

Capacity, Weight/Mass, and Temperature

Measuring Different Attributes

You need

- coffee mug
- ruler, pan balance, paper cup, water, rice, thermometer

What are all of the different ways that you can measure a mug?

STEP 1 Thinking About Attributes

What can you measure about a mug?



STEP 2 Working with Tools

How might you use tools to measure a mug? _____

STEP 3 Measuring in Different Ways

Use the tools to measure a mug in different ways. What did you find out?





School-Home Connection

Dear Family,

Today we started Chapter 15 of *Think Math!* In this chapter, I will explore how to measure capacity, weight/mass, and temperature. There are NOTES on the Lesson Activity Book pages to explain what I am learning every day.

Here are some activities for us to do together at home. These activities will help me understand measurement.

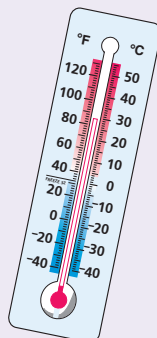
Love,

Family Fun

What Is the Temperature?

Work with your child to record the daily air temperature.

- Each day for a week, look in the newspaper to find and record the daily forecast of high and low temperatures.
- Look at your list of temperatures for the week. Talk about which day was the warmest and which was the coldest. Talk about what clothes you might wear in these different temperatures.
- With your child, make a prediction for tomorrow's high and low temperatures.
- Continue recording temperatures beyond the week, if you wish. Then use this information to help your child plan his or her clothes or activities.



Market Measures

Work with your child to identify units of measure at the store.

- Together, look at flyers for the supermarket. Then take a visit to the store and look at different products on the shelves.
- Talk about the weights and liquid measures of meats, juices, cereal, and other products.



- Compare prices of products in different sizes. Decide which is the best buy.
- Have fun shopping and learning together!

Comparing, Ordering, and Measuring Capacity

NCTM Standards 2, 4, 6, 7, 8, 9, 10

Which unit is best to measure the capacity of each container?



spoon



cup



pail

1.



spoons cups pails

2.



spoons cups pails

Choose the unit
that makes the
most sense.



3.



spoons cups pails

4.



spoons cups pails

5.



spoons cups pails

6.



spoons cups pails

7.



spoons cups pails

8.



spoons cups pails



NOTE: Your child is learning to compare, order, and measure containers by how much they hold.

9. Becky has a bowl of soup.
Kari has a cup of soup.
Who has more soup?



10. Kate has a pitcher of water. Bud has a pail of water. Max has a glass of water.
Who has the most water?



11. The metal vase holds 10 cups of water.
The glass vase holds 10 spoonfuls.
Which vase holds less water?

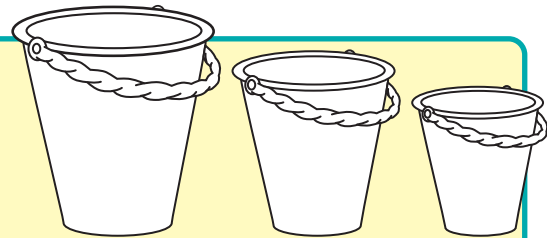


12. How can you find out which of two bowls holds more?



Problem Solving

13. Ray has a red, a blue, and a green pail. The blue pail holds the most. The green pail holds more than the red. Which color pail holds the least? Tell how you found the answer.

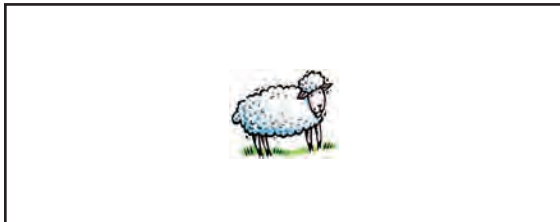


Measuring in Cups, Pints, Quarts, and Gallons

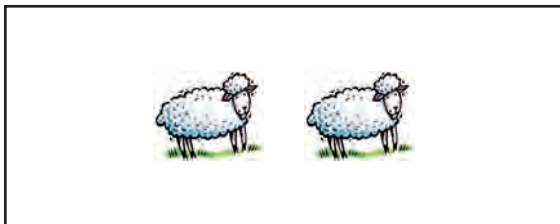
NCTM Standards 1, 2, 4, 6, 8, 9, 10

Each baby lamb drinks 1 cup of milk.
Match the lambs to what they drink.

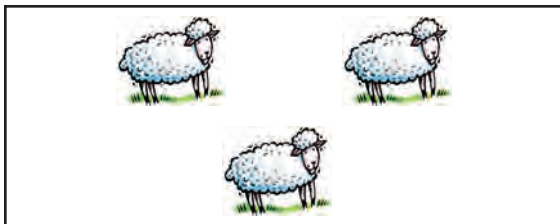
1.



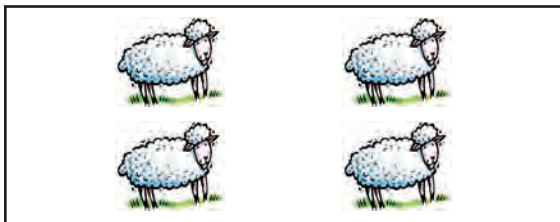
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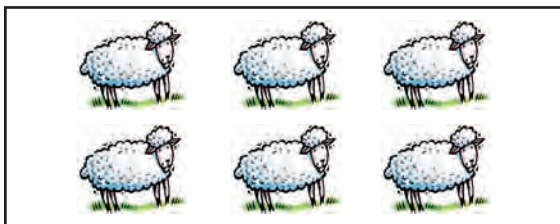
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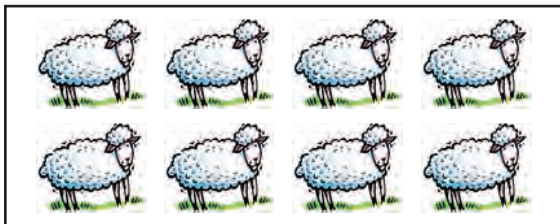
4.



5.



6.



2 cups = 1 pint
2 pints = 1 quart
4 quarts = 1 gallon



1 pint

3 pints

1 cup

2 quarts

3 cups

1 quart



NOTE: Your child is learning about cups, pints, quarts, and gallons. Show your child an empty milk container and ask him or her to find out how many cups will fill the container.

Which measurement from the box solves each riddle?

7. I am more than 1 cup. I am less than 3 cups. What am I?

1 pint

Measurements

1 pint 3 quarts
1 quart 2 gallons
1 gallon

8. I am more than 3 cups. I am less than 5 cups. What am I?

9. I am more than 4 pints. I am less than 1 gallon. What am I?

10. I have the same capacity as 16 cups. What am I?

11. I have the same capacity as 8 quarts. What am I?

-  12. Make up your own riddle.

Problem Solving

13. Tina has a 1-gallon punch bowl. She wants to fill the bowl with orange juice and lemonade. How much of each can she use?



_____ orange juice

_____ lemonade

Measuring in Milliliters and Liters

NCTM Standards 1, 4, 6, 7, 8, 9, 10

Which unit is better to measure the capacity of each object?

1.



milliliters

liters

2.



milliliters

liters

3.



milliliters

liters

4.



milliliters

liters

5.



milliliters

liters

6.



milliliters

liters

Draw something you might measure with each unit.

7.

milliliters

8.

liters



NOTE: Your child is learning about milliliters and liters. Ask your child to guess and then check to find out if various household containers hold more than, less than, or the same as a liter container.



9. Anne drank a glass of milk. Did she drink 230 milliliters or 230 liters of milk?



10. Jeff filled a watering can with water. Did he use 3 liters or 3 milliliters of water?



11. Todd ate a spoonful of soup. Did he eat 15 milliliters or 15 liters of soup?



12. Nina filled the kitchen sink with water. Did she use 25 milliliters or 25 liters of water?





13. Write your own problem.
Have a classmate solve it.



Problem Solving

14. The gas tank in Mr. Brown's car holds about 60 liters. Does the gas tank hold more than or less than 60 gallons? Explain how you know.

Comparing and Measuring Weight

NCTM Standards 2, 4, 6, 7, 8, 9, 10

Which unit is best to measure the weight of each object?



paper
clip



book



brick

1.



paper
clips

books bricks

2.



paper clips books bricks

3.



paper clips books bricks

4.



paper clips books bricks

5.



paper clips books bricks

6.




paper clips books bricks




7. Why did you choose that unit for Problem 6?
Use words, numbers, or pictures to explain.



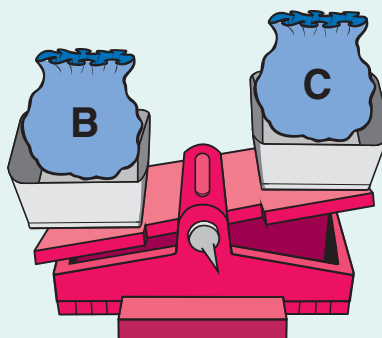
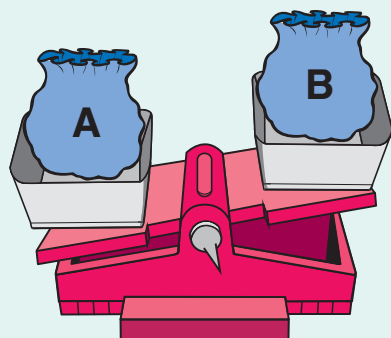
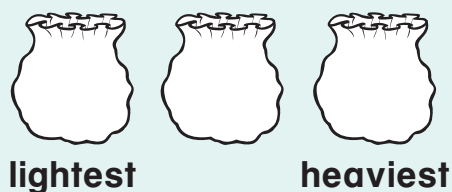
NOTE: Your child is learning to compare and measure objects by how much they weigh.

-  8. Ben's apple weighs more than Ali's apple. Ali's apple weighs more than Casey's apple. Can you tell whose apple weighs the most? Explain.

-  9. Ali's book weighs more than Casey's book. Ben's book weighs more than Casey's book. Can you tell whose book weighs the most? Explain.

Challenge




10. Label the bags in order from lightest to heaviest. Write A, B, and C.



Measuring in Grams and Kilograms

NCTM Standards 1, 2, 4, 6, 8, 9, 10

What is missing? Complete the table.

	Object	More than or less than 1 gram?	More than or less than 1 kilogram?
1.	marker 	more than	
2.	postage stamp 		
3.	computer 		
4.		more than	less than
5.		more than	more than
6.		less than	



NOTE: Your child is learning to estimate and measure objects in grams and kilograms. Ask your child to name some kitchen objects that are more than 1 kilogram.

Draw two objects from your classroom. Estimate each one in grams or kilograms. Then measure.

	Object	Estimate	Measurement
7.		about _____	about _____
8.		about _____	about _____

9. Find two objects in your classroom that are each about 1 kilogram. Draw them.



Problem Solving

10. An adult cocker spaniel is about 12 kilograms. Would a cocker spaniel puppy measure 3 kilograms or 30 kilograms? Tell how you know.



Measuring in Ounces, Pounds, and Tons

NCTM Standards 1, 4, 6, 9, 10

Which unit is best to weigh each object?

1.



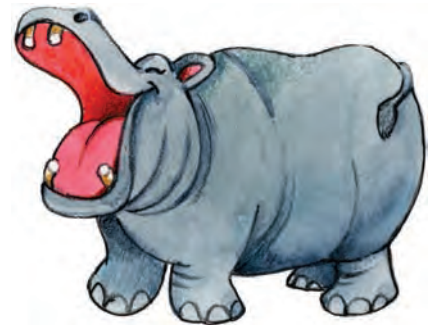
ounces pounds tons

2.



ounces pounds tons

3.



ounces pounds tons

4.



ounces pounds tons

5.



ounces pounds tons

6.



ounces pounds tons

Draw something you might weigh with each unit.

7.

ounces

8.

pounds

9.

tons



NOTE: Your child is learning about ounces, pounds, and tons. Ask your child to estimate and weigh grocery items.

Match each animal to its weight.

10.



whale

12 pounds

11.



lion

10 ounces

12.



cat

125 tons

13.



kitten

400 pounds

14. Draw a classroom object that you think weighs between 1 pound and 3 pounds. Estimate and measure the weight.

Estimate: about _____ pounds

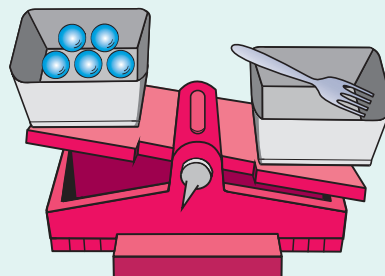
Measurement: about _____ pounds



Challenge

15. Together, 5 identical marbles weigh 1 ounce. How many marbles would you need to balance a 5-ounce fork?

_____ marbles



Measuring Temperature

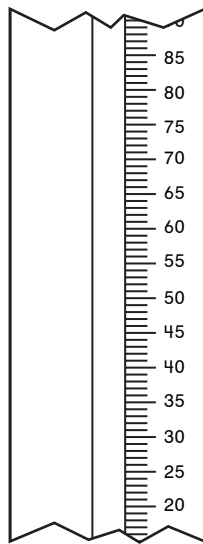
NCTM Standards 1, 2, 4, 6, 8, 9, 10

What temperature goes with each picture?
Color the thermometer to show your estimate.

1.



°Fahrenheit

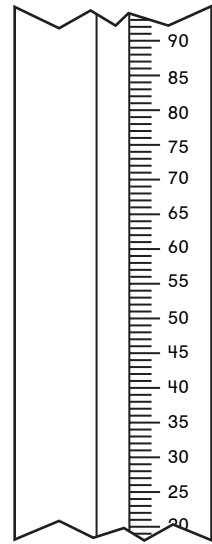


_____ °F

2.



°Fahrenheit

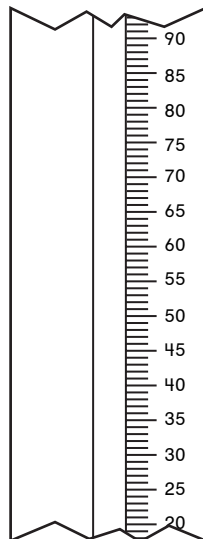


_____ °F

3.

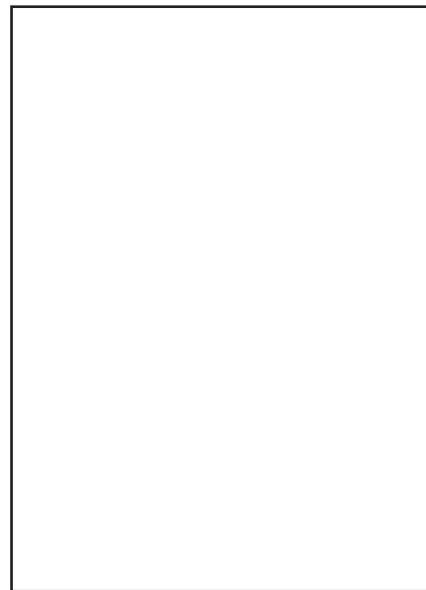


°Fahrenheit

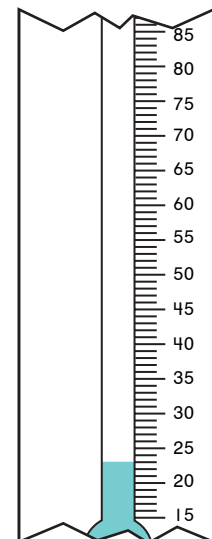


_____ °F

4. Draw your own.



°Fahrenheit



_____ °F

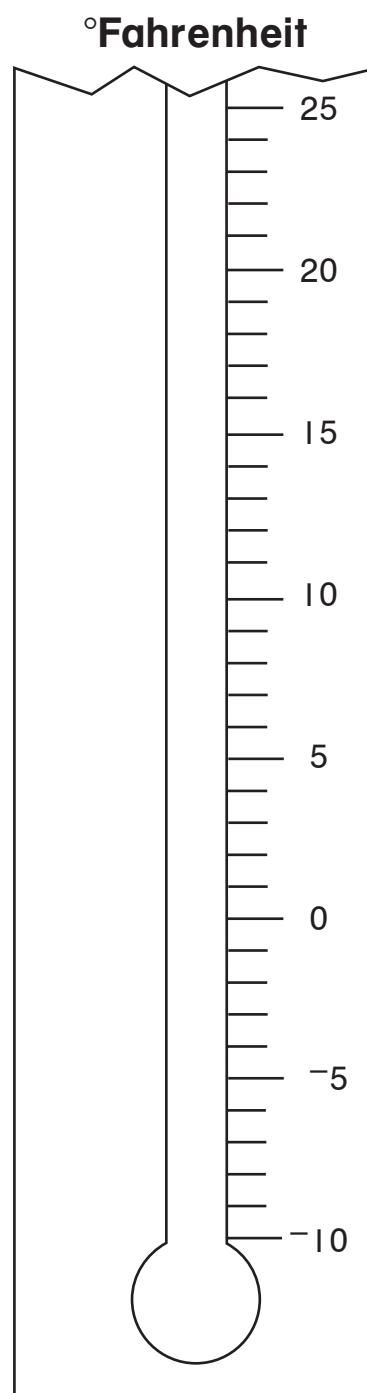


NOTE: Your child is learning how to estimate and measure temperature in degrees Fahrenheit. Together, read and record the outside temperature for a week or so using your home thermometer.

Play the cold version of *What's My Temperature?*
Pick a secret temperature between 25°F and -10°F .
Your partner asks *yes/no* questions. Use red and blue markers
to record on the gameboard below.



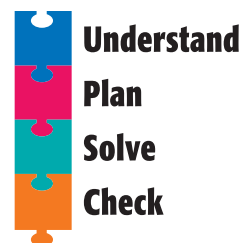
What's My Temperature? Gameboard



Problem Solving Strategy

Act It Out

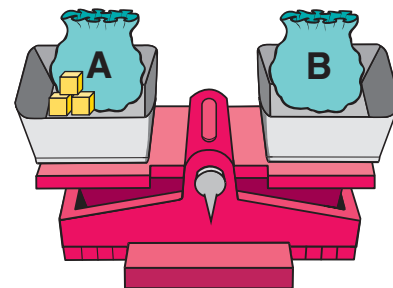
NCTM Standards 1, 2, 4, 5, 6, 7, 8, 9, 10



1. Shayna put 15 cubes in two bags. She put more cubes in Bag B than in Bag A. She balanced the pans by adding 3 cubes to the side with Bag A. How many cubes were in each bag?

Bag A _____ cubes

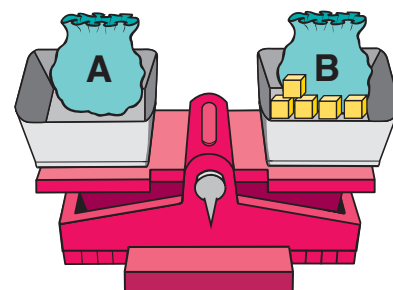
Bag B _____ cubes



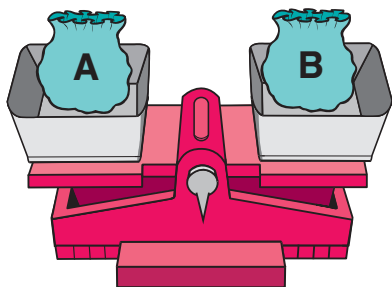
2. Pat put 13 cubes in two bags. He put more cubes in Bag A than in Bag B. He balanced the pans by adding 5 cubes to the side with Bag B. How many cubes were in each bag?

Bag A _____ cubes

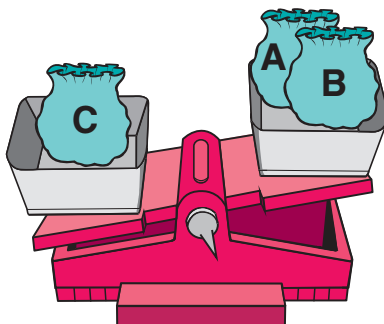
Bag B _____ cubes



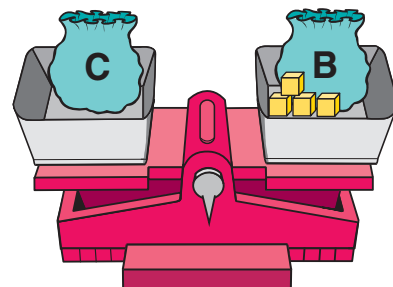
3. Deion put 10 cubes in three bags. He put the same number of cubes in Bags A and B. He put more cubes in Bag C than in the other two bags together. He balanced Bags B and C by adding 4 cubes to the side with Bag B. How many cubes were in each bag?



Bag A _____ cubes



Bag B _____ cubes



Bag C _____ cubes



NOTE: Your child is exploring different ways to solve problems. Sometimes acting it out is an efficient way to solve a problem.

Problem Solving Test Prep

1. I have 6 faces, 12 edges, and 8 vertices. All of my faces are the same shape. What figure am I?

(A) cube
(B) pyramid
(C) sphere
(D) cone

2. I am thinking of a number. When my number is multiplied by 2 it has a product between 10 and 20. Which is NOT my number?

(A) 9
(B) 8
(C) 6
(D) 4



Show What You Know

3. Monica had 69¢. She bought something at the store. Then she had 45¢ left. How much money did she spend?

_____¢

Explain how you found the answer.

4. Kip just loaded some games onto his computer. He almost doubled the number of games. Now he has 23 games. How many games did he have before?

_____ games

Explain how you found the answer.

Review/Assessment

NCTM Standards 1, 4, 5, 6, 7, 8, 9, 10

Which unit is best to measure the capacity of each container? [Lessons 1 and 3](#)

1.



spoons

cups

pails

2.



milliliters

liters

Match each amount to a container. [Lesson 2](#)

3. 2 cups



4. 4 cups



5. 16 cups



Which unit is best to weigh each object? [Lesson 4](#)

6.



paper clips

books

bricks

7.



paper clips

books

bricks

Is each real object *more* or *less* than 1 kilogram? Lesson 5

8.



_____ than 1 kilogram

9.



_____ than 1 kilogram

Match each object to its weight. Lesson 6

10.



2 tons

11.



2 ounces

12.

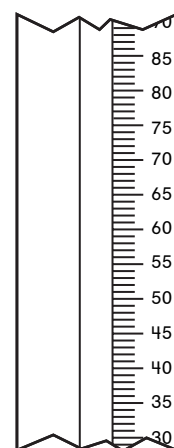


2 pounds

13. What temperature goes with the picture? Color the thermometer to show your estimate. Lesson 7



°Fahrenheit



_____ °F

Problem Solving Lesson 8

14. Al put 20 cubes in two bags. He put more cubes in Bag A than in Bag B. He balanced the two bags by adding 4 cubes to the side with Bag B. How many cubes were in each bag?

Bag A _____ cubes

Bag B _____ cubes

