**Which cookie has the most chips?**





Is there a difference in the number of chocolate chips in Chips Ahoy cookies versus the number of chocolate chips in Meijer brand cookies? Each pair of students will count the number of chocolate chips in 1 Chips Ahoy cookie and 1 Meijer Chipsters cookie. Due to the factories processes, we can assume the population distributions of # of chips are approximately normal and that the samples are random.

1. Record the number of chocolate chips in each cookie. Write them on the board.

# in Chips Ahoy = \_\_\_\_\_\_\_ # in Meijer Chipsters = \_\_\_\_\_\_\_

2. Find the mean number of chocolate chips for each type of cookie, the standard deviation and the difference.

Chips Ahoy:  Meijer Chipsters:  Difference: 

  

3. If we repeated this process many times and created a dotplot, we would have the sampling distribution of . Describe the shape, center and spread of the sampling distribution.

Shape: Center: Spread:

4. Have the conditions for constructing a confidence interval been met? Explain.

5. Construct a 95% confidence interval for the true difference in the mean number of chocolate chips in Chips Ahoy and Meijer Chipsters.

6. Do we have evidence that there is a difference in the average number of chocolate chips in a Chips Ahoy and a Meijer Chipsters cookie?

Confidence Intervals for a Difference in Means

Important ideas:

Check Your Understanding

The most recent American Time Use Survey, conducted by the Bureau of Labor Statistics, found that many Americans barely spend any time reading for fun. People ages 15 to 19 average only 7.8 minutes of leisurely reading per day with a standard deviation of 5.4 minutes. However, people ages 75 and over read for an average of 43.8 minutes per day with a standard deviation of 35.5 minutes. These results were based on random samples of 975 people ages 15 to 19 and 1050 people ages 75 and over.

Construct and interpret a 95% confidence interval for the difference in mean amount of time (minutes) that people age 15 to 19 and people ages 75 and over read per day.