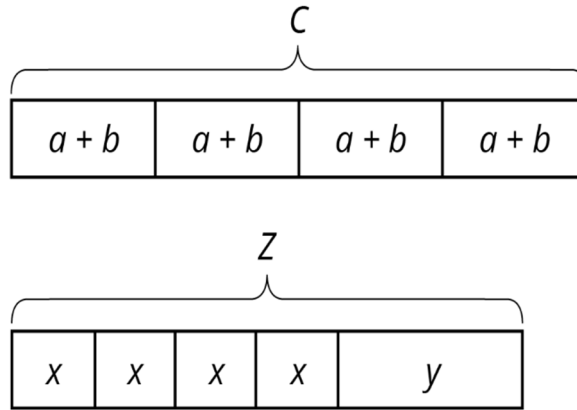


Let's Do Some Math

Notice and Wonder

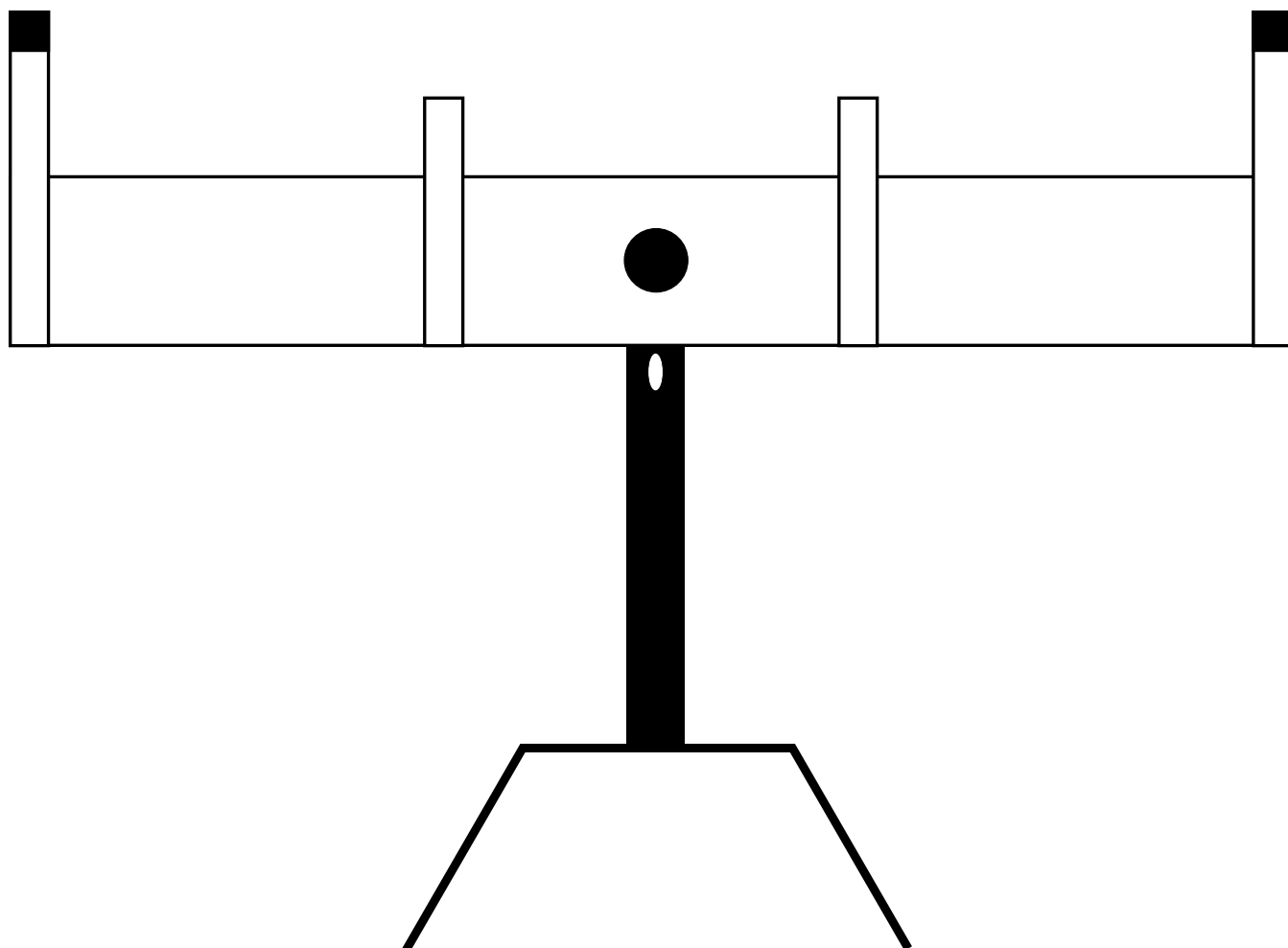


Standards Unpacking		
Key	Standard	Prerequisites/Vocabulary
Put a box around the conceptual component of the standard. Underline the <u>procedural/fluency component</u> of the standard. Put a cloud around the application component of the standard.	7.EE.4 - <u>Use variables</u> to <u>represent</u> quantities in a real-world or mathematical problem and <u>construct</u> simple equations and inequalities to <u>solve problems</u> by reasoning about the quantities.	What prior knowledge should my students have?
		What vocabulary/ notation should students know for this standard?
	7.EE.4a - Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p, q, and r are specific rational numbers. Solve equations of these forms <u>fluently</u>. <u>Compare</u> an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. <i>For example, the perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?</i>	What prior knowledge should my students have?
		What vocabulary/ notation should students know for this standard?

Grade 7 – Equations and Inequalities with Integers

	7.EE.4b - Solve <u>word problems</u> leading to inequalities of the form $px + q > r$, $px + q \geq r$, $px + q < r$ or $px + q \leq r$, where p, q, and r are specific rational numbers. <u>Graph</u> the solution set of the inequality and <u>interpret</u> it in the context of the problem. <i>For example: As a salesperson, you are paid \$50 per week plus \$3 per sale. This week you want your pay to be at least \$100. Write an inequality for the number of sales you need to make, and describe the solutions.</i>	What prior knowledge should my students have?
		What vocabulary/ notation should students know for this standard?

LESSON 18: One-Step Equations with Integers



LESSON 19: Two-Step Equations with Integers

Directions: Complete the following SOLVE problem with your teacher. You will only complete the S step.

Jeremy has a collection of 58 baseball cards. His dad gives him a new card every month. He puts all the cards in a binder. He completely fills 9 pages of the binder and has 4 cards left over. How many cards are on each full page?

S Underline the question.

This problem is asking me to find _____.

Directions: Complete this page with your teacher and partner.

Two-Step Equations

1. $2c + 2 = 6$

Model:	Check:
Pictorial	Solve the equation
Check:	Check:

Directions: Complete this page with your teacher and partner.

2. $2c + ^{-}2 = ^{-}6$ Model	Check:
Pictorial Check:	Solve the equation Check:

Directions: Complete this page with your teacher and partner.

3. $2c + 2 = -6$ Model	Check:
Pictorial Check:	Solve the equation Check:

Directions: Complete this page with your teacher and partner.

4. $2c + ^{-}2 = 6$	Model	Check:
Pictorial	Solve the equation	Check:

Strategies and Models for Solving Two Step Equations		
Record the work for the strategies below for solving two step equations and creating equations from application scenarios.		
Number Line Model	Tape Diagram	Algebra Tiles
$2x + 3 = 6$	Jose is making bag lunches for the service club in his community. Jose is creating 5 bags and needs to include some cookies as well as two small bottles of water in each bag. If at the end of packing lunches, he added 30 items to each bag, how many cookies went in each bag.	Jose is making bag lunches for the service club in his community. Jose is creating 5 bags and needs to include some cookies as well as two small bottles of water in each bag. If at the end of packing lunches, he added 30 items to each bag, how many cookies went in each bag.
Model	Model	Model

You Try It!
What strategy would you use to solve?

Understanding Reasoning Questions		
Use this sheet as a reflection tool to support the understanding of the reasoning questions. After you engage/learn about the questions, use the tool to make notes around your take aways, implementation ideas, and ways to incorporate the rubric		
	Takeaways About the Questions	Reflections on Implementation Ideas and the Rubric
Takeaways About the Questions		
Understanding of How They Are Scored		
Reflections on Implementation Ideas and the Rubric		

Reasoning Question – 7.C.5

Used from: NJ Released Questions – 7.C.5 – Expressions and Equations – VF60696

Matt and his friends paid \$30 for 4 sandwiches and 4 bottles of water.

- Each sandwich cost the same amount.
- The bottles of water cost \$2 each

The equation $4(x + 2) = 30$ can be used to determine x , the cost of each sandwich.

Matt solved the equation using the following steps:

$$4(x + 2) = 30$$

$$4x + 2 = 30$$

$$4x = 28$$

$$x = 7$$

Therefore, Matt calculates the cost of each sandwich as \$7. Did Matt solve the equation correctly?

- If he did, justify each step of Matt's solution using mathematical properties.
- If he did not, describe any error Matt made in his calculation and determine the price of each sandwich. Justify each step you used to come to your conclusion.

LESSON 20: One- and Two-Step Inequalities

Directions: Complete this page with your teacher and partner.

Number Statement	True or False	Multiply or Divide by a Negative	True or False
1. $4 < 7$?		$(-2)4 < 7(-2)$ $-8 < -14$?	
_____ is not less than _____. What can I do to make it a true statement?			
2. $12 > 3$?		$\frac{12}{-3} > \frac{3}{-3}$ $-4 > -1$?	
_____ is not greater than _____. What can I do to make it a true statement?			
3. $2 < 9$?		$(-3)2 < 9(-3)$ $-6 < -27$?	
_____ is not less than _____. What can I do to make it a true statement?			
4. $6 > -12$?		$\frac{6}{-6} > \frac{-12}{-6}$ $-1 > 2$?	
_____ is not greater than _____. What can I do to make it a true statement?			

When solving inequalities, you must _____ the inequality symbol when you _____ or _____ by a _____ integer.

Understanding Modeling Questions		
Use this sheet as a reflection tool to support the understanding of the modeling questions. After you engage/learn about the questions, use the tool to make notes around your take aways, implementation ideas, and ways to incorporate the rubric		
	Takeaways About the Questions	Reflections on Implementation Ideas and the Rubric
Takeaways About the Questions		
Understanding of How They Are Scored		
Reflections on Implementation Ideas and the Rubric		

Think Quantities!	Think Structure!	Think Repetition!
What can I count?	How is this situation behaving?	Is there a process that keeps repeating?
What can I measure?	What kind of problem is this?	Am I counting /building/drawing in the same way each time?
How are the quantities related?	Does the problem remind me of another I've solved?	Do I keep repeating the same calculations?
How can I represent the quantities so I can see relationships?	Will changing the form help?	How can I use repetition to write a rule?
	How can I chunk this expressions/number/visual?	

Modeling Question – D.1

Used from: NJ Released Questions – 7.D.1 – Expressions and Equations – VF652084

A scientist removed a sample of 39.1 grams of a chemical from a container. The sample was $5\frac{3}{4}$ grams less than $\frac{3}{10}$ of the total mass of the chemical in the container.

What was the total mass, in grams, of the chemical in the container before the scientist removed the sample of 39.1 grams? Show your work or explain how you know.