Learning Direction & Degrees of Movement

Grade Level: 5th Grade Special Education Math

Lesson Overview:
Students will become familiar with a starting direction and respond correctly given a degree and rotation. This lesson involves a hands-on activity and is great for hyperactive students that need to move around.

Sources Consulted:

Materials Needed:
1 compass
4 pieces of paper labeled with each letter N,E,W,S
Open floor space to Jump/Spin around
Overhead
Protractor

New Vocabulary:
Degree: A unit of measure
Clockwise: The direction in which the hands of a clock move
Counter Clockwise: The opposite direction in which the hands of a clock move

Focus Question:
When Tony Hawk does a 360 on his skateboard, what does that mean? Introduce clockwise and counter clockwise direction in the discussion. Hint (righty-tighty, lefty-loosey)
Learning Objectives:
Students will understand the four directions and the degrees associated with them.
Students will understand the direction to turn when told clockwise or counter clockwise.
Students will display movement in 90 degree increments.

Benchmarks:

G.TR.05.01  Associate an angle with a certain amount of turning: Know that angles are measured in degrees.
G.GS.05.02  Measure angles with a protractor

Classroom Activity:
Using the compass, pick the wall that is closest to North. Have the students place the four directions on the corresponding walls in the classroom. Bring up the mnemonic (Never Eat Soggy Waffles) to remember the clockwise order of the directions. Display the overhead picture, on page 24 of the book, or something similar. Have the students come up and measure, with the protractor, to confirm degrees listed. After the focus question, state how each direction is either 90, 180, 270 degrees from each other. Have the students face North and then have them jump 90 degrees clockwise. Use different starting directions and different degrees of rotations (90, 180, 270 and 360). A good question to ask would be what degree ends you in the opposite direction regardless of the rotation? A: 180. Which one gets you to your starting direction? A: 360. Once you feel confident with the progress; introduce the directions NE, NW, SE and SW. See if the students can deduce that NE is 1/2 of 90 degrees, thus 45. Ask were NE would be in the room if standing in the middle of the room? A: The North and East wall corner. Display these new degrees 45, 135, 225 and 315 on the board or overhead and show the relationship with the degrees starting with 0 /N, 45/NE, 90E, etc... Challenge the students with the new directions. Ex. Face south and jump 135 degrees clockwise (have them jump/spin to this position). Ask them where do they end up facing? A: NW. Have students challenge each other.

Assessment:
Depending on the level of the students, they can be assessed individually or in groups. Questions can be with the basic N, E, W, S and the 90, 180, 270, 360 degrees of movements. For more of the advance students incorporate NE, NW, SE, SW and 45, 135, 225, 315.