EUREKA MATH

Mathematics Curriculum

Grade 2 • MODULE 2

Addition and Subtraction of Length Units

HOMEWORK

Video tutorials: http://embarc.online

Version 3

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GRADE 2 • MODULE 2

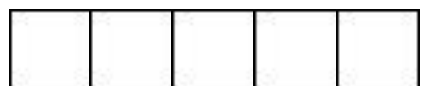Addition and Subtraction of Length Units

Name _____   Date _____

Count each centimeter cube to find the length of each object.

1. The crayon is _____ centimeter cubes long.

2. The pencil is _____ centimeter cubes long.

3. The clothespin is _____ centimeter cubes long.

4.

The length of the marker is _____ centimeter cubes.

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Lesson 1:   Connect measurement with physical units by using multiple copies of
the same physical unit to measure.

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5. Richard has 43 centimeter cubes. Henry has 30 centimeter cubes. What is the length of their cubes altogether?

6. The length of Marisa's loaf of bread is 54 centimeters. She cut off and ate 7 centimeters of bread. What is the length of what she has left?

7. The length of Jimmy's math book is 17 centimeter cubes. His reading book is 12 centimeter cubes longer. What is the length of his reading book?
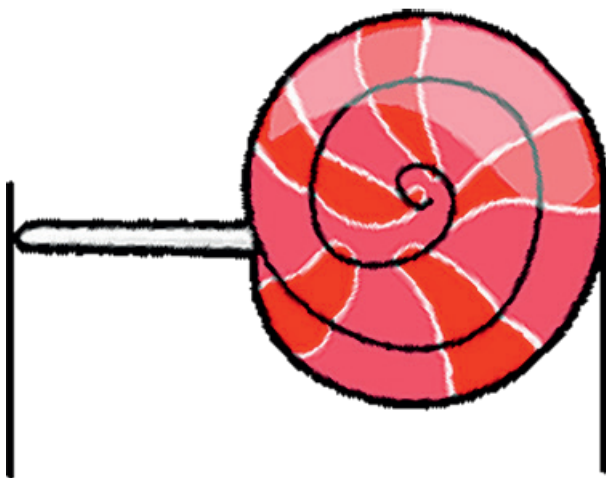
Name _____   Date _____

Use the centimeter square at the bottom of the next page to measure the length of each object. Mark the endpoint of the square as you measure.
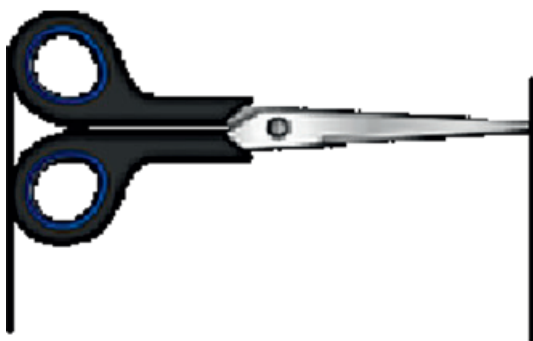
1. The picture of the glue is about _____ centimeters long.
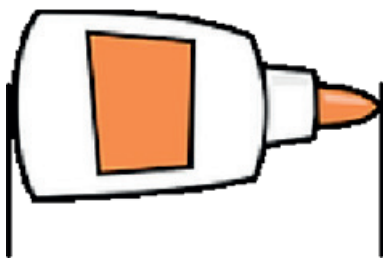
2. The picture of the lollipop is about _____ centimeters long.

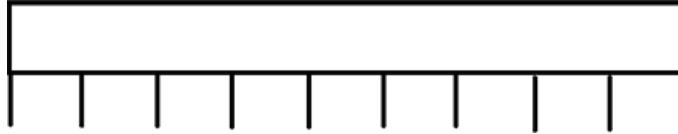3. The picture of the scissors is about _____ centimeters long.

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4. Samantha used a centimeter cube and the mark and move forward strategy to measure these ribbons. Use her work to answer the following questions.

Red Ribbon

Blue Ribbon
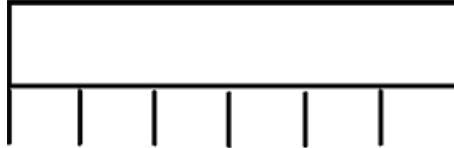
Yellow Ribbon
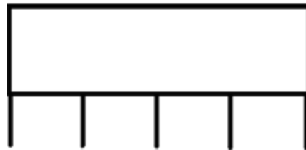
a. How long is the red ribbon? _____ centimeters long.

b. How long is the blue ribbon? _____ centimeters long.

c. How long is the yellow ribbon? _____ centimeters long.

d. Which ribbon is the longest?   Red   Blue   Yellow

e. Which ribbon is the shortest?   Red   Blue   Yellow

f. The total length of the ribbons is _____ centimeters.

_____

Cut out the centimeter square below to measure the length of the glue bottle, lollipop, and scissors.

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Lesson 2:   Use iteration with one physical unit to measure.

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Name _____   Date _____

Measure the lengths of the objects with the centimeter ruler you made in class.

1. The picture of the fish is _____ cm long.

2. The picture of the fish tank is _____ cm long.

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3. The picture of the fish tank is _____ cm longer than the picture of the fish.

Lesson 3:   Apply concepts to create unit rulers and measure lengths using unit rulers.

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4. Measure the lengths of Sides A, B, and C. Write each length on the line.

Side A

_____ cm

Side B

_____ cm

Side D

Side C

_____ cm
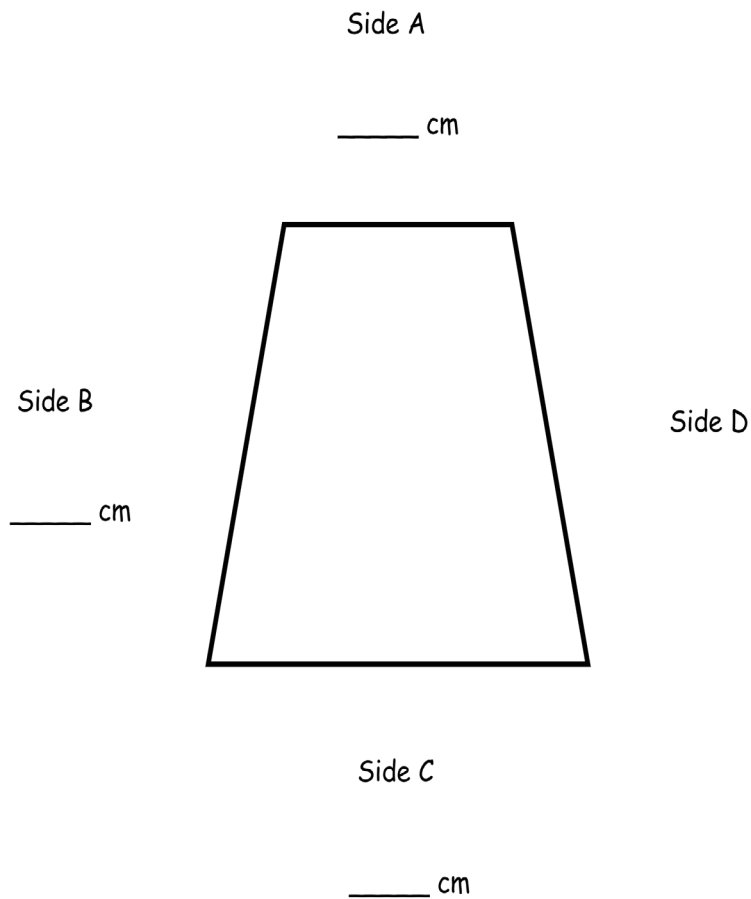
a. Which side is the longest?   Side A   Side B   Side C

b. How much longer is Side B than Side A? _____ cm longer

c. How much shorter is Side A than Side C? _____ cm shorter

d. Sides B and D are the same length.
    What is the length of Sides B and D together? _____ cm

e. What is the total length of all four sides of this figure? _____ cm

Lesson 3:   Apply concepts to create unit rulers and measure lengths using unit rulers.

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Name _____   Date _____

1. Circle cm (centimeter) or m (meter) to show which unit you would use to measure the length of each object.

   a. Length of a marker   cm or m

   b. Length of a school bus   cm or m

   c. Length of a laptop computer   cm or m

   d. Length of a highlighter marker   cm or m

   e. Length of a football field   cm or m

   f. Length of a parking lot   cm or m

   g. Length of a cell phone   cm or m

   h. Length of a lamp   cm or m

   i. Length of a supermarket   cm or m

   j. Length of a playground   cm or m

2. Fill in the blanks with **cm** or **m**.

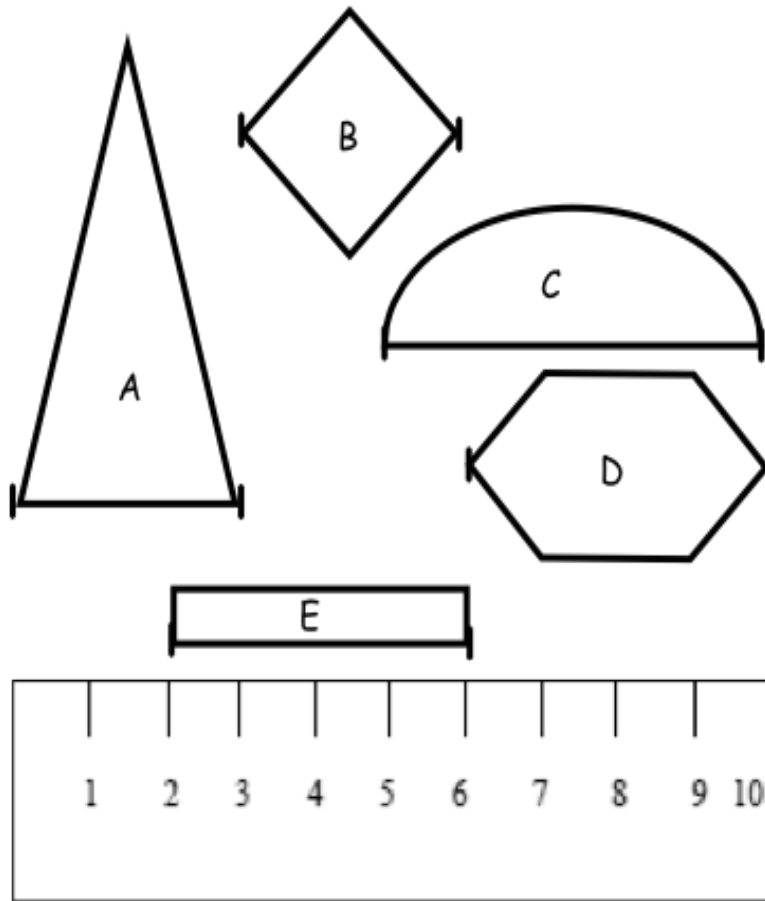   a. The length of a swimming pool is 25 _____.

   b. The height of a house is 8 _____.

   c. Karen is 6 _____ shorter than her sister.

   d. Eric ran 65 _____ down the street.

   e. The length of a pencil box is 3 _____ longer than a pencil.

3. Use the centimeter ruler to find the length (from one mark to the next) of each object.

a. Triangle A is _____ cm long.   Rhombus B is _____ cm long.

Semicircle C is _____ cm long.   Hexagon D is _____ cm long.

Rectangle E is _____ cm long.

b. Explain how the strategy to find the length of each shape above is different from how you would find the length if you used a centimeter cube.

_____

_____

_____

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Name _____   Date _____

1. Name five things in your home that you would measure in meters.
   Estimate their length.

   *Remember, the length from a doorknob to the floor is about 1 meter.

Item	Estimated Length
a.	
b.	
c.	
d.	
e.	

2. Choose the best length estimate for each object.

   a. Whiteboard   3 m   or   45 cm

   b. Banana   14 cm   or   30 cm

   c. DVD   25 cm   or   17 cm

   d. Pen   16 cm   or   1 m

   e. Swimming pool   50 m   or   150 cm

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Lesson 5: Develop estimation strategies by applying prior knowledge of length and using mental benchmarks.

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3. The width of your pinky finger is about 1 cm.

Measure the length of the lines using your pinky finger. Write your estimate.

a. Line A _____

Line A is about _____ cm long.

b. Line B _____

Line B is about _____ cm long.

c. Line C

_____

Line C is about _____ cm long.

d. Line D _____

Line D is about _____ cm long.

e. Line E _____

Line E is about _____ cm long.

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Lesson 5: Develop estimation strategies by applying prior knowledge of length
and using mental benchmarks.

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Name _____   Date _____

Measure each set of lines in centimeters, and write the length on the line. Complete the comparison sentences.

1. Line A _____

    Line B   _____

    a. Line A is about _____ cm longer than line B.

    b. Line A and B are about _____ cm combined.

2. Line X _____

    Line Y   _____

    Line Z   _____

    a.   Line X   Line Y   Line Z

            _____ cm   _____ cm   _____ cm

    b. Lines X, Y, and Z are about_____ cm combined.

    c. Line Z is about _____ cm shorter than Line X.

    d. Line X is about _____ cm shorter than Line Y.

    e. Line Y is about _____ cm longer than Line Z.

    f. Line X doubled is about _____ cm longer than line Y.

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3. Line J is 60 cm long. Line K is 85 cm long. Line L is 1 m long.

   a. Line J is _____ cm shorter than line K.

   b. Line L is _____ cm longer than line K.

   c. Line J doubled is _____ cm more than line L.

   d. Lines J, K, and L combined are _____ cm.

4. Katie measured the seat height of four different chairs in her house. Here are her results:

   Loveseat height: 51 cm   Highchair height: 97 cm
   Dining room chair height: 55 cm   Counter stool height: 65 cm

   a. How much shorter is the dining room chair than the counter stool? _____ cm

   b. How much taller is a meter stick than the counter stool? _____ cm

   c. How much taller is a meter stick than the loveseat? _____ cm

5. Max ran 15 meters this morning. This afternoon, he ran 48 meters.

   a. How many more meters did he run in the afternoon?

   b. How many meters did Max run in all?

Name _____   Date _____

Use a centimeter ruler and paper clips to measure and compare lengths.

1. ————————————————— Line Z

    a. Line Z

        _____ paper clips   _____ cm

    b. Line Z doubled would measure about _____ paper clips or about _____ cm long.

2. ————————————————————— Line A

                ——————————— Line B

    a. Line A

        _____ paper clips   _____ cm

    b. Line B

        _____ paper clips   _____ cm

    c. Line A is about _____ paper clips longer than Line B.

    d. Line B doubled is about _____ cm shorter than Line A.

3. Draw a line that is 9 cm long and another line below it that is 12 cm long.

   Label the 9 cm line F and the 12 cm line G.

   a. Line F   Line G

       _____ paper clips   _____ paper clips

   b. Line G is about _____ cm longer than Line F.

   c. Line F is about _____ paper clips shorter than Line G.

   d. Lines F and G are about _____ paper clips long.

   e. Lines F and G are about _____ centimeters long

4. Jordan measured the length of a line with large paper clips. His friend measured the length of the same line with small paper clips.
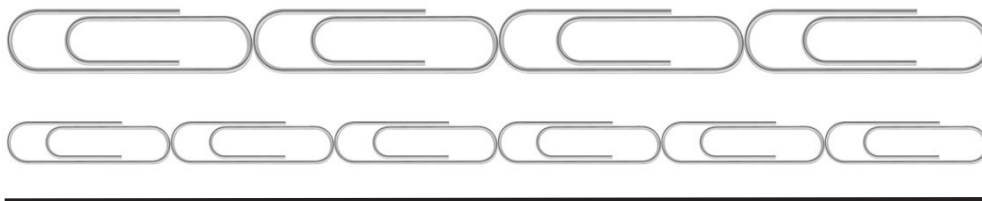
   a. About how many paper clips did Jordan use? _____ large paper clips

   b. About how many small paper clips did his friend use? _____ small paper clips

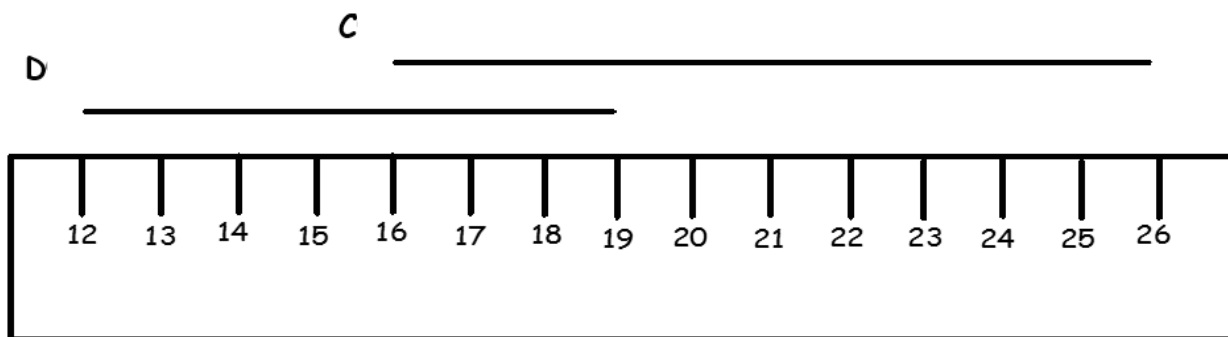   c. Why did Jordan's friend need more paper clips to measure the same line as Jordan?

   _____

   _____

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Name _____   Date _____

1.

C _____

D

_____

| 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 |

a. Line C is _____ cm.

b. Line D is _____ cm.

c. Lines C and D are _____ cm.

d. Line C is _____ cm (longer/shorter) than Line D.

2. An ant walked 12 centimeters to the right on the ruler and then turned around and walked 5 centimeters to the left. His starting point is marked on the ruler. Where is the ant now? Show your work on the broken ruler.

| 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |

Start

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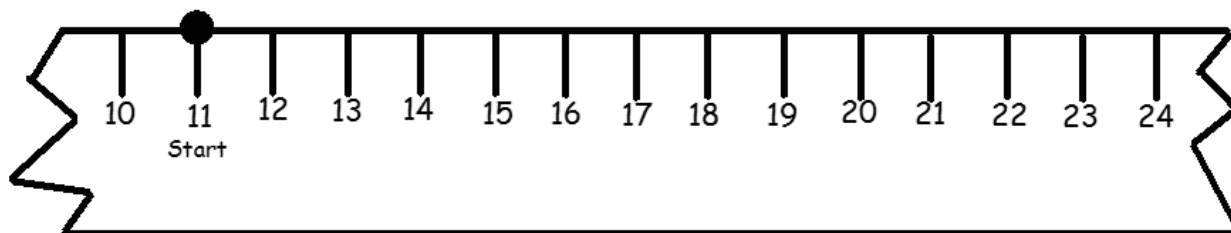
3. All of the parts of the path below are equal length units.

3
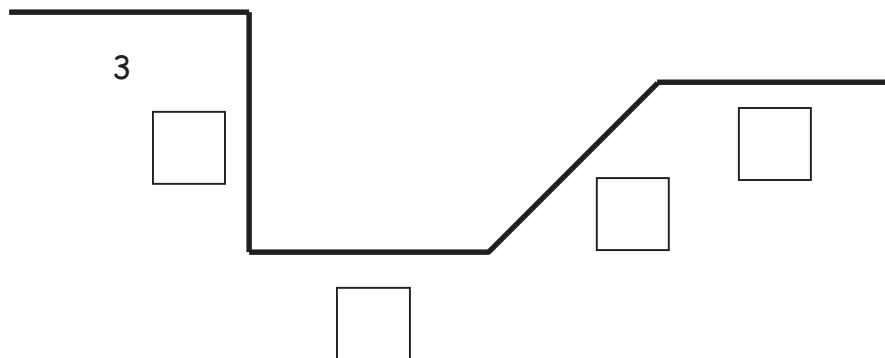
a. Fill in the empty boxes with the lengths of each side.

b. The path is _____ length units long.

c. How many more parts would you need to add for the path to be 21 length units long?

_____ parts

4. The length of a picture is 67 centimeters. The width of the picture is 40 centimeters. How many more centimeters is the length than the width?

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Lesson 8:   Solve addition and subtraction word problems using the ruler as a number line.

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Name _____   Date _____

1. Mia completed the chart by first estimating the measurement around three objects in her house and then finding the actual measurement with her meter strip.

Object Name	Estimated Measurement in Centimeters	Actual Measurement in Centimeters
Orange	40 cm	36 cm
Mini Basketball	30 cm	41 cm
Bottom of a glue bottle	10 cm	8 cm

a. What is the difference between the longest and shortest measurements?

_____ cm

b. Draw a tape diagram comparing the measurements of the orange and the bottom of the glue bottle.

c. Draw a tape diagram comparing the measurements of the basketball and the bottom of the glue bottle.

Lesson 9:   Measure lengths of string using measurement tools, and use tape diagrams to represent and compare lengths.

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2. Measure the two paths below with your meter strip and string.

Path A _____

Path B

a. Path A is _____ cm long.

b. Path B is _____ cm long.

c. Together, Paths A and B measure _____ cm.

d. Path A is _____ cm (shorter/longer) than Path B.

3. Shawn and Steven had a contest to see who could jump farther. Shawn jumped 75 centimeters. Steven jumped 9 more centimeters than Shawn.

a. How far did Steven jump? _____ centimeters

b. Who won the jumping contest? _____

c. Draw a tape diagram to compare the lengths that Shawn and Steven jump.

Lesson 9: Measure lengths of string using measurement tools, and use tape diagrams to represent and compare lengths.
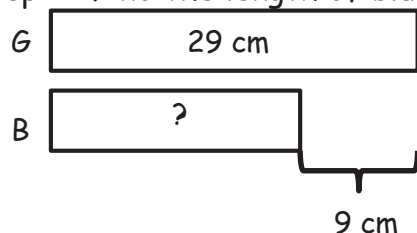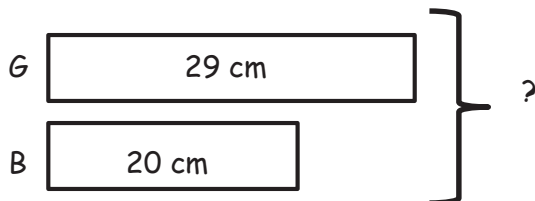
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Name _____   Date _____

Use the RDW process to solve. Draw a tape diagram for each step. Problem 1 has been started for you.

1. There is 29 cm of green ribbon. A blue ribbon is 9 cm shorter than the green ribbon. How long is the blue ribbon?

Step 1: Find the length of blue ribbon.

G | 29 cm |

B | ? |

9 cm

Step 2: Find the length of both the blue and green ribbons.

G | 29 cm |

B | 20 cm |

?

2. Joanna and Lisa drew lines. Joanna's line is 41 cm long. Lisa's line is 19 cm longer than Joanna's. How long are Joanna's and Lisa's lines?

Step 1: Find the length of Lisa's line.

Step 2: Find the total length of their lines.

Lesson 10:   Apply conceptual understanding of measurement by solving two-step word problems.

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