Rule Detective

Use the rule: Start at 3. Add 4 for each new point.

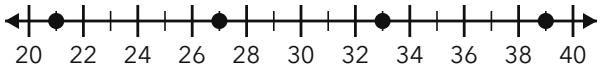
NY-4.OA.5 "Generate a number or shape pattern that follows a given rule. Identify and informally explain apparent features of the pattern that were not explicit in the rule itself."

NAME _____ DATE _____

FOLLOWS THE RULE

The first point and every jump match the rule. Check each jump on the number line.

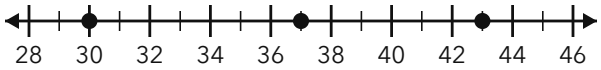
For a different rule, start at 21 and add 6, these points follow the rule.



BREAKS THE RULE

At least one point or jump does not match the rule. Find the place where the rule changes.

For a different rule, start at 30 and add 7, these points break the rule.



1 SORT

8 items

For Part 1, circle FOLLOWS or BREAKS for each figure, then for Part 2, choose two figures and explain how you checked the starting point and the jumps.

1.

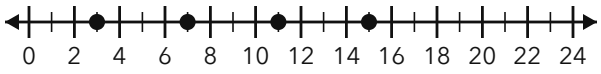


Figure 1

FOLLOWS BREAKS

2.

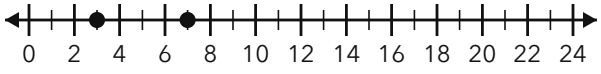


Figure 2

FOLLOWS BREAKS

3.

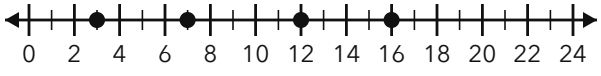


Figure 3

FOLLOWS BREAKS

4.

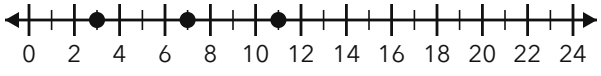


Figure 4

FOLLOWS BREAKS

5.

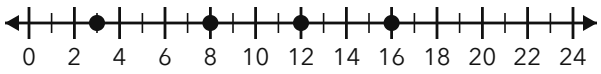


Figure 5

FOLLOWS **BREAKS**

6.

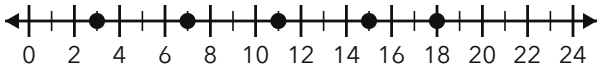


Figure 6

FOLLOWS **BREAKS**

7.

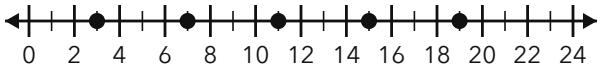


Figure 7

FOLLOWS **BREAKS**

8.

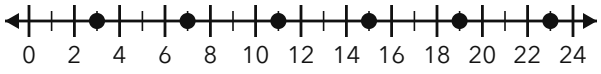


Figure 8

FOLLOWS **BREAKS**

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

For Part 3, draw one new number line example that FOLLOWS the rule and one new number line example that BREAKS the rule.

FOLLOWS

BREAKS

CHALLENGE

Make a FOLLOWS pattern with six points. Then write one feature you notice that the rule does not say directly.

ANSWER KEY # Rule Detective

GRADE 4 · NY-4.OA.5

PART 1 · SORT

#	ITEM	CATEGORY	WHY
1	Figure 1 (numberline)	**FOLLOWS**	It starts at 3 and each jump is 4.
2	Figure 2 (numberline)	**FOLLOWS**	It starts at 3 and the jump is 4.
3	Figure 3 (numberline)	**BREAKS**	The jump from 7 to 12 is 5, not 4.
4	Figure 4 (numberline)	**FOLLOWS**	It starts at 3 and each jump is 4.
5	Figure 5 (numberline)	**BREAKS**	The first jump is 5, not 4.
6	Figure 6 (numberline)	**BREAKS**	The jump from 15 to 18 is 3, not 4.
7	Figure 7 (numberline)	**FOLLOWS**	It starts at 3 and each jump is 4.
8	Figure 8 (numberline)	**FOLLOWS**	It starts at 3 and each jump is 4.

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)

- **FOLLOWS**: 3, 7, 11, 15, 19, 23, 27
- **BREAKS**: 3, 7, 11, 16, 20

Challenge: 3, 7, 11, 15, 19, 23. The numbers are all odd.

Part 1 answers are 1 FOLLOWS, 2 FOLLOWS, 3 BREAKS, 4 FOLLOWS, 5 BREAKS, 6 BREAKS, 7 FOLLOWS, 8 FOLLOWS. In Part 2, students should name the start of 3 and check that each correct jump is 4.