

# Unit 1 Lesson 10: The Effect of Extremes

## 1 Battle Royale (Warm up)

### Student Task Statement

Several video games are based on a genre called "Battle Royale" in which 100 players are on an island and they fight until only 1 player remains and is crowned the winner. This type of game can often be played in solo mode as individuals or in team mode in groups of 2.

1. What information would you use to determine the top players in each mode (solo and team)? Explain your reasoning.
2. One person claims that the best solo players play game A. Another person claims that game B has better solo players. How could you display data to help inform their discussion? Explain your reasoning.

## 2 Separated by Skew

### Student Task Statement

1. Use technology to create a dot plot that represents the distribution of the data, then describe the shape of the distribution.

6      7      8      8      9      9      9      10      10  
10      10      11      11      11      12      12      13      14

2. Find the mean and median of the data.

3. Find the mean and median of the data with 2 additional values included as described.
  - a. Add 2 values to the original data set that are greater than 14.
  - b. Add 2 values to the original data set that are less than 6.
  - c. Add 1 value that is greater than 14 and 1 value that is less than 6 to the original data set.
  - d. Add the two values, 50 and 100, to the original data set.
4. Share your work with your group. What do you notice is happening with the mean and median based on the additional values?
5. Change the values so that the distribution fits the description given to you by your teacher, then find the mean and median.
6. Find another group that created a distribution with a different description. Explain your work and listen to their explanation, then compare your measures of center.

### 3 Plots Matching Measures

#### Student Task Statement

Create a possible dot plot with at least 10 values for each of the conditions listed. Each dot plot must have at least 3 values that are different.

1. a distribution that has both mean and median of 10
2. a distribution that has both mean and median of -15
3. a distribution that has a median of 2.5 and a mean greater than the median
4. a distribution that has a median of 5 and a mean greater than the mean