# 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?