LESSON MAKER PRO

Pattern Power Paths

Find the rule, extend the numbers, and predict what comes next.

GRADE 3 · 3.PAR.3.1

3.PAR.3.1 "Describe, extend, and create numeric patterns related to multiplication. Make predictions related to the patterns."

NAME _____ DATE _____

SPOT THE RULE

A multiplication pattern may show equal groups added again and again, such as counting by the same number. Another multiplication pattern may multiply each term by the same factor, so the amounts added do not have to stay the same. Find the rule between terms, then use it to extend the pattern or predict a later term.

WORKED EXAMPLE

Extend the pattern: 6, 12, 18, ____, ____.

1. 6 + 6 = 12.
2. 12 + 6 = 18.
3. 18 + 6 = 24.
4. 24 + 6 = 30.

Answer: 24, 30

PRACTICE 6 problems

1 Extend the pattern: 7, 14, 21, ___, ___.

ANSWER _____

2 Extend the pattern: 3, 9, 27, ___.

ANSWER _____

3 Describe the rule for this pattern: 48, 44, 40, 36, ___.

ANSWER _____

4 A pattern is 11, 22, 33, 44, ___. Predict the next number.

ANSWER _____

5 Start at 13. Add 13 each time. Write the first five terms of the pattern.

ANSWER _____

6 Describe the rule for this pattern: 100, 90, 80, 70, ___.

ANSWER _____

APPLY IT Show your work

1 Lena earns 7 stars for each science quiz she completes. Her star totals make this pattern: 7, 14, 21, 28, ... How many stars will Lena have after 9 quizzes?

WORK SPACE

ANSWER _____

2 A reading club gives 5 badges for each book a student finishes. Jordan finishes 8 books. How many badges does Jordan earn?

WORK SPACE

ANSWER _____

CHALLENGE One step up

A game level pattern is 2, 4, 8, 16, ____, ____. Write the next two terms. Explain how you know.

WORK SPACE AND ANSWER

ANSWER KEY

Pattern Power Paths

GRADE 3 · 3.PAR.3.1

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Extend the pattern: 7, 14, 21, ___, ___.	**28, 35**
2	Extend the pattern: 3, 9, 27, ___.	**81**
3	Describe the rule for this pattern: 48, 44, 40, 36, ___.	**Subtract 4 each time.**
4	A pattern is 11, 22, 33, 44, ___. Predict the next number.	**55**
5	Start at 13. Add 13 each time. Write the first five terms of the pattern.	**13, 26, 39, 52, 65**
6	Describe the rule for this pattern: 100, 90, 80, 70, ___.	**Subtract 10 each time.**

PART 2 · APPLY IT

1. **63 stars** The pattern adds 7 stars for each quiz. Multiply 9 by 7 to get 63.
2. **40 badges** The badge totals increase by 5 for each book. Multiply 8 by 5 to get 40.

CHALLENGE

32, 64. Each term is multiplied by 2, so 16 multiplied by 2 is 32 and 32 multiplied by 2 is 64.

Accept equivalent rule descriptions, such as “count back by 4” for subtract 4. For the challenge, accept an explanation that identifies multiplying by 2, even if the student uses different words.