Pick the Scale

Sort line plot scales by the space between tick marks.

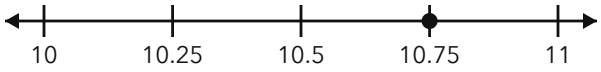
4.DS.A.1.a "Create scaled data visualization (e.g. bar graphs for categorical data; line plots with fraction units of halves, fourths, and eighths for numerical data) to display data to communicate an idea."

NAME _____ DATE _____

FOURTHS SCALE

Each step from one tick mark to the next is 1/4 unit. This scale has a tick mark for every fourth.

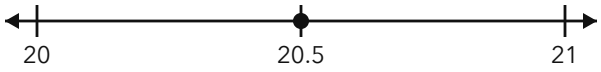
For ribbon lengths measured in fourths of a yard, this scale has the needed tick marks.



HALVES SCALE

Each step from one tick mark to the next is 1/2 unit. This scale has tick marks for halves, but it skips some fourths.

For jump distances measured in halves of a meter, this scale has the needed tick marks.



1 SORT

8 items

For each figure, circle FOURTHS or HALVES, then choose one figure from each group and explain how you knew.

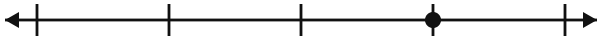
1. 

Figure 1

FOURTHS **HALVES**

2. 

Figure 2

FOURTHS **HALVES**

3. 

Figure 3

FOURTHS **HALVES**

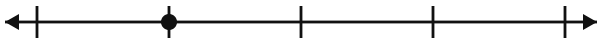
4. 

Figure 4

FOURTHS **HALVES**

5.

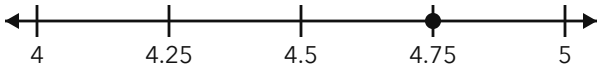


Figure 5

FOURTHS **HALVES**

6.

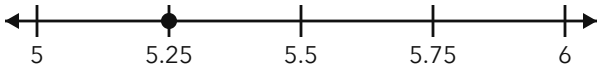


Figure 6

FOURTHS **HALVES**

7.

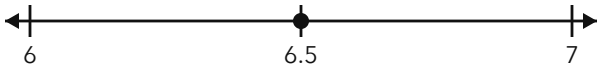


Figure 7

FOURTHS **HALVES**

8.

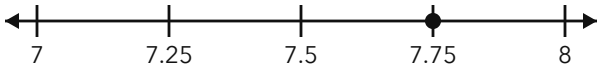


Figure 8

FOURTHS **HALVES**

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

Draw one new FOURTHS scale and one new HALVES scale, and put a dot at a tick mark on each.

FOURTHS

HALVES

CHALLENGE

You measured three leaves: 11 1/4, 11 1/2, and 11 3/4 inches long. Draw a scale that can show all three lengths, put one dot at each measurement, and explain why you chose that scale.

ANSWER KEY

Pick the Scale

GRADE 4 · 4.DS.A.1.a

PART 1 · SORT

#	ITEM	CATEGORY	WHY
1	Figure 1 (numberline)	**FOURTHS**	Neighboring tick marks are 1/4 apart.
2	Figure 2 (numberline)	**HALVES**	Neighboring tick marks are 1/2 apart.
3	Figure 3 (numberline)	**HALVES**	Neighboring tick marks are 1/2 apart.
4	Figure 4 (numberline)	**FOURTHS**	Neighboring tick marks are 1/4 apart.
5	Figure 5 (numberline)	**FOURTHS**	Neighboring tick marks are 1/4 apart.
6	Figure 6 (numberline)	**FOURTHS**	Neighboring tick marks are 1/4 apart.
7	Figure 7 (numberline)	**HALVES**	Neighboring tick marks are 1/2 apart.
8	Figure 8 (numberline)	**FOURTHS**	Neighboring tick marks are 1/4 apart.

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)

- **FOURTHS**: Draw ticks at 8, 8 1/4, 8 1/2, 8 3/4, and 9. Put a dot at 8 1/4.
- **HALVES**: Draw ticks at 9, 9 1/2, and 10. Put a dot at 9 1/2.

Challenge: Draw a FOURTHS scale with ticks at 11, 11 1/4, 11 1/2, 11 3/4, and 12. Put one dot at each of the three measured lengths. A HALVES scale would skip 11 1/4 and 11 3/4.

For Part 2, accept explanations that compare the distance between neighboring tick marks: 1/4 for FOURTHS and 1/2 for HALVES. In the challenge, all three measurements need their own tick marks.