

Sum Fun and Factors

In this concentration game, students match factors, addends, and pictorial representations.

Getting Ready

1. Organize students into pairs and distribute one copy of the blackline master, “Sum Fun and Factors,” to each pair.
2. Have students in each pair cut out the 18 game pieces, turn them over, and if necessary, color the back of each game piece to insure that the pictures and text will not show through.

How to Play

1. Direct the student pairs to place the 18 game pieces face-side down in front of them, and mix them up. Then, arrange the game pieces in 3 rows of 6.
2. Have students alternate turning over 3 game pieces at a time. The goal is to find 3 matching game pieces—an indicated product, a corresponding repeated addition, and a pictorial representation of the two mathematical expressions. If a player finds 3 matching game pieces, the matching pieces can be removed and placed in the player’s own pile, and the player has another turn. If a player doesn’t match all 3 game pieces, the pieces are turned over again, and the other player takes a turn.
3. Play continues until there are no more game pieces left to choose. The player with the greater number of game pieces is the winner.
4. For an added challenge, have student pairs combine two sets of 18 game pieces and play using 36 pieces. The same rules apply.

Assessment Tip

Observe students as they play the game. Find out if they can:

- Recognize equivalent addition and multiplication expressions and their representations.

Try this, too!

Have students choose two numbers from 1 to 9 and write a multiplication sentence that shows their product. For example, if the numbers are 4 and 5, then either $4 \times 5 = 20$ or $5 \times 4 = 20$ are correct multiplication sentences. Then, challenge students to make up a corresponding multiplication story problem and draw a picture illustrating that multiplication problem. (You may need to remind students that the meaning of an expression like 4×5 is “4 groups of 5 objects.”) For example, if the original multiplication sentence was $4 \times 5 = 20$, then a corresponding story problem and picture could be as follows:

There were 4 baskets, with 5 apples in each basket.

How many apples were there altogether?

Math Focus

- Understanding multiplication

Students will need

- blackline master: “Sum Fun and Factors”—1 copy per student
- scissors
- crayons or colored pencils

Approximate Time

- 30 minutes

Grouping

- pairs of students

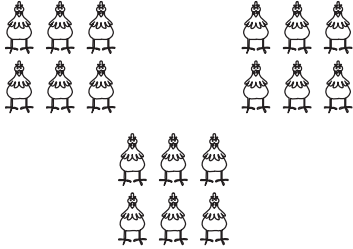

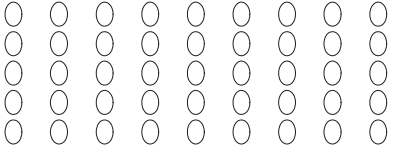
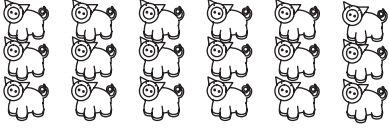
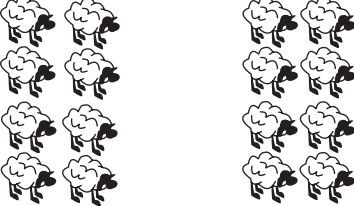
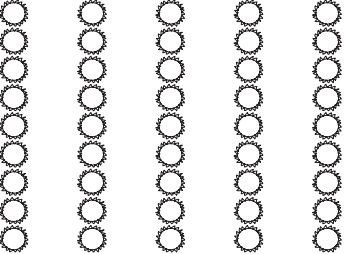
NCTM Standards

- Number & Operations
 - Representation
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Name _____

Sum Fun and Factors

Cut out the 18 game pieces.

	3×6	$6 + 6 + 6$
	8×2	$8 + 8$
	9×5	$5 + 5 + 5 + 5 + 5$ $+ 5 + 5 + 5 + 5$
	6×3	$3 + 3 + 3$ $+ 3 + 3 + 3$
	2×8	$2 + 2 + 2 + 2 + 2$ $+ 2 + 2 + 2$
	5×9	$9 + 9 + 9$ $+ 9 + 9$