

COMPLETE THE PATTERN

Performance Standard 8A.C

Extend two geometric patterns and two numeric patterns accordingly:

- *Mathematical knowledge:* Extend two geometric patterns; extend two numeric patterns.
- *Strategic knowledge:* Use strategies appropriately to complete each pattern.
- *Explanation:* Explain completely and clearly the extension of patterns and why the pattern used is correct.

Procedures

1. *In order to describe numerical relationships using variables and patterns (8A)*, students should experience sufficient learning opportunities to develop the following:
 - Extend geometric and simple numeric patterns using concrete objects or paper and pencil.
 - Demonstrate how to create a pattern given a set of directions.
2. Provide each student a copy of the “Complete a Pattern” recording sheet. Have students review and discuss the task to be completed and how the rubric will be used to evaluate their work. (The task may be read to students who have difficulty reading.)
3. Ask students to extend and complete each of the patterns on the recording sheet. Remind students that they must be able to explain each pattern used during this task orally or in writing. (Students should complete the numeric patterns and be able to explain the patterns. Students will create their own geometric pattern and explain the pattern in writing.)
4. Evaluate each student’s performance using the rubric as follows and use the guide on the rubric to determine the performance level:
 - 4 = All patterns were extended correctly; numeric patterns were calculated correctly; explanations were accurate and complete.
 - 3 = Extensions included some minor errors; explanations were mostly accurate and complete.
 - 2 = Extensions included errors; some explanations were adequate.
 - 1 = Extensions included major calculation errors; all or almost all of the explanations were inaccurate.
 - 0 = Task not attempted.

Examples of Student Work follow

Time Requirements

- 30 - 45 minutes

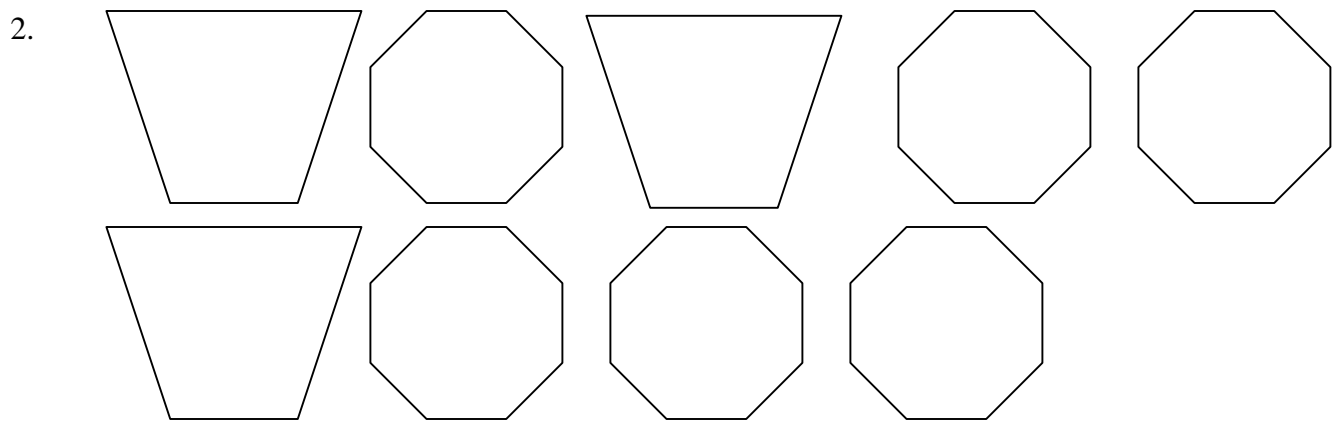
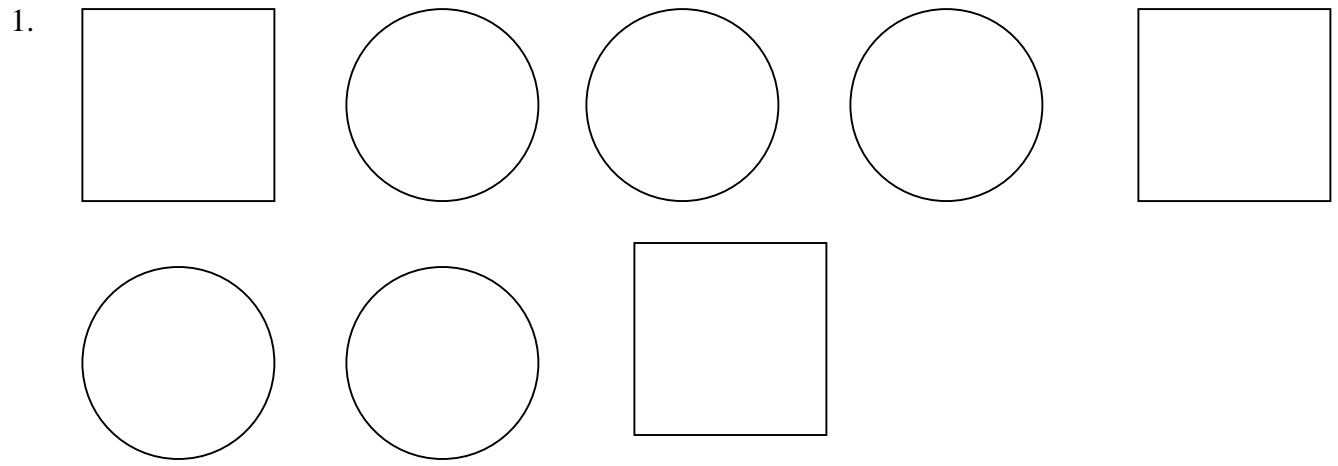
Resources

- Copies of the “Complete a Pattern” recording sheet
- Mathematics Rubric

NAME _____ DATE _____

COMPLETE THE PATTERN

Directions: Extend and complete each of the following patterns. Be able to explain each pattern to a partner and to your teacher. You may explain the pattern either orally or in writing.



Directions: Complete each of the following numeric patterns. Be able to explain the pattern either orally or in writing.

3. 7 14 21 _____

4. 90 81 _____ 63 _____ 36 _____

Make your own geometric pattern. Be sure to explain the pattern in writing.

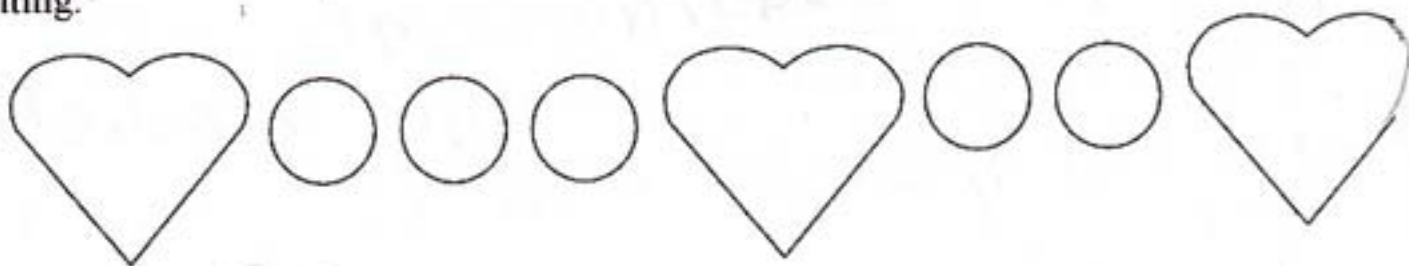
Name _____

Date 05-7-01

Complete the Pattern

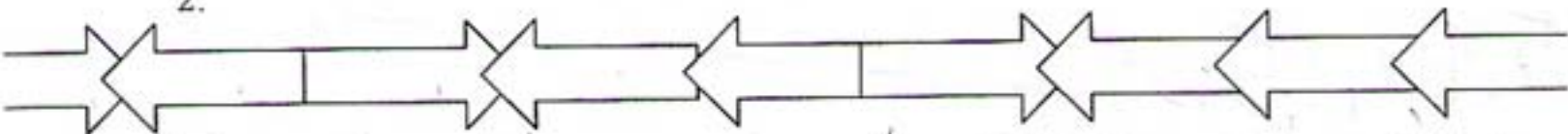
Students: Extend and complete each of the following patterns. Explain the pattern in writing.

1.



I think one circle will come next because the pattern has 3 circles and then 2 circles. So that's why I think it will be 1 circle. Also because in order it's 1, 2, 3. But backwards would be 3, 2, and then 1.

2.



I think the next arrow going to my right will be 3 because the order of numbers go 3, 2, 1 and then 3 will begin again.

Part C: Make your own geometric pattern. Be sure to explain the pattern in writing.

My pattern has a yellow pentagon, two red quadrilaterals, a yellow pentagon, one quadrilateral, and a yellow pentagon in that order.

Part D: Extend each of these numeric patterns.

1. 7, 14, 21, 28, 35, 42, 56, 63.

2. 90, 81, 72, 63, 54, 45, 36, 27, 18.

3. Now, make your own numeric pattern. You must write the first three numbers and the last number of your pattern.

5, 10, 15, 20, 25, 30, 35, 40, 45, 50,

Name _____

Date

AAA 9-24-01

Complete the Pattern

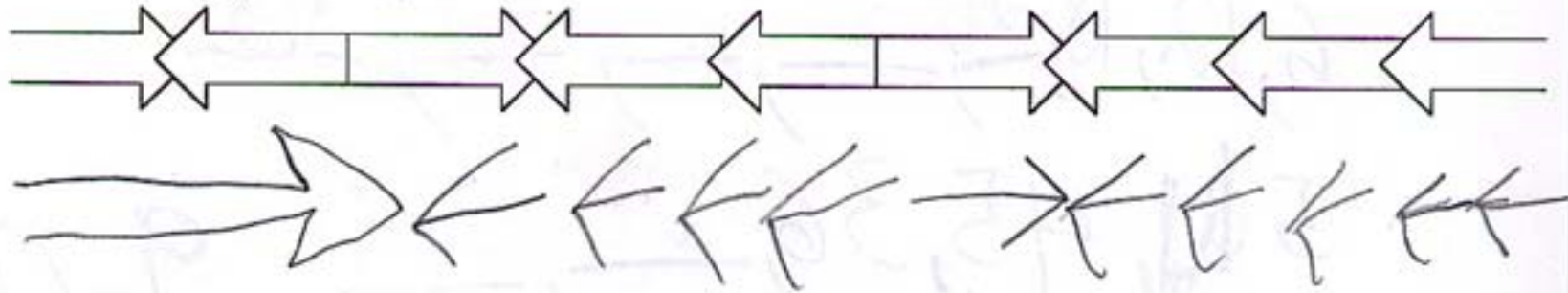
Students: Extend and complete each of the following patterns. Explain the pattern in writing.

1.



I figured out that every time it goes past a heart it loses one circle.

2.



every time you go past a right arrow you add one left arrow.

Part C: Make your own geometric pattern. Be sure to explain the pattern in writing.



every time you pass a square you either have a circle if you have 1 or the next square you pass you add a circle but if you have two's you subtract one 0

Part D: Extend each of these numeric patterns.

1. 7, 14, 21, 28, 35, 42, 49, 56.

2. 90, 81, 72, 63, 54, 45, 36, 27, 18.

3. Now, make your own numeric pattern. You must write the first three numbers and the last number of your pattern.

6, 12, 18, 24, 30, 36, 42, 48.

~~54~~ 45, 36, 27, 18, 9, 0.