Ruler Dot Sort

Each number line is a centimeter ruler. An object starts at 0 and ends at the dot.

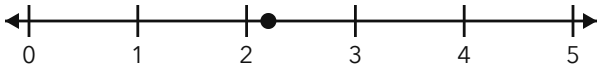
5.GM.3.2 "Measure the length of an object to the nearest whole centimeter or up to 1/16 inch using an appropriate instrument."

NAME _____ DATE _____

ROUND DOWN

If the dot is less than halfway to the next centimeter mark, use the smaller whole centimeter.

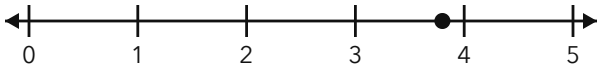
A ribbon reaches 2.2 cm, so its length is 2 cm to the nearest whole centimeter.



ROUND UP

If the dot is halfway or more to the next centimeter mark, use the larger whole centimeter.

A straw reaches 3.8 cm, so its length is 4 cm to the nearest whole centimeter.



1 SORT

8 items

For Part 1, circle DOWN or UP for each figure; for Part 2, choose two figures and explain how each dot helped you decide.

1.

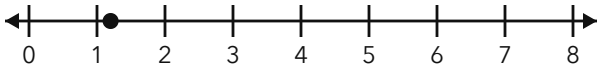


Figure 1

DOWN UP

2.

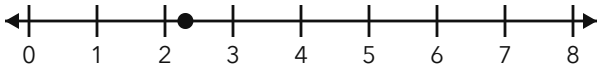


Figure 2

DOWN UP

3.

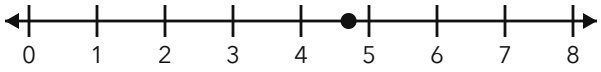


Figure 3

DOWN UP

4.

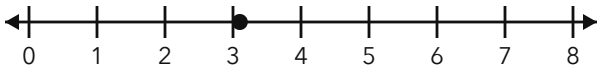


Figure 4

DOWN UP

5.

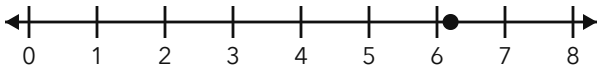


Figure 5

DOWN UP

6.

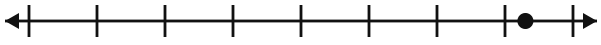


Figure 6

DOWN **UP**

7.

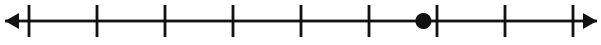


Figure 7

DOWN **UP**

8.

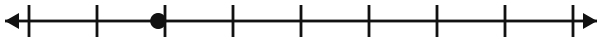


Figure 8

DOWN **UP**

2 PROVE IT

Explain your thinking

Pick two items from Part 1. For each one, tell how you knew where it belonged.

ITEM # _____ **HOW I KNEW** _____

ITEM # _____ **HOW I KNEW** _____

3 MAKE YOUR OWN

One of each

Write one new length that rounds DOWN and one that rounds UP to the nearest whole centimeter; give the rounded length for each.

DOWN _____

UP _____

CHALLENGE

A pencil starts at 2 cm and ends at 6.6 cm on a ruler. What is its length to the nearest whole centimeter? Explain.

ANSWER KEY

Ruler Dot Sort

GRADE 5 · 5.GM.3.2

PART 1 · SORT

#	ITEM	CATEGORY	WHY
1	Figure 1 (numberline)	**DOWN**	The endpoint is nearer 1 cm than 2 cm.
2	Figure 2 (numberline)	**DOWN**	The endpoint is nearer 2 cm than 3 cm.
3	Figure 3 (numberline)	**UP**	The endpoint is nearer 5 cm than 4 cm.
4	Figure 4 (numberline)	**DOWN**	The endpoint is nearer 3 cm than 4 cm.
5	Figure 5 (numberline)	**DOWN**	The endpoint is nearer 6 cm than 7 cm.
6	Figure 6 (numberline)	**DOWN**	The endpoint is nearer 7 cm than 8 cm.
7	Figure 7 (numberline)	**UP**	The endpoint is nearer 6 cm than 5 cm.
8	Figure 8 (numberline)	**UP**	The endpoint is nearer 2 cm than 1 cm.

PART 2 · PROVE IT

Accept any explanation that names the deciding feature from the rule box for the chosen item.

PART 3 · MAKE YOUR OWN (SAMPLE ANSWERS)

- **DOWN**: 2.1 cm rounds DOWN to 2 cm.
- **UP**: 6.7 cm rounds UP to 7 cm.

Challenge: The pencil is 4.6 cm long because 6.6 − 2 = 4.6. Its length rounds UP to 5 cm.

For Part 2, a valid explanation names the centimeter marks around each chosen dot and tells which mark is nearer. For example, Figure 1 is nearer 1 cm than 2 cm, while Figure 3 is nearer 5 cm than 4 cm.