



I Sunk Your Battleship!

Students get practice plotting points on a coordinate plane by playing a game similar to Battleship.

Grades: 4, 5, 6, 7, 8
Disciplines: Math

Objective

The objective is for students to correctly plot coordinates on the coordinate plane.

Materials Needed

Graph paper, pencil

The Lesson

This lesson idea is adapted from the board game ["Battleship" by Milton Bradley](#).

Instruct students to fold a sheet of graph paper in half and draw 2 coordinate planes ([see a sample image](#)). They should draw one coordinate plane above the fold and one below. Each plane should be labeled from -5 to +5 on both the x and y axes.

On the coordinate plane graph that is above the fold, have students plot the locations of five ships. The ships must be placed vertically or horizontally (not diagonally) and must remain within +5 and -5 on both axes. The five ships will follow these specifications:

- Aircraft carrier -- 5 points long
- Battleship -- 4 points long
- Submarine -- 3 points long
- Destroyer -- 3 points long
- PT-Boat -- 2 points long

The coordinate plane below the fold should be left blank.

The Game

Note: It is a good idea to familiarize all students with the rules of the game by playing one game with the whole class trying to guess where you have placed your ships.

Students play this game in pairs. They will keep their graph papers in front of them, folded. That way, when they lift up the fold, they will see the graph with their plotted ships above the fold (for easy access as the player answers his opponent's questions) and the blank graph flat on their desks so they can record the locations of their opponents ships as they guess the ships' coordinates.

Students take turns guessing coordinates that might be the locations of their opponent's ships. (For example, a player might ask, *Have you a ship at x coordinate 4, y coordinate -2?* If the opponent does have a ship at that location, he or she must respond in the affirmative. The student who asked the question notes on his or her graph that the opponent does have a ship there.) If they choose a coordinate where their opponent has placed one of his/her ships, they get to guess another coordinate. As they play the game, each player should record all his/her right and wrong coordinate guesses on the blank coordinate graph. When the player has guessed all the coordinates of a ship, his or her opponent must "give up the ship that has been sunk" by telling the opponent of his/her success.) Gradually, students narrow down the exact locations of all of the opponent's ships.

The winner of the game is the first person who guesses the locations of (sinks) each of his/her opponent's ships.

Assessment

After students have played the game a few times, have them draw another coordinate plane. Write down ten coordinates on the board and have them graph them. I check their graphs to see if they are correct. I have them turn in their game sheets and give them a 100 for a class-work grade if they completed the games.

Adapted from a lesson plan by Peter Heusinger, Stratford High School