LESSON MAKER PRO

Pattern Detectives

Follow the rule and spot what you notice.

GRADE 4 · 4.OA.C

CCSS.Math.Content.4.OA.C "Generate and analyze patterns."

NAME _____ DATE _____

FOLLOW THE RULE

A number pattern is made by using the same rule again and again. Start with the first number, use the rule to find each new number, and look for features such as even numbers or numbers that increase by the same amount.

WORKED EXAMPLE

Start at 9. Add 9 each time. Write the first four terms.

1. Start with 9.
2. 9 + 9 = 18.
3. 18 + 9 = 27.
4. 27 + 9 = 36.

Answer: 9, 18, 27, 36

PRACTICE 6 problems

1 The pattern is 4, 8, 12, 16, __, __. Write the next two numbers.

ANSWER _____

2 Start at 5. Add 6 each time. Write the first five terms.

ANSWER _____

3 The pattern is 30, 25, 20, __, __. What rule is used, and what are the next two terms?

ANSWER _____

4 The pattern is 3, 6, 12, 24, __. What is the next term?

ANSWER _____

5 Each output is 20 more than its input. Complete the outputs for inputs 1, 2, 3, and 4.

ANSWER _____

6 Start at 2. Add 6 each time. Write the first five terms. Then name one feature of the pattern.

ANSWER _____

APPLY IT Show your work

1 Jordan has 10 badges on a reading app at the end of week 1. Jordan earns 7 more badges each week. Write the number pattern for the first five weeks. How many badges will Jordan have at the end of week 5?

WORK SPACE

ANSWER _____

2 The first row in a school garden has 7 sunflower seeds. Each new row has 3 more seeds than the row before it. Write the seed pattern for rows 1 through 5. How many seeds are in row 5?

WORK SPACE

ANSWER _____

CHALLENGE One step up

A robot starts at 4 and adds 11 each time. Write the first six terms. Mia says every term in the pattern is even. Is Mia correct? Explain.

WORK SPACE AND ANSWER

ANSWER KEY # Pattern Detectives

GRADE 4 · 4.OA.C

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	The pattern is 4, 8, 12, 16, __, __. Write the next two numbers.	**20, 24**
2	Start at 5. Add 6 each time. Write the first five terms.	**5, 11, 17, 23, 29**
3	The pattern is 30, 25, 20, __, __. What rule is used, and what are the next two terms?	**Subtract 5 each time; 15, 10**
4	The pattern is 3, 6, 12, 24, __. What is the next term?	**48**
5	Each output is 20 more than its input. Complete the outputs for inputs 1, 2, 3, and 4.	**21, 22, 23, 24**
6	Start at 2. Add 6 each time. Write the first five terms. Then name one feature of the pattern.	**2, 8, 14, 20, 26; all terms are even**

PART 2 · APPLY IT

1. **10, 17, 24, 31, 38; 38 badges** Start with 10 and add 7 for each new week. The fifth term is 38.
2. **7, 10, 13, 16, 19; 19 seeds** Start with 7 and add 3 for each new row. The fifth term is 19.

CHALLENGE

4, 15, 26, 37, 48, 59. No. Adding 11, an odd number, changes an even number to an odd number and an odd number to an even number.

Accept equivalent rule language, such as “increase by 6” for “add 6.” For the challenge, accept any correct explanation that the pattern alternates between even and odd numbers.