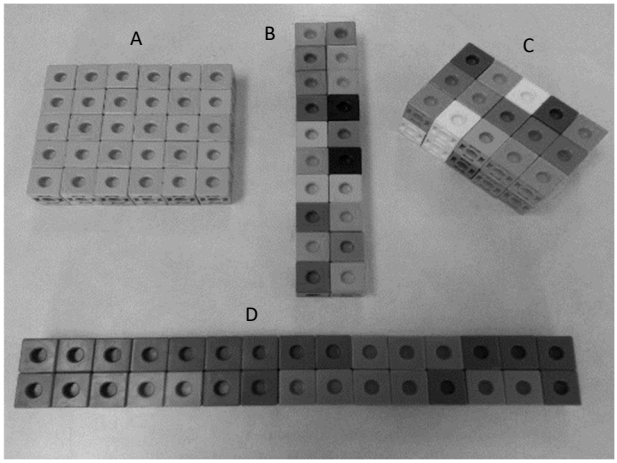
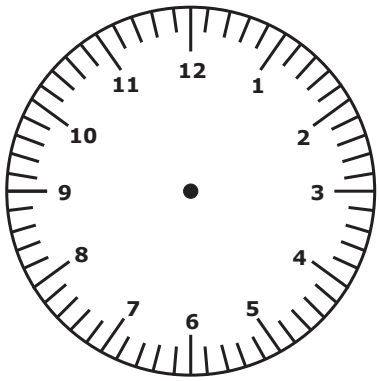
Let's Do Some Math Which One Doesn't Belong?	

Standards Unpacking		
Key	**Standard**	**Prerequisites/Vocabulary**
Put a box around the conceptual component of the standard. Underline the procedural/fluency component of the standard. Put a cloud around the application component of the standard.	**3.M.1 -** Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram.	What prior knowledge should my students have? What vocabulary/ notation should students know for this standard?
	3.M.2 - Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem.	What prior knowledge should my students have? What vocabulary/ notation should students know for this standard?

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

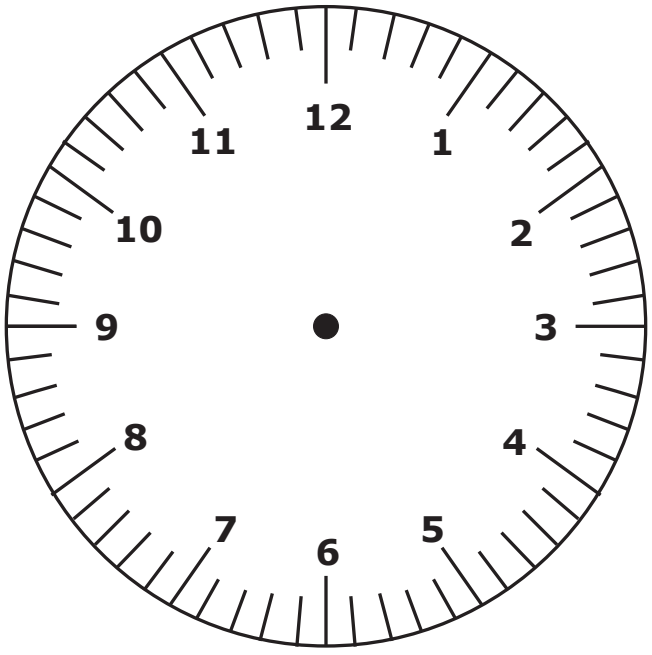
Mrs. Martinez will begin math class soon. The class will have study time today. If it is 8:20 now, what time will it be in 8 minutes?



S Underline the question.
This problem is asking me to find _____

_____.

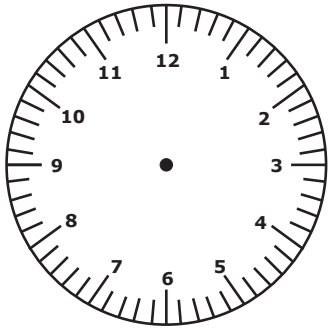
Directions: Complete this page with your teacher and partner.

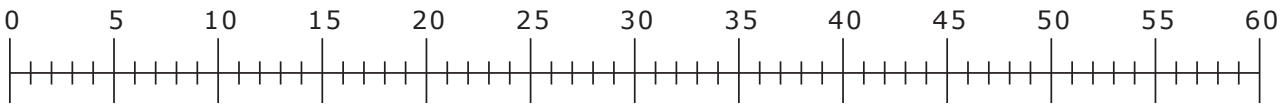


Directions: Complete this page with your teacher and partner.

1.

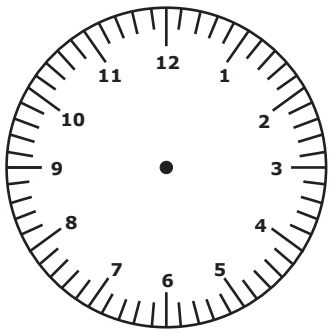
2:12 + ____ =

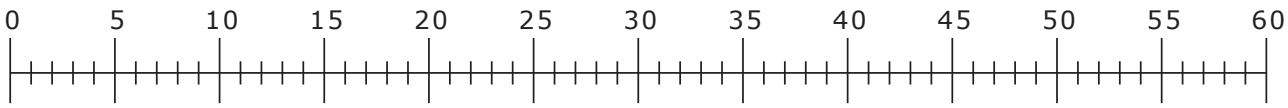




2.

7:29 – ____ =

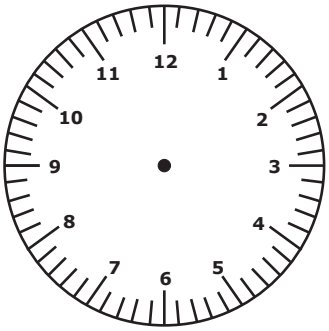


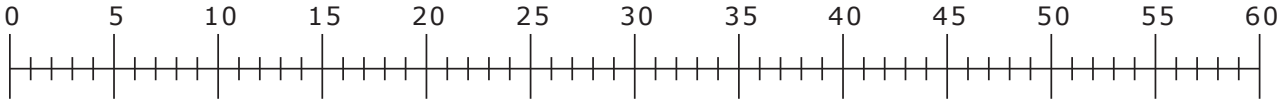


Directions: Complete this page with your partner.

3. If the time is 10:15, then what time will it be in 31 minutes?

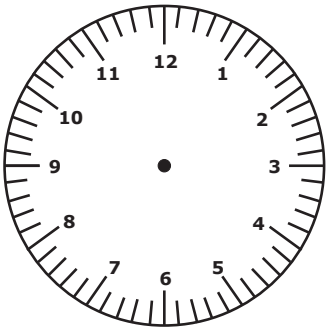
10:15 + ____ =

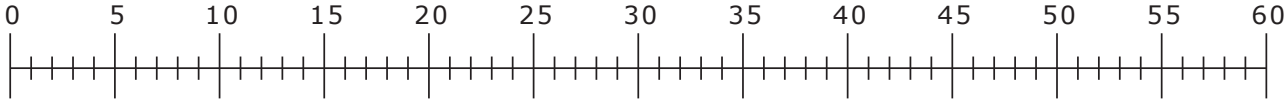




4. If the time is 4:56, then what time was it 11 minutes ago?

4:56 – ____ =

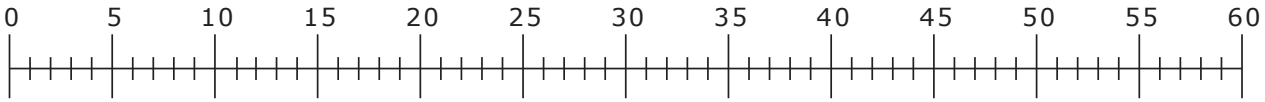




Directions: Complete this page with your teacher and partner.

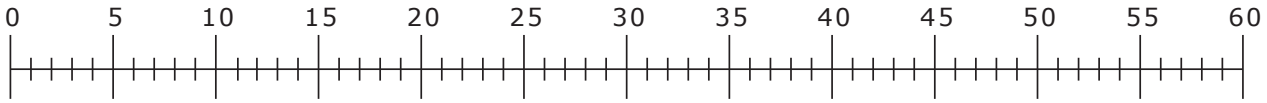
1. Look at the digital clock. What time will it be in 22 minutes? ___:___

2:20



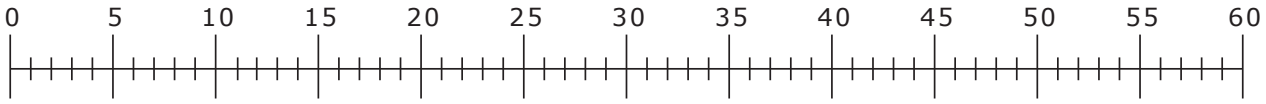
2. Look at the digital clock. What time was it 19 minutes ago? ___:___

7:39



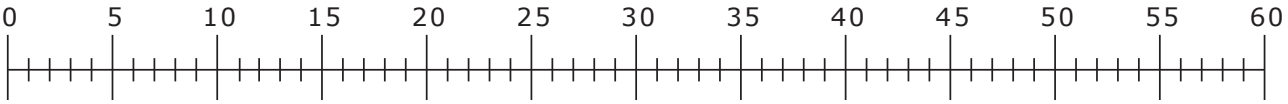
3. Look at the clock. What time was it 45 minutes ago? ___:___

4:56

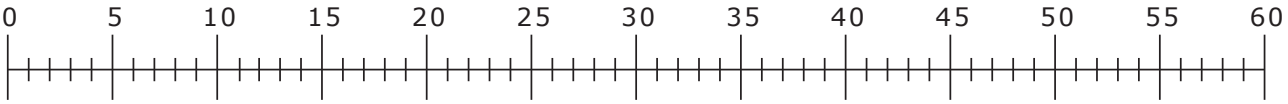


Directions: Complete this page with your teacher and partner.

1. If the time is 4:10, what time will it be in 38 minutes?



2. If the time is 5:21, what time was it 15 minutes ago?



3. If the time is 6:18, what time was it 18 minutes ago?

4. If the time is 9:41, what time will it be in 12 minutes?

5. If the time is 1:21, what time will it be in 23 minutes?

6. If the time is 4:54, what time was it 24 minutes ago?

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

Dontae's mom volunteered to help with the class party at the end of the year. There are 28 students in his class. Dontae's mom is buying 1 liter bottles of fruit punch for the drink. If she plans on 4 servings per liter, how many liters of fruit punch does she need?

S Underline the question.
This problem is asking me to find _____

_____.

Directions: Complete this page with your teacher and partner.

The gram and kilogram are used to measure mass.

1. Which has the greater mass, the gram or the kilogram? _____

2. How many grams does it take to cover the bottom of the kilogram container? _____

3. How many grams can be stacked from bottom to top in one corner of the kilogram container? _____

4. How many grams does it take to completely fill the kilogram container? _____
_____

5. How many grams equal 1 kilogram? _____

6. What are some objects, you see every day that, would be measured in grams?

_____

7. What are some objects, you see every day, that would be measured in kilograms?

_____

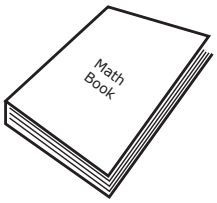
Directions: Complete this page with your teacher and partner.

Circle the unit of measurement that would be used to measure the mass of each object.

1.

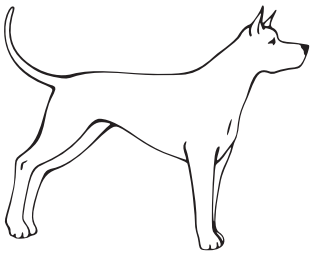
grams kilograms

2.



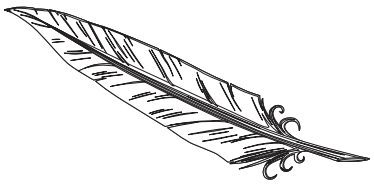
grams kilograms

3.



grams kilograms

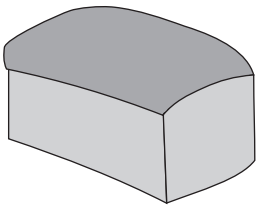
4.



grams kilograms

Circle the correct answer.

5.



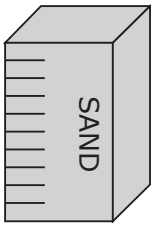
About 1 kilogram

About 1 gram

Exactly 1 gram

Exactly 1 kilogram

6.



About 10 kilograms

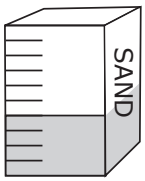
About 10 grams

Exactly 10 grams

Key: Each mark equals 1 gram.

Exactly 10 kilograms

7.



About 4 kilograms

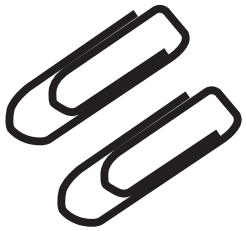
About 4 grams

Exactly 4 grams

Key: Each mark equals 1 gram.

Exactly 4 kilograms

8.



About 1 kilogram

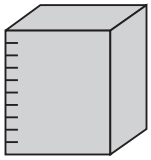
About 1 gram

Exactly 1 gram

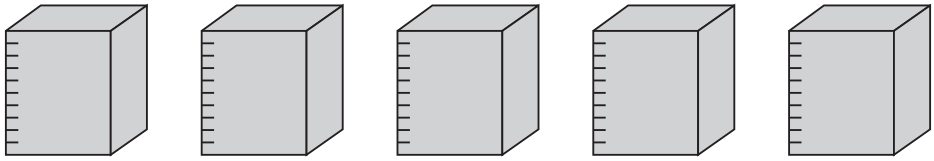
Exactly 1 kilogram

Directions: Complete this page with your teacher and partner.

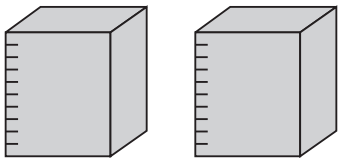
The box below is full of sand. It has a mass of 10 kilograms.



1. John has 5 boxes full of sand. What is the total mass of the boxes of sand shown below? _____



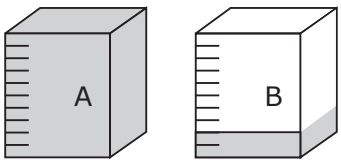
Kate has two boxes of sand. Each box has a mass of 10 kilograms.



2. What is the difference between the amounts of sand John and Kate have?

_____

Each mark on the container represents 1 kilogram of sand.



3. How many kilograms of sand are in Box A? _____

4. How many kilograms of sand are in Box B? _____

5. What is the total mass of sand in Box A and Box B? _____

Directions: Complete this page with your teacher and partner.

The liter is used to measure liquid volume.

1. Which has the greater volume, the liter or the milliliter? _____

2. How many milliliters does it take to cover the bottom of the liter container?

_____

3. How many milliliters can be stacked up from bottom to top in one corner of the liter container? _____

4. How many milliliters does it take to completely fill the liter container?

_____

5. How many milliliters are in a liter? _____

6. What are some liquids you see every day that would have a volume measured in milliliters? _____

7. What are some liquids you see every day that would have a volume measured in liters? _____

Directions: Complete this page with your teacher and partner.

Circle the unit of measurement that would be used to find the volume of each object.

1.

milliliters liters

2.

milliliters liters

3.

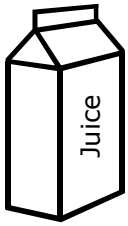
milliliters liters

4.

milliliters liters

Circle the correct answer.

5.



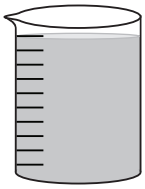
About 1 liter

About 1 milliliter

Exactly 1 milliliter

Exactly 1 liter

6.



About 10 liters

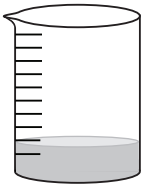
About 10 milliliters

Exactly 10 milliliters

Exactly 10 liters

Key: Each mark = 1 milliliter

7.



About 2 liters

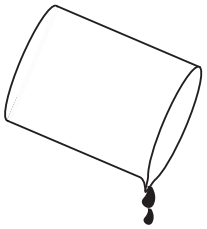
About 2 milliliters

Exactly 2 milliliters

Exactly 2 liters

Key: Each mark = 1 milliliter

8.



About 1 liter

About 1 milliliter

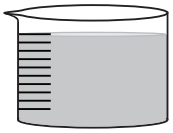
Exactly 1 milliliter

Exactly 1 liter

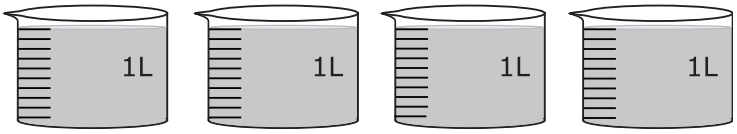
Amount of drops of liquid

Directions: Complete this page with your teacher and partner.

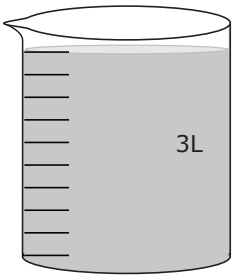
The container below is filled with water and has a volume of 1 liter.



1. Sara has to fill 4 of the containers with water for a science lab. What is the total volume of the water shown below? _____



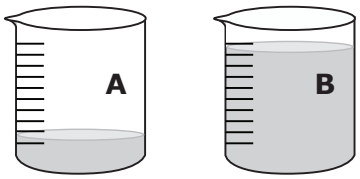
Karissa is working on a different science lab. The amount of water she needs is shown below.



2. What is the difference between the volume of water Sara is using and the volume of water Karissa is using? _____

3. What is the amount of water Karissa is using in milliliters? _____

Each mark on the containers below represents 1 liter of water.



4. How many liters of water are in both of the containers of water? _____

5. How many more liters of water are in Container B than in Container A? _____

Directions: Answer the following questions about mass and volume.

1. Which unit of measurement has a greater mass – a kilogram or a gram?

2. Which unit of measurement has a greater volume – a liter or a milliliter?

3. How many grams equal 1 kilogram?

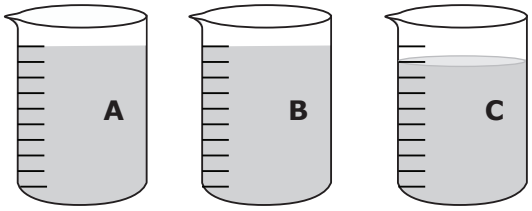
4. How many liters equal 1,000 milliliters?

5. What unit of measurement would be appropriate for measuring the mass of a pencil?

6. What unit of measurement would be appropriate for measuring the volume of water in a bath tub?

Use the following pictures to answer Questions 7 and 8.

Key: Each mark represents 100 milliliters of liquid.

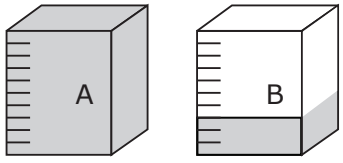


7. How many milliliters are in Container C?

8. How many milliliters are in Containers A and B?

Use the following pictures to answer Questions 9 and 10.

Key: Each mark represents 100 grams of popcorn kernels.



9. How many more grams are in Container A than in Container B?

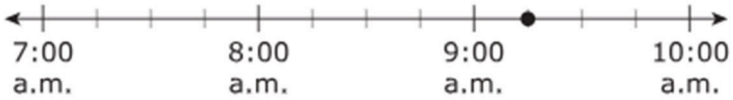
10. How many grams are in both containers?

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 – C.6 – 2

Used from: NJ Released Questions – 3.C.6-2 – Measurement and Data – 0115-M00611

Casey called her friend Linda on the telephone. The point on the number line shows the time the telephone call started.



Part A

Casey began cleaning her room 45 minutes before she called Linda.

At what time did Casey begin cleaning her room? Use the number line to help explain your thinking.

Part B

Casey went to the library 30 minutes after her telephone call with Linda started.

At what time did Casey go to the library? Use the number line to help explain your thinking

Standards Unpacking		
Key	**Standard**	**Prerequisites/Vocabulary**
Put a box around the conceptual component of the standard. Underline the procedural/fluency component of the standard. Put a cloud around the application component of the standard.	**3.DL.1 (New) -** Develop data-based questions and decide what data will answer the question. (e.g. "What size shoe does a 3rd grader wear?", "How many books does a 3rd grader read?")	What prior knowledge should my students have? What vocabulary/ notation should students know for this standard?
	3.DL.2 (New) - Collect student-centered data (e.g. collect data on students' favorite ice cream flavor) or use existing data to answer data-based questions.	What prior knowledge should my students have? What vocabulary/ notation should students know for this standard?
	3.M.5 (Old 3.MD.5) - Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs. For example, draw a bar graph in which each square in the bar graph might represent 5 pets.	What prior knowledge should my students have? What vocabulary/ notation should students know for this standard?

Directions: Complete this page with your teacher and partner.

FAVORITE COLORS

Red	
Blue	
Green	
Orange	
Purple	
Yellow	

Each star represents 1 student.

1. What type of graph did we use to chart our favorite colors? _____

2. What does the graph tell us? _____

3. What does each star represent? _____

4. How many students chose blue as their favorite color? _____

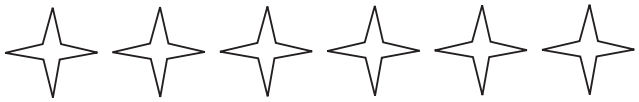
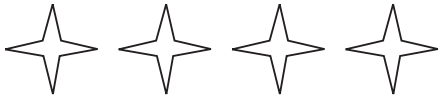
5. How many students chose yellow or purple? _____

6. A _____ _____ provides an easy way for us to organize data using pictures to represent items.

Directions: Complete this page with your teacher and partner.

Scaled Picture Graphs

School Shirt Color

Yellow	
Orange	

Each  represents 2 people.

How many people chose yellow? _____

How many people chose orange? _____

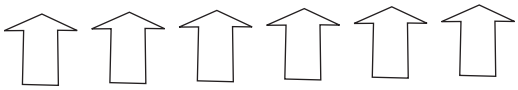
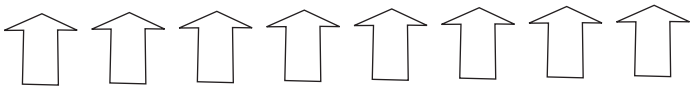
When we are making a picture graph and find that we may have too many pictures to fit all of the information onto the graph, we can change the _____.

The scale tells us how many items are represented by each picture.

When we change the scale so that each picture represents more than 1 item, the graph is a _____ _____ _____, meaning that each picture represents more than one item.

Directions: Complete this page with your teacher and partner.

Favorite Cafeteria Food

Pizza	
Chicken	
Tacos	
Burgers	

Each  represents 4 students.

1. How many students chose tacos as their favorite? _____

2. How many students chose burgers as their favorite? _____

3. How many more students chose pizza than chicken? _____

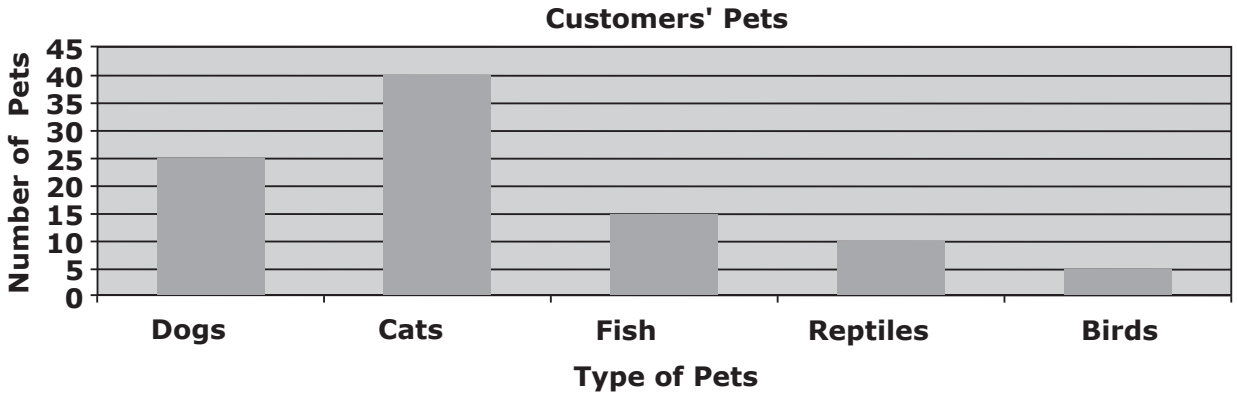
4. What is the difference between the number of students who chose chicken and the number of students who chose burgers? _____

5. How many students chose pizza or burgers as their favorite? _____

6. How many more students chose tacos than chicken and burgers combined? _____

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

Use the bar graph below to answer the question.

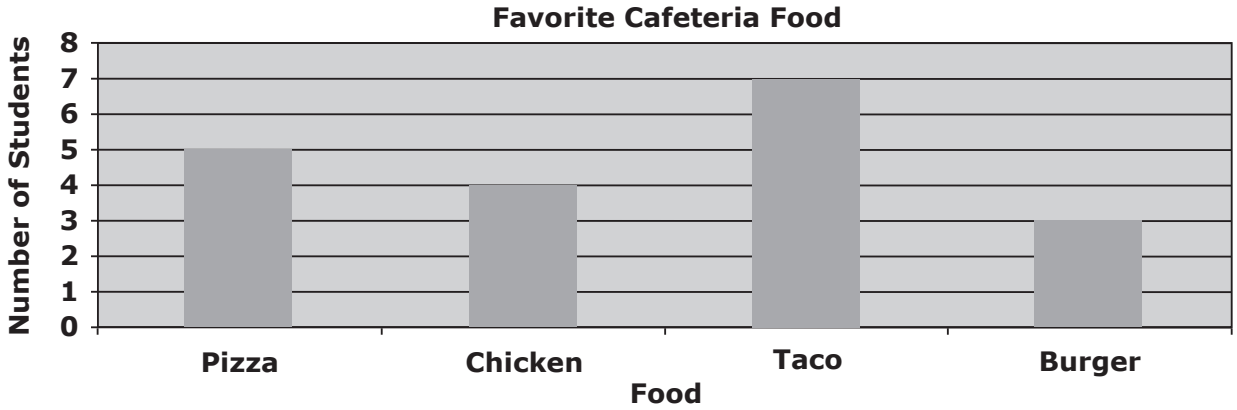


The Happy Pets pet store asked customers what type of pets they have. The results are in the bar graph above. How many more customers have dogs than fish and birds combined?

S Underline the question.
This problem is asking me to find _____

_____.

Directions: Complete this page with your teacher and partner.

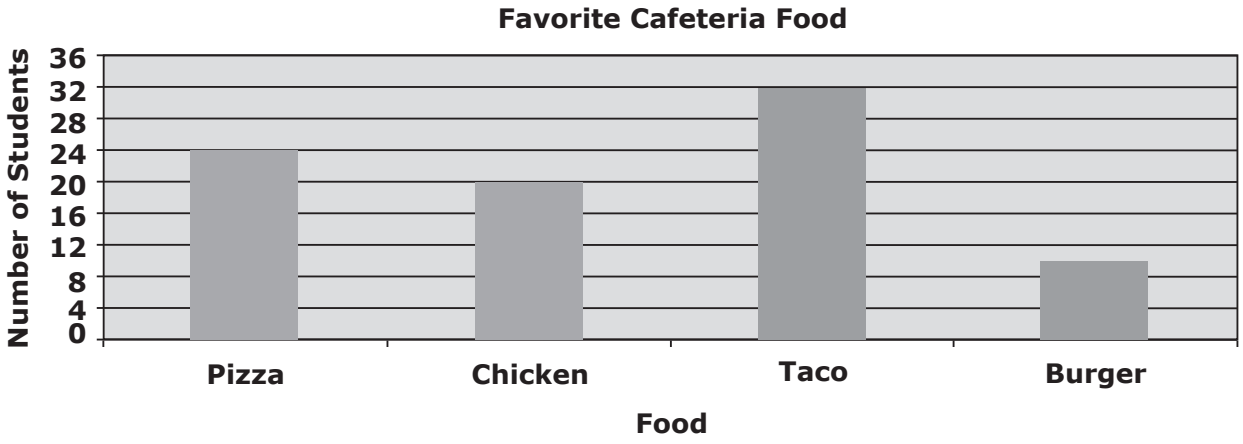


1. What type of graph is this? _____

2. How many students picked chicken as their favorite cafeteria food? _____

3. How many more students like tacos than pizza? _____

Directions: Complete this page with your teacher and partner.



4. What type of graph is this? _____

5. What is the same about this graph and the first one? _____
_____

6. What is different about this graph and the first one? _____
_____

7. This graph is called a _____. It is called that because the numbers on the *y*-axis of the graph do not count by 1. In this case, the numbers are all multiples of _____.

8. How many students chose chicken as their favorite cafeteria food? _____

9. How many more students chose tacos over pizza? _____

10. How many more students chose tacos than burgers and chicken combined?
_____

11. How many fewer students chose pizza than chicken and burgers combined?
_____

12. How many more students chose tacos and pizza combined than burgers?
_____

Directions: Complete this page with your teacher and partner.

1. What color are your eyes? _____

2. Fill in the chart below with the number of students with each color eyes.

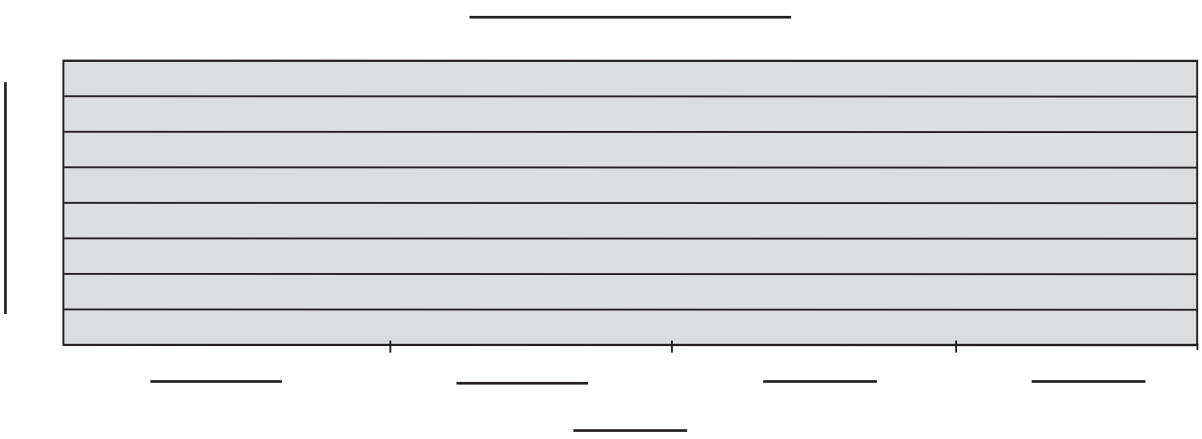
Eye Color	Number Of Students
Blue	
Brown	
Hazel	
Green	

3. Find a partner that has the same color eyes as you.

4. Follow your teacher's directions to make a scaled bar graph on the board.

5. Follow the steps below to make your scaled bar graph.

A. Decide on a title.
B. Write the categories on the *x*-axis.
C. Decide on a scale for the *y*-axis. Write the numbers for each horizontal line.
D. Write labels for the *x*- and *y*- axes.
E. Draw bars for each category. Double check them to make sure you made them the correct height.



6. How many students have blue eyes? _____

7. How many more students have brown eyes than blue and green put together?

_____

8. How many fewer students have green eyes than brown and hazel combined?

_____

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

Modeling Question – D.2

Used from: NJ Released Questions – D.2 – Measurement and Data – 0150-M00792

Several of the students in Ms. Gregory's class were in a jumping content. The lengths of two students' jumps are shown.

- Kevin's jump was 41 inches.
- Mark's jump was 17 inches.

Part A

Tamara jumped 19 inches farther than Mark.

How long was Tamara's jump?

Enter your answer in the blank.

_____ inches

Part B

Xavier's jump was 16 inches shorter than Kevin's jump.

How far did Xavier jump?

Enter your answer in the blank.

_____ inches

Part C

Jason also took a jump. The total distance the five students jumped was 152 inches.

- What is the total distance the other four students jumped?
- How far did Jason jump?

Show all your work.

Training Reflection			
What are your takeaways?			
Reasoning	**Modeling**	**Context**	**Precision**
What are your next steps as a result of this training?			