



# In Your Estimation

## 2<sup>nd</sup> Grade

### Duration

Pre-Visit: 20-30 minutes

Visit: 30 minutes

Post-Visit: 15 minutes

### Location

Gem & Mineral Hall

### Supplies

- Worksheet
- Pencil
- Measuring tape
- Clipboards (optional)
- Penny (optional)

### Standards

Math:

Number Sense 2.6.1

### Vocabulary

Measurement

Estimate

Inches

Centimeters

Scale

## Concepts

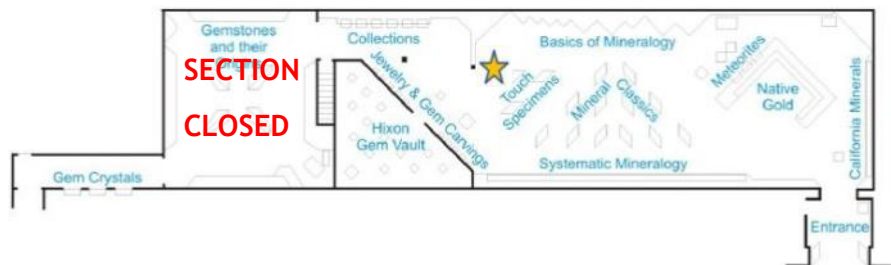
- Estimating is making an informed guess about a measurement.
- Using an object for scale helps inform estimates

## Objectives

- Students will learn that estimates are an informed guess about measurements.
- Students will practice making estimates and then compare to real measurements.
- Students will explore the concept of scale.

## Outline

1. Before visiting the Museum, review measuring inches and centimeters with your students and introduce the concept of estimation. Practice making estimates of specimens using the worksheet.
2. During a trip to the Museum, continue the measuring activity on the worksheet.
3. Back in the classroom, share student findings and review and reflect on the activity.



## Pre-Visit

Review inches and centimeters and how to use a ruler and tape measure. Explain the idea of estimating. Using the photos on the worksheet, have the students make estimated about how long or tall the gems and minerals in the pictures are, guessing based on the arrows on each picture. Students should record their answers in the first column. At this time, you may choose not to advertise the presence of a penny in each picture, and save this for introducing the idea of scale.

Tell students they will finish their worksheet during a field trip to the Natural History Museum!

## Visit

Students will walk around the Gem and Mineral Hall and locate the actual specimens they saw in the pictures (Touch Specimens section).

Students will then use their tape measures to measure the actual size of the specimen.

Have students record their findings on the same worksheet the filled out in class with their estimates.

## Post-Visit

Have students share their findings with the class, you may choose to record findings on the board.

Discuss the results, were their estimates close? Did pictures do a good job of communicating size? What might have helped them make a better estimate? This is a good time to talk about the idea of scale and point out the penny in each picture.

## Variations & Extensions

- Make a chart of student measurements and practice adding and dividing everyone's answers to discover the mean or average.
- Have students brainstorm what kinds of common items they could use for scale, or find and share examples of scale in books or on-line (with adult supervision).



## In Your Estimation

Estimate the size of the specimens below,

then compare estimates with an actual measurement at the Natural History Museum!

|   |   |   |
|---|---|---|
| <p style="text-align: center;"><b>Rhodochrosite</b></p>    | <p style="text-align: center;">Estimate</p> | <p style="text-align: center;">Measured</p> |
| <p style="text-align: center;"><b>Petrified Wood</b></p>  | <p style="text-align: center;">Estimate</p> | <p style="text-align: center;">Measured</p> |
| <p style="text-align: center;"><b>Smokey Quartz</b></p>  | <p style="text-align: center;">Estimate</p> | <p style="text-align: center;">Measured</p> |



## In Your Estimation

|   |   |   |
|---|---|---|
| <p style="text-align: center;"><b>Beryl</b></p>                    | <p style="text-align: center;">Estimate</p> | <p style="text-align: center;">Measured</p> |
| <p style="text-align: center;"><b>Hematite</b></p>                | <p style="text-align: center;">Estimate</p> | <p style="text-align: center;">Measured</p> |
| <p style="text-align: center;"><b>Copper with Malachite</b></p>  | <p style="text-align: center;">Estimate</p> | <p style="text-align: center;">Measured</p> |

Were your estimates close?

What would you do differently next time?