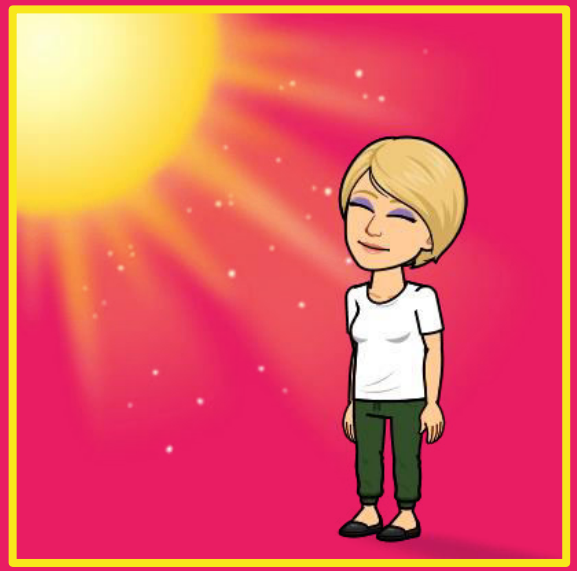
Today's Materials

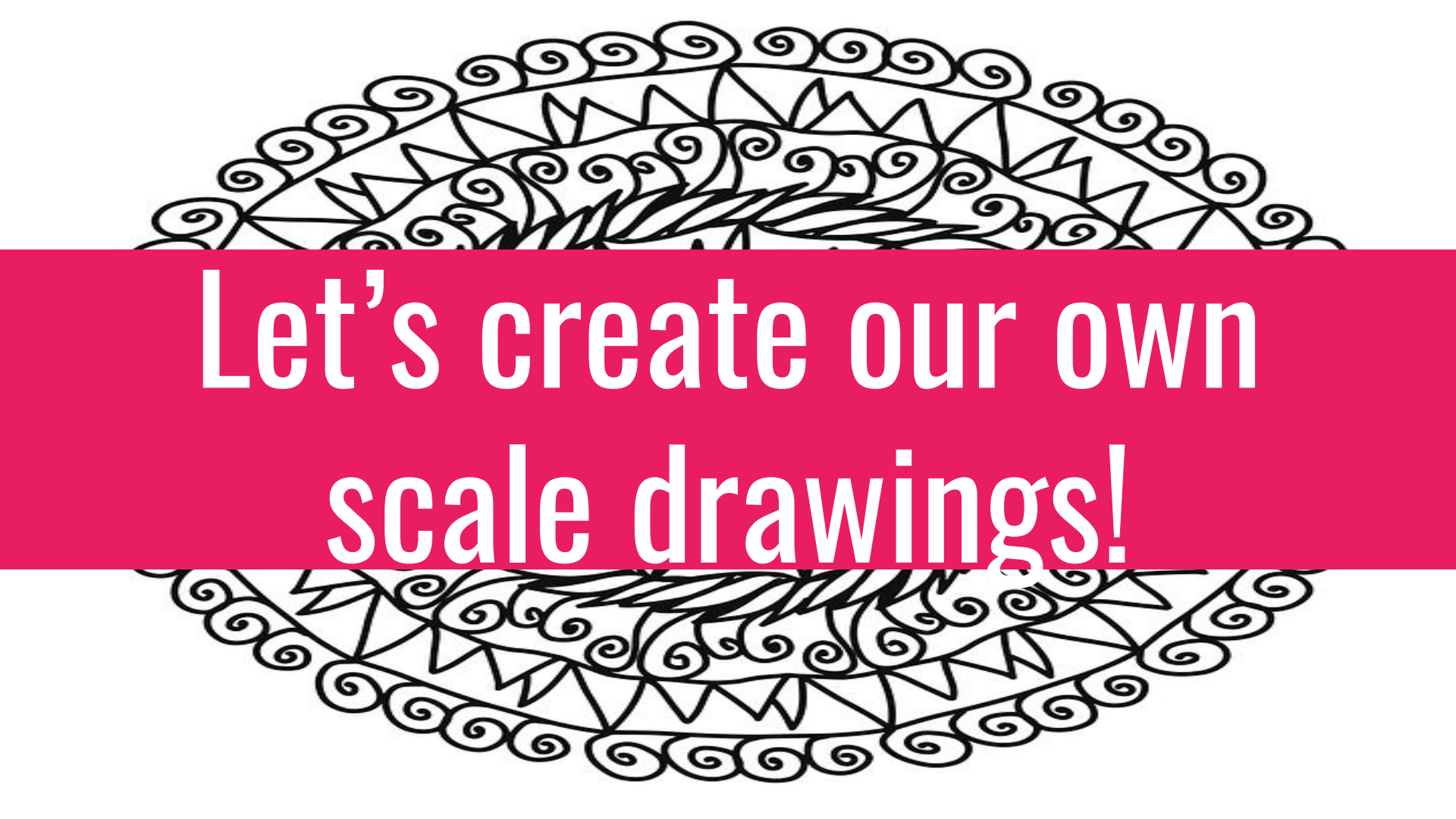


- device
- calculator
- pencil
- notebook
- glue
- a smile

Creating Scale Drawings

Lesson 9

CCSS Standards: Building on	• 3.NF.A.3 • 5.NBT.A.3
CCSS Standards: Addressing	• 7.G.A.1


Let’s create our own
scale drawings!

Number Talk:
Which is Greater?

Warm Up

Without calculating, decide which quotient is larger.

$11 \div 23$ or $7 \div 13$

$0.63 \div 2$ or $0.55 \div 3$

$15 \div \frac{1}{3}$ or $15 \div \frac{1}{4}$

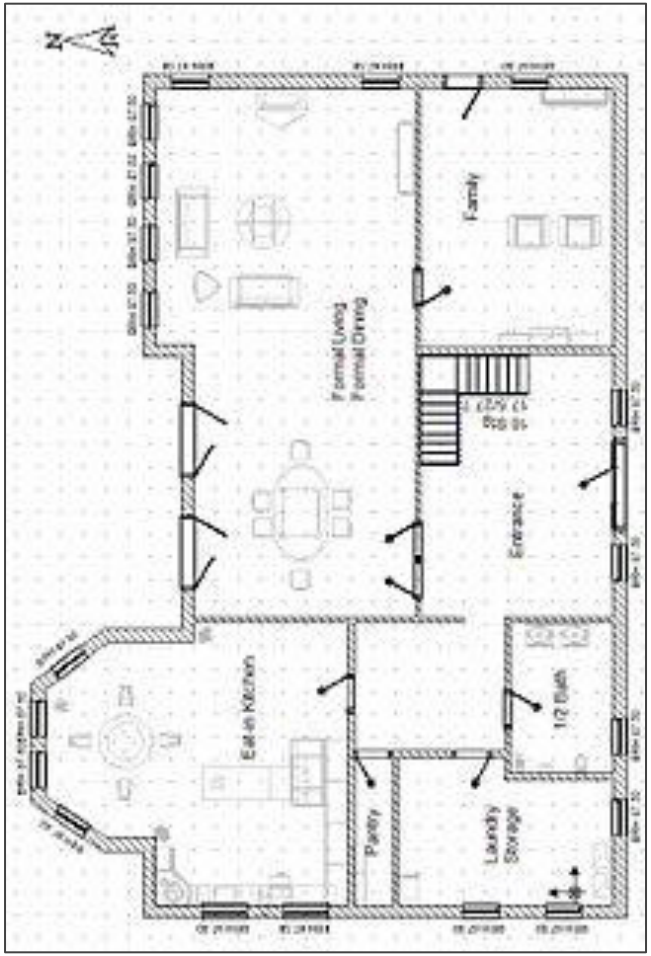
Bedroom Floor Plan

What is a floor plan?

A floor plan is a top-view drawing that shows a layout of a room or building.

They’re usually scale drawings.

Sometimes the scale isn’t noted, but we can find it if we know the scaled and actual lengths.

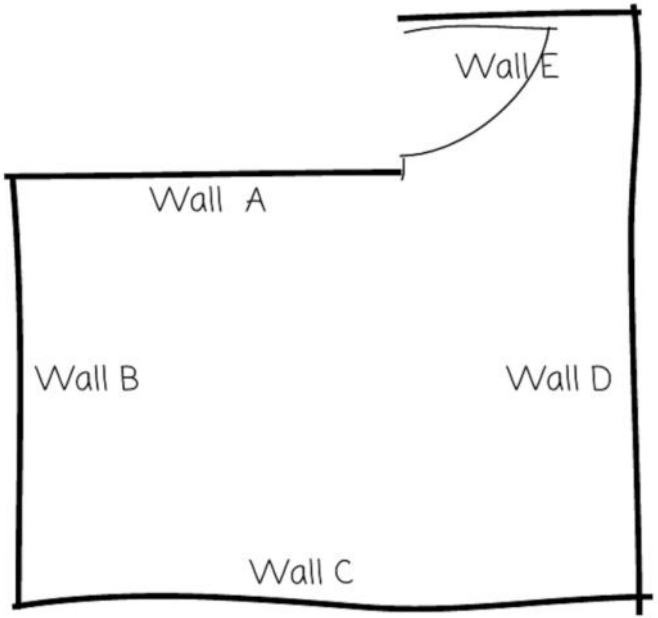


Here is a rough sketch of Noah's bedroom. (not a scale drawing)

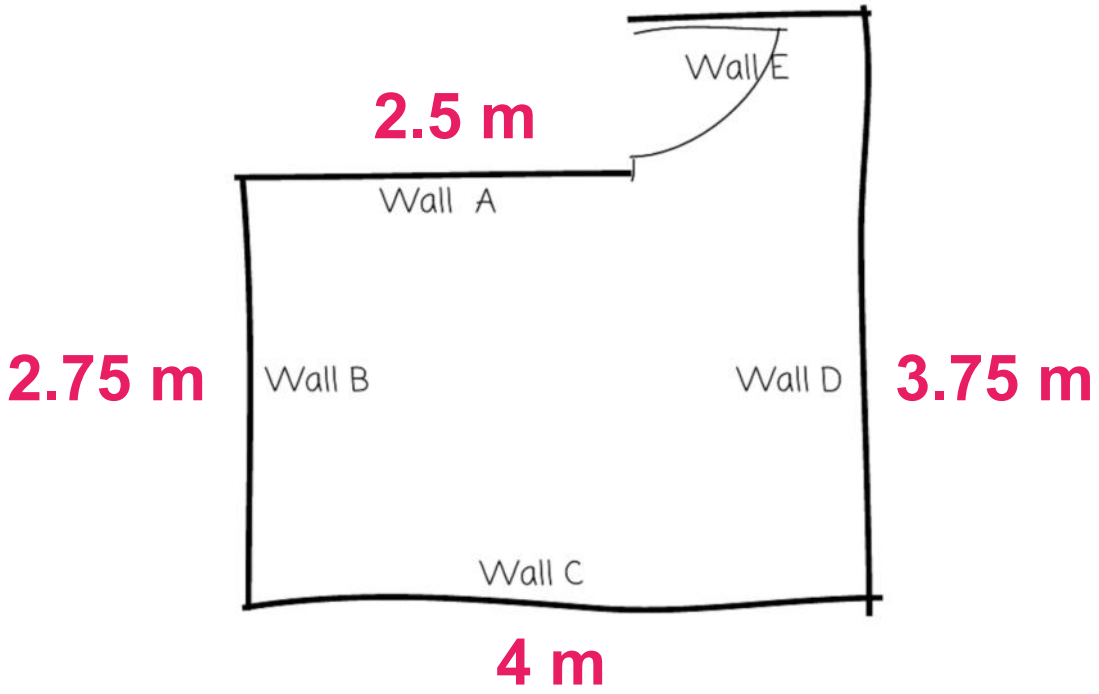
– – –

Noah wants to create a floor plan that is a scaled drawing.

➔ Complete Questions #1-4.
Jot down your answers.
Begin working with Quiet Work Time.
(4-5 min.)

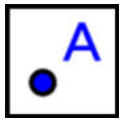


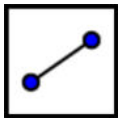
How did you determine the scale of the drawing?



Even if we express a scale in lots of equivalent ways...

- scales are often simplified to show the actual distance for 1 scaled unit (Example: 1 cm to 0.25 m)
- it is common to express at least one distance as a whole number or a benchmark fraction (like ¼, ½)



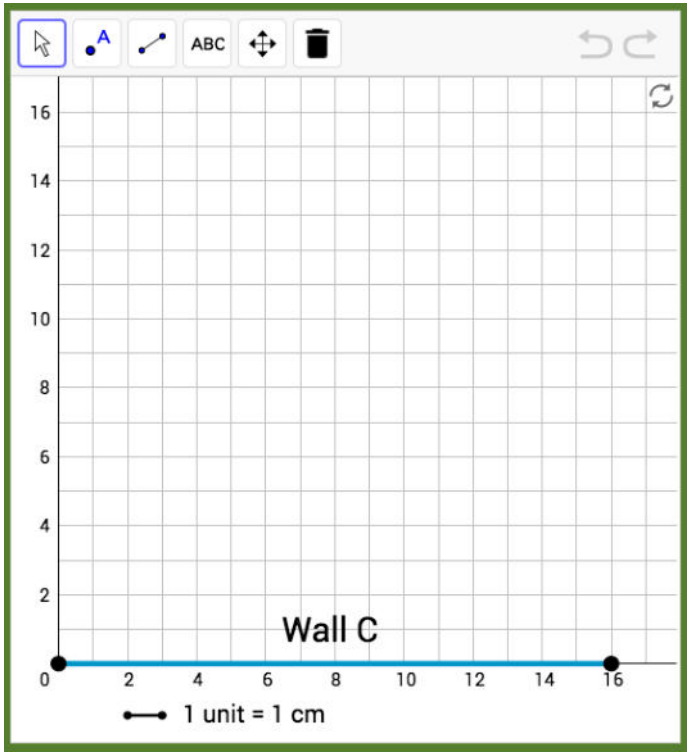


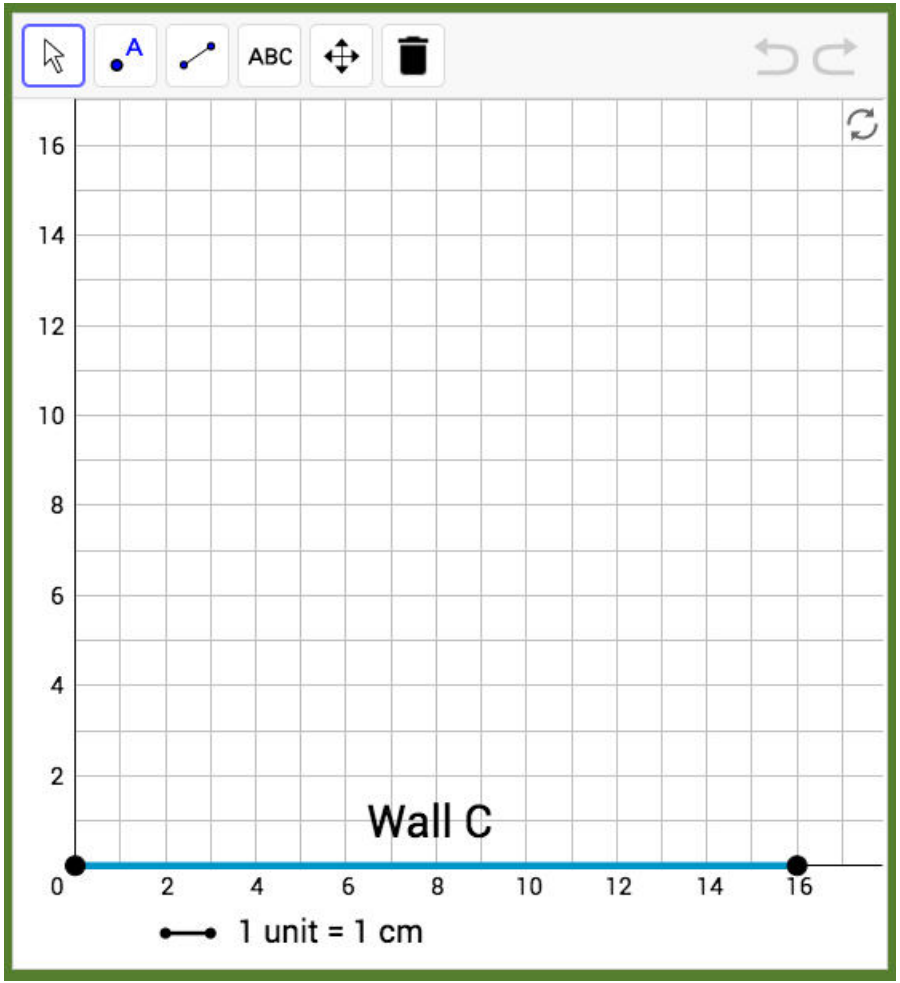
Use the Point tool and the Segment tool to draw the walls of Noah's scale floor plan.

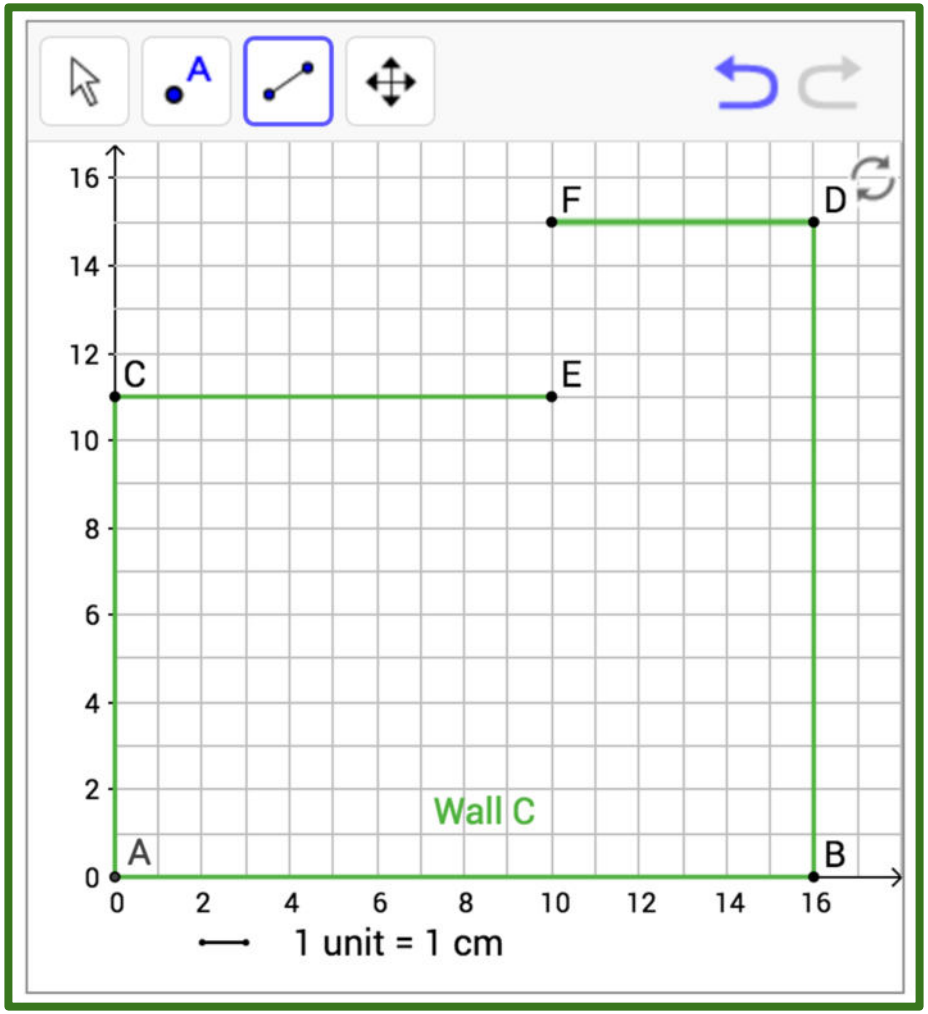
→Unit 1

→Lesson 9

→Activity 9.2



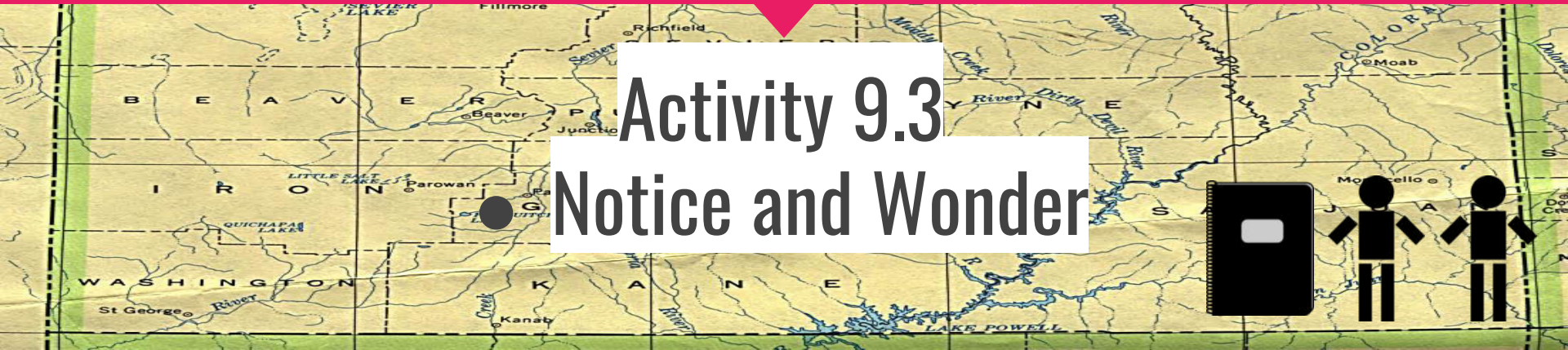

A
ABC
16
14
12
10
8
6
4
2
Wall C
0
2
4
6
8
10
12
14
16
1 unit = 1 cm


A
16
14
12
10
8
6
4
2
0
F
D
C
E
Wall C
A
B
0
2
4
6
8
10
12
14
16
1 unit = 1 cm

“Are you ready for more?”

If Noah wanted to draw another floor plan on which Wall C was 20 cm, would 1 cm to 5 m be the right scale to use? Explain your reasoning.

Two Maps of Utah

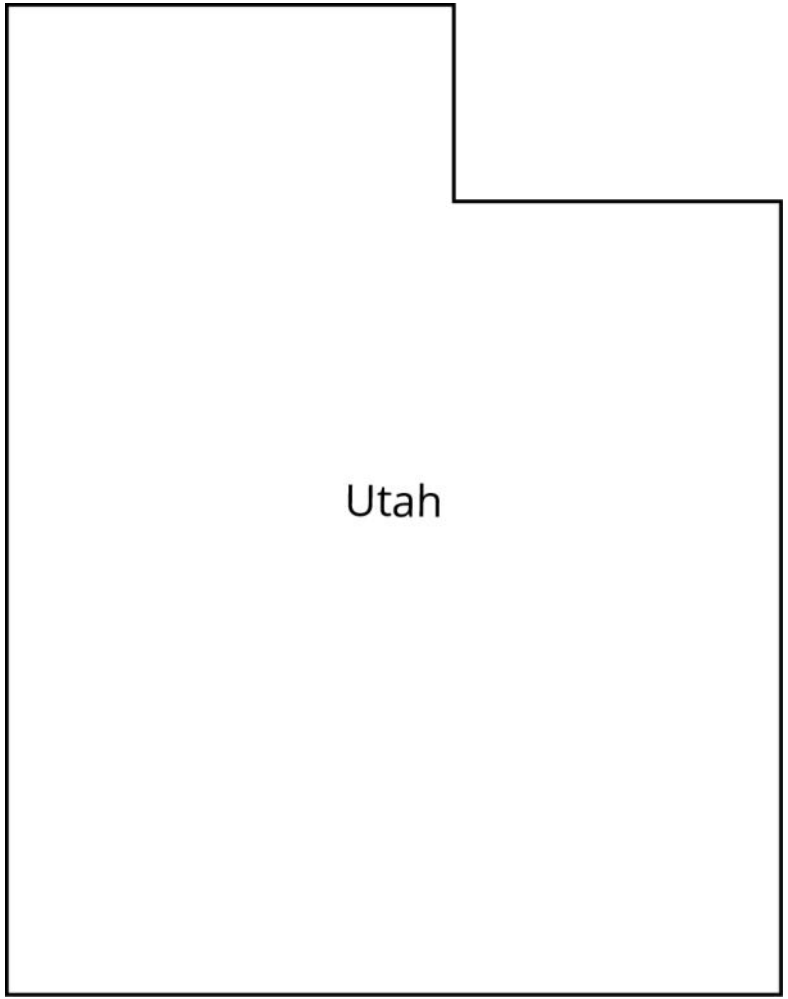


Activity 9.3
Notice and Wonder

What do you notice?
What do you wonder?

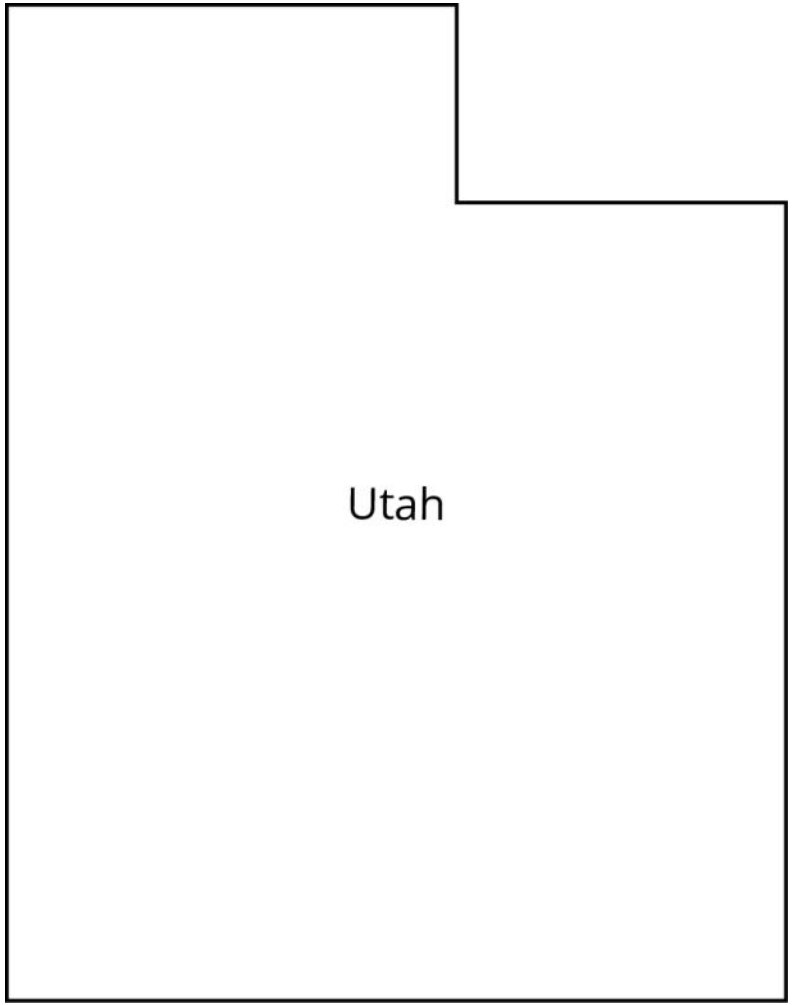
How would you describe the shape of Utah?

Begin working on your own.
(5-6 min.)



What did your two drawings have in common?

How did the two scale drawings differ?



Important Takeaways

- The size of the scale determines the size of the drawing.
- You can have different-sized scale drawings of the same actual object, but the size of the actual object doesn’t change.

Suppose there are two scale drawings of the same house. One uses the scale of 1 cm to 2 m, and the other uses the scale 1 cm to 4 m.

Which drawing is larger? Why?

The one with the 1 cm to 2 m scale is larger. It takes 2 cm on the drawing to represent 4 m of actual length.

Suppose there are two scale drawings of the same house.
One uses the scale of 1 cm to 2 m, and the other uses the scale 1 cm to 4 m.

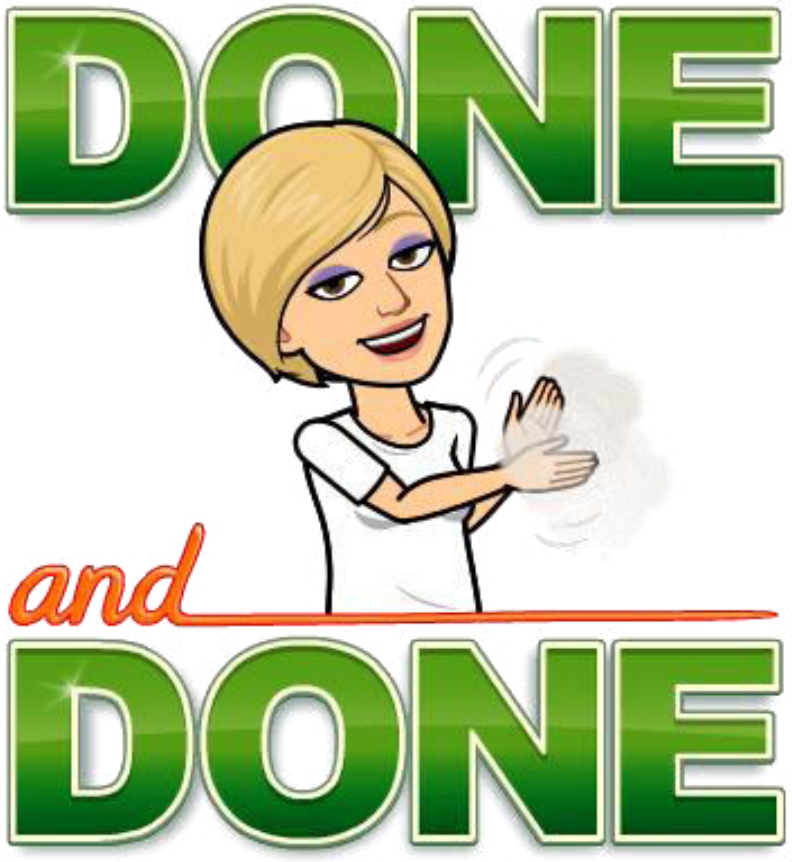
Another scale drawing of the house uses the scale of 5 cm to 10 m.
How does its size compare to the other two?

It's the same size as the drawing with the 1 cm to 2 m scale.

Sometimes two different scales are actually equivalent, like 5 cm to 10 m and 1 cm to 2 m.

It is common to write a scale so that it tells you what one unit on the scale represents, like 1 cm to 2 m.

- ❑ When I know the actual measurements, I can create a scale drawing at a given scale.
- ❑ I know how different scales affect the lengths in the scale drawing.
- ❑ I can determine the scale of a scale drawing when I know lengths on the drawing and corresponding actual lengths.



Drawing a Pool

Cool Down