

Name: \_\_\_\_\_


## Directions for Calibrating “ImageJ” Software

The following instructions will help you understand and perform a calibration exercise with ImageJ using an image of a ruler along side images of US Currency. The ruler serves as the scale for the calibration exercise. A ruler must be present in the image to be analyzed or the scale will not be appropriate.

### Image and Measurement Set-up

1. Open ImageJ
  - a. The ImageJ tool bar should appear at the top of the screen.
2. Click **File** on the ImageJ menu bar.
3. Click **Open** from the pull down menu.
4. Locate and open the **US Currency Image** file (images must be opened in ImageJ to be analyzed).
5. Click **Analyze** on the ImageJ menu bar.
6. Click **Set Measurements** from the pull down menu.
  - a. Check only the **Perimeter** box.
  - b. Enter the number **2** in the **Decimal Places** box.
  - c. Click **OK**.
7. Zoom in on the ruler.
  - a. Click **Image** on the menu bar and then scroll down to **Zoom** and select **In [+]**. Zoom in once or twice until it is easy to see the scale on the ruler.
  - b. If the ruler is outside the viewing window - Click on the **Hand** tool on the tool bar and drag the ruler back into view.

### Calibrating the Scale with the Ruler

8. Click on the **Straight-Line** selection tool  on the tool bar.
9. Click on the ruler at **1cm** (10mm) and drag a line to **3 cm**.

*You should see a line on the ruler between 1cm and 3cm.*

**MAKE SURE YOU ARE PRECISE AS THIS MEASUREMENT WILL BE USED TO SET THE SCALE FOR THE ACTIVITY**

10. Click **Analyze** on the menu bar
11. Choose **Set Scale** from the drop down menu.
  - a. Enter the number **2** in the **Known Distance** box.
  - b. Enter **cm** in the **Unit of Length** box.
  - c. Click **OK**.

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### **Analyzing Measurement for Accuracy**

12. Click on the **straight-line selection** icon on the tool bar.
13. Click on the ruler at **1in** and drag a line to **2in**.
14. Click **Analyze** on the menu bar.
15. Choose **Measure** from the drop down menu.
  - a. A **Results** box should appear.
  - b. The length displayed should be very close to or exactly 2.54cm.  
**1in = 2.54cm**
16. If your measurement is not exact or close you should go through the steps again.
17. When closing the results box you do not have to save your results.
18. Now you are ready to take measurements of the US Currency in the photo.