

Module 4 - Lesson 27:

Convert metric measurements involving decimals.

CCSS Standard – 5.MD.A.1

FLUENCY (10-min)

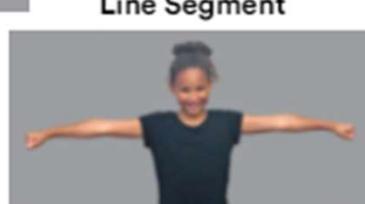
Show Me Geometric Figures: Ray and Angles.

Let's use our hands and arms to show a point, a line segment, a line and a ray.

To show a point, we will do this....



To show a line segment, we will do this....



To show a line, we will do this.....



To show a ray we will do this....



Two rays make an angle.

Point, Line, Line segment & Ray

Point



A point is an exact position on a plane surface.

Line



A line is a set of points in a straight path that extends in opposite directions without ending.

Line segment



A line segment is a part of a line between two end points.

Ray



A ray is a part of a line that has one end point and extends in one direction without ending.

FLUENCY (10-min)

Show Me Geometric Figures: Ray and Angles.

Let's use our hands and arms to show different types of angles.

To show a **RIGHT ANGLE**, we will do this....

Right Angle



To show an **ACUTE ANGLE**, we will do this....

Acute Angle



To show an **OBTUSE ANGLE**, we will do this....

Obtuse Angle



Start with the gesture of a right angle.
Then bring your arms farther apart.

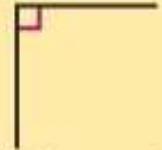
To show a **STRAIGHT ANGLE**, we will do this....

Straight Angle

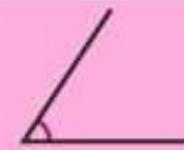


Extend arms straight out to both sides,
parallel to the floor. Keep hands open
and fingers straight.

Types of Angles



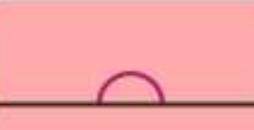
Right angle
(Exactly 90°)



Acute angle
(Less than 90°)



Obtuse angle
(Between 90° & 180°)



Straight angle
(Exactly 180°)

FLUENCY (10-min)

Whiteboard Exchange: Geometric Terms and Notations

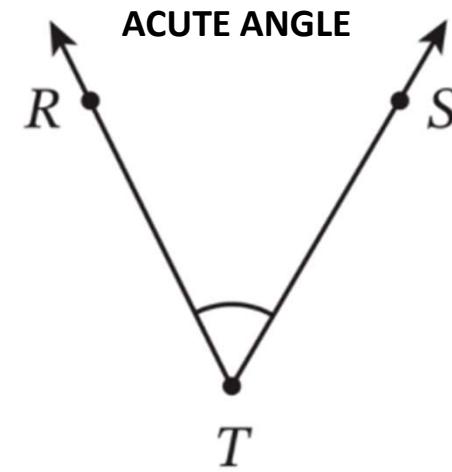
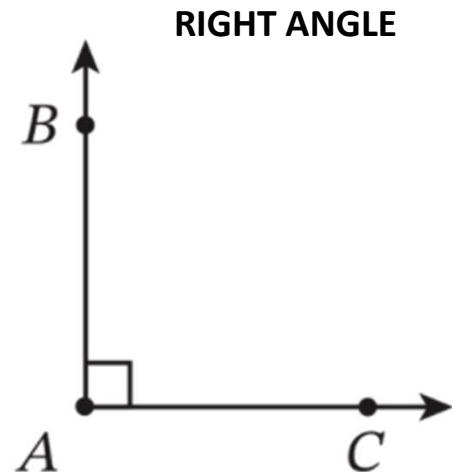


What type of angle is shown?

Write the name of the angle by using 1 point.

Then, write the name of the angle two other ways by using all 3 points.

Let's do the first one together.



FLUENCY (10-min)

Whiteboard Exchange: Geometric Terms and Notations

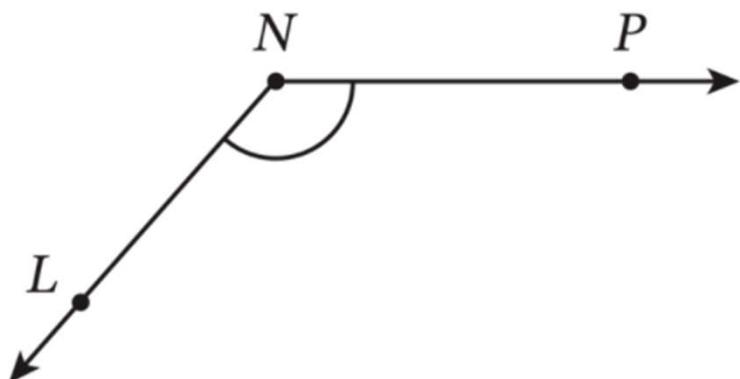


What type of angle is shown?

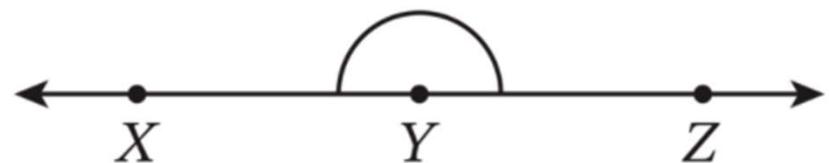
Write the name of the angle by using 1 point.

Then, write the name of the angle two other ways by using all 3 points.

OBTUSE ANGLE



STRAIGHT ANGLE



FLUENCY (10-min)

Whiteboard Exchange: Geometric Terms and Notations

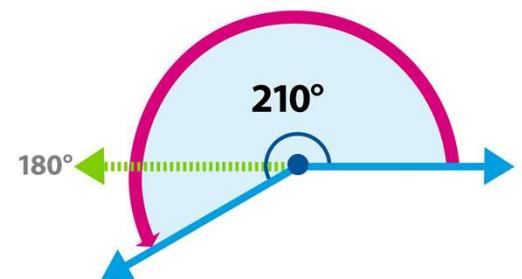
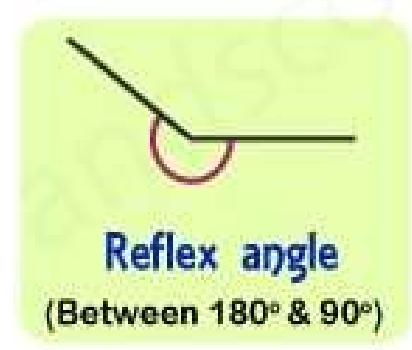
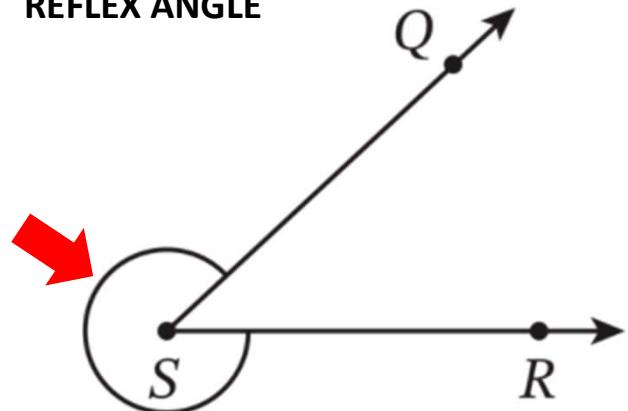


What type of angle is shown?

Write the name of the angle by using 1 point.

Then, write the name of the angle two other ways by using all 3 points.

REFLEX ANGLE



FLUENCY (10-min)

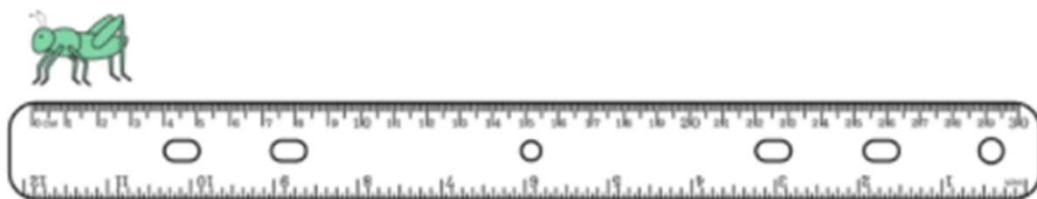
Choral Response: Read the Measurement Scales

Raise your hand when you know the answer to each question.

Wait for my signal to say the answer.

Read the ruler.

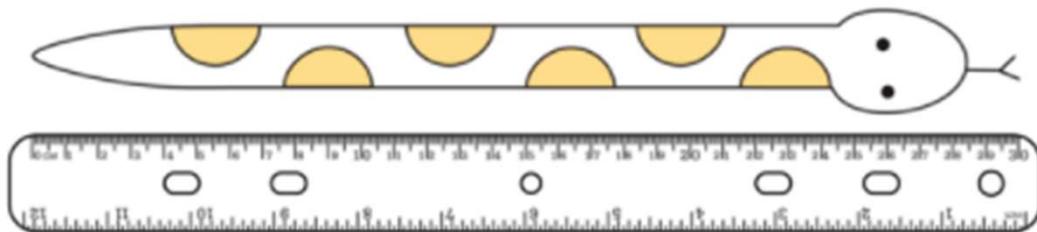
What is the length of the grasshopper in centimeters?



Read the ruler.

What is the length of the snake in centimeters?

How would you complete the statement to represent the relationship between the lengths of the grasshopper and the snake?



The grasshopper is _____ times as _____ as the snake.

FLUENCY (10-min)

Choral Response: Read the Measurement Scales

Raise your hand when you know the answer to each question.

Wait for my signal to say the answer.

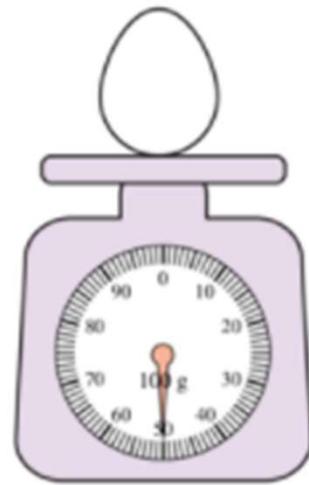
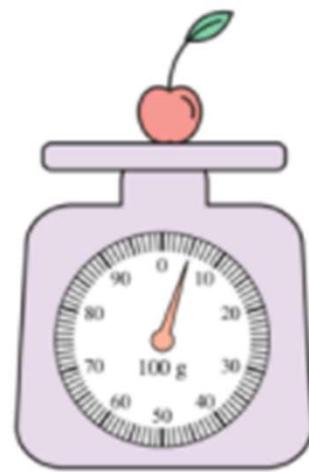
Read the scale.

What is the weight of the cherry in grams?

Read the scale.

What is the weight of the egg in grams?

How would you complete the statement to represent the relationship between the weights of the cherry and the egg?



The cherry is _____ times as _____ as the egg.

FLUENCY (10-min)

Choral Response: Read the Measurement Scales

Raise your hand when you know the answer to each question.

Wait for my signal to say the answer.

Read the graduated cylinder.

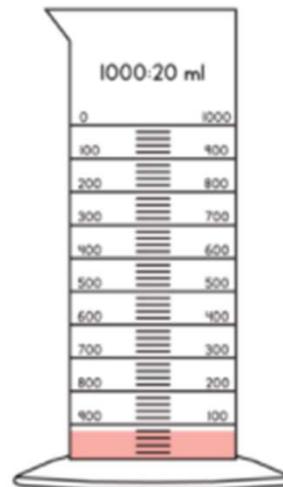
What is the volume of Container A
in milliliters?

Read the graduated cylinder.

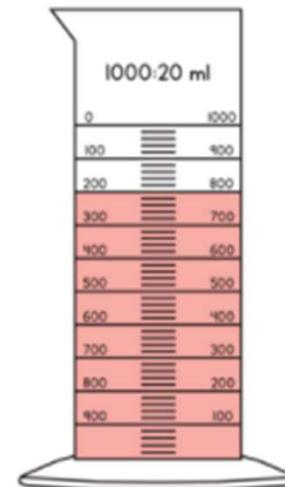
What is the volume of Container B
in milliliters?

How would you complete the
statement to represent the
relationship between the
volume of Containers A and B?

Container A



Container B



Container A has _____ times as _____ liquid as container B.

LAUNCH (5-min)**“Times As Much” Statements (LARGE UNITS to SMALL UNITS)**

Let's use these sentence frames to write a list of statements about metric measurements.
We will begin an anchor chart of our responses. Think length, weight, and capacity!

Length: 1 cm is 10 times as long as 1 mm.

Weight: 1 kg is 1,000 times as heavy as 1 g.

Capacity: 1 L is 100 times as much as 1 mL.



Come up with as many statements as you can in 2 minutes.
Remember, go from large to small units and small to large units.

LAUNCH (5-min)

“Times As Much” Statements (SMALL UNITS to LARGE UNITS)

Let's use these sentence frames to write a list of statements about metric measurements.
We will begin an anchor chart of our responses. Think length, weight, and capacity!

Length: 1 mm is 0.1 times as long as 1 cm.

Weight: 1 g is 0.001 times as heavy as 1 kg.

Capacity: 1 cL is 0.01 times as much as 1 L.

Today, we will convert metric measurements involving decimals from larger units to smaller units.

LEARN (35-min)**Convert Metric Measurements from Larger Units to Smaller Units**

The prize-winning pumpkin at the county fair has a weight of 60.056 kilograms.

What is the weight of the pumpkin in grams?

Which relationship can help us convert the weight from kilograms to grams?

$$60.056 \text{ kg} = \underline{\hspace{2cm}} \text{ g}$$



LEARN (35-min)**Convert Metric Measurements from Larger Units to Smaller Units**

Let's convert a few more measurements from **LARGER UNITS** to **SMALLER UNITS**:

Take-away: When we convert from **LARGE** to **SMALL** units, we must multiply because we need many more smaller units to equal the larger units.

$$4.2 \text{ L} = \underline{\hspace{2cm}} \text{ cL}$$

KHDUDCM

$$100 \text{ cL} = 1 \text{ L}$$

$$17.5 \text{ cm} = \underline{\hspace{2cm}} \text{ mm}$$

KHDUDCM

$$10 \text{ mm} = 1 \text{ cm}$$

$$4.2 \text{ L} = \underline{\hspace{2cm}} \text{ cL}$$

$$4.2 \text{ L} = 4.2 \times 1 \text{ L}$$

$$= 4.2 \times \underline{\hspace{2cm}} \text{ cL}$$

$$= 420 \text{ cL}$$

$$17.5 \text{ cm} = \underline{\hspace{2cm}} \text{ mm}$$

$$17.5 \text{ cm} = 17.5 \times 1 \text{ cm}$$

$$= 17.5 \times \underline{\hspace{2cm}} \text{ mm}$$

$$= 175 \text{ mm}$$

LEARN (35-min)**Convert Metric Measurements from Smaller Units to Larger Units**

The prize-winning sunflower at the county fair
is 360.7 centimeters tall.

How tall is the sunflower in meters?

Which relationship can help us convert
the height from centimeters to meters?

$$360.7 \text{ cm} = \underline{\hspace{2cm}} \text{ m}$$



LEARN (35-min)**Convert Metric Measurements from Smaller Units to Larger Units**

Let's convert a few more measurements from **SMALLER UNITS** to **LARGER UNITS**:

Take-away: When we convert from **SMALL** to **LARGE** units, we must divide because we need less larger units to equal the smaller units.

$$35.94 \text{ mg} = \underline{\hspace{2cm}} \text{ cg}$$

KHDUDCM

$$1 \text{ mg} = 0.1 \text{ cg}$$

$$5,108 \text{ mL} = \underline{\hspace{2cm}} \text{ L}$$

KHDUDCM

$$1 \text{ mL} = 1,000 \text{ L}$$

$$35.94 \text{ mg} = \underline{\hspace{2cm}} \text{ cg}$$

$$\begin{aligned} 35.94 \text{ mg} &= 35.94 \times 1 \text{ mg} \\ &= 35.94 \times 0.1 \text{ cg} \\ &= 3.594 \text{ cg} \end{aligned}$$

$$5,108 \text{ mL} = \underline{\hspace{2cm}} \text{ L}$$

$$\begin{aligned} 5,108 \text{ mL} &= 5,108 \times 1 \text{ mL} \\ &= 5,108 \times 0.001 \text{ L} \\ &= 5.108 \text{ L} \end{aligned}$$

LEARN (35-min)

Convert with Mixed Units

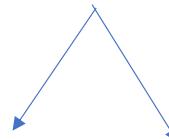
The prize-winning carrot at the county fair
is 6.25 meters long.

What is the length of the carrot in mixed units
of meters and centimeters?



What is 6.25 meters in mixed units of meters and centimeters?

$$6.25 \text{ m} = \underline{\quad 6 \quad} \text{ m } \underline{\quad 25 \quad} \text{ cm}$$



6 m .25 m

We need to convert 0.25 meters into centimeters.
How many centimeters in a meter?

$$\begin{array}{r} .25 \times 100 \\ 25 \end{array}$$

LAND (10-min)

Exit Ticket



Name _____

Date _____



27

Convert each measurement.

1. $0.036 \text{ m} = \underline{\hspace{2cm}} \text{ cm}$

2. $19.8 \text{ cm} = \underline{\hspace{2cm}} \text{ m}$

3. $6 \text{ L } 75 \text{ mL} = \underline{\hspace{2cm}} \text{ mL}$

Exit Ticket – PAGE 257

Small Group Time:

Problem Set Pages 253 - 256

Homework:

Page 171 APPLY BOOK