	37	Statistics & Probability
18	Rates & Proportional Reasoning	38	Statistics & Probability
19	Rates & Proportional Reasoning	39	Statistics & Probability

Home of the Spartans!
#spartanlegacy





Township of Ocean Schools

Assistant Superintendent
Office of Teaching and Learning

SPARTAN MISSION:

Meeting the needs of all students with a proud tradition of academic excellence.

DEPARTMENT: Mathematics

COURSE: Mathematics, Grade 7

20	Rates & Proportional Reasoning	40	Statistics & Probability
----	--------------------------------	----	--------------------------

Core Instructional & Supplemental Materials including various levels of Texts

Core Instruction: Big Ideas Math: Modeling Real Life Grade 7 (Big Ideas Learning) ©2022

Supplemental: IXL Math, NJSLA Released Questions

Special Education and ELL Supplemental: BigIdeasMath.com, Prodigy,

Time Frame	6 Weeks
Topic	
The Number System	
Alignment to Standards	
The Number System- Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers. 7.NS.A.1a: Describe situations in which opposite quantities combine to make 0. 7.NS.A.1b: Understand $p + q$ as the number located a distance q from p, in the positive or negative direction depending on whether q is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts. 7.NS.A.1c: Understand subtraction of rational numbers as adding the additive inverse, $p - q = p + (-q)$. Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts. 7.NS.A.1d: Apply properties of operations as strategies to add and subtract rational numbers. 7.NS.A.2a: Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as $(-1)(-1) = 1$ and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts. 7.NS.A.2b: Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers, then $-(p/q) = (-p)/q = p/(-q)$. Interpret quotients of rational numbers by describing real-world contexts. 7.NS.A.2c: Apply properties of operations as strategies to multiply and divide rational numbers.	

Home of the Spartans!
#spartanlegacy





Township of Ocean Schools

Assistant Superintendent
Office of Teaching and Learning

SPARTAN MISSION:

Meeting the needs of all students with a proud tradition of academic excellence.

DEPARTMENT: Mathematics

COURSE: Mathematics, Grade 7

7.NS.A.2d: Convert a rational number to decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats.

7.NS.A.3: Solve real-world and mathematical problems involving the four operations with rational numbers.

Learning Objectives and Activities

Students will perform addition, subtraction, multiplication, and division with integers and deepen their understanding by applying operations to rational numbers. They will analyze and solve real-life mathematical problems, using strategies such as estimation, mental math, paper-and-pencil techniques, and calculators where appropriate. Emphasis is placed on reasoning and selecting operations purposefully. Formal assessment of properties is not required but will be developed through use.

SWBAT answer the following questions:

- How are integers and their opposites related?
- How do we use what we know about absolute value to add integers?
- How is subtracting integers related to adding integers?
- How do the signs of factors affect their products?
- How does dividing integers relate to multiplying integers?
- How are multiplying and dividing integers related to multiplying and dividing other rational numbers?

SWBAT demonstrate understanding of the following:

- An integer, n , and its opposite, $-n$, combine to make 0.
- When adding integers with the same sign, find the sum of the absolute values. When adding integers with different signs, find the difference of the absolute values.
- When subtracting integers such as $a - b$, rewrite using the additive inverse to model the equivalent addition expression. The distance between two rational numbers p and q on a number line is the absolute value of their difference.
- When multiplying two integers, the sign of the product is positive if both have the same sign, and negative if the signs are different.
- The rules for dividing integers follow the same logic as multiplication: same signs yield a positive quotient, different signs yield a negative quotient.
- These rules apply equally when extending to all rational numbers.

Learning Activities:

- Integer Chips and Algebra Tiles
- Number Line Manipulatives
- Exploration of real-life applications (e.g., temperature, debt, elevation)
- Big Ideas Math interactive lessons and exercises

Assessments

Home of the Spartans!
#spartanlegacy





Township of Ocean Schools

Assistant Superintendent
Office of Teaching and Learning

SPARTAN MISSION:

Meeting the needs of all students with a proud tradition of academic excellence.

DEPARTMENT: Mathematics

COURSE: Mathematics, Grade 7

Formative:

- Rich Thinking Tasks
- Classroom Observation
- Student Reflections and Math Talks
- Targeted Practice via IXL

Summative:

- Mid-unit Quizzes
- Topic Tests
- Performance Tasks/Projects

Alternative:

- NJSLA Released Problems

Interdisciplinary Connections

Science: **MS-PS1-4:** When adding and subtracting positive and negative numbers students develop a model that predicts and describes changes in temperature.

Career Readiness, Life Literacies, and Key Skills

9.1.8.CP.1: Compare prices for the same goods or services.

Technology Integration

All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaboratively and to create and communicate knowledge.

9.4.8.TL.6: Collaborate to develop and publish work that provides perspectives on a real-world problem.

9.4.5.CT.3: Describe how digital tools and technology may be used to solve problems.

9.4.12.TL.1: Assess digital tools based on features such as accessibility options, capacities, and utility for accomplishing a specific task.

9.4.8.TL.6: Collaborate to develop and publish work that provides perspectives on a real-world problem.

Career Education

CRP2: Apply appropriate academic and technical skills.

CRP8: Utilize critical thinking to make sense of problems and persevere in solving them.

CRP11: Use technology to enhance productivity.

Time Frame

10 Weeks

Home of the Spartans!
#spartanlegacy





Township of Ocean Schools

Assistant Superintendent
Office of Teaching and Learning

SPARTAN MISSION:

Meeting the needs of all students with a proud tradition of academic excellence.

DEPARTMENT: Mathematics

COURSE: Mathematics, Grade 7

Topic
Expressions, Equations, & Inequalities
Alignment to Standards
Expressions and Equations- Use properties of operations to generate equivalent expressions. 7.EE.A.1: Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients. 7.EE.A.2: Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related. 7.EE.B.4a: Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p, q, and r are specific rational numbers. Solve equations of these forms with accuracy and efficiency. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. 7.EE.B.4b: Solve word problems leading to inequalities of the form $px + q > r$ or $px + q < r$, where p, q, and r are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem.
Learning Objectives and Activities
Students will begin the unit by generating equivalent expressions through factoring and applying the distributive property. They will solve two-step and multi-step equations, extending their reasoning to real-world problems. The unit culminates in solving inequalities using multiple operations and interpreting inequality solutions contextually. Students will apply operations to rational numbers, including fractions and decimals, using manipulatives, technology, and collaborative strategies.. SWBAT answer the following questions: • How can algebraic expressions be used to represent and solve problems? • How do you write equivalent expressions? • How are properties of operations used to simplify expressions? • How does the value of an expression change when it is expanded? • How does the Distributive Property relate to factoring expressions? • How can writing equivalent expressions show how quantities are related? • How does an equation show the relationship between variables and quantities in a situation? • How is solving a two-step equation similar to solving a one-step equation? • How does the Distributive Property help you solve equations? • How is solving inequalities similar to and different from solving equations? • How is solving a two-step inequality similar to and different from solving a two-step equation?

Home of the Spartans!
#spartanlegacy





Township of Ocean Schools

Assistant Superintendent
Office of Teaching and Learning

SPARTAN MISSION:

Meeting the needs of all students with a proud tradition of academic excellence.

DEPARTMENT: Mathematics

COURSE: Mathematics, Grade 7

SWBAT demonstrate understanding of the following:

- Algebraic expressions represent real-world problems with unknown quantities; variables can be substituted to evaluate them.
- Expressions can be expanded or factored using properties of operations (e.g., distributive property, GCF).
- Rewriting expressions helps clarify relationships between variables.
- Two-step equations represent real-world relationships and can be solved using properties of equality.
- Solving equations involves using inverse operations to isolate variables.
- Solving inequalities involves the same operations as solving equations, but with an important rule: multiplying/dividing by a negative number reverses the inequality.
- Inequalities often represent a range of solutions rather than a single value.

Learning Activities:

- Algebra Tiles and Communicators
- Using a scale and weights to model solving algebraic equations
- Big Ideas Math interactive lessons and exercises
- Rich Math Tasks
- Discourse of real-life activities that must be done in a certain order (cooking, construction, sports, etc.)

Assessments

Formative:

- Rich Thinking Tasks
- Classroom Observation
- Student Reflections and Math Talks
- Targeted Practice via IXL

Summative:

- Mid-unit Quizzes
- Topic Tests
- Performance Tasks/Projects

Alternative:

- NJSLA Released Problems

Interdisciplinary Connections

Career Readiness, Life Literacies, and Key Skills

9.1.8.CP.1: Compare prices for the same goods or services.

Home of the Spartans!
#spartanlegacy





Township of Ocean Schools

Assistant Superintendent
Office of Teaching and Learning

SPARTAN MISSION:

Meeting the needs of all students with a proud tradition of academic excellence.

DEPARTMENT: Mathematics

COURSE: Mathematics, Grade 7

Technology Integration

All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaboratively and to create and communicate knowledge.

9.4.8.TL.6: Collaborate to develop and publish work that provides perspectives on a real-world problem.

9.4.5.CT.3: Describe how digital tools and technology may be used to solve problems.

9.4.12.TL.1: Assess digital tools based on features such as accessibility options, capacities, and utility for accomplishing a specific task.

9.4.8.TL.6: Collaborate to develop and publish work that provides perspectives on a real-world problem.

Career Education

CRP2: Apply appropriate academic and technical skills.

CRP8: Utilize critical thinking to make sense of problems and persevere in solving them.

CRP11: Use technology to enhance productivity.

Time Frame	7 Weeks
Topic	
Rates and Proportional Reasoning	
Alignment to Standards	
Ratios and Proportions: Analyze proportional relationships and use them to solve real-world and mathematical problems. 7.RP.A.1: Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. 7.RP.A.2a: Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin. 7.RP.A.2b: Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships. 7.RP.A.2c: Represent proportional relationships by equations. 7.RP.A.2d: Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points (0, 0) and (1, r) where r is the unit rate. 7.RP.A.3: Use proportional relationships to solve multistep ratio and percent problems.	

Home of the Spartans!
#spartanlegacy





Township of Ocean Schools

Assistant Superintendent
Office of Teaching and Learning

SPARTAN MISSION:

Meeting the needs of all students with a proud tradition of academic excellence.

DEPARTMENT: Mathematics

COURSE: Mathematics, Grade 7

Learning Objectives and Activities

Students will analyze proportional relationships using rational numbers in both same and different units. They will distinguish these from non-proportional relationships and apply this understanding to real-world problems, such as scale drawings and percent change. Algebraic connections will be made as students represent proportional relationships with equations and graphs. A variety of methods, such as mental math, estimation, paper-and-pencil, and calculators, will be applied strategically..

SWBAT answer the following questions:

- How are ratios, rates, and unit rates used to solve problems?
- Why is it useful to write a ratio of fractions as a unit rate?
- How are proportional quantities described by equivalent ratios?
- How can you represent a proportional relationship with an equation?
- What does the graph of a proportional relationship look like?
- How do scale drawings and actual measurements represent proportional relationships?

SWBAT demonstrate understanding of the following:

- Use equivalent ratios and unit rates to solve problems involving proportional reasoning.
- Understand how to write a ratio of fractions as a unit rate using knowledge of fractions and operations.
- Recognize a proportional relationship when ratios of $\frac{y}{x}$ are constant across values.
- Represent proportional relationships with equations of the form $y = kx$ where k is the constant of proportionality.
- Know that proportional relationships graph as straight lines through the origin.
- Apply proportions and equations to solve real-world problems involving scale drawings using the relationship $y = kx$.
- Explain what each part of a proportional relationship graph means in context (e.g., origin, slope).

Learning Activities:

- Solve real-world proportional problems in Centers and Stations
- Big Ideas Math interactive lessons and exercises
- Problem Scenarios: Solve grocery store unit rates, speed problems, and recipe conversions.
- Collaborative Work: Students graph and explain proportional situations.
- Rich Math Tasks

Assessments

Formative:

Home of the Spartans!
#spartanlegacy





Township of Ocean Schools

Assistant Superintendent
Office of Teaching and Learning

SPARTAN MISSION:

Meeting the needs of all students with a proud tradition of academic excellence.

DEPARTMENT: Mathematics

COURSE: Mathematics, Grade 7

- Rich Thinking Tasks
- Classroom Observation
- Student Reflections and Math Talks
- Targeted Practice via IXL

Summative:

- Mid-unit Quizzes
- Topic Tests
- Performance Tasks/Projects

Alternative:

- NJSLA Released Problems

Interdisciplinary Connections

Science MS-PS3-1: In writing and solving proportional equations students will construct and interpret graphical displays of data to describe the relationships of kinetic energy to the mass of an object and to the speed of an object.

Career Readiness, Life Literacies, and Key Skills

9.1.8.CP.1: Compare prices for the same goods or services.

Technology Integration

All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaboratively and to create and communicate knowledge.

9.4.8.TL.6: Collaborate to develop and publish work that provides perspectives on a real-world problem.

9.4.5.CT.3: Describe how digital tools and technology may be used to solve problems.

9.4.12.TL.1: Assess digital tools based on features such as accessibility options, capacities, and utility for accomplishing a specific task.

9.4.8.TL.6: Collaborate to develop and publish work that provides perspectives on a real-world problem.

Career Education

CRP2: Apply appropriate academic and technical skills.

CRP8: Utilize critical thinking to make sense of problems and persevere in solving them.

CRP11: Use technology to enhance productivity.

Time Frame

8 Weeks

Home of the Spartans!
#spartanlegacy





Township of Ocean Schools

Assistant Superintendent
Office of Teaching and Learning

SPARTAN MISSION:

Meeting the needs of all students with a proud tradition of academic excellence.

DEPARTMENT: Mathematics

COURSE: Mathematics, Grade 7

Topic
Fractions, Decimals, & Percentages
Alignment to Standards
Ratios and Proportions: Analyze proportional relationships and use them to solve real-world and mathematical problems. 7.RP.A.3: Use proportional relationships to solve multistep ratio and percent problems. Expressions and Equations- Use properties of operations to generate equivalent expressions. 7.EE.B.3: Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies.
Learning Objectives and Activities
Students will recognize fractions, decimals, and percents as equivalent representations of rational numbers. They will apply ratio and proportion knowledge to practical problems such as commissions, gratuities, taxes, markups/markdowns, percent increase/decrease, and simple interest. Students will use mental math, estimation, traditional computation, and calculators as appropriate. SWBAT answer the following questions: • How are rational numbers written as decimals? • How do percentages show the relationship between quantities? • How are problems involving tax, gratuity, and commission related to proportional reasoning? • How is calculating percent error similar to finding percent change? • What is percent markup and markdown, and how are they calculated? • How does simple interest illustrate proportional reasoning and relate to the percent equation? SWBAT demonstrate understanding of the following: • All rational numbers can be expressed as fractions (including decimals and percents). • Percents represent a part-to-whole relationship and are a way to express ratios. • Percent problems (tax, gratuity, commission) model proportional relationships; these can be solved with the percent equation • $y = mx$ (part = percent $\times$ whole) • Percent change and percent error are types of percent problems solved via equations such as $\text{amount of change} = \text{percent change} \times \text{original amount}$

Home of the Spartans!
#spartanlegacy





Township of Ocean Schools

Assistant Superintendent
Office of Teaching and Learning

SPARTAN MISSION:

Meeting the needs of all students with a proud tradition of academic excellence.

DEPARTMENT: Mathematics

COURSE: Mathematics, Grade 7

- Percent error measures accuracy as a positive percent comparing estimated/measured values to actual values.
- Markup (or markdown) problems represent increases or decreases in price and use the form $\text{markup/discount} = \text{percent} \times \text{original value}$
- Simple interest shows a proportional relationship between interest, principal, rate, and time $\text{simple interest} = \text{principal} \times \text{rate} \times \text{time}$

Learning Activities:

- Real world applications of shopping (better buy)
- Working within a budget (including coupons and tax)
- Fractions, Decimals, Percents stations and centers
- Big Ideas Math interactive lessons and exercises
- Rich Math Tasks

Assessments

Formative:

- Rich Thinking Tasks
- Classroom Observation
- Student Reflections and Math Talks
- Targeted Practice via IXL

Summative:

- Mid-unit Quizzes
- Topic Tests
- Performance Tasks/Projects

Alternative:

- NJSLA Released Problems

Interdisciplinary Connections

Career Readiness, Life Literacies, and Key Skills

9.2.8.CAP.20: Identify the items to consider when estimating the cost of funding a business.

9.1.8.CDM.2: Demonstrate an understanding of the terminology associated with different types of credit (e.g., credit cards, installment loans, mortgages, lines of credit) and compare and calculate the interest rates associated with each.

9.1.8.CDM.3: Compare and contrast loan management strategies, including interest charges and total principal repayment costs.

9.1.8.CP.1: Compare prices for the same goods or services.

9.1.8.FI.4: Analyze the interest rates and fees associated with financial products

Home of the Spartans!
#spartanlegacy





Township of Ocean Schools

Assistant Superintendent
Office of Teaching and Learning

SPARTAN MISSION:

Meeting the needs of all students with a proud tradition of academic excellence.

DEPARTMENT: Mathematics

COURSE: Mathematics, Grade 7

Technology Integration

All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaboratively and to create and communicate knowledge.

9.4.8.TL.6: Collaborate to develop and publish work that provides perspectives on a real-world problem.

Students will use internet based game sites such as Quizizz, Kahoot, and Quizlet live to reflect on their learning progress.

9.4.5.CT.3: Describe how digital tools and technology may be used to solve problems. Students will use IXL math in order to extend learning and apply skills to new content and will consider the appropriateness of the digital tool for the task.

9.4.12.TL.1: Assess digital tools based on features such as accessibility options, capacities, and utility for accomplishing a specific task.

Additional resources and extension activities will be posted on Google Classroom in order to encourage students to reflect on their learning and expand on their knowledge.

9.4.8.TL.6: Collaborate to develop and publish work that provides perspectives on a real-world problem.

Career Education

CRP2: Apply appropriate academic and technical skills.

CRP8: Utilize critical thinking to make sense of problems and persevere in solving them.

CRP11: Use technology to enhance productivity.

Time Frame	5 Weeks
Topic	
Geometry	
Alignment to Standards	
Geometry: Draw, construct, and describe geometrical figures and describe the relationships between them. Solve real-life and mathematical problems involving angle measure, area, surface area, and volume. 7.G.A.2: Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.	

Home of the Spartans!
#spartanlegacy





Township of Ocean Schools

Assistant Superintendent
Office of Teaching and Learning

SPARTAN MISSION:

Meeting the needs of all students with a proud tradition of academic excellence.

DEPARTMENT: Mathematics

COURSE: Mathematics, Grade 7

7.G.A.3: Describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids.

7.G.B.4: Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.

7.G.B.5: Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.

7.G.B.6: Solve real-world and mathematical problems involving area, volume, and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.

Learning Objectives and Activities

Home of the Spartans!
#spartanlegacy





Township of Ocean Schools

Assistant Superintendent
Office of Teaching and Learning

SPARTAN MISSION:

Meeting the needs of all students with a proud tradition of academic excellence.

DEPARTMENT: Mathematics

COURSE: Mathematics, Grade 7

Students will develop understanding of geometric constructions based on side lengths and angle measurements. They will draw, construct, and describe 2D and 3D figures, analyze relationships among figures, and explore cross sections of 3D solids. Applying algebraic and numeric methods, students will calculate area, surface area, and volume of circles, prisms, cylinders, and cones. Emphasis is placed on spatial reasoning, use of physical and digital models, and mathematical problem-solving.

SWBAT answer the following questions:

- How does the circumference of a circle relate to the length of its diameter?
- How are angles formed by intersecting lines related?
- How can a triangle be constructed given specific side and angle conditions?
- How do you find the area of a circle?
- How do the faces of 3D figures determine the shapes of cross sections?
- How is finding the area of composite 2D figures related to finding the surface area of 3D figures?
- What does the volume formula $V = Bh$ mean in terms of a prism's dimensions?

SWBAT demonstrate understanding of the following:

- The circumference C of a circle is the distance around it, with ratio $C/d = \pi \approx 3.14$ and formulas $C = \pi d$ or $C = 2\pi r$
- Angles that form a straight line or adjacent angles have supplementary or complementary relationships; vertical angles are equal
- Using given side lengths and angle measures, students determine if one, more than one, or no unique triangle can be formed. Triangles can be drawn freehand, with tools, or with technology.
- Area of a circle is calculated as $A = \pi r^2$ where r is the radius.
- A cross section of a 3D figure is the 2D shape revealed by slicing the figure; it matches the shape of faces parallel to the slicing direction.
- Composite 2D figure area is the sum of areas of individual parts; similarly, surface area of a 3D figure is the sum of its faces' areas.
- Volume formula $V = Bh$ uses base area B multiplied by height h to find the space inside 3D solids.

Learning Activities:

- Interactive activities on circle properties, cross sections, and volume calculations
- Centers and Stations hands-on activities
- Rich Math Tasks
- Geometry stations exploring area, volume, and construction

Assessments

Formative:

- Rich Thinking Tasks

Home of the Spartans!
#spartanlegacy





Township of Ocean Schools

Assistant Superintendent
Office of Teaching and Learning

SPARTAN MISSION:

Meeting the needs of all students with a proud tradition of academic excellence.

DEPARTMENT: Mathematics

COURSE: Mathematics, Grade 7

- Classroom Observation
- Student Reflections and Math Talks
- Targeted Practice via IXL

Summative:

- Mid-unit Quizzes
- Topic Tests
- Performance Tasks/Projects

Alternative:

- NJSLA Released Problems

Interdisciplinary Connections

Career Readiness, Life Literacies, and Key Skills

9.1.8.CP.1: Compare prices for the same goods or services.

Technology Integration

All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaboratively and to create and communicate knowledge.

9.4.8.TL.6: Collaborate to develop and publish work that provides perspectives on a real-world problem.

Students will use internet based game sites such as Quizizz, Kahoot, and Quizlet live to reflect on their learning progress.

9.4.5.CT.3: Describe how digital tools and technology may be used to solve problems.

Students will use IXL math in order to extend learning and apply skills to new content and will consider the appropriateness of the digital tool for the task.

9.4.12.TL.1: Assess digital tools based on features such as accessibility options, capacities, and utility for accomplishing a specific task.

Additional resources and extension activities will be posted on Google Classroom in order to encourage students to reflect on their learning and expand on their knowledge.

9.4.8.TL.6: Collaborate to develop and publish work that provides perspectives on a real-world problem.

Career Education

CRP2: Apply appropriate academic and technical skills.

CRP8: Utilize critical thinking to make sense of problems and persevere in solving them.

CRP11: Use technology to enhance productivity.

Home of the Spartans!
#spartanlegacy





Township of Ocean Schools

Assistant Superintendent
Office of Teaching and Learning

SPARTAN MISSION:

Meeting the needs of all students with a proud tradition of academic excellence.

DEPARTMENT: Mathematics

COURSE: Mathematics, Grade 7

Time Frame	5 Weeks
Topic	
Statistics & Probability	
Alignment to Standards	
Statistics and Probability: Use random sampling to draw inferences about a population. Investigate chance processes and develop, use, and evaluate probability models. 7.SP.A.1: Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences. 7.SP.A.2: Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions. 7.SP.C.5: Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around 1 — 2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event. 7.SP.C.6: Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability. 7.SP.C.7a: Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events. 7.SP.C.7b: Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process. 7.SP.C.8a: Understand that, just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs. 7.SP.C.8b: Represent sample spaces for compound events using methods such as organized lists, tables and tree diagrams. For an event described in everyday language (e.g., “rolling double sixes”), identify the outcomes in the sample space which compose the event. 7.SP.C.8c: Design and use a simulation to generate frequencies for compound events.	
Learning Objectives and Activities	
Students will apply formal statistical methods, including measures of central tendency and variability, to analyze data and make inferences about populations based on random	

Home of the Spartans!
#spartanlegacy





Township of Ocean Schools

Assistant Superintendent
Office of Teaching and Learning

SPARTAN MISSION:

Meeting the needs of all students with a proud tradition of academic excellence.

DEPARTMENT: Mathematics

COURSE: Mathematics, Grade 7

samples. They will represent and interpret data using dot plots and box plots. Students will explore probability through models, simulations, and calculations of simple and compound events using lists, tables, and tree diagrams.

SWBAT answer the following questions:

- How can a representative sample of a population be determined?
- How can inferences about a population be drawn from sample data?
- How can data displays compare different populations?
- What is probability and how can it help make predictions?
- How is experimental probability different from theoretical probability?
- How can models be used to find the probability of simple and compound events?
- How can simulations determine probabilities?

SWBAT demonstrate understanding of the following:

- Samples are subsets that represent populations; random sampling helps produce representative samples.
- Measures of center (mean, median) and variability (range, interquartile range) summarize data to make inferences.
- Box plots and dot plots allow visual comparison of distributions between populations.
- Probability values range from 0 to 1, expressing the likelihood of an event.
- Theoretical probability is calculated from known equally likely outcomes; experimental (relative frequency) probability comes from data.
- Probability models include sample space and events with assigned probabilities.
- Compound event probabilities can be determined using lists, tables, or tree diagrams representing sample spaces.
- Simulations model real-world situations where experimental data approximates probability.

Learning Activities:

- Rich Math Tasks
- Centers and Stations
- Big Ideas Math interactive lessons and exercises

Assessments

Formative:

- Rich Thinking Tasks
- Classroom Observation
- Student Reflections and Math Talks
- Targeted Practice via IXL

Summative:

- Mid-unit Quizzes
- Topic Tests

Home of the Spartans!
#spartanlegacy





Township of Ocean Schools

Assistant Superintendent
Office of Teaching and Learning

SPARTAN MISSION:

Meeting the needs of all students with a proud tradition of academic excellence.

DEPARTMENT: Mathematics

COURSE: Mathematics, Grade 7

- Performance Tasks/Projects

Alternative:

- NJSLA Released Problems

Interdisciplinary Connections

Science: MS-ETS1-4: In discussing experimental probability students will develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.

ELA: W.7.1: When students are justifying their reasoning on short answer and extended constructed response questions they write arguments to support claims with clear reasons and relevant evidence.

Career Readiness, Life Literacies, and Key Skills

9.4.12.CT.1: Identify problem-solving strategies used in the development of an innovative product or practice.

Technology Integration

All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaboratively and to create and communicate knowledge.

9.4.8.TL.6: Collaborate to develop and publish work that provides perspectives on a real-world problem.

9.4.5.CT.3: Describe how digital tools and technology may be used to solve problems.

9.4.12.TL.1: Assess digital tools based on features such as accessibility options, capacities, and utility for accomplishing a specific task.

9.4.8.TL.6: Collaborate to develop and publish work that provides perspectives on a real-world problem.

Career Education

CRP2: Apply appropriate academic and technical skills.

CRP8: Utilize critical thinking to make sense of problems and persevere in solving them.

CRP11: Use technology to enhance productivity.

Modifications (ELL, Special Education, At-Risk Students, Gifted & Talented, & 504 Plans)

Home of the Spartans!
#spartanlegacy





Township of Ocean Schools

Assistant Superintendent
Office of Teaching and Learning

SPARTAN MISSION:

Meeting the needs of all students with a proud tradition of academic excellence.

DEPARTMENT: Mathematics

COURSE: Mathematics, Grade 7

ELL:

- Work toward longer passages as skills in English increase
- Use visuals
- Introduce key vocabulary before lesson
- Teacher models reading aloud daily
- Provide peer tutoring
- Use of Bilingual Dictionary
- Guided notes and/or scaffold outline for written assignments
- Provide students with English Learner leveled readers.

Supports for Students With IEPs:

- Allow extra time to complete assignments or tests
- Guided notes and/or scaffold outline for written assignments
- Work in a small group
- Allow answers to be given orally or dictated
- Use large print books, Braille, or books on CD (digital text)
- Follow all IEP modifications

At-Risk Students:

- Guided notes and/or scaffold outline for written assignments
- Introduce key vocabulary before lesson
- Work in a small group
- Lesson taught again using a differentiated approach
- Allow answers to be given orally or dictated
- Use visuals / Anchor Charts
- Leveled texts according to ability

Gifted and Talented:

- Create an enhanced set of introductory activities (e.g. advance organizers, concept maps, concept puzzles)
- Provide options, alternatives and choices to differentiate and broaden the curriculum
- Organize and offer flexible small group learning activities
- Provide whole group enrichment explorations
- Teach cognitive and methodological skills
- Use center, stations, or contracts
- Organize integrated problem-solving simulations
- Propose interest-based extension activities
- Expose students to beyond level texts.

Home of the Spartans!
#spartanlegacy





Township of Ocean Schools

Assistant Superintendent
Office of Teaching and Learning

SPARTAN MISSION:

Meeting the needs of all students with a proud tradition of academic excellence.

DEPARTMENT: Mathematics

COURSE: Mathematics, Grade 7

Supports for Students With 504 Plans:

- Follow all the 504 plan modifications
- Text to speech/audio recorded selections
- Amplification system as needed
- Leveled texts according to ability
- Fine motor skill stations embedded in rotation as needed
- Modified or constrained spelling word lists
- Provide anchor charts with high frequency words and phonemic patterns

Home of the Spartans!
#spartanlegacy

