## The Penny Project

In what year was a typical penny minted?

## Materials

## You get out

- Lined Paper - in your packet
- Pencil
- Ruler
- Calculator

I will give you

- Graph Paper
- 50 pennies in a cup


## Rules

- Elbow partner teams.
- These will be your partners for the duration of the unit.
- MUST have 50 pennies in the cup at the end of the period.
- Each heading needs to be clearly labeled; each question numbered.


## Prediction

USE COMPLETE SENTENCES on Lined Paper

1. Predict the year the typical penny currently in circulation was minted.
2. Determine how old the typical penny would be.

## Measures of Center

1. What is the mean of the minting dates of your pennies?
2. What is the median of the minting dates of your pennies?
3. What do these tell you about pennies currently in circulation?
4. Which do you think is the best measure of center and why?

## Standard Deviation

1. What is the standard deviation of your set of pennies?
2. Find another group to compare. Write the group members names down. What is their standard deviation? Compare the two standard deviations. What does that tell you about the data sets?

## Dot Plot

## Make a dot plot on your graph paper.

## Reflection Questions

1. What patterns do you see in the heights on the dot plot?
2. What do the patterns tell you about these pennies?
3. What can you say about the typical penny and its minting year or age from looking at the dot plot?
4. Where do you see the mean and median on the dot plot?

## Box Plot

## Make a box plot of your stack of pennies

## Reflection Questions

1. What percent of data is in the box?
2. Why is half the data filling much less than half the plot?
3. Did you have any outliers?
4. How do the two whiskers of the plot compare in length?
5. What fraction of the pennies does each whisker represent?
6. Since the whiskers are different lengths but represent the same amount of data, what does that tell you about the pennies in the longer whisker?
7. Summarize what the box plot tells you about the minting dates of pennies.

## Measures of Variability

1. What is the interquartile range?
2. What does this tell you about pennies currently in circulation?
3. Do you think this interquartile range is the best measure of variability and why?

## Histograms

Make a histogram on your graph paper using intervals of 5 years.

Reflection Questions

1. What patterns do you see in the heights on the histogram?
2. What do the patterns tell you about these pennies?
