# Next Number Mystery

Follow the rule to find a hidden feature.

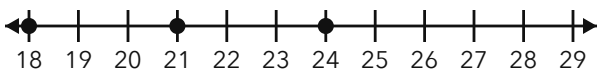
**MT.4.OA.5** "Analyze a number or shape pattern that follows a given rule, identify and explain informally features of the pattern that were not explicit in the rule itself, generate terms in the resulting sequence, and observe the pattern."

NAME _____ DATE _____

## ODD NEXT NUMBER

The marked points show three numbers. Add 3 to the last number. If the next number is odd, it belongs here.

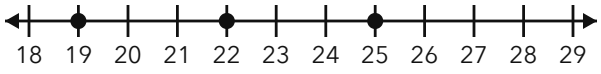
18, 21, 24. The next number is 27.




## EVEN NEXT NUMBER

The marked points show three numbers. Add 3 to the last number. If the next number is even, it belongs here.

19, 22, 25. The next number is 28.




## 1 SORT

8 items

For Part 1, circle ODD or EVEN for each figure; for Part 2, choose two figures and explain how you found each next number.

**1.**

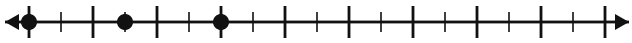



Figure 1

ODD EVEN

**2.**

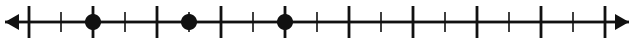



Figure 2

ODD EVEN

**3.**

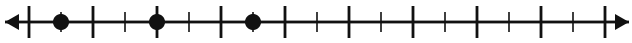



Figure 3

ODD EVEN

**4.**

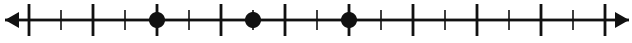



Figure 4

ODD EVEN

**5.**

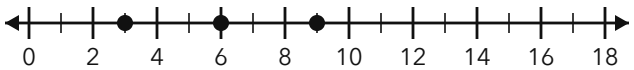



Figure 5

**ODD** **EVEN**

**6.**

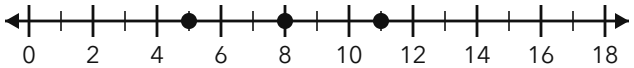



Figure 6

**ODD** **EVEN**

**7.**

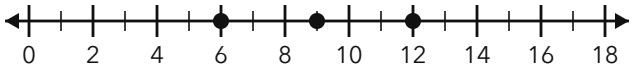



Figure 7

**ODD** **EVEN**

**8.**

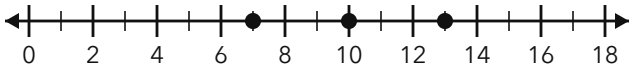



Figure 8

**ODD** **EVEN**

## 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 two new number lines, one with an ODD next number and one with an EVEN next number; mark three numbers that follow the add 3 rule and write each next number.

**ODD** _____

**EVEN** _____

**CHALLENGE**

Find the next four numbers after Figure 1. Write them and explain what you notice about odd and even numbers.

**ANSWER KEY** # Next Number Mystery

**GRADE 4 · MT.4.OA.5**

## PART 1 · SORT

| # | ITEM | CATEGORY | WHY |
|---|---|---|---|
| 1 | Figure 1 (numberline) | **ODD** | Add 3 to 6 to get 9, which is odd. |
| 2 | Figure 2 (numberline) | **ODD** | Add 3 to 8 to get 11, which is odd. |
| 3 | Figure 3 (numberline) | **EVEN** | Add 3 to 7 to get 10, which is even. |
| 4 | Figure 4 (numberline) | **ODD** | Add 3 to 10 to get 13, which is odd. |
| 5 | Figure 5 (numberline) | **EVEN** | Add 3 to 9 to get 12, which is even. |
| 6 | Figure 6 (numberline) | **EVEN** | Add 3 to 11 to get 14, which is even. |
| 7 | Figure 7 (numberline) | **ODD** | Add 3 to 12 to get 15, which is odd. |
| 8 | Figure 8 (numberline) | **EVEN** | Add 3 to 13 to get 16, which is even. |

## 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)

- **ODD**: Mark 30, 33, and 36. The next number is 39.
- **EVEN**: Mark 31, 34, and 37. The next number is 40.

**Challenge:** 9, 12, 15, 18. They alternate between odd and even because adding 3 changes an odd number to an even number, or an even number to an odd number.

For Part 2, look for explanations that add 3 to the last marked number and identify whether the result is odd or even. For Part 3, accept any two correctly marked add 3 patterns with next numbers in the requested categories.