

Clump



Strands:

Number & Quantity	X
Algebra	
Functions	
Geometry	
Statistics & Probability	

Materials Needed:

- Tokens or bingo chips, 20 per team
- 20-sided die or 3 6-sided dice, per team

Where:

Outside	X
Inside	X
On-line	
On-site	

Players explore division, remainders, and factors, while dividing themselves into smaller and smaller groups in this game where elimination is key.

Set Up:

- Round 1: Split into teams of 10–15 players. The Clump Master is the player whose birthday is next. (Ensure there is a large enough area for players to move around.)
- Rounds 2, 3, and 4: Split into teams of 2 or 3 players. Supply each team with a 20-sided die. Spread groups out so they can work without other groups hearing their conversations.

Object of the Game: Use division and remainders to determine the least number of times groups need to Clump.

Playing the Game:

Round 1:

1. The Clump Master stands in the center of the group, while players dance, skip, or walk around.
2. The Clump Master calls out a number.
3. Players link arms to form clumps the size of the Clump Master's number.
4. Players who are not in a clump are eliminated from the round.
5. Clumps disband. Repeat Steps 1 through 4 until only 2 players remain.
6. The Clump Master keeps track of how many numbers are called to eliminate all but 2 players.
7. No points are awarded for Round 1.

Rounds 2 through 4:

8. Players form teams of 2 or 3. Use tokens or bingo chips (manipulatives) to act out the game visually.
9. One player rolls a number greater than 10 (reroll if needed). All teams use the number rolled.
10. Team works together to decide what numbers a Clump Master should call out with the goal of ending the round with 2 remaining tokens. The Clump Master's goal is to use the fewest amount of numbers possible.
11. Teams compare the Clump Master numbers they determined. Teams earn 1 point for each number the Clump Master calls.
12. Repeat Steps 8 through 11 to complete Rounds 3 and 4.
13. Add up the total number of points from Rounds 2 through 4.

To Win: The team with the fewest points wins.

**Think About It:**

Within your team, explore the mathematics of the game. Answer the following questions:

- a. For the number of players in Round 1, what is the least number of times players can clump for the round to be over? (Remember someone is the Clump Master and is not included in the game.)
- b. Think about the different numbers that can be called out during Round 1. Which number would eliminate the MOST players?
- c. Based on your answer to questions a and b, what is a possible sequence of numbers a Clump Master could call when playing the game?
- d. Why does the Clump Master never call the number 1?
- e. Can the Clump Master call a number that is a factor of the number of people in the room? Why or why not?
- f. Why must there be two players remaining at the end of each round? Why can't just 1 player remain?

Variations:

Skip Round 1: If there are fewer than 8 players, use manipulatives, skip Round 1, and go right to Rounds 2 through 4.

Random Number: For Rounds 2 through 4, instead of rolling a die, call out any number between 10 and 20 or use a random number generator on a computer or graphing calculator.

Helpful Hints:

- During Round 1, call out the number of players being eliminated to allow the clump master to think about which number eliminates the most players.
- What is the largest number of players that can be eliminated when 20 players start the game? 19 players? 13 players? How do you know?