

Above & Below Zero

A game to practice negative numbers

Learn the meaning of the minus sign in this game of positive and negative numbers.

Activity Challenge

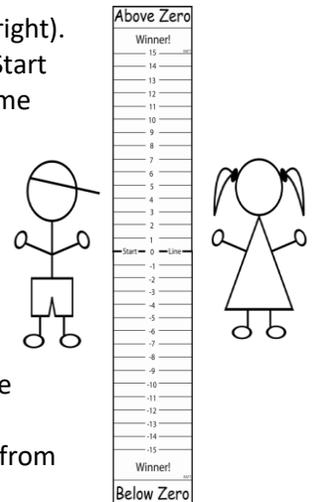
Add both positive and negative numbers by moving a playing piece up and down a game board. The first player to reach the Above Zero or Below Zero space on the game board wins. The game can be played by 2, 3, or 4 players.

Preparation

1. Review the Materials Needed List. Print or copy the game board (see page 3).
2. Find an object to be your game piece or make your own.
3. Find two 6-sided dice, each a different color. If you don't have dice, cut 6 squares out of colored paper. Have the sides measure about 1 inch each and number the squares 1 through 6. Make another set of 6 numbered squares out of a different color paper. If colored paper is not available, write the numbers with different colored ink.

To Play

1. Place game board vertically between players (see right). Each player places his or her playing piece on the Start Line which is located at "0" in the center of the game board.
2. Choose one color die (or colored paper numbered 1-6) for positive numbers. The other color will represent negative numbers.
3. Each player takes turns rolling the "positive" die; the player with the highest roll goes first. If using colored paper, turn them up-side-down, mix them up, and pick one number. The player with the higher number goes first.
4. The first player rolls both dice or picks one square from each set if colored paper squares are used.
5. Counting aloud, the player moves their piece:
 - a. **UP** the board the number of lines shown on the **positive** die, and then **DOWN** the number of lines on the **negative** die.
6. Example: For a roll of **+5** and **-3**, the piece starting at 0 would move **UP 5 lines** (positive) and then **DOWN 3 lines** (negative), ending up **2 lines** above where it started.



Materials Needed

- Game board (see last page of this activity)
- Game pieces
- Two 6-sided dice, each a different color OR see "Preparation" for dice modifications

Grade Range

6-8

Topics/Skills

Math: Negative numbers

Learning Standards

CCSS Math: [Rational Numbers](#)

Duration

15-30 mins

Prep Time

10 – 15 mins

7. Players take turns getting both a positive and negative number and moving their pieces on the game board. Each piece's movement starts from its current location. Two pieces may occupy the same line. As students become more comfortable with adding positive and negative numbers, they may add the numbers mentally and then move the piece the sum of the values.
8. The first player to reach either end of the game board (positive or negative) wins. Players do not have to have the exact number to land at the end of the board.

Extensions

- Create your own gameboard that extends further in the +/- directions.
- Use additional dice or paper squares to move greater distances in both +/- directions.
- List all the values, and track calculations, for each player or turn.

The Content behind the Activity

Some students have trouble grasping the meaning of the **minus sign (-)**. It can signify subtraction, direction, or the fact that a number is negative. A negative number, such as -2 , is less than zero. A positive number, such as 4 , is greater than zero. Zero itself is neither positive nor negative. Negative numbers are used to describe values on a scale that goes below zero, such as very cold temperatures shown on a thermometer.

Above Zero

Winner!

15 RAFT

14

13

12

11

10

9

8

7

6

5

4

3

2

1

Start — 0 — Line

-1

-2

-3

-4

-5

-6

-7

-8

-9

-10

-11

-12

-13

-14

-15

Winner!

RAFT

Below Zero

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