

Human Battleship

Do you think you could handle playing a life-size version of Battleship? Create your own coordinate grid, grab a few friends, and learn about coordinate planes while sinking "ships" as you go!

TEKS:

5.8A Describe the key attributes of the coordinate plane, including perpendicular number lines (axes) where the intersection (origin) of the two lines coincides with zero on each number line and the given point (0, 0); the x-coordinate, the first number in an ordered pair, indicates movement parallel to the x-axis starting at the origin; and the y-coordinate, the second number, indicates movement parallel to the y-axis starting at the

6.11 Measurement and data. The student applies mathematical process standards to use coordinate geometry to identify locations on a plane. The student is expected to graph points in all four quadrants using ordered pairs of rational numbers.

How To:

- 1. Beforehand, make a coordinate grid on the floor using taped-down yarn that is 6 squares by 6 squares. Each square should be approximately 2-feet by 2-feet in size.
- 2. Use numbered index cards to label the X- and Y-axes. Number the lines on each axis 1-6. See the STEM Explanation for clarification on X- and Y-axes.
- 3. Use a sheet or something you can't see through to divide the area.
- 4. Repeat steps 1 & 2 on the other side of the sheet. Make sure that you cannot see the grid on the other side of the sheet.
- 5. Color a handful of index cards to create "color counters" to be used to record when you land on a coordinate, but do not hit anything.

Materials:

- Interactive dice (can be found here)
- Yarn
- Masking tape
- Sheet, blanket, or something you can't see through
- Index cards
- Markers



How To (continued):

- 6. Divide your friends into two teams. Have no more than 10 members from each team pick a coordinates to stand or sit in, depending how tall your middle divider is. Do not allow the other team to see your placements.
- 7. Now, have someone from team 1 roll the dice. The first value rolled will be the x-coordinate and the second value rolled will be the y-coordinate. If someone is standing on the coordinate pair rolled, they yell, "hit" and they are out! If no one is standing on the coordinate pair, place a color counter to mark the place and the team yells, "miss".
- 8. Teams take turns rolling the dice. The game is over when all members from one team have been 'torpedoed!'

The STEM Explanation:

The coordinate plane is formed by two number lines. The horizontal number line is called the x-axis and the vertical number line is the y-axis. They intersect at a point called the origin or (0,0), which is given in the (x,y)format. The first value is the x-coordinate, which is how many spaces to move right (positive), or left (negative). The second value in a coordinate pair is the y-coordinate. This coordinate describes how many spaces you move up (positive) or down (negative).

Career Connection:

Urban planners create plans for the use of land within a city. After they understand the goals of a project, urban planners collect a lot of data. Using coordinates, they make decisions on the best locations for their plans. After they determine the best use of the land, urban planners normally meet with architects and engineers to start designing the project.

Resources:

- http://www.scholastic.com/teachers/article/dice-games-build-math-skills
- http://www.curriculumbits.com/prodimages/details/maths/mat0005.html
- http://resources.alljobopenings.com/urban-planners

