

The Balance Game

Objective: To solve equations of the type $x + b = c$ using manipulatives.

Materials: Each player will need

- the balance scale template,
- three different colored connecting cubes
 - 10 of one color
 - 5 of another color
 - 1 of green cube color
- one opaque container
- Each pair or group will need a reservoir of first two colors of cubes for balancing the scales.

Players: two

Rules:

- Each player places the ten cubes, the five cubes and the one green cube in the container and randomly selects a handful of cubes and places them on the LEFT side of the balance scale.
- The remaining cubes in this container are placed on the RIGHT side of the balance scale.
- Each player must find the value of the green cube that will keep the scale balanced. (They must solve for the green cube.) Once the players have determined the value of the green cube, the winner of the round is determined by comparing the absolute values of the answers. The player that has the greater absolute value wins the round. If the values are the same, each player gets a point. The first player to get five points wins the game.

Example Game (1)

- Don and Audrey are playing a game against each other. Don and Audrey are playing a game with 10 yellow cubes, 5 red cubes, and one green cube.
- Don chooses two red and three yellow cubes and places them on the left side of the balance scale. The remaining cubes, three red, seven yellow, and one green, are placed on the right side.
- Audrey chooses six yellow cubes and one green cube and places them on the left side of his balance scale. The remaining cubes, five red and four yellow, are placed on the right side of the balance scale.
- Don determines that he needs three red cubes to make his scale balance, so his answer is -3 .
- Audrey determines that she needs seven red cubes to make her scale balance so his answer is -7 .
- The absolute values of -3 and -7 are 3 and 7, respectively. Since $7 > 3$, Audrey gets the point for the round.

EXAMPLE GAME (2)

- Don and Audrey are playing a game against each other. Don and Audrey are playing a game with 10 yellow cubes, 5 red cubes, and one green cube.
- Don chooses four red, five yellow, and one green cube and places them on the left side of the scale. The remaining cubes, one red and five yellow, are placed on the right side.
- Audrey chooses three red and four yellow cubes and places them on the left side of the scale. The remaining cubes, two red, six yellow and one green are placed on the right side of the scale.
- Don determines that his green cube has a value of three yellow, or 3. Audrey determines her green cube has a value of -3 . The absolute value of both 3 and -3 is 3. Since the values are equal, each player gets a point.