Curriculum Committee

Thursday, January 11, 2018 4:30 PM
Curriculum Committee, L.P. Wilson Community Center, Room 17, 601 Matianuck Avenue, Windsor, CT 06095

1. **Call to Order, Pledge to the Flag and Moment of Silence**
2. **Audience to Visitors**
3. **Consumer Math: Pre-Algebra**
4. **Grade 3 Humanities**
5. **Grade 4 Humanities**
6. **Grade 5 Humanities**
7. **Adjournment**

Consumer Math-Pre-Algebra (High School Special Education)

Curriculum Map	Unit 1- IEP Goal and Objectives/ Intervention	Unit 2- Review Place Value, Rounding, Fractions & Decimals	Unit 3: Algebraic Expressions & Integers	Unit 4- Understanding Word Problems	Unit 5 - Solving One Step Equations and Inequalities	Unit 6- Solving Multi-Step Equations and Inequalities	Unit 7 - Graphing	Unit 8- Ratios, Proportions & Percents	Unit 9- Probability
Number of Days	On going throughout the year (1 class period monthly at least)	6 weeks	4 weeks	3 weeks	5 weeks	5 weeks	4 weeks	4 weeks	3 weeks
Standards (Ex. CCSS, C3, NGSS, etc.)	Standards will vary based on students individual area of need.	CCSS.5.NF.1 CCSS.5.NF.B.3 CCSS.5.NBT.B.7 CCSS.6.NS.C.5 CCSS.4.NBT.3 CCSS.5.NBT.A.1 CCSS.4.NBTA.1 CCSS.4.NBT.A.2 CCSS.NBT.A.4	CCSS-7.N.S. A.3 CCSS-6.EE.A.2.C' CCSS-3.OA.B.5	CCSS.4.OA.A.2	CCSS.7.EE.A.1 CCSS.7.EE.B.3 CCSS.7.EE.B.4.A CCSS.6.EE.B.6	CCSS.7.EE.A.1 CCSS.7.EE.B.3 CCSS.7.EE.B.4.A CCSS.6.EE.B.5 CCSS.8.EE.C.7.B CCSS.8.EEC.8.C	CCSS- 4.G.A.1 CCSS 5.G.A.1	CCSS-6.RP.A.1 CCSS..6.RP.A.3 CCSS-6.RP.A.3c	CCSS-7.SP.5 CCSS-7.SP.6 CCSS-7.SP.7a,b CCSS-7.SP.8 a-c
Essential Questions	How can I improve my areas of weakness as they relate to mathematics?	How do I demonstrate the relationship between numbers, quantities and place value for whole numbers up to 1,000 and numbers as low as the thousandths place?	How do we apply and relate rational numbers to real world situations? How do we use order of operations and the distributive property to evaluate expressions?	How do we recognize which operation, or operations to use when solving word problems? How do we turn real world examples into mathematical equations and expressions?	What is variable and what does it represent in an equation/inequality? What is the difference between an equation and an inequality? How do inverse operations	How do I use what I know about one-step equations/inequalities to solve multi-step equations?	How do we use a coordinate plane to represent data?	How can numbers be compared and contrasted? When and why do I use proportional comparisons? How do we use percents in real world situations?	What makes a situation fair or unfair? When will the theoretical and experimental probabilities be the same? How can you represent a situation to find all possible

		What are the rules of rounding and how do I apply them? How do we add, subtract, multiply and divide fractions using different strategies? How do we add, subtract, multiply and divide decimals? What happens when you multiply and divide by fractions and decimals?			help me solve one -step equations and inequalities. How do I use a one-step equations/ inequalities to solve a real world problem?				outcomes? Does the probability of one event affect the probability of another? How?
Significant Task 1:	Small group/ individual direct instruction based on individual needs of students. -Group students based on common areas of need to provide instruction. -Provide independent work for each student based on IEP goals and objectives.	Whole group instruction and modeling of the different methods of modeling place value. (place value tiles, expanded form, place value chart)- guided notes/ examples. Students will rotate through stations practicing the different methods to build place value understanding.	Students will recall the integer rules as a whole class. Teacher will review through guided notes Integers with class with a focus on negative numbers. To refresh and practice the prior learning students will rotate through stations (each station is a different	Student learning walk to brainstorm all of the various terms that correlate with basic math operations. Whole group review of the terms associated with the different operations/ guided notes. Teach the students the BUCKS Method of	Exploration activity to assess students knowledge of variables. Individual practice on identifying variable. Working with a partner, identify the unknown in the problem and write it as a variable. Come together as a whole group to	Whole group review on how to solve one-step equations/Ine qualities using inverse operations. Individual practice Web resources such as IXL, Kahn Academy and Kahoots.	Exploration activity to assess students prior knowledge of graphing and ordered pairs. Whole group instruction/ review on graphing and ordered pairs -Identifying the two-axis in a coordinate plane -Identifying which portions of the graph are positive and which are negative	Conduct a class wide survey and record the results on the board to create real life ratios. Students will review prior knowledge of ratios by brainstorming: What is a ratio? How are ratios used in real life situations? In groups, students will each come up with a number	In small groups, student will play probability games. Students will develop the strategies of using an organized list, building tables and making tree diagrams to answer questions. They will use these models to determine theoretical probabilities and to make predictions

		The class will come back together to share about the different methods. Teacher can clear up misconceptions. -What worked best? What did each method show us? -What was confusing to them? -Independent practice answering place value questions. --What do different places values represent? --Comparing and contrasting different values. Teacher lead small group re-teaching for certain students.	operation with rational numbers and integers)	problem solving. Guided practice on critical reading strategies associate with reading word problems using the BUCKS method.. -What is the problem asking you to solve?/ How do you know? -Underline key words. Omit extraneous information. -How do know the information is extraneous? -Partner activity practicing analyzing and discussing word problems using the BUCKS method. Classwide sharing of partner work and what they learned.	discuss and review what they learned with their partners.		-What does each number in an ordered pair represent.	of real world ratios to share with the class. Individual practice/stations . Stations may include: Matching given situation with the correct ratio Given a statement, writing the correct ratio Web based programs such as Kahoot, IXL Whole class discussion- define a ratio in guided notes.	about future events. Full class discussion should focus on the various strategies used by the groups or pairs. Class discussions should include: -Describe likelihood of an event using fractions, decimals and percents. -Make predictions about future events based on data. -Brainstorm reasons for any differences between experimental and theoretical probability
Significant Task 2:		Whole group discussion and guided notes to review the rules of rounding and the number line method of	Students will review prior knowledge of order of operations through brainstorming.	In stations, students will read and analyze word problems and identify the real world math	In partners, students will be given sets of scenarios that are similar, but one represents an equation	Whole group instruction/modeling on how to solve multi-step equations/inequalities.	In adult led small groups, students will use whiteboards to practice graphing coordinate	In small groups students will explore the relationship between a ratio and a proportion.(a	Teacher will model different methods for solving and representing theoretical probability

		rounding. Individual practice rounding numbers to different place values.	Teacher will review order of operations with students (guided notes) In small groups, modeling will be provided on how to work through order of operation problems in a systematic manner. Independent practice performing order of operations through BINGO game.	associate with them. Stations may include: -Matching equations with word problems task cards -Writing word problems based on given equations -Sorting expressions with their operations -Kahoot or other web based programs to review terms associated with word problems	and one an inequality. The students will try to determine what the difference between the two scenarios is. Group discussion on what the students came up with in their partners . Direct instruction and guided notes the difference between an equation and an inequality.	In their guided notebooks, provided multiple teacher lead examples for multi-step highlighting what to do after the first step is complete. Individual practice using previously learned rules for solving equations/inequalities..	points as well as identifying the order pair associated with a point on a graph.	proportion is two ratios that are equal to each other) and practice solving different real world examples of proportions. As a class, the student will discuss what methods they used to solve the proportions.	event. (formula, tree diagram, area model) Class will meet as a whole to discuss results, share different methods and Brainstorm reasons for any differences between experimental and theoretical probability Students will use guided notes and understanding from the lessons to create their own probability game in pairs.
Significant Task 3:		Before we start performing operations a group review about what a fraction is and what are the different parts of fractions? Whole class instruction and guided notes on the rules of adding and subtracting fractions.	Review distributive property and how to properly apply it within an equations (guided notes). Independent practice applying the distributive property with equations.		Review what an inverse operation is. Have students practice independently writing inverser operations of numbers. Introduce the process of solving one-step equations and inequalities using the	Students will be able to use the information from a word problem/real life situation and create a multi-step equation. Working with a partner, students will read word problems/real life situations and create a	Whole group instruction on the equation of a line (y=mx+b). -What do m and b stand for in the equation. -What do x and y stand for in the equation. Independent practice identifying slope and	Review guided notes of ratios and how they relate to percents. Discussion on what is a percent? How do I convert a percent to a ratio, proportion and decimal? Where do I use percents in the real world?	

		Making sure to include how to simplify fractions on the TI-30 calculator. Practice skills as a whole class before moving into small group/ individual practice adding and subtracting fractions.			Inverse operation. In their guided notebooks, provided multiple teacher lead examples and reminders, such as: -What you do to one side of the equal sign you have to do to the other -Switch signs on inequalities when multiplying or dividing by a negative -What the four different inequality signs mean. Independent practice solving one step equations and inequalities,..	problem from the information given. Write examples in their notebooks on how to change a word problem into a multi-step equation.	y-intercept of an equation. Review independent work on identifying slope and y-intercept. Whole group instruction on graphing a line based on an equation, once you have identified slope and y-intercept. -teach- slope (rise over run, $\frac{y}{x}$) -Teach how to plot y-intercept -Recognize that y-intercept is an order pair Using stations, practice graphing lines given an equation.	Independent practice converting percents to ratios, and decimals.	
Significant Task 4		Whole class instruction and guided notes on the rules of multiplying and dividing fractions. Review simplifying fractions on a calculator. Practice skills as a whole			Review strategies of solving word problems and have students lead the review of the steps to solving one step equations and inequalities. Teacher modeling on how to turn a		Whole group instruction on how to identify slope and y-intercept from a line on a coordinate plane. -Identify that the y-intercept is the starting point Identify that the y-intercept is the point where the line	Students will investigate the uses of percent through several real-world contexts in small groups. Students will create an "order" from a restaurant	

		class before moving into small group/ individual practice adding and subtracting fractions. Have students find recipes (with fractions) and manipulate them to increase or decrease the size of the serving.			word problem into an equation or inequality with a special emphasis on how you know the difference/ how you determine the variable. Station work on turning real world scenarios into word problems. Stations may include: -Matching scenarios with equations -Writing scenarios based on given equations -Reading word problems and determine the equation. .		crosses the y-axis -Recognize that slope is how you move from one point to the next using rise over run. - Find slope given the line Small group practice on plugging the information found on the graph (slope/ y-intercept) into the equation y=mx+b Independent practice writing equations from a line on a coordinate plane.	menu and calculate tax, tip and discount. Full class discussion will focus on the comparison of different methods of calculating percents, and the reasoning behind each method.	
Significance Task 5		Exploration activity on what decimals represent. Group instruction/ Guided notes on addition, subtraction, multiplication and division of decimals. Practice in stations using a calculator to							

		perform the four operations using decimals.							

Grade Level Assessment Overview	Unit 1: EP Goal and Objectives/ Intervention	Unit 2-Review Fractions, Decimals, Place Value & Rounding	Unit 3- Algebraic Expressions & Integers	Unit 4 -Word Problems	Unit 5-Solving One Step Equations and Inequalities	Unit 6-Solving Multi-Step Equations and Inequalities	Unit 7- Graphing	Unit 8- Ratios, Proportions & Percents	Unit 9- Probability
Writing & Creating (Summary of Tasks)	Each teacher will create a method to supply students with supplementary work in relation to their personal areas of weakness (folders, binders, digitally).	Each teacher will create a method of guided notes.	guided notes.	Create stations based on word problems. (Include supplementary web based programs)	Guided notes	Guided notes	Guided notes	Guided notes	Create Probability games.
Unit Assessments	The progress students make on their individual goals will be monitored by the teacher and reflected in their quarterly IEP progress reports.	-Pre-unit assessment -Cumulative post unit assessment	-Pre-unit assessment -Cumulative post unit assessment	Pre-unit assessment -Cumulative post unit assessment	-Pre-unit assessment -Cumulative post unit assessment	-Pre-unit assessment -Cumulative post unit assessment	Pre-unit assessment -Cumulative post unit assessment	-Pre-unit assessment -Cumulative post unit assessment	-Cumulative post unit assessment
District	IEP progress	STAR MATH	STAR MATH	STAR MATH	STAR MATH	STAR MATH	STAR MATH	STAR MATH	STAR MATH

Assessments	updates								

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Windsor Public Schools
Curriculum Map
Consumer Math: Pre-Algebra Unit 1
BOE Approved Date:

Grade Level: 9-12 Special Education

Course Name: Consumer Math: Pre-Algebra

Name of Unit 1: IEP Goals and Objectives/ Intervention

Length of the Unit: On going throughout the year (at least one class period monthly)

Purpose of the Unit: In this unit students will work on personal IEP goals and objectives to fill in gaps in their own learning as they pertain to mathematics. They will receive direct instruction in small groups of on an individualized basis.

Standards Addressed In The Unit

- Standards in this unit will vary based on students personal IEP goals and objectives.

Big Ideas:

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Essential Questions:

- How can I improve my areas of weakness as they relate to mathematics?

Students will Know:

- How to read and interpret their IEP.

Students will be able to:

- Identify their own weakness in math
- Identify their own goals and objectives in math

Key Vocabulary in this unit:
IEP Goal IEP Objective

Significant Task 1

Description of Task: Students will receive direct individualized or small group instruction based on their own area of need as measured by their IEP goals and objectives.

Teacher Preparation:

- Create a method to supply students with supplementary work in relation to their personal areas of weakness (folders, binders, digitally)

Prior Student Knowledge:

- What is an IEP goal/ Objective?
- What are my weaknesses in math?

Possible Misconceptions:

- Having an IEP means that you can't learn as well as other students.

Materials Needed:

- Vary depending on lesson/ concept being taught.

ENGAGE: Opening Activity

- Students will read their IEP goals and objectives related to math and will be able to state what those areas of weakness are.

EXPLORE: Lesson Description

- Teacher provides direction instruction in small groups based on common IEP goals.
- Teacher will also provided individual practice for each student will work on independently.

ELABORATE:

- Students will be able to explain their own progress on their IEP goals and objectives based on the independent work they have complete.
- Students will state what strategies have been useful to them.

Timeline: Ongoing
Key vocabulary: IEP goal, IEP objective
Resources:

- Math IXL account

Common Assessments:

- STAR MATH ASSESSMENT
- IEP Progress Reports

Teacher Notes:

- Teacher will group students according to areas of weakness and do rotating min-lessons.
- Teacher will provide individual assistance and support while students work on math goals and objectives.

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Windsor Public Schools
Curriculum Map
Consumer Math: Pre-Algebra: Unit 2
Review Place Value ,Rounding,Fractions & Decimals

Grade Level: 9-12 Special Education

Course Name: Consumer Math: Pre-Algebra

Name of Unit 2: Review Fractions, Decimals, Place Value & Rounding

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Length of the Unit: 6 weeks

Purpose of the Unit: In this unit students will build upon previous knowledge and review the concepts surrounding fractions, decimals, place value and rounding.

Standards Addressed In The Unit:

- **CCSS.5.NF.A.1** - Fractions - add and subtract numbers with unlike denominators
- **CCSS.5.NF.B.3** - Interpret a fraction as the division of the numerator by the denominator
- **CCSS.5.NBT.B.7**- Add subtract, multiply and divide decimals to hundredths place
- **CCSS.6.NS.C.5** - Understand that positive and negative numbers are used to describe quantities with opposite values
- **CCSS.4.NBT.A.3**- Generalize place value knowledge for multi-digit numbers
- **CCSS.5.NBT.A.1**-Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.
- **CCSS.4.NBT.A.2**-Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.
- **CCSS.NBT.A.4** - Use place value to round whole numbers and decimals to any place value.

Big Ideas:

- Identifying place value using strategies
- Rounding using different strategies
- Operations involving fractions
- Operations involving decimals

Essential Questions:

- How do I demonstrate the relationship between numbers, quantities and place value for

whole numbers up to 1,000 and numbers as low as the thousandths place?
- What are the rules of rounding and how do I apply them?
- How do we add, subtract, multiply and divide fractions using different strategies?
- How do we add, subtract, multiply and divide decimals?
- What happens when you multiply and divide by fractions and decimals?

Students will Know:
- The value of each place value through the thousands place and as low as the thousandths
- The rules of rounding and how to apply them
- Rules of multiplying,dividing, adding and subtracting fractions.
- How to add, subtract, multiply and divide decimals
- How to reduce fractions on a calculator

Students will be able to:
- Identify the values of numbers through the thousands place and as low as the thousandths place.
- Reduce a fraction on the calculator
- Apply the rules of rounding to round numbers through the thousandths place and as low as the thousandths.
- Add, subtract, multiply decimals and round to an identified place value.
- Apply the rules of adding and subtracting fractions to adding and subtract fractions and write the answer in simplest form.
- Apply the rules of multiplying and dividing fractions to adding and subtract fractions and write the answer in simplest form

Key Vocabulary in this unit:

- numerator
- denominator
- reciprocal
- place value
- ones
- tens
- hundreds
- thousands
- tenths
- hundredths
- thousandths
- greater than
- less than
- equal to

Significant Task 1:

Description of Task: Students will use different strategies to be able to identify place value of a number.
Lesson 1: Identifying Place Value

Teacher Preparation:
- Create stations on place value: place value tiles, expanded form, place value charts.
- Create independent work on place value strategies

Prior Student Knowledge:
- Understanding that different places in a number represent different values
- Understanding that decimals are a part of a whole.

Possible Misconceptions:
- Identifying incorrect place values

Materials Needed:
- Station work
- Independent practice activities

Opening Activity
- Give students a variety of decimals, asking them to identify the place value that is underlined and how much that value represents.
  Example: 7<u>2</u>1 <u>1</u>08 1.29 1.1<u>9</u>6

Lesson Description
- Teacher will model different strategies for modeling/ identifying place value.
- Students will break into small groups and rotate through the stations on the different methods of place value (place value chart, expanded form, place value tiles etc.) to build understanding of place value.
- Students share strategies and understanding of each method they worked on.
  - What worked best?
  - What did each method show us?
  - What was confusing?
- Whole class discussion on what each group learned and understood.

Independent Practice
- Students will work independently practicing all of the strategies learned and answering questions based on place value.
  - What do different places values represent?
  - Identify the underlined place value
  - Comparing and contrasting different values.
- At this time, teacher will take small groups of students to reteach or clarify any misconceptions.

Timeline: 2 days
Key vocabulary: Ones, tens, hundreds, thousands, tenths, hundredths, thousandths, greater than, less

than, equal to

Resources: Math IXL

Significant Task 2:

Description of Task: Rounding whole numbers and decimals to a given place value

Lesson 1: Understanding Rules of Rounding and Practice

Teacher Preparation:
- Preparation of guided notes/practice worksheets

Prior Student Knowledge:
- Understanding the place value of numbers

Possible Misconceptions:
- Students may round to the wrong place value
- Students may not use rules of rounding correctly and come up with an incorrect answers

Materials Needed:
- Place value charts
- Guided Notes
- Number lines

Opening Activity :
- Using a place value chart and a number line, ask students to correctly round numbers to the given place value (Using guided notes)
  Example - round to the nearest 10's, 100's, tenths, hundredths etc.

Lesson Description
- Teacher will model how to round using rules of rounding and using the number line
- In small groups,using their guided practice notes, students will practice how to round using rules of rounding and the number line
- As a whole group, students will share their understanding of how to round numbers and which strategies worked best for them:
  Which method of rounding worked best for you?
  Why was that method easier?
  What is still confusing about rounding?.
- Whole group review of rounding and what the students have learned.

Independent Practice
- Using their guided notes, students will independently round numbers to given place values.
  Why do you have to know place value in order to round numbers?
  How do I apply the rules of rounding?
  How can rounding help in real life situations?
- Teacher will reteach/clarify to any students still having difficulty with this topic.

Timeline: 3 days
Key vocabulary: place value, round up, estimate, digits
Supporting vocabulary: about, nearest reasonable
Resources: Math IXL, Kahn Academy

Significant Task 3

Description of Task: Students will learn how to add and subtract fractions independently with the use of a calculator.

Lesson 1: Adding and Subtracting Fractions

Teacher Preparation:

- Create guided notes for adding and subtracting fractions
- Whole class examples
- Examples for small groups/ individual practice

Prior Student Knowledge:

- Fractions are a part of a whole

Possible Misconceptions:

- Which is the numerator/ denominator?
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Materials Needed:

- Guided notes on adding and subtracting fractions
- TI-30 Calculator (or comparable calculator that can simplify fractions)
- Whiteboards, markers & erasers

Opening Activity

- Group discussion on what a fraction is, what are its parts (numerator & denominator)
- What do the numerator and denominator represent?
- What are some places we use fractions in real life?

Lesson Description

- Whole group instruction and guided notes on the steps of adding and subtracting fractions using a calculator with multiple examples done by the teacher with student help and prompting.
- Specific practice and modeling on using the calculator:
    - How do we type fractions in the calculator?
    - How do we simplify fractions in the calculator?
    - What if when I simplify I get the same answer?
- Whole class practice adding and subtracting fractions using whiteboards and calculator to check each student's understanding.
- Independent practice/ re-teaching
    - Students that are ready to move on will practice independently on the skill while teacher pulls small groups for re-teaching or further assistance.

Timeline: 2 days
Key vocabulary: Fraction, numerator, denominator

Significant Task 4:

Description of Task: Students will learn how to independently multiply and divide fractions using the calculator and will apply this knowledge to real world situations.

Lesson 1:Multiplying and Dividing Fractions

Teacher Preparation:
- Guided notes/ examples on multiplying fractions
- Independent practice examples
- Guidelines for recipe project

Prior Student Knowledge:
- What are the parts of a fraction/ what do they represent?
- What is a reciprocal ?

Possible Misconceptions:
- Multiplying a fraction by a fraction makes the number bigger

Materials Needed:
- Whiteboards, markers, erasers

Lesson Description
- Whole group instruction and guided notes on the steps of multiplying and dividing fractions using a calculator with multiple examples done by the teacher with student help and prompting.
- Whole class practice multiplying and dividing fractions using whiteboards and calculator to check each student's understanding.
- Independent practice/ re-teaching
    - Students that are ready to move on will practice independently on the skill while teacher pulls small groups for re-teaching or further assistance.

Extension Activity: Recipe Project
- Students will be asked to find a recipe that includes fractions
- Students will be asked to manipulate the serving size to make it both larger and smaller and explain reasons they would need to manipulate a recipe to make it larger and smaller.
- Students will use their knowledge of multiplying and dividing fractions to accurately calculate the new amounts (student will not be asked to make conversions of units)

Timeline: 2 Days
Key vocabulary: reciprocal, numerator, denominator

Significant Task 5:

Description of Task:
Lesson 1: Addition, Subtraction, Multiplication and Division of Decimals

Teacher Preparation:
- Guided Notes/examples of the four operations involving decimals
- Independent practice sheets
- Station work

Prior Student Knowledge:
- How fractions relate to decimals and how fractions can be converted into decimals

Possible Misconceptions:
- Understanding decimals with values greater than one and values less than one

Materials Needed:
- Guided notes
- Whiteboards for practice
- Station work activities

Opening Activity
- **Group discussion on decimals and what do they mean**
- **How are fractions and decimals related**
- **How do you convert a fraction into a decimal**

Lesson Description
- Whole group discussion on rules for addition,subtraction, multiplication and division of decimals using guided notes.
- Whole group practice with whiteboards on the four operations using decimals.
- 4 rotating stations, one for each operation
- Independent practice/reteaching
  Those students who are doing well with the concepts can practice independently while teacher works with small groups of students who still need assistance

Timeline: 3 days
Key vocabulary: decimals,place value, ones, tens, hundreds, thousands, tenths, hundredths, thousandths, estimation , rounding

Common Assessments:
- Pre-unit assessment
- Cumulative post unit assessment

Teacher Notes:

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Windsor Public Schools
Curriculum Map
Consumer Math: Pre-Algebra Unit 3

Grade Level: 9-12 Special Education

Course Name: Consumer Math: Pre-Algebra

Name of Unit 3: Algebraic Expressions and Integers

Length of the Unit: 4 weeks

Purpose of the Unit: In this unit students will understand:

- How to apply and relate rational numbers to real world situations
- How to use order of operations and the distributive property to evaluate expressions

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Standards Addressed In The Unit:

- CCSS-7.NS.A.3 -Integers can be divided, provided divisor is not zero, and every quotient is a rational number
- CCSS-6.EE.A.2.C - Evaluate expression including variables using order of operations
- CCSS-3.OA.B.5 - Apply properties of operations as strategies to multiply and divide ie: Distributive property

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Big Ideas:

- Integer Rules
- Order of Operations
- Distributive Property

Essential Questions:

- How do we apply and relate rational numbers to real world situations?
- How do we use order of operations and the distributive property to evaluate expressions?

Students will Know:

- The rules of integers
- The rules of order of operations
- The distributive property

Students will be able to:

- Correctly apply order of operations and the distributive property to solve simple equations
- Apply the rules of integers to simple expressions

Key Vocabulary in this unit:

- integer
- positive
- negative
- order of operations (PEMDAS)
- distributive property

Significant Task 1:

Description of Task:. Students will use different strategies to understand the rules of integers (including the use of negative and positive numbers)

Lesson 1:

Teacher Preparation:

- Guided notes
- Station work
- Independent practice sheets

Prior Student Knowledge:

- Rules for applying four operations to negative numbers
- What an integer is
- placing integers on a number line

Possible Misconceptions:

- Not understanding that when two negative numbers are multiplied or divided the resulting answer is always positive
- When you add or subtract negative and positive numbers, you always keep the sign of the larger number
- All numbers have an opposite number Exp: 7 and -7

Materials Needed:

- White boards
- Number lines
- Notecards and colored pencils for stations
- independent practice sheets

Opening Activity:

- Students will brainstorm in pairs what they know about integers. Then one member from each pair will

share their ideas

What is an integer?

What do I need to know about negative numbers in order to solve problems involving integers?

Where in real life situations will I use integers?

How do integers relate to Algebra?

Lesson Description:

- Whole group instruction using guided notes on how to solve problems involving integers with a focus on use of negative numbers
- White board practice on solving integer problems with teacher input on correctness of answers
- Station Work:

Station 1- Using colored pencils, correctly place an integer and its opposite on a number line

Station 2 - Note cards will contain different scenarios. Translate the information on the notecard into an integer

Example - It is 12 degrees below zero

Station 3- Change an integer into a written statement

Example: -10 I withdrew $10 from my bank today

- Whole group round-up. what did you learn? What is still confusing
- Independent practice for those students ready to move on
- Small group instruction for those students still struggling with the concept

Timeline: 3 days
Key vocabulary: positive integer, negative integer, opposites
Supporting vocabulary: Order of operations, number lines
Resources: https://www.khanacademy.org/...integersss/.../adding-integers-with-..

Significant Task 2:

Description of Task: Students will learn the rules of order of operations and practice through small groups and a bingo game.

Lesson 1: Order of Operations

Teacher Preparation:

- Guided notes with examples on order of operations

Prior Student Knowledge:

- Integer rules

Possible Misconceptions:

- Students believe multiplication must come before division and adding before subtracting because of the way PEMDAS is written
- Distributing before simplifying inside the parenthesis.

Materials Needed:

- Practice problems for small group and independent practice
- Bingo cards

Opening Activity

- Students will brainstorm in small groups what they know about order of operations- groups will share out as a class.
    - When do you use it ?
    - What is it?
    - What does it help you do?
    - What is the saying that helps you remember it?/ What does the saying stand for?

Lesson Description

- Teacher will review what the students know about order of operations and through guided notes will fill in the rules around order of operations
    - Note: make sure to talk about the M/D and A/S and how the order between each pair is determined from left to right.
- Together as a class, teacher and students will complete example problems together- teacher will model how to write the problems out properly and students will have a guided example in their notes for future reference.
- BINGO - independently, students will participate in a class wide bingo game that is based on order of operations problems. Students must solve the expression and mark off the answer if it appears on their board. The student then must get 5 answers in a row, column or diagonal to win the game.

Timeline: 2 days
Key vocabulary: order of operations
Supporting vocabulary: diagonal, row, column
Resources: Order of Operations- BINGO card & directions

Significant Task 3

Description of Task: Students will understand how to apply the distributive property through guided practice.

Lesson 1: Distributive Property

Teacher Preparation:
- Guided notes
- Independent practice sheets
- Materials for stations

Prior Student Knowledge:
- Know what the distributive property is
- Prior practice using numbers only

Possible Misconceptions:
- The number being distributed only has to be applied to the first term within the parentheses.
- Simplify within the parentheses before applying the distributive property

Materials Needed:
- Notecards and colored pencils
- Whiteboards and markers
- Sheets for independent practice

Opening Activity
- In small groups brainstorm prior knowledge of the distributive property
  - What is the distributive property?
  - How is it used?
  - When is it used?
  - How is it useful?

Lesson Description
- In a whole group, using guided notes, teacher will review the distributive property, how and when it is used.
- Whole group whiteboard practice with simple teacher generated problems
- Stations
  1 - Using notecards and colored pencils, students will practice distributing drawing lines between the number being distributed to all the numbers it is distributed to
  2- Students choose 5 teacher generated problems to solve
- Students who are doing well this this concept will continue practice using web based IXL program.
- Teacher led small group instruction and assistance for students still struggling with this concept.

Timeline: 2 Days
Key vocabulary: distribute, apply, multiply, simplify
Supporting vocabulary: order of operations
Resources: Distributive Property

Common Assessments:
- Pre-unit assessment
- Cumulative post unit assessment

Teacher Notes:

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Windsor Public Schools
Curriculum Map
Consumer Math: Pre-Algebra Unit 4

Grade Level: 9-12 Special Education

Course Name: Consumer Math: Pre-Algebra

Name of Unit 4: Understanding Word Problems

Length of the Unit: 3 weeks

Purpose of the Unit: In this unit students will be taught the strategies that are involved with solving a word problems.

Standards Addressed In The Unit:

- CCSS-4.OA.A.2 - Multiply/Divide to solve word problems

Big Ideas:

- BUCKS Strategy for solving word problems

Essential Questions:

- How do we recognize which operation(s) to use when solving a word problem?
- How do we turn real world examples into mathematical expressions/ equations?

Students will Know:

- What terms and phrases mean add.
- What terms and phrases mean subtract.
- What terms and phrases mean multiply.
- What terms and phrases mean divide.
- How to apply the BUCKS strategy to solving word problems.

Students will be able to:

- Read a word problems and identify the correct operation operations to perform.
- Read a word problem and accurately apply the BUCKS strategy

Key Vocabulary in this unit:

- Add (and all associated terms and phrases)
- subtract (and all associated terms and phrases)
- multiply (and all associated terms and phrases)
- divide (and all associated terms and phrases)
- BUCKS
- expression
- eqaution

Significant Task 1:

Description of Task: Students will review terms associated with the four operations and will be introduced to the BUCKS method of solving word problems.

Lesson 1: BUCKS Method

Teacher Preparation:

- Set up learning walk, brainstorming activity
- Create guided notes for terms/phrases associated with the four operations and BUCKS method.
- Practice problems

Prior Student Knowledge:

-

Possible Misconceptions:

- Students often have trouble with the term "groups" and don't realize groups can be dividing or multiplying depending on the context or other phrases in the problem.

Materials Needed:

- Four areas of white board/ large chart paper with each of the four operations on top.
- Guided notes on terms/phrases associated with word problems and BUCKS method
- Different color markers/pencils/ crayons

Opening Activity:

- Students will take a learning walk in small groups to four stations (add, subtract, multiply and divide). The students will write down terms, phrases and examples for each phrase in rotating groups.

Lesson Description:

- Students will come back together as a class and review the work done during the learning walk.
- The teacher will go through each of the four areas and add terms that are missing or take away terms that don't belong.
    - Make special note of how "groups" can be used in different ways- put a few examples for each
- Students will take guided notes while the teacher is making corrections.
- Teacher will introduce the BUCKS method of solving word problems through guided notes and will included examples for students guided notes.

- Partner activity practicing the BUCKS method for analyzing word problems. Have students use different colors to show their understanding of the different parts of the BUCKS method.
- Class wide discussion of what the students learned in their partner work.
    - What was helpful?
    - What was the easiest part to find in the word problem?
    - What was the hardest part to find in the word problem?
    - How did you know the information was unnecessary?

Timeline: 2 days
Key vocabulary: Add (and all associated terms and phrases) ,subtract (and all associated terms and phrases), multiply (and all associated terms and phrases), divide (and all associated terms and phrases), BUCKS

Resources: BUCKS Method for Word Problems

Significant Task 2:

Description of Task:. Station work practicing analyzing word problems

Lesson 1: Word Problem Stations
Teacher Preparation:
- Create station work

Prior Student Knowledge:
- BUCKS Method
- Terms associated with all four operations

Possible Misconceptions:
- Students often have trouble with the term "groups" and don't realize groups can be dividing or multiplying depending on the context or other phrases in the problem.

Materials Needed:
- Materials for each station (varying based on station)

Opening Activity:
- Teacher will review guided notes from yesterday

Lesson Description:
- In stations, students will read and analyze word problems and identify the real world math associate with them. Stations may include:
    - Matching equations with word problems task cards
    - Writing word problems based on given equations
    - Sorting expressions with their operations
    - Kahoot or other web based programs to review terms associated with word problems

Timeline: 1 day
Key vocabulary: Add (and all associated terms and phrases) ,subtract (and all associated terms and phrases), multiply (and all associated terms and phrases), divide (and all associated terms and phrases),

BUCKS

Resources:

Common Learning Experiences

Common Assessments:

- Pre-unit assessment
- Cumulative post unit assessment

Teacher Notes:

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Windsor Public Schools
Curriculum Map
Consumer Math: Pre-Algebra Unit 5
BOE Approved Date:

Grade Level: 9-12 Special Education

Course Name: Consumer Math: Pre-Algebra

Name of Unit 5: Solving One Step Equations and Inequalities

Length of the Unit: 5 weeks

Purpose of the Unit: In this unit students will learn how to solve one step equations/inequalities through direct instruction and individual practice.

Standards Addressed In The Unit:

- CCSS.7.EE.A.1 - Apply properties of operations as strategies to expand linear expressions with rational coefficents
- CCSS.7.EE.B.3 - Solve real life and mathematical problems using numerical and algebraic expressions and equations
- CCSS.7.EE.B.4.A - Convert Arithmetic problems into expressions and equations
- CCSS.6.EE.B.6 - Use variables to represent numbers and write expressions/equations

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Big Ideas:

- Equations/inequalities can be used to represent a word problem
- Inverse operations are a critical skill when solving equations/inequalities
- Equations/inequalities can be applied to real life situations

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Essential Questions:

- What is a variable and what does it represent in an equation/inequality?
- How can you tell the difference between an equation and an inequality?
- How do inverse operations help me solve one step equations/inequalities?
- How do I use one step equations/inequalities to solve real world problems?

Students will Know:

- Strategies to solve one-step equations and inequalities
- Know what an inverse operation is
- What a variable represents
- The differences between equations and inequalities

Students will be able to:

- Use the strategies they have learned to solve one step-equations/inequalities
- Use inverse operations to solve one-step equations/inequalities
- Recognize that a variable represents an unknown number
- Understand that an equation contains an equal sign and an inequality is represented by greater than, less than etc.

Key Vocabulary in this unit:

- variable
- unknown
- represents
- expression
- coefficent
- inverse operations
- opposites
- greater than
- less than
- greater than or equal to
- less than or equal to
- equation
- balancing an equation
- add
- subtract
- multiply
- divide

Significant Task 1:

Description of Task:. Identification of variables and what they represent

Lesson 1:

Teacher Preparation:

- Guided Notes
- practice sheets
- Create stations for practice

Prior Student Knowledge:

- Rules of Integers
- Rules of negative and positive numbers
- Basic mathematical operations

Possible Misconceptions:

- A variable has a definite value

- A variable can stand alone without a coefficent

Materials Needed:

- Guided notes defining variables and how they are represented
- whiteboards and markers for practice
- Sticky notes
- Notecards

Opening Activity:

- Students will write down two ideas about what a variable is on a sticky note. They will then place the sticky notes around the room.

  What is a variable?
  How is it represented?
  Why do we use variables?
  Why don't we use s or o to represent variables?
- Students will shout out about their ideas about a variable is.

Lesson Description:

- Whole group instruction using guided notes, defining what a variable is, why and how it's used.
- Rotate through stations to practice working with variables.
  1- Using whiteboards, students will read different scenarios and write the expression, including a variable, on the whiteboard.
  Example: If Paul earns $50 a week, how much will he earn in an unknown number of weeks - 50x
  2- Using note cards, match scenario with the correct expression.
- Students will get back together as a whole group and discuss what students learned and what is still confusing,

Independent practice:

- Students who understand what a variable is will continue with independent practice.
- Teacher will work in small groups reteaching/assisting with concepts that are still confusing.

Timeline: 2 days
Key vocabulary: variable, expression,unknown
Supporting vocabulary: represents
Resources:

- **: webmath.com/gline.html, IXL web based practice**

Significant Task 2:

Description of Task:. In this lesson, students will learn what an equation and an inequality is and how they are different.

Lesson 1:

Teacher Preparation:

- Guided notes that define equations and inequalities and give examples of each
- Notecard scenarios
- Practice sheets

Prior Student Knowledge:

- Students have been exposed to the concept of equations and inequalities
- Students know about greater and less than and the symbols that represent each
- Understanding of the four mathematical operations

Possible Misconceptions:

- Inequalities and equations are the same things
- Confusion around meanings of inequality signs
- An inequality has an equal sign
- Use an equation when the problem states: makes at least but not more than

Materials Needed:

- Guided Notes
- White boards and markers
- Practice sheets
- Note cards with scenarios

Opening Activity:

- In partners, students will brainstorm on the meanings of equations and inequalities. How are they alike, how are they different?
  - What is an equation?
  - What is an inequality?
  - How are they alike?
  - How are they different?
  - How do you write inequality symbols?

Lesson Description:

- In small groups, students will be given different scenarios, some are equations and some are inequalities. As a group, students will decide what each scenario represents. Groups will the share their findings with the class.
- Direct instruction, using guided notes, on inequalities and equations

Independent practice:

- Individual practice writing equations and inequalities for those students who are doing well with the concept.
- Small group re-teaching and individual assistance for those students still struggling with the concepts

Timeline: 3 days
Key vocabulary: Inequality, equation, greater than, less than
Supporting vocabulary: variable, unknown
Resources: www.shmoop.com › Algebra › Equations and Inequalities, IXL web based practice

Significant Task 3

Description of Task: Use inverse operations to solve one-step equations and inequalities
Lesson 1:

Teacher Preparation:

- Teacher guided notes
- Note cards with practice problems
- Note cards with inequality signs and note cards with definitions

Prior Student Knowledge:

- Students will know that inverse means opposite
- Basic rules of integers
- Basic rules of negative and positive numbers
- Understanding of how to use different mathematical properties such as the distributive and associative properties

Possible Misconceptions:

- You only have to perform an operation on one side of an equation
- Leave the inequality the same when multiplying or dividing by a negative number
- That you don't need to do the opposite operation when moving a number or a variable to the other side of an equation or inequality

Materials Needed:

- Guided notes
- White boards and markers
- Practice sheets
- Note cards

Opening Activity:

- Small group discussions on inverse operations
  - What does inverse mean?
  - Why do you have to use inverse operations when solving an equation or inequality?
  - Why do you have to do the same operation to both sides of an equation or inequality?

Lesson Description:

- Using guided notes, the teacher will provide multiple examples and reminders such as: What you do to one side of an equation/inequality, you have to do to the other
  Switch signs in inequalities when multiplying/dividing by a negative number
  What the four different inequality signs mean
- In small groups, match the inequality sign with its correct definition. Groups will share with other groups why they matched the inequality signs the way they did.

Independent Practice:

- Individual practice using worksheets and with teacher support
- Small group reteaching and assistance for students who have not mastered these concepts

Timeline: 3 days
Key vocabulary: Inverse operations, opposites, balancing, switch signs
Supporting vocabulary: inequalities, greater than, less than
Resources: IXL web based program

Significant Task 4

Description of Task: Students will be able to turn word problems into one-step equations or inequalities using previously learned strategies.
Lesson 1:

Teacher Preparation:

- Guided notes

- Matching note card scenarios
- Practice sheets
- Problems to be done on white boards

Prior Student Knowledge:

- Rules that apply to negative numbers
- How to do inverse operations
- How to solve simple one-step equations and inequalities
- Any operation done to one side of an equation/inequality must be done to the other side to keep the equation/inequality balanced
- In inequalities, when multiplying or dividing by a negative number, the sign must be switched.

Possible Misconceptions:

- All information in a word problem must be used in an equation/inequality
- Word problems cannot be changed into equations/inequalities

Materials Needed:

- Guided notes on how to turn word problems into equations/inequalities, Review notes on how to solve word problems
- Note cards with matching scenarios
- White boards for practice
- Practice sheets

Opening Activity:

- In pairs, read word problems and discuss what information from the word problem is necessary and what parts of the problem could be turned into equations/inequalities
- As a whole group discuss the following topics:
  - How can information in a word problem be translated into an equation/inequality?
  - How do you identify what information is pertinent?
  - How do you recognize what the variable will be, the coefficent?

Lesson Description:

- Whole group instruction and teacher modeling on how to turn a word problem into an equation or inequality. Emphasis will be placed on how you recognize the variable and coefficent. Guided notes will be used to reinforce learning.
- Station work involving matching word problems scenarios to the appropriate equation/inequality.
- Whole group whiteboard practice involving writing equations/inequalities from the teacher

Independent Practice:

- Students will use teacher generated worksheets to practice turning word problems into equations/inequalities
- Small group instruction/reteaching for students still struggling with the concept

Timeline: 3 days

Key vocabulary: add, subtract, multiply, divide, variable, coefficent

Supporting vocabulary: balancing equation, balancing an equation

Resources: https://www.mathcounts.org/resources/ IXL web based resources

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Common Learning Experiences:

Common Assessments:

Teacher Notes:

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Windsor Public Schools
Curriculum Map
Consumer Math: Pre-Algebra Unit 6
BOE Approved Date:

Grade Level: 9-12 Special Education

Course Name: Consumer Math: Pre-Algebra

Name of Unit 6: Solving multi-step Equations and Inequalities

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Length of the Unit: 5 weeks

Purpose of the Unit:

- Students will learn strategies to solve multi-step equations and inequalities

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Standards Addressed In The Unit:

- CCSS.7.EE.A.1 - Apply properties of operations as strategies to add, subtract, multiply, divide and expand linear expressions
- CCSS.7.EE.B.3 - Solve real life and mathematical problems using numerical and algebraic expressions and equations
- CCSS.7.EE.B.4. - Solve word problems using equations
- CCSS.6.EE.B.5 - Understand solving an equation/inequality as the process of answering a question
- CCSS.8.EE.C.7.B- solve linear equations with rational number coefficents
- CCSS.8.EE.8.C - Solve real world and mathematical problems leading to two linear equations with two or more variables

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Big Ideas:

- An equation or inequality is the answer to a mathematical question
- Multi-step equations and inequalities can be applied to real life situations

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Essential Questions:

- How can I use what I know about one-step equations and inequalities to solve multi-step equations and inequalities

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Students will Know:

- An equation/inequality answers a question
- How to determine what information in a word problem is unnecessary
- How to solve multi step equations/inequalities using inverse operations
- Strategies they learned to solve one step equations/inequalities can be applied to solving mult-step equations/inequalities

Students will be able to:

- Use inverse operations to solve multi-step equations/inequalities
- Use strategies learned to solve one-step equations/inequalities to solve multi-step equations/inequalities
- Translate word problems into multi-step equations/inequalities

Key Vocabulary in this unit:

- variable
- unknown
- represents
- expression
- coefficent
- inverse operations
- opposites
- greater than
- less than
- greater than or equal to
- less than or equal to
- equation
- balancing an equation
- add
- subtract
- multiply
- divide

Significant Task 1:

Description of Task:. Develop strategies for solving multi-step equations/inequalities with emphasis on the use of inverse operations

Lesson 1:

Teacher Preparation:

- Guided notes on solving multi-step equations/inequalities
- White boards and markers
- IXL lessons
- Individual practice sheets

Prior Student Knowledge:

- Rules of negative numbers

- How to use inverse operations
- How to solve one-step equations/inequalities
- How to turn one-step equations/inequalities into word problems and how to turn equations/inequalities into word problems

Possible Misconceptions:

- The same rules that apply to solving one-step equations/inequalities don't relate to solving multi-step equations/inequalities
- It is difficult to turn a word problem into a multi-step equation/inequality

Materials Needed:

- Guided notes
- Chrome books

Opening Activity:

- Whole group brainstorming on solving one-step equations and inequalities
  - How do you use inverse operations to solve one-step equations/inequalities
  - What does balancing an equation mean?
  - How do you represent a variable, a coefficent?

Lesson Description:

- Students will individually review/practice solving one-step equations/inequalities using Web resources such as IXL and Kahn academy and Kahoots.
- Teacher assistance/reteaching as needed.

Timeline: 2 days
Key vocabulary: variable, coefficent, balancing an equation, inverse operations
Supporting vocabulary: unknown, represents, expression
Resources: IXL, Kahn Academy

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Significant Task 2:

Description of Task:. Using previously learned strategies, students will be able to solve multi-step equations/inequalities

Lesson 1:

Teacher Preparation:

- Guided notes
- Practice sheets

Prior Student Knowledge:

- Rules of negative and positive numbers
- How to use inverse operation
- How to solve one step equations/word problems
- how to translate word problems into one-step equation/inequalities

Possible Misconceptions:

- Using inverse operations is not necessary when solving mult-step equations/inequalities
- Solving multi-step equations is too hard
- Previous learned strategies will not be useful

Materials Needed:
- Guided notes
- IXL lesson
- Practice sheets

Opening Activity:
- Whole group sharing on what students know about solving two-step equations/inequalities
  - How is a multi-step equation like a one step equation/inequality?
  - What strategies I have previously learned can I use to solve two step equations/inequalities
  - How can I turn a word problem into a mult-step equation/inequality

Lesson Description:
- Using guided notes, teacher will give whole group instruction on how to solve multi-step equations/inequalities. Teacher will highlight the steps needed to solve problems. What comes first, what is next etc
- Individual practice using IXL programs and Kahn Academy

Independent practice:
- Students will continue to practice using worksheets and IXL programs
- Reteaching/Individual assistance as needed

Timeline: 3 days
- **Key vocabulary:** variable, unknown, balancing equations, inverse operations

Supporting vocabulary: equation, inequality
Resources: IXL and Kahn Academy

Significant Task 3

Description of Task: Using previously learned strategies, students will be able to turn word problems into multi-step equations/inequalities

Lesson 1:

Teacher Preparation:
- Guided notes
- Practice sheets
- IXL lessons

Prior Student Knowledge:
- How to use inverse operations
- How to solve one-step equations/inequalities
- How to solve one step equations/inequalities

Possible Misconceptions:
- Turning word problems into multi-step equations/inequalities is too difficult
- All information in word problems is necessary

Materials Needed:
- Chrome books
- Guided notes
- Practice sheets

- Note card scenarios

Opening Activity:

- In partners, brainstorm on how to turn word problems into equations/inequalities
- Whole class sharing on previous strategies learned
  - Identify important information
  - Get rid of extraneous information
  - What is the question being asked?
  - How do we identify variables, co-efficents

Lesson Description:

- In partners, read word problem scenarios and change them into multi-step equations/inequalities
- Come together as a group and discuss what went well, what didn't
- Discuss strategies that could be employed to make translating word problems into multi-step equations/inequalities easier
- Guided notes that give steps to follow and strategies to use

Independent Practice:

- IXL practice and worksheets to give further practice
- Reteaching/Individual assistance as needed.

Timeline: 3 days
Key vocabulary: word problems, equations, inequalities
Supporting vocabulary: balancing equations, variables, coefficents
Resources: IXL web based practice

Common Learning Experiences:

Common Assessments:

Teacher Notes:

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Windsor Public Schools
Curriculum Map
Consumer Math: Pre-Algebra Unit 7
BOE Approved Date:

Grade Level: 9-12 Special Education

Course Name: Consumer Math: Pre-Algebra

Name of Unit 1: Graphing

Length of the Unit: 4 weeks

Purpose of the Unit:

- Students

Standards Addressed In The Unit:

- CCSS-4.G.A.1 -draw points, lines, line segments, parallel and perpendicular lines on a coordinate plane
- CCSS.5.G.A.1 - Use the x and Y axes to define a coordinate plane and be able to plot an ordered pair on numbers on that coordinate plane

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Big Ideas:

- Use a coordinate plane to graph a point

Essential Questions:

- How do we use a coordinate plane to represent data?

Students will Know:

- The difference between the x and y axis and what they stand for
- How do identify the x and y value in an ordered pair and how to plot that point
- Recognize that the x axis is the independent variable and the y axis is the dependent variable

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Students will be able to:

- Independently plot a point (ordered pair) on a coordinate plane
- Independently plot a series of points from a data table

Key Vocabulary in this unit:

- x axis
- y axis
- unit
- variable
- independent variable
- dependent variable
- data
- data table
- ordered pair
- plot
- vertical axis
- horizontal axis
- equation of a line
- y=mx+b

Significant Task 1:

Description of Task:. Students will employ different strategies to understand what a coordinate plane is and what a point is

Lesson 1:

Teacher Preparation:

- Guided Notes with examples of graphing a point from an ordered pair and from a data table
- Practice sheets

Prior Student Knowledge:

- Working knowledge of integer number lines
- Be able to construct a coordinate plane
- Understand that a point is made up of an x and a y value
- Which parts of the coordinate plane are positive and negative

Possible Misconceptions:

- Confusion of the x and y axis
- Understanding that the x value is always plotted first
- Confusion between which axes is the independent variable and which is the dependent variable

Materials Needed:

- Graph paper
- Rulers
- Colored pencils
- notecards

- practice sheets

Opening Activity:

- In small groups, student will brainstorm on how to graph a point
  - Which axis is the horizontal axis, which axis is the vertical axis?
  - In an ordered pair, what are the x and y values?
  - How do you plot a point from an ordered pair?
  - If you have a point on a coordinate plane, what is its corresponding point?

Lesson Description:

- Whole group instruction, using guided notes, on understanding parts of the graph, understanding a point and its values, how to plot a point, which parts of the coordinate plane are positive and which are negative.
- Independent practice and reteaching to help with understanding

Timeline: 2 Days
Key vocabulary: x and y axis, ordered pair, point, horizontal, vertical, coordinate plane
Supporting vocabulary: Independent variable, Dependent variable
Resources:

- IXL web based practice
- https://www.khanacademy.org/.../coordinate.../graphing-points-exer...

Significant Task 2:

Description of Task:. Graphing of coordinate points as well as understanding the values associated with an ordered pair

Lesson 1:

Teacher Preparation:

- Guided Notes
- Graphs that are labeled with x and y axis

Prior Student Knowledge:

- Understanding that a graph consists of a coordinate plane with an x and y axis
- The first number in an ordered pair is the x value, the second number in an ordered pair is the y value

Possible Misconceptions:

- Confusion of the x and y axis
- Confusion over which value in an ordered pair is the x value, which is the y value

Materials Needed:

- whiteboards and markers
- practice sheets

Opening Activity:

- Teacher will model on the smartboard how to plot a coordinate point
- In partners, students will share what they know about plotting a point on a coordinate plane

Lesson Description:

- Whole group instruction, using guided notes on how to plot a point on a coordinate plane. Emphasis will be placed on identifying the x as the horizontal axis and the y as the vertical axis.
- Small group white board practice plotting points on a coordinate plane, including labeling the x and y axis, labeling the coordinate point as x and y and identifying which axis is the independent variable and which is the dependent variable
- Whole group recap of what the students learned
  - How do you identify the x and y axis and what is their relationship to independent and dependent variables
  - What are the x and y values in a coordinate point
  - How do you plot a coordinate point
  - What have you learned

Timeline: 2 days
Key vocabulary: coordinate point, plot, x and y axis
Supporting vocabulary: vertical axis, horizontal axis
Resources: Web based IXL practice

Significant Task 3

Description of Task: What is the equation of a line (y=mx+b) and what do the m and b stand for in this equation. Plotting the equation of a line (y=mx+b) on a coordinate plane.
Lesson 1:

Teacher Preparation:
- Teacher guided notes explaining what the equation of a line means and what the variables stand for
- Practice sheets
- Equations on notecards

Prior Student Knowledge:
- Understanding that a variable stands for an unknown quantity
- Basic knowledge of how to plot a point on a coordinate plane
- Understanding that slope is rise/run, the opposite order of a coordinate point

Possible Misconceptions:
- Not using the y intercept as the starting point when graphing an equation
- Understanding that when using slope, you go up or down on the y axis first
- Confusion between the x and the y axis

Materials Needed:
- graphs
- colored pencils
- practice sheets
- whiteboards

Opening Activity:
- Brainstorm on the meaning of the equation of a line
  - What is the purpose of an equation of a line?
  - What do the variables in y=mx+b stand for?
  - How can knowing what the variables in a line stand for help you plot that equation on a coordinate plane?

Lesson Description:

- Using guided notes and in a whole group, explain what the equation of a line means and identify the variables in the equation and what they mean. Recognize that the y intercept is the starting point in an equation and is an ordered pair.
- Stations:
  1- Use whiteboards to practice plotting a line from a given equation. Teacher assistance and support.
  2- Students will be given equations on notecards. They will plot these equations on graph paper labeling the x and the y axis.
- Independent practice on plotting the equation of a line for students who are doing well with the concept. Small group instruction/reteaching for students who need additional support.

Timeline: 2 Days
Key vocabulary: Equation of a line, slope, y intercept
Supporting vocabulary: coordinate point, x and y axis
Resources: webmath.com/gline.html, IXL web based practice

Significant Task 4:

Description of Task:. When given a line on a coordinate plane, students will be able to write the equation of the line in (y=mx+b format) and identify the slope and y intercept.

Lesson 1:
Teacher Preparation:

- Teacher guided notes explaining how to write the equation of a line from a line on a coordinate plane.
  Emphasis on how to find the y intercept (starting point) and how to count slope (rise/run).
- Practice sheets
- Graphs with a line

Prior Student Knowledge:

- Understanding that a variable stands for an unknown quantity
- Basic knowledge of how to plot a point on a coordinate plane
- Understanding that slope is rise/run, the opposite order of a coordinate point

Possible Misconceptions:

- Not recognizing that the y intercept is an ordered pair
- Counting slope beginning with the x axis instead of the y axis

Materials Needed:

- graphs
- colored pencils
- practice sheets
- whiteboards

Opening Activity:

- Brainstorm on how to write the equation of a line from a given line
  What do you look at first when you want to identify the equation of a line from a given line?
  Where do you start?
  How do you count slope?

Lesson Description:

- Using guided notes and in a whole group, identify the equation of a line by starting with the y intercept and counting slope from that point. Then transfer that information into an equation.

- Stations:
  1- Use whiteboards to practice writing the equation of a line from a line on a coordinate plane. Teacher assistance and support
  2- Students will be given lines on a coordinate plane.. They will identify the y intercept and slope from these lines and use that information to write the equation of a line in y=mx+b format.

- Independent practice on writing the equation of a line from a given line on a coordinate plane for those students who understand the concept. Small group instruction/reteaching for students who need additional support.

Timeline: 2 Days
Key vocabulary: y intercept, slope, rise/run, equation of a line
Supporting vocabulary: x and y axis, coordinate plane, ordered pair
Resources : webmath.com/gline.html, IXL web based practice

Common Learning Experiences:

Common Assessments:

- Pre-unit assessment
- Cumulative post unit assessment

Teacher Notes:

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Windsor Public Schools
Curriculum Map
Consumer Math: Pre-Algebra Unit 8
BOE Approved Date:

Grade Level: 9-12 Special Education

Course Name: Consumer Math: Pre-Algebra

Name of Unit 6: Ratios, Proportions and Percents

Length of the Unit: 4 weeks

Purpose of the Unit:

- Students will use ratios, proportions and percents to be able to compare and contrasts numbers in real world situations.

Standards Addressed In The Unit:

- CCSS-6.RP.A.1-Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities.
- CCSS-6.RP.A.3- Use ratio and rate reasoning to solve real-world and mathematical problems
- CCSS-6.RP.A.3c-Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part and the percent

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Big Ideas:

- Comparing ratios, proportions and percents.

Essential Questions:

- How can numbers be compared and contrasted?
- When and why do I use proportional comparisons?
- How do we use percents in real world situations?

Students will Know:

- What a proportion is and when do you use them
- What a ratio is when do you use them
- What a percent is

Students will be able to:

- Create ratios

- Solve proportions.
- Convert percents to decimals and ratios.
- Calculate tax, tip & discount.

Key Vocabulary in this unit:
• Ratio • Proportion • Rate • Percent • Part • Whole • Tax • Tip • Discount

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Significant Task 1:

Description of Task: Students will explore what a ratio is through stations and real world examples.

Lesson 1: Ratios

Teacher Preparation:
- Create stations
- Create guided notes

Prior Student Knowledge:

Possible Misconceptions:
- Understanding how to properly label units

Materials Needed:
- chromebooks

Opening Activity:
- Conduct a class survey and record the information on the board:
  - Number of people with blue eyes compared to brown eyes in the class
  - Number of people with long sleeves and short sleeve
  - Number of students with glasses and without glasses
- Students will review prior knowledge of ratios by brainstorming:
  - What is a ratio?
  - What do ratios do?
  - How do we write a ratio?

Lesson Description:

- Individual practice/stations on ratios .Stations may include:
  - Matching given situation with the correct ratio
  - Given a statement, writing the correct ratio
  - Finding ratios in the real world (using chromebook)
  - Web based programs such as Kahoot, IXL
- Together student and teacher will come together and review group work.
- As a class, students will come up with a definition of a ratio for their notes. They will also include real world examples in their guided notes.

Timeline: 2 days
Key vocabulary: ratio, rate
Resources:

Significant Task 2:

Description of Tas: Students will explore the relationship between ratios and proportions to come to the conclusion that a proportion is two equal ratios. In small groups, students will figure out how to solve proportions using real-world examples.

Lesson 1: What is a proportion ?

Teacher Preparation:

- Create real world examples of proportions

Prior Student Knowledge:

- Ratio is a a comparison of two numbers

Possible Misconceptions:

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Materials Needed:

Opening Activity:

- Use the same survey questions from the class from the significant task #1 to introduce proportions.
  - ex: blue eyes to brown eyes in the class- class of 15
  - What if we had 25 students in our class with the same ratio of blue to brown eyes, how many brown eyes would we expect in the class?
- Have students work to try and figure out how to solve the ratio as a class.

Lesson Description:

- Have students break into small groups and try to solve real world ration problems using any way they can
- Discuss different methods used by different groups as a class
- Whole group instruction and guided notes on the cross multiplying method of solving proportions making sure to include examples.
- Independent practice solving real world ratio problems.

Timeline: 1 day
Key vocabulary: proportion, ratio
Supporting vocabulary: cross multiply

Significant Task 3:

Description of Task: Student will explore what a percent is in relation to a ratio, they will be able to convert percents to decimals and ratios.

Lesson 1: How does a ratio relate to a percent?
Teacher Preparation:
- Independent practice activities

Prior Student Knowledge:
- A ratio is a comparison of two numbers

Possible Misconceptions:
- Ratios cannot be made into percents because they are not out of 100

Materials Needed:

Opening Activity:
- Review guided notes of ratios and how they relate to percents.
- Discussion on what is a percent? (Ratio that is out of 100)
    - How do I convert a percent to a ratio, proportion and decimal?
    - Where do I use percents in the real world?

Lesson Description:
- Guided notes and examples on converting converting percents to ratios, and decimals and calculating percents of a number.
- Independent practice calculating percents of numbers, converting ratios to percents and converting decimals to percents.

Timeline:
Key vocabulary:
Supporting vocabulary:
Resources:

Significant Task 4

Description of Task: Students will apply their understanding of percents to a real world menu activity.
Lesson 1: Menu Activity

Teacher Preparation:
- Create outline for menu activity

Prior Student Knowledge:
- Percents means per 100

Possible Misconceptions:

- Students often forget to convert a percent to a decimal when calculating percents of a number

Materials Needed:

- Restaurant menus or online access to restaurant menus

Activity:

- Students will investigate the uses of percent through several real-world contexts in small groups. Students will create an "order" from a restaurant menu and calculate tax, tip and discount.
- Full class discussion will focus on the comparison of different methods of calculating percents, and the reasoning behind each method.

Timeline: 1 day

Key vocabulary: tax, tip, discount

Common Learning Experiences:

- Menu Activity

Common Assessments:

- Pre-unit assessment
- Cumulative post unit assessment

Teacher Notes:

Resource: Ratio and Proportion Activities

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Windsor Public Schools
Curriculum Map
Consumer Math: Pre-Algebra Unit 9
BOE Approved Date:

Grade Level: 9-12 Special Education

Course Name: Consumer Math: Pre-Algebra

Name of Unit 9: Probability

Length of the Unit: 4 weeks

Purpose of the Unit:

- Students understand probability and explore the different methods to solve probability problems in real world situations.

Standards Addressed in The Unit:

- 7.SP.5: Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.
- 7.SP.7: Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy.
  a. Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events.
  b. Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process. 7.SP.8: Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.
- 7.SP.6: Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability
- 7.SP.8: Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.

Big Ideas:

- Find probabilities based on frequencies found in an experiment

- find probabilities based on a theoretical model
- Compare experimental and theoretical probabilities and explain possible sources of discrepancies between them
- Make predictions based on probabilities
- Represent sample space of simple and compound events using tree diagrams, organized lists, and area models

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Essential Questions:

- What makes a situation fair or unfair?
- When will the theoretical and experimental probabilities be the same?
- How can you represent a situation to find all possible outcomes?
- Does the probability of one event affect the probability of another? How?

Students will Know:

- Probability is a number between 0 and 1 and can be represented as a fraction, decimal, or percent
- The probability of an event describes how likely it is to occur
- All possible outcomes of an event should add to 1
- That the probability of a compound event is the product of the simple events that compose it
- As you perform more trials the experimental probability will converge with the theoretical probability

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Students will be able to:

Key Vocabulary in this unit:
• Probability • event • experimental • theoretical

Significant Task 1:

Description of Task: Students will play various games to explore probability.

Lesson 1: Exploring Probability

Teacher Preparation:

- Create probability games
- Create guided notes

Prior Student Knowledge:

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Possible Misconceptions:

- Students have trouble determining the total number of outcomes from a tree-diagram. They confuse the individual "branches" with the final outcomes.

Materials Needed:

- **Game materials (dice, coins etc.)**

Lesson Description:

- In small groups, student will play probability games.
- Students will develop the strategies of using an organized list, building tables and making tree diagrams to answer questions.
- They will use these models to determine theoretical probabilities and to make predictions about future events.
- Full class discussion should focus on the various strategies used by the groups or pairs.Class discussions should include:
    - Describe likelihood of an event using fractions, decimals and percents.
    - Make predictions about future events based on data.
    - Brainstorm reasons for any differences between experimental and theoretical probability
- Teacher guided notes including:
    - definition of probability
    - how we write it
    - examples of different methods to track (lists, tree, diagram, formula)
    - difference between experimental and theoretical probability.

Timeline: 3 days
Key vocabulary: Probability,event, experimental, theoretical
Supporting vocabulary: method, tree diagram

Significant Task 2:

Description of Task:.

Lesson 1:

Teacher Preparation:

- Create probability games
- Create outline for student created games

Prior Student Knowledge:

- Probability is the likelihood an event will happen
- Multiple methods to find probability.

Possible Misconceptions:

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Materials Needed:

- Varies depending on probability games.

Lesson Description:

- Teacher will review different methods for solving and representing theoretical probability event. (formula, tree diagram, area model)
- Students will play more probability games in small groups, this time will focus on using all of the different methods to represent the data.
    - require students to use each method at least once
- Class will meet as a whole to discuss results:
    - Share different methods and brainstorm reasons for any differences between experimental and theoretical probability
    - What was their favorite method? Why?
    - What was their least favorite method? Why?
    - Do different methods work better in different situations?
- In small groups, students will create their own probability games
- Pair up with another group to play each other's probability game.

Timeline: 2 days
Key vocabulary: Probability,event, experimental, theoretical
Supporting vocabulary: method
Resources:

Common Learning Experiences:

- Students will create their own probability game.

Common Assessments:

- Cumulative post unit assessment

Teacher Notes: