Pattern Builders

Make patterns with colors, objects, and numbers.

2.PFA.1.c · Create a repeating or increasing pattern using various representations (e.g., objects, pictures, numbers).

Name _____ Date _____

BUILD THE RULE

A repeating pattern has a part that comes again in the same order. An increasing pattern grows according to a rule. Some increasing patterns add the same amount each time; others add changing amounts that follow a rule.

Worked example

A bracelet shows: yellow bead, yellow bead, green bead, green bead, yellow bead, yellow bead, ___, ___. What beads come next?

1. Find the repeat part: yellow, yellow, green, green.
2. The pattern starts the repeat again with yellow, yellow.
3. After yellow, yellow come green, green.

green bead, green bead

1. Practice

A toy train has cars numbered 1, 2, 3, ___. What number comes next?

2. Practice

Pip has bandanas in this pattern: red, blue, red, blue, ___. What color comes next?

3. Practice

A block tower has 2 blocks, then 5 blocks, then 8 blocks, then ___. How many blocks are next?

4. Practice

Choose two shapes and your own repeating core. Draw it three complete times and circle one core.

5. Practice

Choose a start from 1 to 5 and a whole number from 1 to 3 to add. Draw four growing dot groups. Write their numbers and explain your rule.

6. Apply

Kai is making a game board. The spaces repeat in this order: star, circle, triangle. Write the next 6 spaces after star, circle, triangle.

7. Apply

Ava finds 3 shells on Monday, 5 shells on Tuesday, and 7 shells on Wednesday. If her pattern continues, how many shells will she find on Thursday?

8. Challenge

At a pet show, the first dog gets 1 treat, the second gets 3 treats, the third gets 6 treats, and the fourth gets 10 treats. How many treats should the fifth dog get? Explain how you know. Compare the amounts added between groups to find the rule.

What to accept

Accept answers with commas, words, or clearly ordered lists. For repeating patterns, the order must stay the same.

1. Practice

4

2. Practice

red

3. Practice

11

4. Practice

Answers vary. Require consistent core, three complete repetitions, and one correctly circled core.

5. Practice

Answers vary. Example: start 2, add 2 gives groups 2,4,6,8.

6. Apply

star, circle, triangle, star, circle, triangle

The repeat part has three spaces: star, circle, triangle. Repeat that part two times.

7. Apply

9 shells

The number of shells increases by 2 each day. Add 2 to 7.

8. Challenge

15 treats. The groups grow by 2, then 3, then 4, so the next group grows by 5.