

Pattern Detective Sort

Find the groups that repeat.

K.PAR.6.1 "Create, extend, and describe repeating patterns with numbers and shapes, and explain the rationale for the pattern."

NAME _____

DATE _____

REPEATS

A small group stays the same and comes again and again.

rectangle, oval, rectangle, oval

NO REPEAT

The group does not stay the same when it comes again.

diamond, heart, star, diamond, heart, oval

1 SORT _____ 8 items

Circle REPEATS or NO REPEAT for each row, then choose one row from each group and tell how you know.

1. circle, triangle, circle, triangle

REPEATS

NO REPEAT

2. 2, 4, 6, 8

REPEATS

NO REPEAT

3. square, circle, triangle, square, circle, square

REPEATS

NO REPEAT

4. 7, 9, 7, 9

REPEATS

NO REPEAT

5. triangle, triangle, circle, triangle, triangle, circle

REPEATS

NO REPEAT

6. 1, 3, 1, 3, 1, 3

REPEATS

NO REPEAT

7. 4, 4, 6, 4, 4, 7

REPEATS

NO REPEAT

8. 5, 5, 8, 5, 5, 8

REPEATS

NO REPEAT

2 PROVE IT Explain your thinking

Pick two items from Part 1. For each one, tell how you knew where it belonged.

ITEM # _____ HOW I KNEW _____

ITEM # _____ HOW I KNEW _____

3 MAKE YOUR OWN One of each

Write one new REPEATS pattern and one new NO REPEAT pattern.

REPEATS

NO REPEAT

CHALLENGE

Make a repeating pattern with three different shapes. Show the group three times and tell which group repeats.

PART 1 • SORT

#	ITEM	CATEGORY	WHY
1	circle, triangle, circle, triangle	REPEATS	The group circle, triangle repeats.
2	2, 4, 6, 8	NO REPEAT	The numbers grow, but no group repeats.
3	square, circle, triangle, square, circle, square	NO REPEAT	The first three-shape group does not repeat the same way.
4	7, 9, 7, 9	REPEATS	The group 7, 9 repeats.
5	triangle, triangle, circle, triangle, triangle, circle	REPEATS	The group triangle, triangle, circle repeats.
6	1, 3, 1, 3, 1, 3	REPEATS	The group 1, 3 repeats.
7	4, 4, 6, 4, 4, 7	NO REPEAT	The group 4, 4 is followed by 6, then 7, so it does not repeat.
8	5, 5, 8, 5, 5, 8	REPEATS	The group 5, 5, 8 repeats.

PART 2 • PROVE IT

Accept any explanation that names the deciding feature from the rule box for the chosen item.

PART 3 • MAKE YOUR OWN (SAMPLE ANSWERS)

- **REPEATS:** 9, 1, 9, 1
- **NO REPEAT:** 6, 8, 10, 12

Challenge: circle, square, triangle, circle, square, triangle, circle, square, triangle. The group circle, square, triangle repeats.

For Part 2, accept an oral explanation, drawing, or sentence that names the repeated group or points out where the group changes. A growing number pattern belongs in NO REPEAT because the same number group does not come again.