LESSON MAKER PRO

Pattern Power

Find the rule, then keep the pattern going.

GRADE 3 · MA.3.AR.3.3

MA.3.AR.3.3 "Identify, create and extend numerical patterns."

NAME _____ DATE _____

SPOT THE RULE

A pattern follows a rule. Look at how the numbers change from one number to the next. The rule might be add, subtract, multiply, or divide by the same number each time.

WORKED EXAMPLE

Complete the pattern: 5, 11, 17, 23, ____

1. Find the change: 11 - 5 = 6.
2. Check: 17 - 11 = 6.
3. Add 6 to 23: 23 + 6 = 29.

Answer: 29

PRACTICE 6 problems

1 Complete the pattern: 2, 4, 6, 8, ___

ANSWER _____

2 Complete the pattern: 42, 35, 28, ___, ___

ANSWER _____

3 Complete the pattern: 4, 8, 16, 32, ___

ANSWER _____

4 Tell the rule: 90, 80, 70, 60, ...

ANSWER _____

5 Start with 7. Add 9 each time. Write the next four numbers.

ANSWER _____

6 Complete the pattern. Tell the rule: 81, 27, 9, 3, ___

ANSWER _____

APPLY IT Show your work

1 In a robot game, Kai earns 10 coins on level one. Each new level gives twice as many coins as the level before. How many coins will Kai earn on level four?

WORK SPACE

ANSWER _____

2 At a skating game, Nia's bonus points after three rounds are 63, 56, and 49. Her points change by the same amount each round. What will her bonus points be after the next two rounds?

WORK SPACE

ANSWER _____

CHALLENGE One step up

The pattern is 2, 8, 16, 64, 128, ___. What number comes next? Explain the rule.

WORK SPACE AND ANSWER

ANSWER KEY

Pattern Power

GRADE 3 · MA.3.AR.3.3

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Complete the pattern: 2, 4, 6, 8, ___	**10**
2	Complete the pattern: 42, 35, 28, ___, ___	**21, 14**
3	Complete the pattern: 4, 8, 16, 32, ___	**64**
4	Tell the rule: 90, 80, 70, 60, ...	**Subtract 10 each time.**
5	Start with 7. Add 9 each time. Write the next four numbers.	**16, 25, 34, 43**
6	Complete the pattern. Tell the rule: 81, 27, 9, 3, ___	**1; divide by 3 each time.**

PART 2 · APPLY IT

1. **80 coins** The coin pattern is 10, 20, 40, 80. Multiply by 2 for each new level.
2. **42 points, then 35 points** The points decrease by 7 each round. Continue by subtracting 7 two times.

CHALLENGE

512. The rule alternates: multiply by 4, then multiply by 2.

Accept equivalent rule descriptions, such as "take away 10" for subtract 10. For the challenge, students should name both parts of the alternating rule and give 512.