

Just in Time Quick Check

Standard of Learning 1.PFA.1

Strand: Patterns, Functions, and Algebra

Standard of Learning 1.PFA.1

The student will identify, describe, extend, create, and transfer repeating patterns and increasing patterns using various representations.

Students will demonstrate the following Knowledge and Skills:

- a) Identify and describe repeating and increasing patterns.
- b) Analyze a repeating or increasing pattern and generalize the change to extend the pattern using objects, colors, movements, pictures, or geometric figures.
- c) Create a repeating or increasing pattern using objects, pictures, movements, colors, or geometric figures.
- d) Transfer a repeating or increasing pattern from one form to another.

Just in Time Quick Check

Just in Time Quick Check Teacher Notes

Supporting and Prerequisite SOL: K.PFA.1, 1.NS.2, 1.MG.2

Just in Time Quick Check 1.PFA.1

1. Circle the pattern that is a repeating pattern.



2. Draw the next three shapes in the following pattern.



3. Fill in the blanks to complete the following pattern.

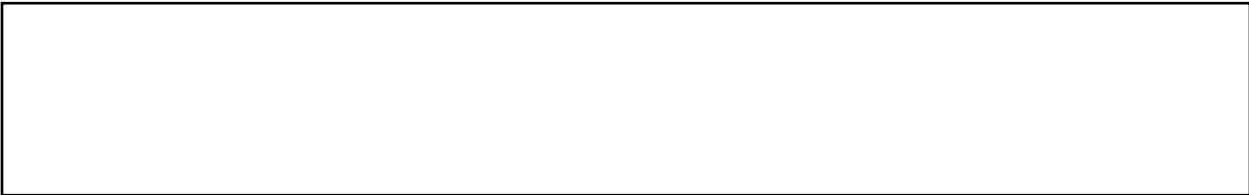


4. Use linking cubes, pattern blocks, or other materials provided to create an increasing pattern.

Explain what makes your pattern an increasing pattern.

5. Transfer the following numerical pattern to a shape pattern:

6 4 6 3 6 4 6 3



1.PFA.1 Just in Time Quick Check Teacher Notes

Common Errors/Misconceptions and their Possible Indications

1. Circle the pattern that is a repeating pattern.



Some students may struggle to identify the repeating pattern because the core is not fully repeated a third time in the representation. Students would benefit from identifying the core in repeating patterns and checking to see that the core repeats. Students would also benefit from identifying the elements that grow or change in an increasing pattern.

2. Draw the next three shapes in the following pattern.



Some students may struggle to complete a repeating pattern that contains more than two different elements or contains elements of varying quantities. A common error is for students to draw a triangle as the next shape, indicating that they did not identify the core correctly or they did not notice the two stars in the pattern. These students may need more support with identifying the core of the pattern then determining what should come next in the pattern. During instructional activities, direct the student to circle or identify the core before deciding what would come next in the pattern. Students who are more visual may also benefit from coloring the pattern (e.g., all stars one color, all triangles another color, and all squares a third color), allowing them to see the color pattern before identifying the core and then helping them to visualize what comes next in the pattern. Students should have experiences with repeating patterns such as AABC, ABAC, ABBC, and ABCD in first grade.

3. Fill in the blanks to complete the following pattern.



Some students may incorrectly record a heart and then an arrow as the next elements in this increasing pattern. This may indicate that they are unable to identify what comes next in the increasing pattern and may be focusing solely on the arrow and hearts without considering that the number of hearts grows or increases with each iteration. These students may need additional

exposure to multiple examples of repeating and increasing patterns that have more than two elements, as well as elements that vary in quantity.

4. Use linking cubes, pattern blocks, or other materials provided to create an increasing pattern.

Explain what makes your pattern an increasing pattern.

Some students may create a repeating pattern indicating that they may not be comfortable identifying and/or creating increasing patterns. These students will need additional opportunities to explore, identify, describe, and create increasing patterns throughout the school year. Increasing patterns are more complex as students must determine not only what comes next, but they must also generalize how the pattern is building or growing.

5. Transfer the following numerical pattern to a shape pattern:

6 4 6 3 6 4 6 3

Students who are unable to transfer the number pattern to a shape representation may need additional opportunities to collaborate with classmates to describe and analyze patterns and then represent those same patterns in different forms. Transferring patterns is easier for students once they can identify the core and extend patterns.