Unit 1: Whole Numbers

Content Area: **Math**
Course(s): **Math**
Time Period: **Marking Period 1**
Length: **3 weeks**
Status: **Published**

Standards

Math Standards

MA.2.OA.A	Represent and solve problems involving addition and subtraction.
MA.3.OA.A	Represent and solve problems involving multiplication and division.
MA.6.EE.A	Apply and extend previous understandings of arithmetic to algebraic expressions.

Life Literacies and Key Skills

TECH.9.4.12.CI.1	Demonstrate the ability to reflect, analyze, and use creative skills and ideas (e.g., 1.1.12prof.CR3a).
TECH.9.4.12.CT.1	Identify problem-solving strategies used in the development of an innovative product or practice (e.g., 1.1.12acc.C1b, 2.2.12.PF.3).

Mathematical Practices

MA.K-12.1	Make sense of problems and persevere in solving them.
MA.K-12.2	Reason abstractly and quantitatively.
MA.K-12.3	Construct viable arguments and critique the reasoning of others.
MA.K-12.4	Model with mathematics.
MA.K-12.5	Use appropriate tools strategically.
MA.K-12.6	Attend to precision.
MA.K-12.7	Look for and make use of structure.
MA.K-12.8	Look for and express regularity in repeated reasoning.

Transfer Goals

Transfer Goals

Students will be able to independently use their learning of adding, subtracting, mutliplying and dividing

whole numbers to solve real world applications for this course, college math courses and to prepare for the Accuplacer college placement test.

Concepts

Essential Questions

- How are the order of operation rules used to solve a multi-operational problem?
- How do you estimate with whole numbers?

Understandings

- Arithmetic operations with whole numbers.

Critical Knowledge and Skills

Knowledge

Students will know:

- Add, subtract, multiply and divide whole numbers.

Skills

Students will be able to:

- Add whole numbers.
- Subtract whole numbers without borrowing.
- Subtract whole numbers with borrowing.
- Multiply whole numbers.
- Long division of whole numbers.

- Solve word problems involving adding, subtracting, multiplying and/or dividing whole numbers.

Assessment and Resources

School Formative Assessment Plan (Other Evidence)

- Homework
- Quizzes
- Exit Tickets
- Reflections
- Performance Tasks

School Summative Assessment Plan

- Unit Assessment

Primary Resources

- https://accuplacerpractice.collegeboard.org/login

Supplementary Resources

- IXL
- Kutasoftware
- Desmos
- Khan Academy
- PatrickJMT

Technology Integration and Differentiated Instruction

Technology Integration

- **Google Products**
    - Google Classroom - Used for daily interactions with the students covering a vast majority of different educational resources (Daily Notes, Exit Tickets, Classroom Polls, Quick Checks, Additional Resources/ Support, Homework, etc.)
    - GAFE (Google Apps For Education) - Using various programs connected with Google to collaborate within the district, co-teachers, grade level partner teacher, and with students to stay connected with the content that is covered within the topic. Used to collect data in real time and see results upon completion of the assignments to allow for 21st century learning.

- **One to One Student's laptop**
    - All students within the West Deptford School District are given a computer, allowing for 21st century learning to occur within every lesson/topic.

- **Additional Support Videos**
    - Videos can be assigned from PatickJMT, Khan Academy and Youtube, etc... to support each of the lessons within this topic.

Differentiated Instruction

Gifted Students (N.J.A.C.6A:8-3.1)

❑ Within each lesson, the Gifted Students are given choice on topic and subject matter allowing them to explore interests appropriate to their abilities, areas of interest and other courses.

English Language Learners (N.J.A.C.6A:15)

❑ Within each lesson, the English Language Learners are given choice of topic and resources so that their materials are within their ability to grasp the language.

❑ Work with ELL Teacher to allow for all assignments to be completed with extra time.

At-Risk Students (N.J.A.C.6A:8-4.3c)

❑ Within each lesson, the at-risk students are given choice of topic and resources so that their materials

are within their ability level and high-interest.

Special Education Students (N.J.A.C.6A:8-3.1)

❑ Within each lesson, special education students are given choice of topic and resources so that their materials are within their ability level and high-interest.

❑ All content will be modeled with examples and all essays are built on a step-by-step basis so modifications for assignments in small chunks are met.

All other IEP modifications will be honored (ie. hard copies of notes, directions restated, etc.)

Interdisciplinary Connections

ELA - Students will apply reasoning skills to justify statements. Students will justify statements through oral and written communication.

SCIENCE - Students will interpret graphs.

SOCIAL STUDIES -

WORLD LANGUAGES -

VISUAL/PERFORMING ARTS -

APPLIED TECHNOLOGY -

BUSINESS EDUCATION - Students will analyze data to predict trends.

GLOBAL AWARENESS -

Learning Plan / Pacing Guide

Suggested timeline:

- Week 1
    - Accuplacer Pretest
    - Adding & Subtracting Whole Numbers
    - IXL: Grade 3-C.14, D.7
- Week 2
    - Applications of Adding & Subtracting Whole Numbers (White Board Activity)
    - Multiplying Whole Numbers
    - Applications of Multiplying Whole Numbers (White Board Activity)

    - Dividing Whole Numbers
    - IXL: Grade 3-C.15, D.3 Grade 4-E.8, E.16 Grade 5-C.15, D.13 Grade 6-B.2
- Week 3
    - Applications of Dividing Whole Numbers (White Board Activity)
    - IXL: Grade 5-D.14
    - Unit 1 Practice Test
    - Unit 1 Test

Unit 2: Fractions

Content Area: **Math**
Course(s): **Math**
Time Period: **Marking Period 1**
Length: **3 weeks**
Status: **Published**

Standards

Math Standards

MA.5.NF.A	Use equivalent fractions as a strategy to add and subtract fractions.
MA.5.NF.A.1	Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators.
MA.5.NF.A.2	Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers.
MA.5.NF.B	Apply and extend previous understandings of multiplication and division to multiply and divide fractions.
MA.5.NF.B.3	Interpret a fraction as division of the numerator by the denominator (□/□ = □ ÷ □). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem.
MA.5.NF.B.4	Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.
MA.5.NF.B.5b	Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number; and relating the principle of fraction equivalence □/□ = (□ × □)/(□ × □) to the effect of multiplying □/□ by 1.
MA.5.NF.B.7a	Interpret division of a unit fraction by a non-zero whole number, and compute such quotients.
MA.5.NF.B.7b	Interpret division of a whole number by a unit fraction, and compute such quotients.
MA.5.NF.B.7c	Solve real world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, e.g., by using visual fraction models and equations to represent the problem.

Life Literacies and Key Skills

TECH.9.4.12.CI.1	Demonstrate the ability to reflect, analyze, and use creative skills and ideas (e.g., 1.1.12prof.CR3a).

TECH.9.4.12.CT.1	Identify problem-solving strategies used in the development of an innovative product or practice (e.g., 1.1.12acc.C1b, 2.2.12.PF.3).

Mathematical Practices

MA.K-12.1	Make sense of problems and persevere in solving them.
MA.K-12.2	Reason abstractly and quantitatively.
MA.K-12.3	Construct viable arguments and critique the reasoning of others.
MA.K-12.4	Model with mathematics.
MA.K-12.5	Use appropriate tools strategically.
MA.K-12.6	Attend to precision.
MA.K-12.7	Look for and make use of structure.
MA.K-12.8	Look for and express regularity in repeated reasoning.

Transfer Goals

Transfer Goals

Students will be able to independently use their learning of operations with fractions to solve real life applications.

Concepts

Essential Questions

- How can identifying factors and multiples of denominators help to identify equivalent fractions?
- How can you add and subtract fractions with unlike denominators?
- How is multiplying or dividing whole numbers similar to multiplying or dividing fractions?
- If you have two fractions, how do you know which is greater or has more value?
- What is a fraction?
- Why does the denominator stay the same when adding and subtracting fractions with like denominators?

Understandings

- Arithmetic Operations with Fractions

Critical Knowledge and Skills

Knowledge

Students will know:

- Add, Subtract, Multiply & Divide fractions and mixed numbers

Skills

Students will be able to:

- Reduce fractions
- Convert fractions
- Make common denominators
- Add & subtract fractions with like denominators
- Add & subtract fractions with unlike denominators
- Multipy Fractions
- Divide Fractions
- Add, Subtract, multiply & divide mixed numbers
- Solve world problems involving fractions

Assessment and Resources

School Formative Assessment Plan (Other Evidence)

- Homework
- Quizzes
- Exit Tickets
- Reflections

- Performance Tasks

School Summative Assessment Plan

- Unit Assessment

Primary Resources

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Supplementary Resources

- IXL
- Kuta Software
- Desmos
- Khan Academy
- Patrick JMT

Technology Integration and Differentiated Instruction

Technology Integration

- **Google Products**
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Differentiated Instruction

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English Language Learners (N.J.A.C.6A:15)

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Interdisciplinary Connections

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SCIENCE - Students will interpret graphs.

SOCIAL STUDIES -

WORLD LANGUAGES -

VISUAL/PERFORMING ARTS -

APPLIED TECHNOLOGY -

BUSINESS EDUCATION - Students will analyze data to predict trends.

GLOBAL AWARENESS -

Learning Plan / Pacing Guide

Week 1:

- Equivalent Fractions
- Reducing Fractions
- Improper Fractions
- Mixed Numbers
- Multiplying Fractions & Whole numbers
- Multiplying Mixed Numbers
- IXL: Grade 6: I2, I3, I8, K2, K6, K8, L2, L3, L5

Week 2:

- Divide Fractions
- Divide Mixed Numbers
- Adding and Subtracting Fractions with Like & Unlike Denomiators
- Adding and subtracting Mixed numbers
- IXL: Grade 6: L11, 12, L7, L8
- Grade 7: A2, A6, F4, F5, G1, 2, 3, 4, 16, 18

Week 3:

- Ordering Fractions
- Application problems with fractions

- Test

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Unit 3: Decimals

Content Area: **Math**
Course(s): **Math**
Time Period: **Marking Period 1**
Length: **3 weeks**
Status: **Published**

Standards

Math Standards

MA.5.NBT.A	Understand the place value system.
MA.5.NBT.A.1	Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.
MA.5.NBT.A.2	Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.
MA.5.NBT.A.3	Read, write, and compare decimals to thousandths.
MA.5.NBT.A.4	Use place value understanding to round decimals to any place.
MA.5.NBT.A.3a	Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., 347.392 = 3 × 100 + 4 × 10 + 7 × 1 + 3 × (1/10) + 9 × (1/100) + 2 × (1/1000).
MA.5.NBT.A.3b	Compare two decimals to thousandths based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.
MA.5.NBT.B	Perform operations with multi-digit whole numbers and with decimals to hundredths.
MA.5.NBT.B.6	Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
MA.5.NBT.B.7	Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.

Life Literacies and Key Skills

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TECH.9.4.12.CT.1	Identify problem-solving strategies used in the development of an innovative product or practice (e.g., 1.1.12acc.C1b, 2.2.12.PF.3).
TECH.9.4.12.TL.1	Assess digital tools based on features such as accessibility options, capacities, and utility for accomplishing a specified task (e.g., W.11-12.6.).
TECH.9.4.12.TL.2	Generate data using formula-based calculations in a spreadsheet and draw conclusions

about the data.

Mathematical Practices

MA.K-12.1	Make sense of problems and persevere in solving them.
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MA.K-12.5	Use appropriate tools strategically.
MA.K-12.6	Attend to precision.
MA.K-12.7	Look for and make use of structure.
MA.K-12.8	Look for and express regularity in repeated reasoning.

Transfer Goals

Transfer Goals

Students will be able to independently use their learning of adding, subtracting, multiplying and dividing decimal numbers to solve real life applications.

Concepts

Essential Questions

- How do you convert between decimals and fractions?
- How do you order decimals?
- What are the basic rules for operations with decimals?

Understandings

- Arithmetic Operations with Decimals

Critical Knowledge and Skills

Knowledge

Students will know:

- Add, subtract, multiply & divide decimals

Skills

Students will be able to:

- Add decimals
- Subtract decimals
- Multiply decimals
- Divide decimals
- Order decimals
- Convert between decimals & fractions
- Solve word problems involving decimals

Assessment and Resources

School Formative Assessment Plan (Other Evidence)

- Homework
- Quizzes
- Exit Tickets
- Reflections
- Performance Tasks

School Summative Assessment Plan

- Unit Assessment

Primary Resources

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Differentiated Instruction

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English Language Learners (N.J.A.C.6A:15)

❑ Within each lesson, the English Language Learners are given choice of topic and resources so that their materials are within their ability to grasp the language.

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At-Risk Students (N.J.A.C.6A:8-4.3c)

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Interdisciplinary Connections

ELA - Students will apply reasoning skills to justify statements. Students will justify statements through

oral and written communication.

SCIENCE -

SOCIAL STUDIES -

WORLD LANGUAGES -

VISUAL/PERFORMING ARTS -

APPLIED TECHNOLOGY -

BUSINESS EDUCATION - Students will solve problems involving money amounts.

GLOBAL AWARENESS -

Learning Plan / Pacing Guide

Week 1:

- Place Value
- Reading Decimals
- Converting Decimals to Fractions
- Add, Subtract, Multiply, Divide Decimals

Week 2:

- Add, Subtract, Multiply, Divide Decimals
- Decimal Application Problems

Week 3:

- Converting Fractions to decimals
- Order of operations with decimals
- Test

Unit 4: Ratios, Proportions & Percents

Content Area: **Math**
Course(s): **Math**
Time Period: **Marking Period 1**
Length: **3 weeks**
Status: **Published**

Standards

Math Standards

MA.6.RP.A.1	Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities.
MA.6.RP.A.2	Understand the concept of a unit rate □/□ associated with a ratio □:□ with □ ≠ 0, and use rate language in the context of a ratio relationship.
MA.6.RP.A.3c	Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part and the percent.
MA.7.RP.A	Analyze proportional relationships and use them to solve real-world and mathematical problems.
MA.7.RP.A.3	Use proportional relationships to solve multistep ratio and percent problems.

Life Literacies and Key Skills

TECH.9.4.12.CI.1	Demonstrate the ability to reflect, analyze, and use creative skills and ideas (e.g., 1.1.12prof.CR3a).
TECH.9.4.12.CT.1	Identify problem-solving strategies used in the development of an innovative product or practice (e.g., 1.1.12acc.C1b, 2.2.12.PF.3).
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Mathematical Practices

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MA.K-12.7	Look for and make use of structure.
MA.K-12.8	Look for and express regularity in repeated reasoning.

Transfer Goals and Career Ready Practices

Transfer Goals

- Students will be able to independently use their learning of ratios and proportions to solve real world applications.
- Students will be able to independently use their learning of percents to solve real world applications.

Concepts

Essential Questions

- How are cross products and unit rates helpful in determining whether two ratios are equivalent?
- How is a ratio or rate used to compare two quantities or values?
- What is a proportion?
- Where can examples of ratios & rates be found?
- Where do we see fractions, decimals and percentages being used in the real world?
- Why is it important to understand percentages?

Understandings

- Solve ratios, proportions and percnt problems.

Critical Knowledge and Skills

Knowledge

Students will know:

- Ratios
- Proportions
- Percents

Skills

Students will be able to:

- Finding unit price
- Write and reduce ratios
- Identifying proportions
- Solving proportions
- Using proportions to solve application problems
- Change decimals to a percent
- Change a fraction to a percent
- Change a percent to a decimal
- Solve application problems involving percent

Assessment and Resources

School Formative Assessment Plan (Other Evidence)

- Homework
- Quizzes
- Exit Tickets
- Reflections
- Performance Tasks

School Summative Assessment Plan

- Unit Assessment

Primary Resources

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Interdisciplinary Connections

ELA - Students will apply reasoning skills to justify statements. Students will justify statements through oral and written communication.

SCIENCE - Students will apply proportions to convert units in measurements.

SOCIAL STUDIES - Students will apply proportions and percents to changes in population.

WORLD LANGUAGES -

VISUAL/PERFORMING ARTS -

APPLIED TECHNOLOGY -

BUSINESS EDUCATION - Students will apply percents to discounts, sales tax and tips while shopping and/or eating out.

GLOBAL AWARENESS -

Learning Plan / Pacing Guide

Week 1:

- Writing and reducing ratios
- Best Buys
- Writing and Solving Proportions
- Converting between decimals, percents & fractions

Week 2:

- Finding percents of numbers
- Using the percent proportion
- Percent application problems

Week 3:

- Percent Application problems
- Test

-

Unit 5: Integer Operations

Content Area: **Math**
Course(s): **Math**
Time Period: **Marking Period 1**
Length: **3 weeks**
Status: **Published**

Standards

Math Standards

MA.6.EE.A.2c	Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations).
MA.6.NS.C.5	Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation.
MA.6.NS.C.7a	Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram.
MA.6.NS.C.7c	Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in a real-world situation.
MA.6.NS.C.7d	Distinguish comparisons of absolute value from statements about order.
MA.7.EE.A	Use properties of operations to generate equivalent expressions.
MA.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.
MA.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 □ and □ are integers, then –(□/□) = (–□)/□ = □/(–□). Interpret quotients of rational numbers by describing real-world contexts.
MA.7.NS.A.2c	Apply properties of operations as strategies to multiply and divide rational numbers.

Life Literacies and Key Skills

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TECH.9.4.12.CT.1	Identify problem-solving strategies used in the development of an innovative product or practice (e.g., 1.1.12acc.C1b, 2.2.12.PF.3).
TECH.9.4.12.TL.3	Analyze the effectiveness of the process and quality of collaborative environments.

Mathematical Practices

MA.K-12.1	Make sense of problems and persevere in solving them.
MA.K-12.2	Reason abstractly and quantitatively.
MA.K-12.3	Construct viable arguments and critique the reasoning of others.
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MA.K-12.7	Look for and make use of structure.
MA.K-12.8	Look for and express regularity in repeated reasoning.

Transfer Goals

Transfer Goals

Students will be able to independently use their learning of signed numbers to solve real life applications.

Concepts

Essential Questions

- How are integers ordered?
- What are order of operations?
- What are the rules for arithmetic operations with integers?
- What does absolute value mean?

Understandings

Arithmetic operations with integers

Critical Knowledge and Skills

Knowledge

Students will know:

- Add, subtract, multiply & divide integers
- Absolute value
- Order of Operations with integers

Skills

Students will be able to:

- Add, subtract, multiply & divide postive and negative numbers
- Apply absolute value
- Use order of operations to simplify more complex problems with integers operations

Assessment and Resources

School Formative Assessment Plan (Other Evidence)

- Homework
- Quizzes
- Exit Tickets
- Reflections
- Performance Tasks

School Summative Assessment Pan

- Unit Assessment

Primary Resources

https://accuplacerpractice.collegeboard.org/

Supplementary Resources

- IXL
- Kuta Software
- Desmos
- Khan Academy
- Patrick JMT

Technology Integration and Differentiated Instruction

Technology Integration

- **Google Products**
    - Google Classroom - Used for daily interactions with the students covering a vast majority of different educational resources (Daily Notes, Exit Tickets, Classroom Polls, Quick Checks, Additional Resources/ Support, Homework, etc.)
    - GAFE (Google Apps For Education) - Using various programs connected with Google to collaborate within the district, co-teachers, grade level partner teacher, and with students to stay connected with the content that is covered within the topic. Used to collect data in real time and see results upon completion of the assignments to allow for 21st century learning.

- **One to One Student's laptop**
    - All students within the West Deptford School District are given a computer, allowing for 21st century learning to occur within every lesson/topic.

- **Additional Support Videos**
    - Videos can be assigned from PatickJMT, Khan Academy and Youtube, etc... to support each of the lessons within this topic.

Differentiated Instruction

Gifted Students (N.J.A.C.6A:8-3.1)

❑ Within each lesson, the Gifted Students are given choice on topic and subject matter allowing them to explore interests appropriate to their abilities, areas of interest and other courses.

English Language Learners (N.J.A.C.6A:15)

❑ Within each lesson, the English Language Learners are given choice of topic and resources so that their materials are within their ability to grasp the language.

❑ Work with ELL Teacher to allow for all assignments to be completed with extra time.

At-Risk Students (N.J.A.C.6A:8-4.3c)

❑ Within each lesson, the at-risk students are given choice of topic and resources so that their materials are within their ability level and high-interest.

Special Education Students (N.J.A.C.6A:8-3.1)

❑ Within each lesson, special education students are given choice of topic and resources so that their materials are within their ability level and high-interest.

❑ All content will be modeled with examples and all essays are built on a step-by-step basis so modifications for assignments in small chunks are met.

All other IEP modifications will be honored (ie. hard copies of notes, directions restated, etc.)

Interdisciplinary Connections

ELA - Students will apply reasoning skills to justify statements. Students will justify statements through oral and written communication.

SCIENCE - Students will analize temperaure changes.

SOCIAL STUDIES -

WORLD LANGUAGES -

VISUAL/PERFORMING ARTS -

APPLIED TECHNOLOGY -

BUSINESS EDUCATION - Students will solve banking problems involving deposits and withdraws.

GLOBAL AWARENESS -

Learning Plan / Pacing Guide

Week 1:

- Add and subtract integers
- Multiple and divide integers

Week 2:

- Finding the absolute value of integers
- Order of operations involving integers and absolute value
- Application problems involving integers and absolute value

Week 3:

- Review
- Test

-

Unit 6: Basic Algebra

Content Area: **Math**
Course(s): **Math**
Time Period: **Marking Period 1**
Length: **3 weeks**
Status: **Published**

Standards

Math Standards

MA.6.EE.A.3	Apply the properties of operations to generate equivalent expressions.
MA.6.NS.C.7	Understand ordering and absolute value of rational numbers.
MA.6.NS.C.7c	Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in a real-world situation.
MA.7.EE.A	Use properties of operations to generate equivalent expressions.
MA.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.
MA.7.EE.B	Solve real-life and mathematical problems using numerical and algebraic expressions and equations.
MA.8.EE.C.7b	Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.
MA.A-CED.A.1	Create equations and inequalities in one variable and use them to solve problems.
MA.A-REI.A.1	Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method.
MA.A-REI.B.3	Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.

Life Literacies and Key Skills

TECH.9.4.12.CI.1	Demonstrate the ability to reflect, analyze, and use creative skills and ideas (e.g., 1.1.12prof.CR3a).
TECH.9.4.12.CT.1	Identify problem-solving strategies used in the development of an innovative product or practice (e.g., 1.1.12acc.C1b, 2.2.12.PF.3).

Mathematical Practices

MA.K-12.1	Make sense of problems and persevere in solving them.
MA.K-12.2	Reason abstractly and quantitatively.

MA.K-12.3	Construct viable arguments and critique the reasoning of others.
MA.K-12.4	Model with mathematics.
MA.K-12.5	Use appropriate tools strategically.
MA.K-12.6	Attend to precision.
MA.K-12.7	Look for and make use of structure.
MA.K-12.8	Look for and express regularity in repeated reasoning.

Transfer Goals

Transfer Goals

- Students will be able to independently use their learning of equations & inequalities to solve real world applications for this course, college math courses, and to prepare for the Accuplacer college placement test.
- Students will be able to independently use their learning of real numbers and algebraic expressions to solve real world applications for this course, college math courses, and to prepare for the Accuplacer college placement test.

Concepts

Essential Questions

- How can you check the reasonableness of your solution?
- How do you know when an expression is in simplest form?
- How is solving an equation similar to and different from solving an inequality?
- What does it mean to solve an equation?
- What does it mean to solve an inequality?
- What methods are used to simplify expressions?

Understandings

- The difference between like and unlike terms.
- The difference between and expression and an equation.
- The difference berween equations and inequalities
- The process of solving equations
- The process of solving inequaties

- The meaning of the solution of systems of linear equations.

Critical Knowledge and Skills

Knowledge

Students will know:

- How to simplify algebraic expressions.
- How to solve equations and inequalities.

Skills

Students will be able to:

- Combine like terms in algebraic expressions.
- Solve one-step equations and inequalities.
- Solve multi-step equations and inequalities.
- Solve systems of linear equations.

Assessment and Resources

School Formative Assessment Plan (Other Evidence)

- Homework
- Quizzes
- Exit Tickets
- Reflections
- Performance Tasks

School Summative Assessment Pan

- Unit Assessment

Primary Resources

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Supplementary Resources

- IXL
- Kutasoftware
- Desmos
- Khan Academy
- PatrickJMT

Technology Integration and Differentiated Instruction

Technology Integration

- **Google Products**
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- **One to One Student's laptop**
    - All students within the West Deptford School District are given a computer, allowing for 21st century learning to occur within every lesson/topic.

- **Additional Support Videos**
    - Videos can be assigned from PatickJMT, Khan Academy and Youtube, etc... to support each of the lessons within this topic.

Differentiated Instruction

Gifted Students (N.J.A.C.6A:8-3.1)

❑ Within each lesson, the Gifted Students are given choice on topic and subject matter allowing them to explore interests appropriate to their abilities, areas of interest and other courses.

English Language Learners (N.J.A.C.6A:15)

❑ Within each lesson, the English Language Learners are given choice of topic and resources so that their materials are within their ability to grasp the language.

❑ Work with ELL Teacher to allow for all assignments to be completed with extra time.

At-Risk Students (N.J.A.C.6A:8-4.3c)

❑ Within each lesson, the at-risk students are given choice of topic and resources so that their materials are within their ability level and high-interest.

Special Education Students (N.J.A.C.6A:8-3.1)

❑ Within each lesson, special education students are given choice of topic and resources so that their materials are within their ability level and high-interest.

❑ All content will be modeled with examples and all essays are built on a step-by-step basis so modifications for assignments in small chunks are met.

All other IEP modifications will be honored (ie. hard copies of notes, directions restated, etc.)

Interdisciplinary Connections

ELA - Students will apply reasoning skills to justify statements. Students will justify statements through oral and written communication.

SCIENCE -

SOCIAL STUDIES -

WORLD LANGUAGES -

VISUAL/PERFORMING ARTS -

APPLIED TECHNOLOGY -

BUSINESS EDUCATION - Student will solve problems to determine when services are more cost effective than another service.

GLOBAL AWARENESS -

Learning Plan / Pacing Guide

Week 1:

- Writing algebraic expressions
- Simplfying expressions (combining like terms & distributive property)
- Solving equations

Week 2:

- Solving equations
- Solving inequalities
- Applications of equations and inequalities

Week 3:

- Review
- Test

-

Unit 7: Linear Functions & Systems of Equations

Content Area: **Math**
Course(s): **Math**
Time Period: **Marking Period 1**
Length: **4 weeks**
Status: **Published**

Standards

Math Standards

MA.8.F.B.4	Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (□, □) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.
MA.8.EE.C.8a	Understand that solutions to a system of two linear equations in two variables correspond to points of intersection of their graphs, because points of intersection satisfy both equations simultaneously.
MA.8.EE.C.8b	Solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations. Solve simple cases by inspection.
MA.F-BF.A	Build a function that models a relationship between two quantities
MA.F-IF.B.4	For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship.
MA.F-IF.C.7a	Graph linear and quadratic functions and show intercepts, maxima, and minima.
MA.F-LE.A.1a	Prove that linear functions grow by equal differences over equal intervals, and that exponential functions grow by equal factors over equal intervals.
MA.F-LE.A.1b	Recognize situations in which one quantity changes at a constant rate per unit interval relative to another.
MA.A-REI.D.10	Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line).
MA.G-GPE.B.5	Prove the slope criteria for parallel and perpendicular lines and use them to solve geometric problems (e.g., find the equation of a line parallel or perpendicular to a given line that passes through a given point).

Life Literacies and Key Skills

TECH.9.4.12.CI.1	Demonstrate the ability to reflect, analyze, and use creative skills and ideas (e.g., 1.1.12prof.CR3a).
TECH.9.4.12.CT.1	Identify problem-solving strategies used in the development of an innovative product or practice (e.g., 1.1.12acc.C1b, 2.2.12.PF.3).
TECH.9.4.12.TL.1	Assess digital tools based on features such as accessibility options, capacities, and utility for accomplishing a specified task (e.g., W.11-12.6.).

Mathematical Practices

MA.K-12.1	Make sense of problems and persevere in solving them.
MA.K-12.2	Reason abstractly and quantitatively.
MA.K-12.3	Construct viable arguments and critique the reasoning of others.
MA.K-12.4	Model with mathematics.
MA.K-12.5	Use appropriate tools strategically.
MA.K-12.6	Attend to precision.
MA.K-12.7	Look for and make use of structure.
MA.K-12.8	Look for and express regularity in repeated reasoning.

Transfer Goals

Transfer Goals

- Students will be able to independently use their learning of linear function to solve real world applications for this course, college math courses, and to prepare for the Accuplacer college placement test.

Concepts

Essential Questions

- How are slopes of parallel and perpendicular lines related?
- How do you recognize a linear pattern?
- What are methods for solving systems of equations?
- What are the key features of a linear function and what information to they tell you?
- What does slope indicate about a line?

Understandings

- Methods for finding slope
- Methods for graphing linear functions
- Interpreting linear functions

Critical Knowledge and Skills

Knowledge

Students will know:

- Linear Functions
- Graphs of parallel and perpendicular lines
- Systems of Equations

Skills

Students will be able to:

- Determine if a point is on a given line
- Calculate slope of a line graphically and algebraically
- Graph a line
- Detemine the equation of a line
- Interpret the key features of linear functions
- Solve real world problems involving linear functions
- Solve systems of equations
- Find equations of lines which are parallel and perpendicular to given lines

Assessment and Resources

School Formative Assessment Plan (Other Evidence)

- Homework
- Quizzes
- Exit Tickets
- Reflections

- Performance Tasks

School Summative Assessment Pan

- Unit Assessment

Primary Resources

https://accuplacerpractice.collegeboard.org/

Supplementary Resources

- IXL
- Kuta Software
- Desmos
- Khan Academy
- Patrick JMT

Technology Integration and Differentiated Instruction

Technology Integration

- **Google Products**
    - Google Classroom - Used for daily interactions with the students covering a vast majority of different educational resources (Daily Notes, Exit Tickets, Classroom Polls, Quick Checks, Additional Resources/ Support, Homework, etc.)
    - GAFE (Google Apps For Education) - Using various programs connected with Google to collaborate within the district, co-teachers, grade level partner teacher, and with students to stay connected with the content that is covered within the topic. Used to collect data in real time and see results upon completion of the assignments to allow for 21st century learning.
- **One to One Student's laptop**
    - All students within the West Deptford School District are given a computer, allowing for 21st

century learning to occur within every lesson/topic.

- **Additional Support Videos**
  - Videos can be assigned from PatickJMT, Khan Academy and Youtube, etc... to support each of the lessons within this topic.

Differentiated Instruction

Gifted Students (N.J.A.C.6A:8-3.1)

❑ Within each lesson, the Gifted Students are given choice on topic and subject matter allowing them to explore interests appropriate to their abilities, areas of interest and other courses.

English Language Learners (N.J.A.C.6A:15)

❑ Within each lesson, the English Language Learners are given choice of topic and resources so that their materials are within their ability to grasp the language.

❑ Work with ELL Teacher to allow for all assignments to be completed with extra time.

At-Risk Students (N.J.A.C.6A:8-4.3c)

❑ Within each lesson, the at-risk students are given choice of topic and resources so that their materials are within their ability level and high-interest.

Special Education Students (N.J.A.C.6A:8-3.1)

❑ Within each lesson, special education students are given choice of topic and resources so that their materials are within their ability level and high-interest.

❑ All content will be modeled with examples and all essays are built on a step-by-step basis so modifications for assignments in small chunks are met.

All other IEP modifications will be honored (ie. hard copies of notes, directions restated, etc.)

Interdisciplinary Connections

ELA - Students will apply reasoning skills to justify statements. Students will justify statements through oral and written communication.

SCIENCE -

SOCIAL STUDIES -

WORLD LANGUAGES -

VISUAL/PERFORMING ARTS -

APPLIED TECHNOLOGY -

BUSINESS EDUCATION - Students will create and graph functions to model business costs which are linear.

GLOBAL AWARENESS -

Learning Plan / Pacing Guide

Week 1:

- Finding slope given two points
- Finding the slope of an equation
- Finding slope using a graph
- Graphing a line using intercepts

Week 2:

- Finding the slope intercept form of an equation
- Using the slope intercept form to graph a line
- Finding equations of lines that are parallel and perpendicular to a given line.

Week 3:

- Solving systems of equatons

Week 4:

- Review
- Test

Unit 8: Exponents

Content Area: **Math**
Course(s): **Math**
Time Period: **Marking Period 1**
Length: **3 weeks**
Status: **Published**

Standards

Math Standards

MA.8.EE.A.1	Know and apply the properties of integer exponents to generate equivalent numerical expressions.
MA.8.EE.A.4	Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities (e.g., use millimeters per year for seafloor spreading). Interpret scientific notation that has been generated by technology.

Life Literacies and Key Skills

TECH.9.4.12.CI.1	Demonstrate the ability to reflect, analyze, and use creative skills and ideas (e.g., 1.1.12prof.CR3a).
TECH.9.4.12.CT.1	Identify problem-solving strategies used in the development of an innovative product or practice (e.g., 1.1.12acc.C1b, 2.2.12.PF.3).

Mathematical Practices

MA.K-12.1	Make sense of problems and persevere in solving them.
MA.K-12.2	Reason abstractly and quantitatively.
MA.K-12.3	Construct viable arguments and critique the reasoning of others.
MA.K-12.4	Model with mathematics.
MA.K-12.5	Use appropriate tools strategically.
MA.K-12.6	Attend to precision.
MA.K-12.7	Look for and make use of structure.
MA.K-12.8	Look for and express regularity in repeated reasoning.

Transfer Goals and Career Ready Practices

Transfer Goals

- Students will be able idependently use their learning of exponents to solve real world applications for this course, college math courses and to prepare for the Accuplacer college placement test.

Concepts

Essential Questions

- How can you simplify expressions involving exponents?
- How does a rational exponent relate to a radical?

Understandings

Critical Knowledge and Skills

Knowledge

Students will know:

- Rules for exponents.
- Negative rxponents.
- Rational exponents.

Skills

Students will be able to:

- Apply exponent properties.
- Convert between rational exponents and radical expressions.

Assessment and Resources

School Formative Assessment Plan (Other Evidence)

- Homework
- Quizzes
- Exit Tickets
- Reflections
- Performance Tasks

School Summative Assessment Plan

- Unit Assessment

Primary Resources

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Supplementary Resources

- IXL
- Kutasoftware
- Desmos
- Khan Academy
- PatrickJMT

Technology Integration and Differentiated Instruction

Technology Integration

- **Google Products**
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    - GAFE (Google Apps For Education) - Using various programs connected with Google to collaborate within the district, co-teachers, grade level partner teacher, and with students to stay connected with the content that is covered within the topic. Used to collect data in real time and see results upon completion of the assignments to allow for 21st century learning.

- **One to One Student's laptop**
    - All students within the West Deptford School District are given a computer, allowing for 21st century learning to occur within every lesson/topic.

- **Additional Support Videos**
    - Videos can be assigned from PatickJMT, Khan Academy and Youtube, etc... to support each of the lessons within this topic.

Differentiated Instruction

Gifted Students (N.J.A.C.6A:8-3.1)

❑ Within each lesson, the Gifted Students are given choice on topic and subject matter allowing them to explore interests appropriate to their abilities, areas of interest and other courses.

English Language Learners (N.J.A.C.6A:15)

❑ Within each lesson, the English Language Learners are given choice of topic and resources so that their materials are within their ability to grasp the language.

❑ Work with ELL Teacher to allow for all assignments to be completed with extra time.

At-Risk Students (N.J.A.C.6A:8-4.3c)

❑ Within each lesson, the at-risk students are given choice of topic and resources so that their materials

are within their ability level and high-interest.

Special Education Students (N.J.A.C.6A:8-3.1)

❑ Within each lesson, special education students are given choice of topic and resources so that their materials are within their ability level and high-interest.

❑ All content will be modeled with examples and all essays are built on a step-by-step basis so modifications for assignments in small chunks are met.

All other IEP modifications will be honored (ie. hard copies of notes, directions restated, etc.)

Interdisciplinary Connections

ELA - Students will apply reasoning skills to justify statements. Students will justify statements through oral and written communication.

SCIENCE -

SOCIAL STUDIES -

WORLD LANGUAGES -

VISUAL/PERFORMING ARTS -

APPLIED TECHNOLOGY -

BUSINESS EDUCATION -

GLOBAL AWARENESS -

Learning Plan / Pacing Guide

Week 1:

- Properties of Exponents

Week 2:

- Converting fraction exponents to radical expressions

Week 3:

- Review
- Test

-

Unit 9: Data Analysis

Content Area: **Math**
Course(s): **Math**
Time Period: **Marking Period 1**
Length: **3 weeks**
Status: **Published**

Standards

Math Standards

MA.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.
MA.7.SP.B.4	Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations.
MA.S-ID.A.1	Represent data with plots on the real number line (dot plots, histograms, and box plots).
MA.S-ID.A.2	Use statistics appropriate to the shape of the data distribution to compare center (median, mean) and spread (interquartile range, standard deviation) of two or more different data sets.
MA.S-ID.B.6	Represent data on two quantitative variables on a scatter plot, and describe how the variables are related.

Life Literacies and Key Skills

TECH.9.4.12.CI.1	Demonstrate the ability to reflect, analyze, and use creative skills and ideas (e.g., 1.1.12prof.CR3a).
TECH.9.4.12.CT.1	Identify problem-solving strategies used in the development of an innovative product or practice (e.g., 1.1.12acc.C1b, 2.2.12.PF.3).
TECH.9.4.12.TL.1	Assess digital tools based on features such as accessibility options, capacities, and utility for accomplishing a specified task (e.g., W.11-12.6.).
TECH.9.4.12.TL.2	Generate data using formula-based calculations in a spreadsheet and draw conclusions about the data.
TECH.9.4.12.TL.3	Analyze the effectiveness of the process and quality of collaborative environments.

Section Title

Mathematical Practices

MA.K-12.1	Make sense of problems and persevere in solving them.

MA.K-12.2	Reason abstractly and quantitatively.
MA.K-12.3	Construct viable arguments and critique the reasoning of others.
MA.K-12.4	Model with mathematics.
MA.K-12.5	Use appropriate tools strategically.
MA.K-12.6	Attend to precision.
MA.K-12.7	Look for and make use of structure.
MA.K-12.8	Look for and express regularity in repeated reasoning.

Transfer Goals

Transfer Goals

- Students will be able to independently use their learning of data analysis and measures of central tendency for this course, college math courses, and to prepare for the Accuplacer college placement test

Concepts

Essential Questions

- How can collecting and analyzing data help you make decisions or predictions?
- How can you make and interpret different representations of data?
- What are mean, median, mode & range?

Understandings

Students will analyze data in represented in different ways.

Critical Knowledge and Skills

Knowledge

Students will know:

- Interpreting data plots
- Measures of central tendnecy

Skills

Students will be able to:

- Calculate mean, median, mode & range
- Interpret linear models
- Interpret bar graphs
- Interpret box and whisker plots
- Use data plots to make predictions

Assessment and Resources

School Formative Assessment Plan (Other Evidence)

- Homework
- Quizzes
- Exit Tickets
- Reflections
- Performance Tasks

School Summative Assessment Pan

- Unit Assessment

Primary Resources

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Supplementary Resources

- IXL
- Kuta Software
- Desmos
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Technology Integration and Differentiated Instruction

Technology Integration

- **Google Products**
    - Google Classroom - Used for daily interactions with the students covering a vast majority of different educational resources (Daily Notes, Exit Tickets, Classroom Polls, Quick Checks, Additional Resources/ Support, Homework, etc.)
    - GAFE (Google Apps For Education) - Using various programs connected with Google to collaborate within the district, co-teachers, grade level partner teacher, and with students to stay connected with the content that is covered within the topic. Used to collect data in real time and see results upon completion of the assignments to allow for 21st century learning.
- **One to One Student's laptop**
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- **Additional Support Videos**
    - Videos can be assigned from PatickJMT, Khan Academy and Youtube, etc... to support each of the lessons within this topic.

Differentiated Instruction

Gifted Students (N.J.A.C.6A:8-3.1)

❑ Within each lesson, the Gifted Students are given choice on topic and subject matter allowing them to explore interests appropriate to their abilities, areas of interest and other courses.

English Language Learners (N.J.A.C.6A:15)

❑ Within each lesson, the English Language Learners are given choice of topic and resources so that their materials are within their ability to grasp the language.

❑ Work with ELL Teacher to allow for all assignments to be completed with extra time.

At-Risk Students (N.J.A.C.6A:8-4.3c)

❑ Within each lesson, the at-risk students are given choice of topic and resources so that their materials are within their ability level and high-interest.

Special Education Students (N.J.A.C.6A:8-3.1)

❑ Within each lesson, special education students are given choice of topic and resources so that their materials are within their ability level and high-interest.

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All other IEP modifications will be honored (ie. hard copies of notes, directions restated, etc.)

Interdisciplinary Connections

ELA - Students will apply reasoning skills to justify statements. Students will justify statements through oral and written communication.

SCIENCE - Students will analyze graphs and tables.

SOCIAL STUDIES -

WORLD LANGUAGES -

VISUAL/PERFORMING ARTS -

APPLIED TECHNOLOGY -

BUSINESS EDUCATION - Students will use data to predict trends.

GLOBAL AWARENESS -

Learning Plan / Pacing Guide

Week 1:

- Interpreting Data Plots (Linear Models, Tables, Box and whisker plots, bar graphs)

Week 2:

- Calculating and Applying mean, median, mode and range

Week 3:

- Review
- Test

-

Unit 10: Geometry

Content Area: **Math**
Course(s): **Math**
Time Period: **Marking Period 1**
Length: **3 weeks**
Status: **Published**

Standards

Math Standards

MA.3.MD.D.8	Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.
MA.4.MD.A.3	Apply the area and perimeter formulas for rectangles in real world and mathematical problems.
MA.6.G.A.1	Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.
MA.6.G.A.2	Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas □ = □□h and □ = □h to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.
MA.7.EE.B.4a	Solve word problems leading to equations of the form □□ + □ = □ and □(□ + □) = □, where □, □, and □ are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. For example, the perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?

Life Literacies and Key Skills

TECH.9.4.12.CI.1	Demonstrate the ability to reflect, analyze, and use creative skills and ideas (e.g., 1.1.12prof.CR3a).
TECH.9.4.12.CI.3	Investigate new challenges and opportunities for personal growth, advancement, and transition (e.g., 2.1.12.PGD.1).

Mathematical Practices

MA.K-12.1	Make sense of problems and persevere in solving them.
MA.K-12.2	Reason abstractly and quantitatively.
MA.K-12.3	Construct viable arguments and critique the reasoning of others.
MA.K-12.4	Model with mathematics.

MA.K-12.5	Use appropriate tools strategically.
MA.K-12.6	Attend to precision.
MA.K-12.7	Look for and make use of structure.
MA.K-12.8	Look for and express regularity in repeated reasoning.

Transfer Goals

Transfer Goals

- Apply mathematical knowledge of perimeter, area and volume to analyze and model mathematical relationships in the context of a situation in order to make decisions, draw conclusions, and solve problems.

Concepts

Essential Questions

- How do we measure perimeter, area and volume?
- What are some different strategies that can be used to find perimeter, area and/or volume?
- What ways, if any, are perimeter, area and volume related?

Understandings

- Perimeter, area and volume of geometric figures and their uses.

Critical Knowledge and Skills

Knowledge

Students will know:

- The perimeter of geometric figures
- The area of geometric figures
- The volume of geometric figures
- The circumference of cicles

Skills

Students will be able to:

- Find the perimeter of geometric figures.
- Find the area of geoemtric figures.
- Find the volume of geomtric figures.]
- Find the circumference of circles.
- Solve word problems involving perimeter, area and/or volume.

Assessment and Resources

School Formative Assessment Plan (Other Evidence)

- Homework
- Quizzes
- Exit Tickets
- Reflections
- Performance Tasks

School Summative Assessment Pan

- Unit Assessment

Primary Resources

- https://accuplacerpractice.collegeboard.org/login

Supplementary Resources

- IXL
- Kutasoftware
- Desmos
- Khan Academy
- PatrickJMT

Technology Integration and Differentiated Instruction

Technology Integration

- **Google Products**
    - Google Classroom - Used for daily interactions with the students covering a vast majority of different educational resources (Daily Notes, Exit Tickets, Classroom Polls, Quick Checks, Additional Resources/ Support, Homework, etc.)
    - GAFE (Google Apps For Education) - Using various programs connected with Google to collaborate within the district, co-teachers, grade level partner teacher, and with students to stay connected with the content that is covered within the topic. Used to collect data in real time and see results upon completion of the assignments to allow for 21st century learning.
- **One to One Student's laptop**
    - All students within the West Deptford School District are given a computer, allowing for 21st century learning to occur within every lesson/topic.
- **Additional Support Videos**
    - Videos can be assigned from PatickJMT, Khan Academy and Youtube, etc... to support each of the lessons within this topic.

Differentiated Instruction

Gifted Students (N.J.A.C.6A:8-3.1)

❑ Within each lesson, the Gifted Students are given choice on topic and subject matter allowing them to explore interests appropriate to their abilities, areas of interest and other courses.

English Language Learners (N.J.A.C.6A:15)

❑ Within each lesson, the English Language Learners are given choice of topic and resources so that their materials are within their ability to grasp the language.

❑ Work with ELL Teacher to allow for all assignments to be completed with extra time.

At-Risk Students (N.J.A.C.6A:8-4.3c)

❑ Within each lesson, the at-risk students are given choice of topic and resources so that their materials are within their ability level and high-interest.

Special Education Students (N.J.A.C.6A:8-3.1)

❑ Within each lesson, special education students are given choice of topic and resources so that their materials are within their ability level and high-interest.

❑ All content will be modeled with examples and all essays are built on a step-by-step basis so modifications for assignments in small chunks are met.

All other IEP modifications will be honored (ie. hard copies of notes, directions restated, etc.)

Interdisciplinary Connections

ELA - Students will apply reasoning skills to justify statements. Students will justify statements through oral and written communication.

SCIENCE -

SOCIAL STUDIES -

WORLD LANGUAGES -

VISUAL/PERFORMING ARTS - Students will use their knowledge of perimeter and area to create floor plans for their dream house.

APPLIED TECHNOLOGY -

BUSINESS EDUCATION -

GLOBAL AWARENESS - Students will use perimter and area using measurements in a home.

Learning Plan / Pacing Guide

Week 1:

- Perimeter
- Area
- Volume

Week 2:

- Pythagoeran Theorem
- Applications of perimeter, area, volume and pythaorean theorem

Week 3:

- Review
- Test

Unit 11: Probability

Content Area: **Math**
Course(s): **Math**
Time Period: **Marking Period 1**
Length: **3 weeks**
Status: **Published**

Standards

Math Standards

MA.S-CP.A.1	Describe events as subsets of a sample space (the set of outcomes) using characteristics (or categories) of the outcomes, or as unions, intersections, or complements of other events (“or,” “and,” “not”).
MA.S-CP.A.2	Understand that two events □ and □ are independent if the probability of □ and □ occurring together is the product of their probabilities, and use this characterization to determine if they are independent.
MA.S-CP.A.3	Understand the conditional probability of □ given □ as □(□ □□□ □)/□(□), and interpret independence of □ and □ as saying that the conditional probability of □ given □ is the same as the probability of □, and the conditional probability of □ given □ is the same as the probability of □.
MA.S-CP.A.4	Construct and interpret two-way frequency tables of data when two categories are associated with each object being classified. Use the two-way table as a sample space to decide if events are independent and to approximate conditional probabilities.
MA.S-CP.A.5	Recognize and explain the concepts of conditional probability and independence in everyday language and everyday situations.
MA.S-CP.B.9	Use permutations and combinations to compute probabilities of compound events and solve problems.

Life Literacies and Key Skills

TECH.9.4.12.CI.1	Demonstrate the ability to reflect, analyze, and use creative skills and ideas (e.g., 1.1.12prof.CR3a).
TECH.9.4.12.CT.1	Identify problem-solving strategies used in the development of an innovative product or practice (e.g., 1.1.12acc.C1b, 2.2.12.PF.3).
TECH.9.4.12.TL.1	Assess digital tools based on features such as accessibility options, capacities, and utility for accomplishing a specified task (e.g., W.11-12.6.).
TECH.9.4.12.TL.2	Generate data using formula-based calculations in a spreadsheet and draw conclusions about the data.

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Transfer Goals and Career Ready Practices

Transfer Goals

- Students will be able to independently use their learning to make predictions and decisions on real world events based on sampling, statistics, and probability.

Concepts

Essential Questions

- What are the possible outcomes for the event(s) in this situation?
- What determines whether an event is dependent or independent?
- What is the difference between experimental and theoretical probability?

Understandings

Statistics and probability is apparent in our everyday lives and can helps us tobetter predict and interpret scenarios that involve data collection andlikelihood.

Critical Knowledge and Skills

Knowledge

Students will know:

- That there is a connection among all concepts in the unit and how additionalinformation can skew our results.

Skills

Students will be able to:

determine the theoretical probability of an outcome in a probability experiment and use it to predict the frequency of an outcome.

Assessment and Resources

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Primary Resources

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WORLD LANGUAGES -

VISUAL/PERFORMING ARTS -

APPLIED TECHNOLOGY -

BUSINESS EDUCATION -

GLOBAL AWARENESS - Students will find probabilities of outcomes in different games.

Learning Plan / Pacing Guide

Week 1:

- Determine if an event is independent or dependent
- Find the possible outcomes of an event(s)

Week 2:

- Finding an experimental probability
- Finding a theoretical probability

Week 3:

- Review
- Test

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