Pattern Number Paths

Grow and shrink number patterns to 20.

2.PAR.4.2 · Identify, describe, and create growing patterns and shrinking patterns involving addition and subtraction up to 20.

Name _____ Date _____

SPOT THE RULE

A growing pattern gets larger; a shrinking pattern gets smaller. In these examples, repeat the same addition or subtraction each time.

Worked example

A bead tray holds 2, 7, 12, 17 beads. What is the rule?

1. 7 - 2 = 5
2. 12 - 7 = 5
3. 17 - 12 = 5
4. The pattern adds 5 each time.

Add 5 each time.

1. Practice

Three toy boxes hold 3, 5, 7, __ cars. What number comes next?

2. Practice

A stack of books has 16, 15, 14, __ books on its shelves. What number comes next?

3. Practice

A game score pattern is 13, 14, 15, __ points. Write the next score and the rule.

4. Practice

A puppy gets 19, 16, 13, __ treats in a shrinking pattern. What number comes next?

5. Practice

Make a growing pattern for sticker sheets. Start with 1 sticker and add 4 each time. Write four numbers.

6. Apply

At the skate park, Sam earns 4 points in one game, 6 points in the next game, and 8 points in the next game. He earns 2 more points each game. How many points will he earn in the next game?

7. Apply

Create your own shrinking pattern with four whole-number terms between 0 and 20. Choose the start and how many to subtract each time. Write the pattern and explain your rule.

8. Challenge

A robot has 8, 9, __, __ bolts in four boxes. Write the next two numbers. Then explain the rule.

What to accept

Accept number words or numerals when the value is correct. For rule answers, accept equivalent language such as “plus 1 each time” or “one more each time.”

1. Practice

9

2. Practice

13

3. Practice

16, add 1 each time.

4. Practice

10

5. Practice

1, 5, 9, 13

6. Apply

10 points

The points grow by 2 each game. Add 2 to 8 to get 10.

7. Apply

Answers vary. Example: 18, 14, 10, 6; subtract 4 each time.

Check all four terms are from 0 to 20 and follow the student-stated subtraction rule.

8. Challenge

10, 11. Add 1 each time.