**Expansion Work** Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Write a rule for a shape pattern that involves a 3-dimensional figure. Include a description or drawing of the first element, and describe the appearance of at least 3 elements in the shape pattern. Identify at least one feature of the pattern.
2. Describe at least 3 places where shape patterns can be seen in the world around you.
3. Write a word problem that includes a shape pattern. Pose a question, and show the pattern that may be used to solve the problem. Solve.

**Expansion Work** **(KEY)**

1. Write a rule for a shape pattern that involves a 3-dimensional figure. Include a description or drawing of the first element, and describe the appearance of at least 3 elements in the shape pattern. Identify at least one feature of the pattern.

***Answers will vary.***

**Rule: Increase the number of faces by 1.**

**Description of first element: a triangular pyramid**

**A correct pattern would be a triangular pyramid, a triangular prism, a cube, and a pentagonal pyramid.**

**The number of edges alternate between an even number and an odd number.**

1. Describe at least 3 places where shape patterns can be seen in the world around you.

***Answers will vary.***

**Shape patterns may be found on floor tiles, fish scales, pinecones, and fruits such as pineapples.**

1. Write a word problem that includes a shape pattern. Pose a question, and show the pattern that may be used to solve the problem. Solve.

***Answers will vary.***

**The smallest square pool sold by a pool company, has a perimeter of 40 feet. The sizes of the square pools have perimeters that increase by a factor of 2. What is the perimeter of the fifth largest square pool?**

**Solution: 640 ft**

10 ft

20 ft

40 ft

80 ft

160 ft