

Measuring Artifacts (aka Students Might as Well Measure Interesting Objects)
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Standards (from 4th Grade Common Core Standards but many other standards will match this activity): [4-MD1] Know relative sizes of measurement units within one system of units, including km, m, cm; kg, g; lb, oz; l, ml; and hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table.

[4-MD4] Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Solve problems involving addition and subtraction of fractions by using information presented in line plots. Example: From a line plot find and interpret the difference in length between the longest and shortest specimens in an insect collection.

Teacher Background: Students will examine, measure, and categorize (by size) items that could have been found in archaeological digs near the only known existing slave quarters in New England. It is located in the Boston area in what is now Medford, Massachusetts. The slave quarters is located only 35 feet from the home of the owner, Isaac Royall. Archaeologists have examined several locations in the vicinity of these buildings and have found, measured, and categorized over 60,000 artifacts. Slaves lived on the Royall property during the 1700's.

The Slave Quarters for the Royall Family



The Home of the Royall Family with the Slave Quarters beside the House



Directions: The teacher will show students different objects that are similar to ones found beside the Slave Quarters and discuss how these objects could have been used in the 1700's by enslaved people belonging to the Royall family. Objects could include **repaired china** (possibly thrown out by the Royalls and repaired for use by their slaves as tableware), 1 inch **square tiles made from china** or tiles that were around fireplaces (children's game pieces), **clay spheres** (used as marbles by children), **thimbles, part from scissors, sewing pins** (enslaved people would have done mending and sewing), **lice comb fragment, stone pestle** (for grinding herbs and other ingredients), **buttons, two prong fork, glass bottle, a bead with a hole** in it, an arrowhead shaped piece that was possibly used as a good luck charm (**amulet**) from ideas brought from Africa, **bones** from animals that were domesticated and eaten (wild animal bones haven't been found showing that hunting probably didn't take place)....

After the discussion and initial observation of the objects they should be placed around the room with an ID tag.

Students will work with a partner and measure each object to the nearest 1/2 centimeter in the direction that the object is longest. Results will be recorded on student-made charts. Once all artifacts have been measured, results will be graphed on a line plot prepared by the teacher to show how many objects of each length have been found.

An actual archaeological dig at the Royall home:



Extension Activities: Students will look at the list of actual artifacts that were found on the Royall's property and draw conclusions about what this information might be revealing about life on the Royall's property was like in the 1700's.

Students will view photos of actual objects found in archaeological searches and determine an estimated area of these objects based on the centimeter grid beside each object. Students will brainstorm reasons why the size of these findings matters.

<http://www.royallhouse.org/what-youll-see/archaeology/>

Students will write a story using the artifacts as inspiration.

Students will create a VENN diagram to compare and contrast the types of artifacts would be found in their backyard vs the ones from the Royall's Slave Quarters

Students will research to learn more about the Ten Hills Farm and who else lived there besides the Royalls and the enslaved people of that time period.

