Pair Up Numbers

Sort numbers by what happens in pairs.

2.7.A "determine whether a number up to 40 is even or odd using pairings of objects to represent the number;"

NAME _____ DATE _____

EVEN NUMBER

An even number can be put into pairs with no object left alone.

12 shells: 6 pairs, no shell left alone.

ODD NUMBER

An odd number has one object left alone after you make all the pairs you can.

13 beads: 6 pairs and 1 bead left alone.

1 SORT

8 items

Circle EVEN or ODD for each item, then choose two items and explain whether every object has a partner or one is left over.

1. 24 pencils: 12 pairs — EVEN ODD
2. 8 socks: 4 pairs — EVEN ODD
3. 19 cubes: 9 pairs and 1 left over — EVEN ODD
4. 30 stickers: 15 pairs — EVEN ODD
5. 11 erasers: 5 pairs and 1 left over — EVEN ODD
6. 37 marbles: 18 pairs and 1 left over — EVEN ODD
7. 16 books: 8 pairs — EVEN ODD
8. 40 balloons: 20 pairs — EVEN ODD

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

Your teacher gives you 25 counters. Choose one even number and one odd number from 1 to 25. For each number, count that many counters and arrange them in separate pairs. Draw each pair with a loop around it, including any unpaired counter. Label the total EVEN or ODD and explain what the pairing shows. Reset the counters between models.

EVEN

ODD

CHALLENGE

Write two next-door numbers from 1 to 40, one even and one odd. Tell what happens when you pair each number.

ANSWER KEY # Pair Up Numbers

GRADE 2 · TEKS 2.7.A

PART 1 · SORT

#	ITEM	CATEGORY	WHY
1	24 pencils: 12 pairs	**EVEN**	All 24 pencils make pairs with none left over.
2	8 socks: 4 pairs	**EVEN**	All 8 socks make pairs with none left over.
3	19 cubes: 9 pairs and 1 left over	**ODD**	One cube is left over after making pairs.
4	30 stickers: 15 pairs	**EVEN**	All 30 stickers make pairs with none left over.
5	11 erasers: 5 pairs and 1 left over	**ODD**	One eraser is left over after making pairs.
6	37 marbles: 18 pairs and 1 left over	**ODD**	One marble is left over after making pairs.
7	16 books: 8 pairs	**EVEN**	All 16 books make pairs with none left over.
8	40 balloons: 20 pairs	**EVEN**	All 40 balloons make pairs with none left over.

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)

- **EVEN**: For 22: draw 11 loops, each containing 2 dots; no dot remains. Label EVEN.
- **ODD**: For 25: draw 12 loops, each containing 2 dots, and one separate dot. Label ODD.

Challenge: 26 and 27. Twenty-six makes 13 pairs with none left over. Twenty-seven makes 13 pairs with 1 left over.

Accept any explanation that names the deciding feature from the rule box for the chosen item. Answers in order: EVEN, EVEN, ODD, EVEN, ODD, ODD, EVEN, EVEN. For Part 2, look for a correct explanation about no leftover object or one leftover object. Supply the 25 real counters. In Part 3 check two actual counter arrangements and matching paired-dot drawings; chosen totals must be from 1 to 25, one even and one odd. No unpaired counter means even; one unpaired counter means odd. Pair-count sentences alone are insufficient. The original sorting and next-door challenge remain valid within 40.