TOWNSHIP OF UNION PUBLIC SCHOOLS

Grade 6 Mathematics

Adopted: August 18, 2020
Readopted**:** October 20, 2020

Mission Statement

The mission of the Township of Union Public Schools is to build on the foundations of honesty, excellence, integrity, strong family, and community partnerships. We promote a supportive learning environment where every student is challenged, inspired, empowered, and respected as diverse learners. Through cultivation of students' intellectual curiosity, skills and knowledge, our students can achieve academically and socially, and contribute as responsible and productive citizens of our global community.

Philosophy Statement

The Township of Union Public School District, as a societal agency, reflects democratic ideals and concepts through its educational practices. It is the belief of the Board of Education that a primary function of the Township of Union Public School System is to formulate a learning climate conducive to the needs of all students in general, providing therein for individual differences. The school operates as a partner with the home and community.

Unit I Module A

Unit Title: Mathematics – Quotients of Fractions Ratio and Rate Reasoning – Unit 1 – Module A

Grade level: Grade 6 **Timeframe: 21 days**

Rationale

Grade 6 – Quotients of Fractions Ratio and Rate Reasoning – Unit 1, Module A

Unit 1 begins with the additional work of the grade as grade 6 learners build on previously learned concepts of performing operations on decimals to the hundredths and multi-digit whole numbers using concrete models or drawings, place value strategies and properties of operations. The major focus of the unit quotients of fractions, ratios, and unit rates. Learners interpret and compute quotients of fractions and solve word problems involving division of fractions by fractions. They understand the concept of a ratio, use ratio language to describe a ratio relationship, and use rate language in the context of a ratio relationship. The unit concludes as learners use ratio and rate reasoning to solve real-world and mathematical problems. They reason about tables of equivalent ratios, solve unit rate problems, find a percent of a quantity as a rate per 100, solve problems involving finding the whole, given a part and the percent, and use ratio reasoning to convert measurement units.

Essential Questions

How do we divide multi digit numbers?
How do we add, subtract, multiply, and divide decimals? How is it similar to operations with whole numbers? How is it different?
What is a reciprocal?
How do we divide fractions? How can I use tape diagrams to divide fractions?
What does a quotient mean given a scenario?

Standards

Standards (Taught and Assessed):

- **6.NS.B.2.** Fluently divide multi-digit numbers using the standard algorithm.
- **6.NS.B.3** Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.
- **6.NS.A.1** Interpret and compute quotients of fractions and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem. *For example, create a story context for (2/3) ÷ (3/4) and use a visual fraction model to show the quotient; use the relationship between multiplication and division to explain that (2/3) ÷ (3/4) = 8/9 because 3/4 of 8/9 is 2/3. (In general, (a/b) ÷ (c/d) = ad/bc). How much chocolate will each person get if 3 people share 1/2 lb. of chocolate equally? How many 3/4- cup servings are in 2/3 of a cup of yogurt? How wide is a rectangular strip of land with length 3/4 mi and area 1/2 square mi?*

Key: Major Cluster Supporting Cluster Additional Cluster

Highlighted Career Ready Practices and 21st Century Themes/Skills

- 9.1.4.A.2 Evaluate available resources that can assist in solving problems.
- 9.1.4.A.5 Apply critical thinking and problem-solving skills in classroom and family settings.
- 9.2.4.A.4 Explain why knowledge and skills acquired in the elementary grades lay the foundation for future academic and career success.
- CRP1. Act as a responsible and contributing citizen and employee.
- CRP2. Apply appropriate academic and technical skills.
- CRP4. Communicate clearly and effectively and with reason.
- CRP6. Demonstrate creativity and innovation.
- CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.
- CRP11. Use technology to enhance productivity.

Social-Emotional Learning Competencies

- Self-Awareness
- Self-Management
- Social Awareness
- Relationship Skills
- Responsible Decision-Making

Instructional Plan

Pre-Assessment and Reflection

Pre-Assessment	Modifications (ELL, Special Education, Gifted, At-risk of Failure, 504) and Reflections
The 5th grade summer packet which has the skills in Unit 1 Module A	Individualized as needed

Student Learning Objectives (SLO), Strategies, Formative Assessment, Activities and Resources (add rows as needed)

SLO – WALT We are learning to/that	Student Strategies	Formative Assessment	Activities and Resources	Modifications (ELL, Special Education, Gifted, At-risk of Failure, 504) and Reflections
6.NS.B.2 – WALT divide multi-digit numbers using the standard algorithm working towards accuracy and efficiency	• recall the distributive property to help multiply multi digit numbers • Use "Thinking Bubble" to show multiplication scrap • Use estimation to help decide factors	• Short constructed responses • Teacher Observation • Do Now & Exit Tickets • Sample: Use the computation shown below to find the products. $16\overline{)3024}$ = 189 16 142 128 144 144 0 a. 189×16 b. 80×16 c. 9×16	Define what a standard dividing algorithm is. Provide notes and direct instruction on how to divide multi digit numbers. Practice: Individual and/or Group Resources: Multi Digit Division practice 6.NS.B.2 Review the distributive property and explain how it can help multiply numbers.	**ELL:** Model and Provide Example. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities to expand upon the curriculum. Use higher level questioning techniques in class and on assessments. **SPED/504/at risk:** Individualized as needed

6.NS.B.3 – WALT add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation, working towards accuracy and efficiency	• Apply previous knowledge of basic operations • Recall that the first step of adding and subtracting decimals is ALWAYS to line up the decimals. • Use arrows to count spaces/loops/place values in each decimal factor and apply in the product. • Recall that a divisor can never be a decimal and use arrows to count place value movements. • Use estimation as a tool to see if your answer is reasonable	• Short constructed responses • Teacher Observation • Do Now & Exit Tickets • Sample: Thomas buys a case of bottled water. A case contains 36 bottles of water and $4.69. Thomas will sell each bottle of water for $0.75 at a school event. How much profit, in dollars, will Thomas earn if he sells all the bottles of water?	Review decimal place value and numerical operations. Provide notes and direct instruction on how to conduct addition, subtraction, multiplication and division with multi digit decimals. Practice: Individual and/or Group Resources: ***Reasoning about Multiplication and Division and Place Value: 6.NS.B.3***	**ELL:** Model and Provide Example. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities to expand upon the curriculum. Use higher level questioning techniques in class and on assessments. **SPED/504/at risk:** Individualized as needed

6.NS.A.1 – WALT compute quotients of fractions **6.NS.A.1 – WALT** interpret quotients of fractions	• Apply and extend previous understandings of multiplication and division to divide fractions by fractions • Use song about dividing fractions to help remember to multiply by the fractions reciprocal • Students look for and uncover patterns while modeling quotients of fractions to ultimately discover the relationship between multiplication and division. • Tape diagrams and models.	• Short constructed responses • Teacher Observation • Do Now & Exit Tickets • Sample: Dan observes that $\frac{6}{10} \div \frac{2}{10} = 6 \div 2$ He says, ***I think that if we are dividing a fraction by a fraction with the same denominator, then we can just divide the numerators.*** Is Dan's conjecture true for all fractions? Explain how you know.	Define what a quotient is. Review fraction components. Provide notes and direct instruction on how to compute quotients of fractions. Use word problems and real life application scenarios to interpret the result of dividing fractions. Practice: Individual and/or Group Resources: Dividing by a Fraction is the Same as Multiplying by its Reciprocal: 6.NS.A.1	**ELL:** Model and Provide Example. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities to expand upon the curriculum. Use higher level questioning techniques in class and on assessments. **SPED/504/at risk:** Individualized as needed

6.NS.A.1 – WALT solve word problems involving division of fractions by fractions using visual models and equations	• Underline key words in word problem that will guide the division expression • Use tape diagrams and models to translate the given scenario. • Use colored pencils/highlights in the tape diagram.	• Short constructed responses • Teacher Observation • Do Now& Exit Tickets • Sample: You are stuck in a big traffic jam on the freeway and you are wondering how long it will take to get to the next exit, which is 112 miles away. You are timing your progress and find that you can travel 23 of a mile in one hour. If you continue to make progress at this rate, how long will it be until you reach the exit? Solve the problem with a diagram and explain your answer as given a magnet in Science class today. Each magnet weighed $\frac{5}{16}$ of a pound. If there were 28 students in your class, how much did all of the magnets weigh together?	Define what visual models and equations are. Review how to dissect a word problem to pull out relevant information. Provide notes, visuals and direct instruction on how to solve word problems involving division of fractions by fractions. Practice: Individual and/or Group Resources: *Traffic Jam: 6.NS.A.1*	**ELL:** Model and Provide Example. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities to expand upon the curriculum. Use higher level questioning techniques in class and on assessments. **SPED/504/at risk:** Individualized as needed

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Benchmark Assessment 1

Benchmark Assessment	Modifications (ELL, Special Education, Gifted, At-risk of Failure, 504) and Reflections
Multi-Digit Decimal Operations Assessment	**ELL:** Model and Provide Example. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities to expand upon the curriculum. Use higher level questioning techniques in class and on assessments. **SPED/504/at risk:** Individualized as needed

Benchmark Assessment 2

Benchmark Assessment	Modifications (ELL, Special Education, Gifted, At-risk of Failure, 504) and Reflections
Modeling Multiplying & Dividing Fractions Assessment	**ELL:** Model and Provide Example. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities to expand upon the curriculum. Use higher level questioning techniques in class and on assessments. **SPED/504/at risk:** Individualized as needed

Summative Assessments (add rows as needed)

Summative Assessment	Modifications (ELL, Special Education, Gifted, At-risk of Failure, 504) and Reflections
Cumulative Test	**ELL:** Model and Provide Example. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities to expand upon the curriculum. Use higher level questioning techniques in class and on assessments. **SPED/504/at risk:** Individualized as needed

Interdisciplinary Connections

Interdisciplinary Connections	**Modifications (ELL, Special Education, Gifted, At-risk of Failure, 504) and Reflections**
• Open Ended/ Extended Constructive Response Questions – Students will be provided with a real life scenario. Students will be asked to analyze and provide detailed explanation on their conclusions. • Population – Students will use multi digit division to find the number of people per square mile in the countries/regions discussed in Social Studies. • Find the Mistake -Students will be given 3 responses to a problem. Students are to identify the correct answer & method as well as analyze & describe the errors done in the 2 incorrect responses.	**ELL:** Model and Provide Example. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities to expand upon the curriculum. Use higher level questioning techniques in class and on assessments. **SPED/504/at risk:** Individualized as needed

Unit I Module B

Unit Title: Mathematics – Quotients of Fractions Ratio and Rate Reasoning – Unit 1 – Module B

Grade level: Grade 6 **Timeframe: 45**

Rationale

Grade 6 – Quotients of Fractions Ratio and Rate Reasoning – Unit 1, Module A

Unit 1 begins with the additional work of the grade as grade 6 learners build on previously learned concepts of performing operations on decimals to the hundredths and multi-digit whole numbers using concrete models or drawings, place value strategies and properties of operations. The major focus of the unit quotients of fractions, ratios, and unit rates. Learners interpret and compute quotients of fractions and solve word problems involving division of fractions by fractions. They understand the concept of a ratio, use ratio language to describe a ratio relationship, and use rate language in the context of a ratio relationship. The unit concludes as learners use ratio and rate reasoning to solve real-world and mathematical problems. They reason about tables of equivalent ratios, solve unit rate problems, find a percent of a quantity as a rate per 100, solve problems involving finding the whole, given a part and the percent, and use ratio reasoning to convert measurement units.

Essential Questions

What is a ratio? How is a ratio used?
What is a unit rate and how do you find it?
Every fraction is actually an_____ problem?
What is an equivalent ratio? How can you tell if two ratios are equivalent? What are two equivalent ratios called?
What is a coordinate plane? How do we use the ordered pair to help us graph a line?

Standards

Standards (Taught and Assessed):

6.RP.A.1. Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. *For example, "The ratio of wings to beaks in the bird house at the zoo was 2:1, because for every 2 wings there was 1 beak." "For every vote candidate A received, candidate C received nearly three votes."*

6.RP.A.2 Understand the concept of a unit rate a/b associated with a ratio *a*:*b* with b ≠ 0, and use rate language in the context of a ratio relationship. *For example, "This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is 3/4 cup of flour for each cup of sugar." "We paid $75 for 15 hamburgers, which is a rate of $5 per hamburger.*

6.RP.A.3 Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.

a. Make tables of equivalent ratios relating quantities with whole number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios.
b. Solve unit rate problems including those involving unit pricing and constant speed. *For example, if it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed?*
c. 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.
d. Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.

Key: Major Cluster Supporting Cluster Additional Cluster

Highlighted Career Ready Practices and 21st Century Themes/Skills

- 9.1.4.A.2 Evaluate available resources that can assist in solving problems.
- 9.1.4.A.5 Apply critical thinking and problem-solving skills in classroom and family settings.
- CRP2. Apply appropriate academic and technical skills.
- CRP4. Communicate clearly and effectively and with reason.
- CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.
- CRP11. Use technology to enhance productivity.

Social-Emotional Learning Competencies

- Self-Awareness
- Self-Management
- Social Awareness
- Relationship Skills
- Responsible Decision-Making

Instructional Plan

Pre-Assessment and Reflection

Pre-Assessment	Modifications (ELL, Special Education, Gifted, At-risk of Failure, 504) and Reflections
5 question pre-assessment from 5 standards below	Individualized as needed

Student Learning Objectives (SLO), Strategies, Formative Assessment, Activities and Resources (add rows as needed)

SLO – WALT We are learning to/that	Student Strategies	Formative Assessment	Activities and Resources	Modifications (ELL, Special Education, Gifted, At-risk of Failure, 504) and Reflections

6.RP.A.1 – WALT explain the concept of a ratio through definition. **6.RP.A.1 – WALT** use ratio language to describe a relationship between two quantities.	• Recall that ratios can be expressed in 3 different ways: fraction, colon, and using words • Understand and use "to" when comparing refers to a ratio.	• Short constructed responses • Teacher Observation • Do Now& Exit Tickets • Sample: The students in Mr. Hill's class played games at recess. 6 boys played soccer 4 girls played soccer 2 boys jumped rope 8 girls jumped rope. Afterward, Mr. Hill asked the students to compare the boys and girls playing different games. Mika said, "Four more girls jumped rope than played soccer." Chaska said, "For every girl that played soccer, two girls jumped rope." Mr. Hill said, "Mika compared the girls by looking at the difference and Chaska compared the girls using a ratio." 1. Compare the number of boys who played soccer and jumped rope using the difference. Write your answer as a sentence as Mika did. 2. Compare the number of boys who played soccer and jumped rope using a ratio. Write your answer as a sentence as Chaska did. 3. Compare the number of girls who played soccer to the number of boys who played soccer using a ratio. Write your	Define what a ratio is. Explain how to use ratio language appropriately. Review simplifying fractions to aid in correctly setting up ratios. Provide notes and direct instruction on how to write a ratio to compare two quantities. Practice: Individual and/or Group Resources: Games at recess 6RPA1	**ELL:** Model and Provide Example. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities to expand upon the curriculum. Use higher level questioning techniques in class and on assessments. **SPED/504/at risk:** Individualized as needed

		answer as a sentence as Chaska did.		
6.RP.A.2 – WALT construct a unit rate (*a*/*b*) from a given ratio (*a*:*b*) **6.RP.A.2 – WALT** explain a unit rate (*a*/*b*) associated with a ratio (*a*:*b*) **6.RP.A.2 – WALT** express a ratio relationship using rate language	• Use everyday language to help you decide if its price per gallon or gallon per price. Does the wording make sense? • Read "per" as a unit rate. • Recall unit rates are ratios so it can be written as a fraction or using a colon • Recall that unit rates requires a "unit" of measurement since it has the word UNIT in its name.	• Short constructed responses • Teacher Observation • Do Now& Exit Tickets • Sample: We paid $75 for 15 hamburgers, which is a rate of $5 per hamburger. The grocery store sells beans in bulk. The grocer's sign above the beans says, 5 pounds for $4. At this store, you can buy any number of pounds of beans at this same rate, and all prices include tax.	Define what a unit rate is. Explain how a unit rate is related to a ratio as well as identify the difference between the two. Review simplifying fractions to aid in correctly setting up ratios. Provide notes and direct instruction on find a unit rate provide a ratio scenario using the appropriate ratio language. Practice: Individual and/or Group Resources: *Price per pound and price per dollar 6RPA2*	**ELL:** Model and Provide Example. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities to expand upon the curriculum. Use higher level questioning techniques in class and on assessments. **SPED/504/at risk:** Individualized as needed

6.RP.A.3 – WALT represent and solve rate and ratio real-world and mathematical problems by using tables, tape diagrams, double number line diagrams, and equations	• Underline /Circle key words in word problems to help set up a procedure. • Use color/shading to construct tape diagrams. • Use colored pencils to show the difference in both lines in double number line diagrams. • Box out the variable in the equation to help isolate the variable. • Use grid paper to help construct tape diagrams and double number line diagrams.	• Short constructed responses • Teacher Observation • Do Now& Exit Tickets • Sample: Give students a real life example and have them solve it using any method they want: tables, tape diagrams, double number line diagrams, and equations	Define what tape diagrams and double number line diagrams are. Demonstrate how to use tables, tape diagrams, double number line diagrams and equations to predict and solve real life rate and ratio problems. Review basic one step equations to aid in using them to predict/solve the rate and ratio real life problems. Provide notes and direct instruction on how to use multiple models: tables, tape diagrams, double number lines diagrams, and equations to solve real life rate/ratio problems. Discuss real world unit rates scenario and how modeling tape diagrams & double number lines will help in solving the problems. Practice: Individual and/or Group Resources: Voting for Three 6RPA3	**ELL:** Model and Provide Example. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities to expand upon the curriculum. Use higher level questioning techniques in class and on assessments. **SPED/504/at risk:** Individualized as needed

<table>
<tr>
<td>6.RP.A.3a. – WALT create tables of equivalent ratios and find missing values with whole number measurements</td>
<td>

Use prior knowledge of simplifying fractions
Use arrows to show how each cell in the ratio table either get multiplied or divided by the same number.
Recall customary units of measurement equivalence

</td>
<td>

Teacher Observation
Do Now & Exit Tickets
Sample:

Enrique is making cakes.
<table>
<tr><td>Cakes</td><td>2</td><td>4</td><td>6</td><td>7</td></tr>
<tr><td>Eggs</td><td>8</td><td>16</td><td>24</td><td>?</td></tr>
</table>
Based on the table, how many eggs will Enrique need to make 7 cakes?
</td>
<td>Define what equivalent ratios are.

Demonstrate how to use equivalent ratio tables to find missing values.

Provide notes and direct instruction on how to create tables of equivalent ratios and find missing values with whole number measurements.

Practice: Individual and/or Group

Resources:

Equivalent ratio tables 6RPA3.a</td>
<td>ELL: Model and Provide Example. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary.

GT: Provide enrichment activities to expand upon the curriculum. Use higher level questioning techniques in class and on assessments.

SPED/504/at risk: Individualized as needed</td>
</tr>
</table>

6.RP.A.3a. – WALT plot pairs of values, in the coordinate plane, from a ratio table to compare ratios	• Recall X & Y coordinates/coordinate plane • Plot points using "walk across" the X axis and move up or down the Y axis "elevator"	• Short constructed responses • Teacher Observation • Do Now & Exit Tickets • Sample: Have the class stand and move in the way they would plot the ordered pairs. Look and see which child/children are going in the wrong direction.	Define ordered pairs and the coordinate plane. Use visuals of the coordinate plane to demonstrate how to plot pairs of values. Review how to use a ratio table to read ordered pairs. Provide notes and direct instruction on how to plot pairs of values in a coordinate plane and how to obtain these ordered pairs from ratio tables. Discuss real world unit rates scenario and how modeling tape diagrams & double number lines will help in solving the problems. Practice: Individual and/or Group Resources: iready	**ELL:** Model and Provide Example. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities to expand upon the curriculum. Use higher level questioning techniques in class and on assessments. **SPED/504/at risk:** Individualized as needed

6.RP.A.3b. – WALT solve unit rate problems, including unit pricing and constant speed	• Underline KEY words in word problems/ scenarios to help translate the problem • Recall that "per" refers to unit rates	• Short constructed responses • Teacher Observation • Do Now& Exit Tickets • Sample: Chad drove 168 miles in 3 hours. – How many miles per hour did Chad drive? – Chad will drive 672 more miles. He continues to drive at the same rate. How many hours will it take Chad to drive the 672 miles? – Chad stopped and filled the car with 11 gallons of gas. He had driven 308 miles using the previous 11 gallons of gas. How many miles per gallon did Chad's car get? If it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed?	Define unit pricing and constant speed. Review how to find a unit rate. Provide notes and direct instruction on how to solve unit rate problem involving unit pricing and constant speed. Practice: Individual and/or Group Resources: Solve problems with Ratios and unit rates. 6RP.A.3b	**ELL:** Model and Provide Example. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities to expand upon the curriculum. Use higher level questioning techniques in class and on assessments. **SPED/504/at risk:** Individualized as needed
6.RP.A.3c. – WALT find the part, whole, and percent of a quantity in real-world problems	• Use is = part, of = whole to help set up problems • Apply the percent proportion, when application: is/of = %/100 • Recall that "of" translates to multiplication	• Short constructed responses • Teacher Observation • Do Now & Exit Tickets • Sample: Selina bought a shirt on sale that was 20% less than the original price. The original price was $5 more than the sale price. What was the original price? Explain or show work.	Define and label Part, Whole, and Percent of a given quantity. Provide notes and direct instruction on how to find the part, whole, and percent of a quantity in real-world problems.	**ELL:** Model and Provide Example. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities

	• Recall decimal to percent conversion diagram.	- Anita brings 6 dolls to her grandma's house. These dolls represent 20% of Anita's doll collection, as shown in the diagram.	Practice: Individual and/or Group Resources: Shirt sale 6RPA3.c	to expand upon the curriculum. Use higher level questioning techniques in class and on assessments. **SPED/504/at risk:** Individualized as needed
6.RP.A.3d. – WALT unit ratios can be used to manipulate and transform units accurately **6.RP.A.3d. – WALT** convert measurement units utilizing ratio reasoning	• Recall customary units of measurement equivalence ie. 12 inches/1 foot • Recall Metric System conversions & use base ten and decimal loops to convert. • Set up & solve proportions to find new converted unit • Use equivalent ratios to find new converted unit.	• Short constructed responses • Teacher Observation • Do Now& Exit Tickets • Sample: Alberto said, "The ratio of the number of dollars to the number of pounds is 4:5. That's $0.80 per pound." Beth said, "The sign says the ratio of the number of pounds to the number of dollars is 5:4. That's 1.25 pounds per dollar." Are Alberto and Beth both correct? Explain.	Define units of measurement. Use visuals/charts to show measurement equivalency. Provide notes and direct instruction on how to convert measurement units and transform units accurately. Practice: Individual and/or Group Resources: solve measurement conversion 6.RP.A3d	**ELL:** Model and Provide Example. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities to expand upon the curriculum. Use higher level questioning techniques in class and on assessments. **SPED/504/at risk:** Individualized as needed

Benchmark Assessment 1

Benchmark Assessment	Modifications (ELL, Special Education, Gifted, At-risk of Failure, 504) and Reflections

Assessment reading, writing, interpreting, rates, ratios, and unit rates	**ELL:** Model and Provide Example. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities to expand upon the curriculum. Use higher level questioning techniques in class and on assessments. **SPED/504/at risk:** Individualized as needed

Benchmark Assessment 2

Benchmark Assessment	**Modifications (ELL, Special Education, Gifted, At-risk of Failure, 504) and Reflections**
Explain the relationship of two quantities in given ratio using ratio language. Create and complete tables of equivalent ratios to solve real world and mathematical problems using ratio and rate reasoning that include making tables of equivalent ratios, solving unit rate problems, finding percent of a quantity as a rate per 100.	**ELL:** Model and Provide Example. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities to expand upon the curriculum. Use higher level questioning techniques in class and on assessments. **SPED/504/at risk:** Individualized as needed

Summative Assessments (add rows as needed)

Summative Assessment	**Modifications (ELL, Special Education, Gifted, At-risk of Failure, 504) and Reflections**
Cumulative Test	**ELL:** Model and Provide Example. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities to expand upon the curriculum. Use higher level questioning techniques in class and on assessments. **SPED/504/at risk:** Individualized as needed

Interdisciplinary Connections

Interdisciplinary Connections	Modifications (ELL, Special Education, Gifted, At-risk of Failure, 504) and Reflections
• **Esperanza Rising** - Using a map of Mexico & California, students will be able to use the scale and proportions to find the actual distance that Esperanza and her family traveled on their journey. Students will read the novel in English. • **Metric System** – Students will learn how to convert between metrics in Math by multiplying/dividing by base 10. Students will discuss and use the Metric System in Science to gather data. Find the Mistake -Students will be given 3 responses to a problem. Students are to identify the correct answer & method as well as analyze & describe the errors done in the 2 incorrect responses. • **Open Ended/ Extended Constructive Response Questions** – Students will be provided with a real life scenario. Students will be asked to analyze and provide detailed explanation on their conclusions.	**ELL:** Model and Provide Example. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities to expand upon the curriculum. Use higher level questioning techniques in class and on assessments. **SPED/504/at risk:** Individualized as needed

Unit 2 Module A

Unit Title: Mathematics – Introductory Statistics – Unit 2 – Module A

Grade level: Grade 6 **Timeframe: 20 days**

Rationale

Grade 6 – Introductory Statistics – Unit 2, Module A

Unit 2 focuses on foundational statistics which includes recognizing a statistical question and understanding that data collected in response to a statistical question has a distribution. Learners understand that a distribution can be described by its center, spread and overall shape, and that the measure of center is a single number that summarizes all of the data. They display numerical data in dot plots, histograms, and box plots. The unit concludes as learners identify the number of observations for a dataset, describe how the data was measured, give the median or mean as a measure of center, give the interquartile range or mean absolute deviation as a measure of variability, and relate the choice of measures of center and variability to the shape of the data distribution. Learners discuss statistics and report on data in context, consistently reporting units of measure.

Essential Questions

How do we organize data so that it is useful?

How are graphs used?

How do we identify mean, mode, median and range?

Standards

Standards (Taught and Assessed):

6.SP.A.1 Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers. *For example, "How old am I?" is not a statistical question, but "How old are the students in my school?" is a statistical question because one anticipates variability in students' ages.*

6.SP.A.2 Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.

6.SP.A.3 Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.

6.SP.B.4 Display numerical data in plots on a number line, including dot plots, histograms, and box plots.

Key: Major Cluster Supporting Cluster Additional Cluster

Highlighted Career Ready Practices and 21st Century Themes/Skills

- 9.1.4.A.2 Evaluate available resources that can assist in solving problems.
- 9.1.4.A.5 Apply critical thinking and problem-solving skills in classroom and family settings.
- CRP2. Apply appropriate academic and technical skills.
- CRP4. Communicate clearly and effectively and with reason.
- CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.
- CRP11. Use technology to enhance productivity.

Social-Emotional Learning Competencies

- Self-Awareness
- Self-Management
- Social Awareness
- Relationship Skills
- Responsible Decision-Making

Instructional Plan

Pre-Assessment and Reflection

Pre-Assessment	Modifications (ELL, Special Education, Gifted, At-risk of Failure, 504) and Reflections
5 question pre-assessment from 5 standards below	Individualized as needed

Student Learning Objectives (SLO), Strategies, Formative Assessment, Activities and Resources (add rows as needed)

SLO – WALT **We are learning to/that**	**Student Strategies**	**Formative Assessment**	**Activities and Resources**	**Modifications (ELL, Special Education, Gifted, At-risk of Failure, 504) and Reflections**
6.SP.A.1 – WALT a statistical question is one that anticipates variability in the data related to the question and accounts for it in the answers **6.SP.A.1 – WALT** recognize statistical questions	• Recall how to collect data. • Determine if a question is statistical by setting your question based on a group not an individual. • Remember that statistical questions should have different answers NOT an exact answer for example, "How old are you?" is not a statistical question.	• Short constructed responses • Teacher Observation • Do Now& Exit Tickets • Sample: Zeke likes to collect buttons and he keeps them in a jar. Zeke can empty the buttons out of the jar, so he can see all of his buttons at once. Which of the following are statistical questions that someone could ask Zeke about his buttons? (A statistical question is one that anticipates an answer based on data that vary.) For each question, explain why it is or is not a statistical question. a) What is a typical number of holes for the buttons in the jar? b) How many buttons are in the jar? c) How large is the largest button in the jar? d) If Zeke grabbed a handful of buttons, what are the chances that all of the buttons in his hand are round?	Define what a statistical question is. Provide notes and direct instruction on asking and recognizing what a statistical question is vs a non-statistical questions is. Practice: Individual and/or Group Resources: *Identifying Statistical questions 6SPA1*	**ELL:** Model and provide examples. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities to expand upon the curriculum. Use higher level questioning techniques in class and on assessments. **SPED/504/at risk:** Individualized as needed

		e) What is a typical size for the buttons in the jar?		
6.SP.A.2 – WALT a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape	• Recall how to calculate Mean, Median, Mode • Remember that Mean = average, Median = middle and Mode = most • Use cross out towards the middle to help find median.	• Short constructed responses • Teacher Observation • Do Now& Exit Tickets • Sample A game was played where ten tennis balls are tossed into a basket from a certain distance. The numbers of successful tosses for six students were 4, 1, 3, 2, 1, 7 Draw a representation of the data using cubes where one cube represents one successful toss of a tennis ball into the basket.	Define measurement center, spread and shape Provide notes and direct instruction on reading the results of a statistical question and determine its center, spread and shape. Practice: Individual and/or Group Resources: *Puppy Weights 6SPA2 and 6SPB4*	**ELL:** Model and provide examples. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities to expand upon the curriculum. Use higher level questioning techniques in class and on assessments. **SPED/504/at risk:** Individualized as needed
6.SP.A.3 – WALT a measure of center (mean and median) for a numerical data set summarizes all of its values with a single number	• Recall that Mean = average and Median = middle • Use that Median sounds like the size Medium (the middle size) to help with definition. • Recall rules from dividing multi digit numbers/decimals when finding the mean. • Use estimation when needed	• Short constructed responses • Teacher Observation • Do Now& Exit Tickets • Sample: Exit ticket comparing mean and median with numbers provided by teacher.	Define what mean and median are. Provide notes and direct instruction on how to calculate mean and median. Practice: Individual and/or Group Resources:	**ELL:** Model and provide examples. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities to expand upon the curriculum. Use higher level questioning

			Is It Center or Is It Variability? 6SPA3	techniques in class and on assessments. **SPED/504/at risk:** Individualized as needed
6.SP.A.3 – WALT a measure of variation (interquartile range and mean absolute deviation) describes how its values vary with a single number	• Recall that MAD = Mean Absolute Deviation • Recall how to construct and read a Box and Whisker Plot • Visualize Box and Whisker Plot as it sounds (like a cat with whiskers)	• Short constructed responses • Teacher Observation • Do Now & Exit Tickets • Sample: Have students find the IQR of a set of data and the MAD.	Define what mean absolute deviation and interquartile range are. Review how to construct a Box and Whisker Plot Provide notes and direct instruction on calculating the IQR and MAD of a data set.. Practice: Individual and/or Group Resources: *Understanding MAD 6SPA3*	**ELL:** Model and Provide Example. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities to expand upon the curriculum. Use higher level questioning techniques in class and on assessments. **SPED/504/at risk:** Individualized as needed
6.SP.B.4 – WALT display numerical data in plots on a number line, including dot plots, histograms, and box plots	• Recall how to read and set up a data table. • Use colors and rulers to help create the visual models	• Short constructed responses • Teacher Observation • Do Now& Exit Tickets • Sample: The number of siblings for a group of sixth grade students is shown below: 1,0,2,1,6,0,2,0,1,10.	Define what dot plots, histograms and box plots are. Provide notes and direct instruction on construct dot plots, histograms and box plots.	**ELL:** Model and provide examples. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities to

		Make a dot plot of the data. o Find the mean and median of the data. o What does the mean tell you about the data? What about the median? o Which measure of average (mean or median) do you think best describes the data? Why?	Emphasize the title and labels in such plots. Practice: Individual and/or Group Resources: *Puppy Weights 6SPA2 and 6SPB4*	expand upon the curriculum. Use higher level questioning techniques in class and on assessments. **SPED/504/at risk:** Individualized as needed

Benchmark Assessment 1

Benchmark Assessment	**Modifications (ELL, Special Education, Gifted, At-risk of Failure, 504) and Reflections**
What is a statistics question and organizing them. 6SP.A.1 6SP.A.2	**ELL:** Model and Provide Example. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities to expand upon the curriculum. Use higher level questioning techniques in class and on assessments. **SPED/504/at risk:** Individualized as needed

Benchmark Assessment 2

Benchmark Assessment	**Modifications (ELL, Special Education, Gifted, At-risk of Failure, 504) and Reflections**
Mean, Median, MAD and box and whisker plot assessment. 6.SP.A.3, 6.SP.B.4	**ELL:** Model and Provide Example. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities to expand upon the curriculum. Use higher level questioning techniques in class and on assessments.

	SPED/504/at risk: Individualized as needed

Summative Assessments (add rows as needed)

Summative Assessment	Modifications (ELL, Special Education, Gifted, At-risk of Failure, 504) and Reflections
Data Test	**ELL:** Model and Provide Example. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities to expand upon the curriculum. Use higher level questioning techniques in class and on assessments. **SPED/504/at risk:** Individualized as needed

Interdisciplinary Connections

Interdisciplinary Connections	Modifications (ELL, Special Education, Gifted, At-risk of Failure, 504) and Reflections
My Blood is Your Blood Project: https://www.americasblood.org/media/43199/6-8WEBDOC.pdf	**ELL:** Model and Provide Example. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities to expand upon the curriculum. Use higher level questioning techniques in class and on assessments. **SPED/504/at risk:** Individualized as needed

Unit 3 Module A

Unit Title: Mathematics – Expressions, Equations, and Geometry – Unit 3 – Module A

Grade level: Grade 6 **Timeframe: 30 days**

Rationale

Grade 6 – Expressions, Equations, and Geometry – Unit 3

The focus of unit 3 is writing and evaluating both numerical and algebraic expressions. The major conceptual understanding of the unit is equivalence, specifically equivalent expressions. Learners, building on the work of grade 5 using parentheses, brackets, or braces and writing simple numerical expressions, grade 6 learners write and evaluate numerical expressions involving whole-number exponents. Learners extend the grade 4 work of finding all factor pairs for a whole number in the range 1–100 by finding the greatest common factor of two whole numbers and by using the distributive property to express a sum of two whole numbers. They use order of operations to perform arithmetic operations, including those involving whole number exponents.

Grade 6 learners write, read, and evaluate algebraic expressions and apply the properties of operations (introduced in grade 1) to generate equivalent algebraic expressions. A key conceptual understanding of the unit is that solving an equation or inequality as a process of answering the question "which values from a specified set, if any, make the equation or inequality true?". Learners move on to solve real-world and mathematical problems by writing and solving equations.

The unit concludes as learners revisit conceptual understandings from grade 3, namely that area is additive. They find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes. Learners represent three-dimensional figures using nets and use the nets to find the surface area of these figures. They also build upon the volume concepts of grade 5 to find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes.

Essential Questions

Can all algebraic expressions be evaluated?
What is the difference between numeric expressions and equations and algebraic expressions and equations?
What is the difference between an equation and an inequality?
How can algebra be used to solve real word problems?

Standards

Standards (Taught and Assessed):

- **6.EE.A.1**. Write and evaluate numerical expressions involving whole-number exponents.
- **6.EE.A.2** Write, read, and evaluate expressions in which letters stand for numbers.
  a. Write expressions that record operations with numbers and with letters standing for numbers. *For example, express the calculation "Subtract y from 5" as 5 − y.*
- **6.EE.A.2** Write, read, and evaluate expressions in which letters stand for numbers.
  b. Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity. *For example, describe the expression 2 (8 + 7) as a product of two factors; view (8 + 7) as both a single entity and a sum of two terms.*
- **6.EE.A.2** Write, read, and evaluate expressions in which letters stand for numbers.
  c. 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). *For example, use the formulas $V = s^3$ and $A = 6s^2$ to find the volume and surface area of a cube with sides of length s = ½.*
- **6.NS.B.4** Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 1–100 with a common factor as a multiple of a sum of two whole numbers with no common factor. *For example, express 36 + 8 as 4 (9 + 2).*
- **6.EE.A.3** Apply the properties of operations to generate equivalent expressions. *For example, apply the distributive property to the expression 3(2+ x) to produce the equivalent expression 6 + 3x; apply the distributive property to the expression 24x + 18y to produce the equivalent expression 6 (4x + 3y); apply properties of operations to y + y + y to produce the equivalent expression 3y.*
- **6.EE.A.4** Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them). *For example, the expressions y + y + y and 3y are equivalent because they name the same number regardless of which number y stands for.*
- **6.EE.B.6** Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.

Key: Major Cluster Supporting Cluster Additional Cluster

Highlighted Career Ready Practices and 21st Century Themes/Skills

- 9.1.4.A.2 Evaluate available resources that can assist in solving problems.

- 9.1.4.A.5 Apply critical thinking and problem-solving skills in classroom and family settings.
- CRP2. Apply appropriate academic and technical skills.
- CRP4. Communicate clearly and effectively and with reason.
- CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.
- CRP11. Use technology to enhance productivity.

Social-Emotional Learning Competencies

- Self-Awareness
- Self-Management
- Social Awareness
- Relationship Skills
- Responsible Decision-Making

Instructional Plan

Pre-Assessment and Reflection

Pre-Assessment	Modifications (ELL, Special Education, Gifted, At-risk of Failure, 504) and Reflections
5-7 question assessment on the standards below	Individualized as needed

Student Learning Objectives (SLO), Strategies, Formative Assessment, Activities and Resources (add rows as needed)

SLO – WALT We are learning to/that	Student Strategies	Formative Assessment	Activities and Resources	Modifications (ELL, Special Education, Gifted, At-risk of Failure, 504) and Reflections

6.EE.A.1 – WALT write a numerical expression using whole-number exponents **6.EE.A.1 – WALT** evaluate numerical expressions involving whole number exponents	• Recall that an exponent tells you how many times to multiply the BASE by itself. • Use the exponent to write out a multiplication expression to evaluate. • Use underlines to place factors when writing out multiplication expression. • Use "think box" when evaluating.	• Do Now & Exit Tickets • Teacher Observation 4+9^2÷3×2-2 What operation is evaluated first? What operations are evaluated next? What operations are always evaluated last? What is the final answer?	Define what an expression is. Define parts of an exponent expression. Explain how to expand an exponential expression into a multiplication expression and vice versa. Provide notes and direct instruction on write and evaluate numerical expressions involving whole number exponents. Practice: Individual and/or Group Resources: *The Djinni's Offer 6.EE.A.1*	**ELL:** Model and provide examples. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities to expand upon the curriculum. Use higher level questioning techniques in class and on assessments. **SPED/504/at risk:** Individualized as needed

6.EE.A.2a. – WALT write an algebraic expression from a verbal description that includes operations, numbers, and variables **6.EE.A.2b. – WALT** identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient)	• Use colored pencils to identify parts, including numbers, variables, and operations of an expression. • Use word wall to help with definitions: sum, term, product, factor, quotient, coefficient, etc. • Emphasize key words in verbal description to translate into an algebraic expression.	Do Now & Exit Tickets Teacher Observation Write an expression using letters and/or numbers for each problem below. 1. 4 less than the quantity of 8 times n 2. 6 times the sum of y and 11 3. The square of m reduced by 49 4. The quotient when the quantity of 17 plus p is divided by 8	Define what an algebraic expression is. Define parts of an expression: sum, term, product, factor, quotient, coefficient. Provide notes and direct instruction on how to write an algebraic expression from a verbal description. Identify parts of an expression using mathematical terminology. Practice: Individual and/or Group Resources: *Rectangle Perimeter 1. 6.EE.A.2a*	**ELL:** Model and provide examples. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities to expand upon the curriculum. Use higher level questioning techniques in class and on assessments. **SPED/504/at risk:** Individualized as needed

6.EE.A.2b. – WALT view one or more parts of an expression as a single entity	• Recall that coefficients are being multiplied to the variable but still are referred to a term. • Apply previous knowledge of expressions to determine each term. • Differentiate between terms using colored pencils or shapes.	• Do Now & Exit Tickets • Teacher Observation Rewrite the expressions using the division symbol and as a fraction. a. Three divided by 4 b. The quotient of m and 11 c. 4 divided by the sum of h and 7	Define what a single entity is? Redefine terms in an algebraic expression. Provide notes and direct instruction on read expressions, separate and/or combine like terms. Practice: Individual and/or Group Resources: *Writing expressions with variables. 6.EE.A.2b*	**ELL:** Model and provide examples. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities to expand upon the curriculum. Use higher level questioning techniques in class and on assessments. **SPED/504/at risk:** Individualized as needed

6.EE.A.2c. – WALT evaluate expressions, including formulas, for specific values of the variables **6.EE.A.2c. – WALT** perform arithmetic operations, utilizing the Order of Operations, that include whole number exponents and no parentheses	• Recall the teacher analogy: "Substitution" is like a substitute teacher that REPLACES the variable/teacher. • Apply previous knowledge of basic geometric formulas • Recall PEMDAS to help with multi step arithmetic • Use colored pencils to substitute if more than one variable is given.	• Do Now & Exit Tickets • Short constructed response Teacher will put a problem solved wrong on the board. Students will write where the error occurred and then solve the problem correctly.	Review the definitions of algebraic expressions, variables, terms, and evaluate. Review how to solve multi step problems using the Order of Operations Provide notes and direct instruction on how to evaluate expressions given the value of the variables. At times, these expressions/ formulas are multi step and call for the use of Order of Operations. Practice: Individual and/or Group Resources: *Order of operations. 6.EE.A.2c*	**ELL:** Model and provide examples. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities to expand upon the curriculum. Use higher level questioning techniques in class and on assessments. **SPED/504/at risk:** Individualized as needed

6.NS.B.4 – WALT find the greatest common factor of two whole numbers that are less than or equal to 100	• Apply previous knowledge of prime factorization to find the GCF • Use "factor trees" to find all pairs of factors to compare. • Use a multiplication table to find common factors. • Use ladder technique to help find GCF.	The Science Club members are preparing safety kits. They have 45 safety goggles and 60 plastic gloves. a) Find the greatest number of identical kits they can prepare using all of the goggles and gloves. b) How many safety goggles would each kit have? How many plastic gloves will each kit have? • Short Constructed Responses • Do Now & Exit Tickets	Define what a Greatest Common Factor is. Review how to determine factor pairs and how to find prime factorization of a number. Provide notes and direct instruction on how to find the Greatest Common Factor of two whole numbers less than or equal to 100. Practice: Individual and/or Group Resources: *Factors and Common Factors. 6.NS.B.4*	**ELL:** Model and provide examples. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities to expand upon the curriculum. Use higher level questioning techniques in class and on assessments. **SPED/504/at risk:** Individualized as needed

6.NS.B.4 – WALT find the least common multiple of two whole numbers that are less than or equal to 12	• Apply previous knowledge of prime factorization to find the LCM • Use a multiplication table chart to list multiples • Use ladder technique to help find LCM	You are planning to serve hamburgers at the big annual BBQ. Burger patties come 10 to a pack and buns come 8 to a pack. a) What is the least amount of packages of each (patties/buns) that you have to buy to have an equal amount? (no left overs) b) How many packages of burger patties will you buy? How many packages of buns will you buy? • Short Constructed Responses • Do Now & Exit Tickets	Define what a Least Common Multiple is. Provide notes and direct instruction on how to find the Least Common Multiple of two whole numbers less than or equal to 12. Practice: Individual and/or Group Resources: *Multiples and Common Multiples. 6.NS.B.4* *GCF and LCM word problems. 6.NS.B.4*	**ELL:** Model and provide examples. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities to expand upon the curriculum. Use higher level questioning techniques in class and on assessments. **SPED/504/at risk:** Individualized as needed

6.NS.B.4 – WALT use the distributive property to factor the greatest common factor from a sum of two whole numbers in the range 1 to 100	• Apply previous knowledge of algebraic properties • Recall that distributive property has "distribute" in it so the term being multiplied is distributed to each term inside the parentheses. • Use the simplifying fractions technique to rewrite/factor expressions using the distributive property.	The ideal cooking time, in minutes, for a turkey that weighs p pounds is given by the expression $15 + 20p$. Which of the following shows the expression written as the product of the GCF and a sum? F $15p + 20$ G $15(1 + 20p)$ H $5(3 + 20p)$ J $5(3 + 4p)$ Exit tickets and Do Nows	Define what factoring an algebraic expression is. Review how to use the distributive property. Provide notes and direct instruction on how to use the distributive property to factor out the GCF from a sum of two whole numbers in the range 1 to 100. Practice: Individual and/or Group Resources: *Equivalent expression using the distributive property. 6.NS.B4*	**ELL:** Model and provide examples. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities to expand upon the curriculum. Use higher level questioning techniques in class and on assessments. **SPED/504/at risk:** Individualized as needed

6.EE.A.3 – WALT generate equivalent expressions using the properties of operations	• Recall that per means to multiply • Apply previous knowledge of key words like “groups of” to rewrite • Use underlines to help rewrite multiplication expressions into addition expressions.	• Short Constructed Responses • Do Now & Exit Tickets • Teacher Observation Identify which properties state the following: ca = ac a + (b + c) = (a + b) + c o m(n + k) = mn + nk	Define what equivalent expressions are. Provide notes and direct instruction on how to generate equivalent expressions using the properties of operations. Practice: Individual and/or Group Resources: *Equivalent expressions. 6>EE.A.3*	**ELL:** Model and provide examples. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities to expand upon the curriculum. Use higher level questioning techniques in class and on assessments. **SPED/504/at risk:** Individualized as needed

6.EE.A.4 – WALT two expressions are equivalent when they name the same number regardless of which value is substituted into them **6.EE.A.4 – WALT** identify when two expressions are equivalent	• Recall the algebraic properties: commutative & associative properties. • Use substitution to prove that 2 expressions are equivalent. • Use a T chart to evaluate expressions to determine equivalence.	Is 9br the same as 3 x 3 x b x r? • Short Constructed Responses • Do Now & Exit Tickets	Review what equivalent expressions are as well as substitution. Provide notes and direct instruction on how to identify when two expressions are equivalent. Show multiple representations of equivalent expressions using different values of the variables. Practice: Individual and/or Group Resources: *Rectangle Perimeter 2. 6.EE.A.4* *Equivalent Expressions. 6.EE.A.4*	**ELL:** Model and provide examples. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities to expand upon the curriculum. Use higher level questioning techniques in class and on assessments. **SPED/504/at risk:** Individualized as needed

6.EE.B.6 – WALT variables are used to represent unknown numbers, including any number in a specified set **6.EE.B.6 – WALT** write expressions using variables to represent real-world or mathematical situations	• Use colored pencils to represent variables • Define each variable before translating into an equation. • Use starting letter of topic as the variable when possible ie. p = # of people.	Write an equation and then solve: The product of 7 and j is 91. • Do Now & Exit Tickets • Teacher Observation	Recall the definition of variables and how variables are used in expressions that represent real life scenarios. Provide notes and direct instruction on how to write expressions using variables to represent real world situations. Practice: Individual and/or Group Resources: *Model with one-step equations and solve. 6.EE.B.6*	**ELL:** Model and provide examples. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities to expand upon the curriculum. Use higher level questioning techniques in class and on assessments. **SPED/504/at risk:** Individualized as needed

Benchmark Assessment 1

Benchmark Assessment	Modifications (ELL, Special Education, Gifted, At-risk of Failure, 504) and Reflections

Assessment on **6.EE.A.1 6.EE.A.2a 6.EE.A.2b 6.EE.A.2c**	**ELL:** Model and provide examples. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities to expand upon the curriculum. Use higher level questioning techniques in class and on assessments. **SPED/504/at risk:** Individualized as needed

Benchmark Assessment 2

Benchmark Assessment	**Modifications (ELL, Special Education, Gifted, At-risk of Failure, 504) and Reflections**
Assessment on **6.NS.B.4 6.EE.A.3 6.EE.A.4**	**ELL:** Model and provide examples. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities to expand upon the curriculum. Use higher level questioning techniques in class and on assessments. **SPED/504/at risk:** Individualized as needed

Summative Assessments (add rows as needed)

Summative Assessment	**Modifications (ELL, Special Education, Gifted, At-risk of Failure, 504) and Reflections**
End of Module Assessment	**ELL:** Model and provide examples. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities to expand upon the curriculum. Use higher level questioning techniques in class and on assessments. **SPED/504/at risk:** Individualized as needed

Interdisciplinary Connections

Interdisciplinary Connections	**Modifications (ELL, Special Education, Gifted, At-risk of Failure, 504) and Reflections**
• Open Ended/ Extended Constructive Response Questions – Students will be provided with a real life scenario. Students will be asked to analyze and provide detailed explanation on their conclusions. • Find the Mistake -Students will be given 3 responses to a problem. Students are to identify the correct answer & method as well as analyze & describe the errors done in the 2 incorrect responses.	**ELL:** Model and provide examples. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities to expand upon the curriculum. Use higher level questioning techniques in class and on assessments. **SPED/504/at risk:** Individualized as needed

Unit 3 Module B

Unit Title: Mathematics – Expressions, Equations, and Geometry – Unit 3 – Module B

Grade level: Grade 6 **Timeframe: 30 days**

Rationale

Grade 6 – Expressions, Equations, and Geometry – Unit 3

The focus of unit 3 is writing and evaluating both numerical and algebraic expressions. The major conceptual understanding of the unit is equivalence, specifically equivalent expressions. Learners, building on the work of grade 5 using parentheses, brackets, or braces and writing simple numerical expressions, grade 6 learners write and evaluate numerical expressions involving whole-number exponents. Learners extend the grade 4 work of finding all factor pairs for a whole number in the range 1–100 by finding the greatest common factor of two whole numbers and by using the distributive property to express a sum of two whole numbers. They use order of operations to perform arithmetic operations, including those involving whole number exponents.

Grade 6 learners write, read, and evaluate algebraic expressions and apply the properties of operations (introduced in grade 1) to generate equivalent algebraic expressions. A key conceptual understanding of the unit is that solving an equation or inequality as a process of answering the question "which values from a specified set, if any, make the equation or inequality true?". Learners move on to solve real-world and mathematical problems by writing and solving equations.

The unit concludes as learners revisit conceptual understandings from grade 3, namely that area is additive. They find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes. Learners represent three-dimensional figures using nets and use the nets to find the surface area of these figures. They also build upon the volume concepts of grade 5 to find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes.

Essential Questions

Standards

Standards (Taught and Assessed):

6.EE.B.5 Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.
6.EE.B.7 Solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$ and $px = q$ for cases in which p, q and x are all nonnegative rational numbers.
6.EE.C.9 Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. *For example, in a problem involving motion at constant speed, list and graph ordered pairs of distances and times, and write the equation d = 65t to represent the relationship between distance and time.*

Key: Major Cluster Supporting Cluster Additional Cluster

Highlighted Career Ready Practices and 21st Century Themes/Skills

- 9.1.4.A.2 Evaluate available resources that can assist in solving problems.
- 9.1.4.A.5 Apply critical thinking and problem-solving skills in classroom and family settings.
- CRP2. Apply appropriate academic and technical skills.
- CRP4. Communicate clearly and effectively and with reason.
- CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.
- CRP11. Use technology to enhance productivity.

Social-Emotional Learning Competencies

- Self-Awareness
- Self-Management
- Social Awareness
- Relationship Skills
- Responsible Decision-Making

Instructional Plan

Pre-Assessment and Reflection

Pre-Assessment	Modifications (ELL, Special Education, Gifted, At-risk of Failure, 504) and Reflections
5 question assessment from the standards below	Individualized as needed

Student Learning Objectives (SLO), Strategies, Formative Assessment, Activities and Resources (add rows as needed)

SLO – WALT We are learning to/that	Student Strategies	Formative Assessment	Activities and Resources	Modifications (ELL, Special Education, Gifted, At-risk of Failure, 504) and Reflections
6.EE.B.5 – WALT determine if a given number from a specified set is a solution to an equation or an inequality using substitution	• Recall definition of solutions/solution sets. • Recall symbols of inequality. • Use EQUAtion has EQUAL in the word so Equations have = symbol	• Short Constructed Responses • Teacher Observation • Do Now & Exit Tickets • Sample: Determine whether the given value of the variable is a solution. $94 \div s = 26$ for $s = 3$ $v + 79 = 167$ for $v = 88$	Define what a solution is. Define equations and inequalities. Describe the difference between equations and inequalities. Provide notes and direct instruction on determining whether the set is a solution inequality. to either an equation or Practice: Individual and/or Group	**ELL:** Model and provide examples. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities to expand upon the curriculum. Use higher level questioning techniques in class and on assessments. **SPED/504/at risk:**

			Resources: *make use of structure 6.EE.B.5*	Individualized as needed
6.EE.B.7 – WALT write and solve equations of the form $x + p = q$ and $px = q$, where p, q, and x are all nonnegative rational numbers, for real-world and mathematical problems	• Use keywords to help set up equations. • Recall "balancing" technique...whatever you do to one side you do to the other. • Box out the variable that you are solving for to help use inverse operations. • Recall that Addition/Subtraction are inverse operations and Multiplication/Division are inverse operations.	• Teacher Observation • Do Now& Exit Tickets • Sample: Karen buys 4 bouquets of flowers. How many flowers does she buy if each bouquet contains 10, 12, 14, or 16 flowers? Write an equation letting et n equal the amount of flowers in each bouquet and f represent the total number of flowers.	Define what rational numbers are and where they can be found in real word scenarios. Review Inverse Operations. Provide notes and direct instruction on writing and solving equations involving nonnegative rational numbers. Practice: Individual and/or Group Resources: *morning walk. 6.EE.B.7*	**ELL:** Model and provide examples. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities to expand upon the curriculum. Use higher level questioning techniques in class and on assessments. **SPED/504/at risk:** Individualized as needed
6.EE.C.9 – WALT two quantities which change in relationship to one another are expressed as independent and dependent variables	• Recall acronym: XIYD: Xcited It's Your Donut - X variable/Independent & Y variable/Dependent • Use Alphabet to help determine which variable is dependent/independent XY - Dependent/Independent.	• Short Constructed Responses • Teacher Observation • Do Now & Exit Tickets • Sample: Caleb started saving money in a cookie jar. He started with ?. He adds ? to the cookie jar each	Define what independent and dependent variables are. Review how to construct equations	**ELL:** Model and provide examples. Establish a non-verbal cue to redirect students when not on task. Students may

6.EE.C.9 – WALT write an equation using two quantities, an independent and a dependent variable, to represent a real-world problem **6.EE.C.9 – WALT** analyze the relationship between the dependent and independent variables using graphs and tables and relate them to the equation	• Use keywords to help write equations of two quantities. • Recall that X axis is the Independent values and Y axis is the Dependent Values • Use title, labels, scale to help analyze graphs involving 2 variables.	week. Write an equation where ? is the number of weeks Caleb saves his money and is the total amount in dollars in the cookie jar. Determine which variable is the independent variable and which is the dependent variable. Then, graph the total amount in the cookie jar for ? being less than weeks. Short constructed responses Teacher Observation Do Now& Exit Tickets	given a real life scenario. Review how to read graphs and tables using 2 variables. Provide notes and direct instruction on identifying independent and dependent variables and how to write an equation using 2 quantities. Guide students in analyzing independent and dependent relationships using graphs and tables. Practice: Individual and/or Group Resources: *Families of Triangles. 6.EE.C.9*	use a bilingual dictionary. **GT:** Provide enrichment activities to expand upon the curriculum. Use higher level questioning techniques in class and on assessments. **SPED/504/at risk:** Individualized as needed

Benchmark Assessment 1

Benchmark Assessment	**Modifications (ELL, Special Education, Gifted, At-risk of Failure, 504) and Reflections**

Substitution and equation assessment	**ELL:** Model and provide examples. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities to expand upon the curriculum. Use higher level questioning techniques in class and on assessments. **SPED/504/at risk:** Individualized as needed

Benchmark Assessment 2

Benchmark Assessment	Modifications (ELL, Special Education, Gifted, At-risk of Failure, 504) and Reflections
Independent vs dependent, graphing and writing equations assessment	**ELL:** Model and provide examples. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities to expand upon the curriculum. Use higher level questioning techniques in class and on assessments. **SPED/504/at risk:** Individualized as needed

Summative Assessments (add rows as needed)

Summative Assessment	Modifications (ELL, Special Education, Gifted, At-risk of Failure, 504) and Reflections
Unit Assessment	**ELL:** Model and provide examples. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities to expand upon the curriculum. Use higher level questioning techniques in class and on assessments. **SPED/504/at risk:** Individualized as needed

Interdisciplinary Connections

Interdisciplinary Connections	**Modifications (ELL, Special Education, Gifted, At-risk of Failure, 504) and Reflections**
Develop Reading Comprehension Strategies when solving word problems. Write an equation on the board, such as 3n=18. Have students write real world word problems that would use the equation to solve. Connect life events to equations by creating word problems that reflect real world situations.	**ELL:** Model and provide examples. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities to expand upon the curriculum. Use higher level questioning techniques in class and on assessments. **SPED/504/at risk:** Individualized as needed

Unit 4 Module A

Unit Title: Mathematics – Integers in the Number System – Unit 4 – Module A

Grade level: Grade 6 **Timeframe: 20 days**

Rationale

Grade 6 – Integers in the Number System – Unit 4

The major focus of Unit 4 includes positive and negative numbers, and statements of inequality. The key conceptual understanding of the unit is that positive and negative numbers are used together to describe quantities having opposite directions or values. Learners find that, as with fractions, a rational number is a point on the number line. Learners are introduced to absolute value and understand the absolute value of a rational number as its distance from 0 on the number line.

In grade 5, learners defined a coordinate system and graphed points in the first quadrant. Those ideas are extended so that learners represent points on the line and in the plane with negative number coordinates. They solve real-world and mathematical problems by graphing points in all four quadrants, including drawing polygons in the coordinate plane given coordinates for the vertices and using coordinates to find the lengths of sides in special cases.

Essential Questions

What are integers?
What are negative numbers?
How can I use a number line to determine a number's opposite?
In a real life situation, how can I tell if positive or negative numbers are involved when I am figuring out a problem?
What is a rational number?

Standards

Standards (Taught and Assessed):

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.

6.NS.C.6 Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates.

a. Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself, e.g., -(-3) = 3, and that 0 is its own opposite.

6.NS.C.7 Understand ordering and absolute value of rational numbers.

a. Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram. *For example, interpret -3 > -7 as a statement that -3 is located to the right of -7 on a number line oriented from left to right.*

b. Write, interpret, and explain statements of order for rational numbers in real-world contexts. *For example, write -3° C > -7° C to express the fact that -3° C is warmer than -7° C.*

c. 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. *For example, for an account balance of -30 dollars, write |-30| = 30 to describe the size of the debt in dollars*.

d. Distinguish comparisons of absolute value from statements about order. *For example, recognize that an account balance less than -30 dollars represents a debt greater than 30 dollars.*

6.EE.B.8 Write an inequality of the form $x > c$ or $x < c$ to represent a constraint or condition in a real world or mathematical problem. Recognize that inequalities of the form $x > c$ or $x < c$ have infinitely many solutions; represent solutions of such inequalities on number line diagrams.

Key: Major Cluster Supporting Cluster Additional Cluster

Highlighted Career Ready Practices and 21st Century Themes/Skills

- 9.1.4.A.2 Evaluate available resources that can assist in solving problems.
- 9.1.4.A.5 Apply critical thinking and problem-solving skills in classroom and family settings.
- CRP2. Apply appropriate academic and technical skills.
- CRP4. Communicate clearly and effectively and with reason.
- CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.
- CRP11. Use technology to enhance productivity.

Social-Emotional Learning Competencies

- Self-Awareness
- Self-Management
- Social Awareness
- Relationship Skills
- Responsible Decision-Making

Instructional Plan

Pre-Assessment and Reflection

Pre-Assessment	Modifications (ELL, Special Education, Gifted, At-risk of Failure, 504) and Reflections
5 question Pre-assessment on topics below	Individualized as needed

Student Learning Objectives (SLO), Strategies, Formative Assessment, Activities and Resources (add rows as needed)

SLO – WALT We are learning to/that	Student Strategies	Formative Assessment	Activities and Resources	Modifications (ELL, Special Education, Gifted, At-risk of Failure, 504) and Reflections

6.NS.C.5 – WALT the signs of an ordered pair indicate its quadrant location in the coordinate plane **6.NS.C.5 – WALT** ordered pairs that differ only by signs are reflections across one or both axes	• Draw a big "C" on the Coordinate Plane...the direction/motion of the letter C is the order of the quadrants. • Recall that reflection is a mirror image. • Recall that if you reflect over the X axis you change the Y coordinate to its opposite and if you reflect over the Y axis you change the X coordinate to its opposite.	• Teacher Observations • Do Now • Sample: Have students move left and right using ordered pairs. Observe students going in the wrong direction.	Define what quadrants and what reflections are. Provide notes and direct instruction on how to identify what quadrant an ordered pair is located. Illustrate how reflection looks on the coordinate plane. Practice: Individual and/or Group Resources: *Warmer in Miami. 6.NS.C.5* *Mile High. 6.NS.C.5*	**ELL:** Model and provide examples. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities to expand upon the curriculum. Use higher level questioning techniques in class and on assessments. **SPED/504/at risk:** Individualized as needed

6.NS.C.6a. – WALT locate numbers with opposite signs as points on opposite sides of zero on the number line **6.NS.C.6a. – WALT** the opposite of an opposite of a number is the number itself and that zero is its own opposite	• Use number lines and arrowheads to determine opposites. • Recall the Opposite of an opposite refers back to the original number.	• Short constructed responses • Teacher Observation • Do Now & Exit Tickets • Sample: a. Find and label the numbers −2 and −4 on the number line. Explain. b. Find and label the numbers −(−2) and −(−4) on the number line. Explain c. Find and label the number −0 on the number line. Explain.	Define what opposite of a number is and what opposite of an opposite of a number is. Provide notes and direct instruction on locating opposite numbers as well as opposite of an opposite. Practice: Individual and/or Group Resources: *Understanding Integers. 6.NS.C.6a*	**ELL:** Model and provide examples. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities to expand upon the curriculum. Use higher level questioning techniques in class and on assessments. **SPED/504/at risk:** Individualized as needed

6.NS.C.7a. – WALT represent the relative position of two numbers on a number line diagram using inequality statements **6.NS.C.7b. – WALT** write and interpret statements of order using rational numbers to explain real-world problems	• Recall symbols of inequality • Recall when to use Open Circle or Closed Circle when graphing/reading inequalities on a number line. • Use a number line to plot rational numbers and read from left to right to determine least to greatest.	• Short constructed responses • Teacher Observation • Do Now & Exit Tickets • Sample: Write one inequality statement to show the relationship among the following shoe sizes: 10 1/2, 8, and 9. From least to greatest: From greatest to least:	Review inequality statements and ordering rational numbers from least to greatest. Provide notes and direct instruction comparing and ordering rational numbers using a number line. . Practice: Individual and/or Group Resources: *Fractions on a number line. 6.NS.C.7a* *Comparing Temperatures. 6.NS.C.7b*	**ELL:** Model and provide examples. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities to expand upon the curriculum. Use higher level questioning techniques in class and on assessments. **SPED/504/at risk:** Individualized as needed

6.NS.C.7c. – WALT absolute value of a rational number is its distance from zero on the number line **6.NS.C.7c. – WALT** express the magnitude of a positive or negative quantity in a real-world situation using absolute value	• Use arrowheads and colored pencils to show the distance from each integer to zero to help determine the absolute value. • Recall that absolute value is a distance so that it will ALWAYS be positive because you cannot count a negative integer.	• Teacher Observation • Do Now & Exit Tickets • Sample: Julia used absolute value to find the distance between 0 and 6 on a number line. She then wrote a similar statement to represent the distance between 0 and -6. Below is her work. Is it correct? Explain. **|6|=6 and |-6|= -6** Which has the greater magnitude? (Use absolute value to defend your answers.) 33 dollars and -52 dollars -34 feet and 23 feet -12 pounds and 14 pounds	Define what absolute value means. Define the magnitude of a positive or negative quantity. Provide notes and direct instruction finding the absolute value of a rational number as well as expressing the magnitude of positive and negative integers in a real world scenario. Practice: Individual and/or Group Resources: *Understanding absolute value. 6.NS.C.7c*	**ELL:** Model and provide examples. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities to expand upon the curriculum. Use higher level questioning techniques in class and on assessments. **SPED/504/at risk:** Individualized as needed

6.NS.C.7d. – WALT statements about order are used to distinguish comparisons of absolute value	• Recall how to use a number to order rational numbers • Use a number line and loops to find the absolute value or distance to zero of a quantity.	• Short constructed responses • Teacher Observation • Do Now & Exit Tickets • Sample: Teacher will post various rational numbers and have the students list whether it's a negative or positive rational number and its corresponding absolute value.	Provide notes and direct instruction on how to create and read statements to compare absolute values. Practice: Individual and/or Group Resources: *Positive and negative numbers. 6.NS.C.7d*	**ELL:** Model and provide examples. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities to expand upon the curriculum. Use higher level questioning techniques in class and on assessments. **SPED/504/at risk:** Individualized as needed

6.EE.B.8 – WALT represent a constraint or condition in a real-world or mathematical problem by writing an inequality in the form $x > c$ or $x < c$ **6.EE.B.8 – WALT** inequalities of the form $x > c$ or $x < c$ have infinitely many solutions **6.EE.B.8 – WALT** represent the infinitely many solutions to the inequalities $x > c$ or $x < c$ on a number line diagram	• Recall symbols of inequality • Use keywords to help translate inequality statements • Recall that solution sets have restricted infinite solutions and a solution is ONLY 1 value. • Use graphing simple inequalities Checklist: Variable First, Open or Closed, Shade Left or Right.	• Short constructed responses • Teacher Observation • Do Now & Exit Tickets • Sample: Translate and graph the following simple inequalities. No more than 18 students got first honor roll. Fewer than 85 members attended the meeting. There were at least 41 parents in attendance. The height of the tree is above 18 feet.	Define what a solution set is vs a solution. Review symbols of inequalities and key words associated with them when translating. Provide notes and direct instruction on representing a constraint in a real world problem. Emphasize that inequality solution sets have restricted infinitely many solutions that can be represented in a number line diagram. Practice: Individual and/or Group Resources: *Fishing adventures 1. 6.EE.B.8*	**ELL:** Model and provide examples. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities to expand upon the curriculum. Use higher level questioning techniques in class and on assessments. **SPED/504/at risk:** Individualized as needed

Benchmark Assessment 1

Benchmark Assessment	**Modifications (ELL, Special Education, Gifted, At-risk of Failure, 504) and Reflections**

Assessment on 6.NS.C.5,6.NS.C.6a, 6.NS.C.7a, 6.NS.C.7b	**ELL:** Model and provide examples. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities to expand upon the curriculum. Use higher level questioning techniques in class and on assessments. **SPED/504/at risk:** Individualized as needed

Benchmark Assessment 2

Benchmark Assessment	**Modifications (ELL, Special Education, Gifted, At-risk of Failure, 504) and Reflections**
Assessment on 6.NS.C.7c, 6.NS.C.7d, 6.EE.B.8	**ELL:** Model and provide examples. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities to expand upon the curriculum. Use higher level questioning techniques in class and on assessments. **SPED/504/at risk:** Individualized as needed

Summative Assessments (add rows as needed)

Summative Assessment	**Modifications (ELL, Special Education, Gifted, At-risk of Failure, 504) and Reflections**
End of Unit Assessment	**ELL:** Model and provide examples. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities to expand upon the curriculum. Use higher level questioning techniques in class and on assessments. **SPED/504/at risk:** Individualized as needed

Interdisciplinary Connections

Interdisciplinary Connections	**Modifications (ELL, Special Education, Gifted, At-risk of Failure, 504) and Reflections**
Instructional connections through working with authentic scenarios, teachers should help students see how expressions can represent situations in life and will reflect their specific grade-level coursework in other content areas, such as English language arts, reading, science, social studies, world languages, physical education, and fine arts, among others.	**ELL:** Model and provide examples. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities to expand upon the curriculum. Use higher level questioning techniques in class and on assessments. **SPED/504/at risk:** Individualized as needed

Unit 4 Module B

Unit Title: Mathematics – Integers in the Number System – Unit 4 – Module B

Grade level: Grade 6 **Timeframe: 20 days**

Rationale

Grade 6 – Integers in the Number System – Unit 4

The major focus of Unit 4 includes positive and negative numbers, and statements of inequality. The key conceptual understanding of the unit is that positive and negative numbers are used together to describe quantities having opposite directions or values. Learners find that, as with fractions, a rational number is a point on the number line. Learners are introduced to absolute value and understand the absolute value of a rational number as its distance from 0 on the number line.

In grade 5, learners defined a coordinate system and graphed points in the first quadrant. Those ideas are extended so that learners represent points on the line and in the plane with negative number coordinates. They solve real-world and mathematical problems by graphing points in all four quadrants, including drawing polygons in the coordinate plane given coordinates for the vertices and using coordinates to find the lengths of sides in special cases.

Essential Questions

What is a rational number?
What is a coordinate plane?
How can I find, identify or place a point on the coordinate plane?
What is a quadrant on the coordinate plane?

Standards

Standards (Taught and Assessed):

6.NS.C.6 Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates.

c. Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane.

6.NS.C.6 Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates.

b. Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane; recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes.

6.NS.C.8 Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.

6.G.A.3 Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems.

Key: Major Cluster Supporting Cluster Additional Cluster

Highlighted Career Ready Practices and 21st Century Themes/Skills

- 9.1.4.A.2 Evaluate available resources that can assist in solving problems.
- 9.1.4.A.5 Apply critical thinking and problem-solving skills in classroom and family settings.
- CRP2. Apply appropriate academic and technical skills.
- CRP4. Communicate clearly and effectively and with reason.
- CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.
- CRP11. Use technology to enhance productivity.

Social-Emotional Learning Competencies

- Self-Awareness
- Self-Management
- Social Awareness
- Relationship Skills
- Responsible Decision-Making

Instructional Plan

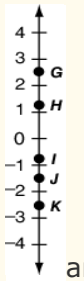
Pre-Assessment and Reflection

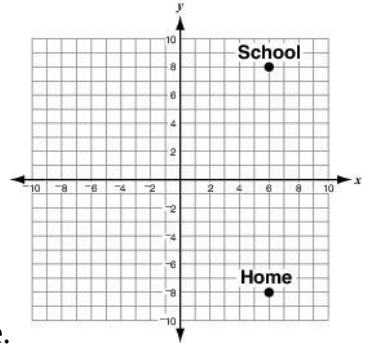
Pre-Assessment	Modifications (ELL, Special Education, Gifted, At-risk of Failure, 504) and Reflections

5-7 question assessment using the standards below.	Individualized as needed

Student Learning Objectives (SLO), Strategies, Formative Assessment, Activities and Resources (add rows as needed)

SLO – WALT **We are learning to/that**	**Student Strategies**	**Formative Assessment**	**Activities and Resources**	**Modifications (ELL, Special Education, Gifted, At-risk of Failure, 504) and Reflections**

6.NS.C.6c – WALT find and position integers and other rational numbers on a horizontal or vertical number line **6.NS.C.6c – WALT** find and plot pairs of integers nd other rational numbers on the coordinate plane **6.NS.C.6b – WALT** the signs of an ordered pair indicate its quadrant location in the coordinate plane	• Apply previous knowledge of number lines plot rational numbers. • Apply previous knowledge of ordered pairs and plotting on the coordinate plane. • Use "walk" across the X axis and go up and down the Y axis "elevator to help plot ordered pairs. • Draw in a large "C" in the coordinate to help determine quadrant order.	• Short Constructed Responses • Teacher Observation • Do Now & Exit Tickets • Sample: Which points on this vertical number line best represent the locations of  2.5 and -1.5	Define what rational numbers are. Provide notes and direct instruction on how to plot rational numbers on number lines and how to plot ordered pairs on the coordinate plane. Review how to identify quadrant location using symbols +/- of the order pair. Practice: Individual and/or Group Resources: *Coordinate plane problems in all four quadrants. 6.NS.C.6c*	**ELL:** Model and provide examples. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities to expand upon the curriculum. Use higher level questioning techniques in class and on assessments. **SPED/504/at risk:** Individualized as needed

6.NS.C.6b – WALT ordered pairs that differ only by signs are reflections across one or both axes **6.NS.C.8 – WALT** use coordinates and absolute value to find distances between points, with the same first coordinates or same second coordinates, in the four quadrants to solve real-world and mathematical problems	• Recall that reflection is like a mirror image • Use arrowheads/loops to "count" distance on the coordinate. • Remember: If the ordered pairs are on the same side of the axis then you subtract the absolute values of the corresponding coordinate, if the ordered pairs are on opposite sides of the axis then you add the absolute values of the corresponding coordinate.	• Teacher Observation • Do Now & Exit Tickets • Sample: Find the distance between school and home. 	Define what a reflection on the coordinate plane is. Review how to find absolute value. Provide notes and direct instruction on how to interpret/read ordered pairs that reflect each other as well as finding distance on the coordinate plane using absolute value. Provide a visual for distance on the coordinate plane. Practice: Individual and/or Group Resources: *Nome, Alska. 6.NS.C8*	**ELL:** Model and provide examples. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities to expand upon the curriculum. Use higher level questioning techniques in class and on assessments. **SPED/504/at risk:** Individualized as needed

6.G.A.3 – WALT draw polygons in the coordinate plane given coordinates of the vertices **6.G.A.3 – WALT** find the length of a side of a polygon using coordinates with the same first coordinate or the same second coordinate **6.G.A.3 – WALT** apply the technique of finding the length of a side of a polygon to solve real-world and mathematical problems in the coordinate plane	• Recall how to plot points on the coordinate plane. • Use ruler to connect points. • Remember to label vertices. • Count units in the coordinate to find distances of line segments • Draw out/Plot the figure being asked about. • Recall basic polygon definitions and proportions. ie. a rectangle has 4 right angles and opposite sides congruent. • Use keywords/colored pencils to help translate real life situations.	• Short Constructed Responses • Teacher Observation • Do Now & Exit Tickets • Sample: Point *A* has coordinates (−4, −2), Point *B* has coordinates (1, −2) and Point *C* has coordinates of (1, 5). Your teacher asks you to plot point D, so that quadrilateral ABCD results in a rectangle. What is the coordinate of Point D?	Define what a polygon and vertices of a polygon are. Review properties of basic polygons. Provide notes and direct instruction on how to draw and find missing ordered pairs/side lengths in a polygon given sufficient information. Provide a visual by plotting the polygon in question on a coordinate plane to help see the missing point. Practice: Individual and/or Group Resources: *polygons in coordinate plane. 6.G.A.3*	**ELL:** Model and provide examples. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities to expand upon the curriculum. Use higher level questioning techniques in class and on assessments. **SPED/504/at risk:** Individualized as needed

Benchmark Assessment 1

Benchmark Assessment	Modifications (ELL, Special Education, Gifted, At-risk of Failure, 504) and Reflections
Assessment on 6.NS.C.6b, 6.NS.C.6c, 6.NS.C.8	**ELL:** Model and provide examples. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities to expand upon the curriculum. Use higher level questioning techniques in class and on assessments. **SPED/504/at risk:** Individualized as needed

Benchmark Assessment 2

Benchmark Assessment	Modifications (ELL, Special Education, Gifted, At-risk of Failure, 504) and Reflections
Assessment on 6.G.A.3	**ELL:** Model and provide examples. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities to expand upon the curriculum. Use higher level questioning techniques in class and on assessments. **SPED/504/at risk:** Individualized as needed

Summative Assessments (add rows as needed)

Summative Assessment	Modifications (ELL, Special Education, Gifted, At-risk of Failure, 504) and Reflections
End of Module assessment	**ELL:** Model and provide examples. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities to expand upon the curriculum. Use higher level questioning techniques in class and on assessments.

	SPED/504/at risk: Individualized as needed

Interdisciplinary Connections

Interdisciplinary Connections	**Modifications (ELL, Special Education, Gifted, At-risk of Failure, 504) and Reflections**
• Open Ended/ Extended Constructive Response Questions – Students will be provided with a real life scenario. Students will be asked to analyze and provide detailed explanation on their conclusions. • In SS and Science, students will use temperatures of different locations and find the distance in the temperatures	**ELL:** Model and provide examples. Establish a non-verbal cue to redirect students when not on task. Students may use a bilingual dictionary. **GT:** Provide enrichment activities to expand upon the curriculum. Use higher level questioning techniques in class and on assessments. **SPED/504/at risk:** Individualized as needed