# Battleship Searching Games

**Big Ideas**

**Tools and technologies can be adapted for specific purposes.**

When you first started looking at the linear and binary search algorithms, you probably didn’t consider how they could be used in a game of battleship. This is what many find so interesting about Computer Science. The algorithms and solutions can be adapted to solve a wide variety of problems!

## Linear Searching Game

1. What were the scores for your first game?

My Score: My Partner’s Score:

1. What is the lowest score possible?
2. What is the highest score possible?
3. Do you think you could lower your score? If so, how might you make fewer choices?

## Binary Searching Game

1. What were the scores for your first binary search game?

My Score: My Partner’s Score:

1. Were you able to lower your score as you played the game again? If so, how did you (or your partner) lower your score?
2. To get the lowest score, which ship should you choose first?
3. To get the lowest score, what location should you choose next?

## Thinking About Searching Algorithms

1. Imagine that your partner tried to trick you by giving you a ship number that wasn’t really in their array. How many tries would it take you to show that the ship you were looking for wasn’t in your partner’s array?
2. Using the binary search strategy, how many shots would you need to make if there were 100 locations in your partner’s array? What about 1,000 locations? Or 1,000,000 locations?