



Volume at Home (Volume at School) Project

By: Jessica Shaffer

5th grade teacher; M.A. in Administration and Leadership, Georgian Court University, NJ

Math
Grades 6–8



Introduction

Students will explore their homes and measure various objects with a ruler or measuring tape in order to find the volume of multiple three-dimensional objects. Students will then have to analyze the data collected by solving critical thinking problems. Students will create a Flipgrid and discuss one of the objects, the object's dimensions, and their thoughts on the project.

Learning Objectives

Students will measure objects and calculate their volume.

Materials Needed

- Ruler/tape measure
- Scrap paper/pencil or whiteboard/dry erase marker
- [Volume at Home project slideshow](#)
- Flipgrid for project

Procedure

Day 1

1. Review the formula for volume ($l \times w \times h$) of rectangular prisms. Put a few example problems on the board for students to solve using whiteboards. If you are doing this virtually, have the students solve these problems during your Google Meets/Zoom Meetings for instruction.
2. Review measurement with the class. The project calls for students to measure the objects to the nearest $\frac{1}{2}$ inch. Remind students how to round numbers as well. You can adjust the requirements for the project to have objects measured to the nearest $\frac{1}{4}$ inch or $\frac{1}{8}$ of an inch depending on the grade level standards you wish to address.
3. Go through each slide of the project with the class. The project can be assigned to the students in Google Classroom, and you will just make a copy for each student so the slides can be edited and submitted by each student.
 - The title slide is worth 5 points. It must include the student's name and a picture relating to volume.
 - The rubric slide goes over the point value of each part of the project, as well as the expectations. You can create a rubric for the actual project in the assignment on Google Classroom (use the same categories as the rubric on the slides), and it makes it easy to grade and make comments for the students.

Continued on page 2



Volume at Home (Volume at School) Project

By: Jessica Shaffer

5th grade teacher; M.A. in Administration and Leadership, Georgian Court University, NJ

Math
Grades 6–8



Continued from page 1

- Part One: This is the part where students will measure household objects. In the slideshow, there are four objects named with a fifth object of choice. You can edit this however you wish, and have students choose more of their objects. Remind students to label each measurement in “inches”. Students may use decimals or fractions to represent the $\frac{1}{2}$ inch. For example “six and a half inches” can be represented as 6.5 inches or $6\frac{1}{2}$ inches. Since students will be measuring five objects and Part 1 is worth 20 points in total, the measurement of each object is worth 4 points.
 - Part Two: The students must find the volume of each object. The equation must be written out just as the example is with labels on each measurement and a variable. Students will then solve each equation and correctly label the product. This part is worth 40 points, so each object is worth 8 points in total.
 - Part Three: Solve the four analysis questions. This part is worth 20 points, so each problem is worth 5 points.
 - Part Four: Create a Flipgrid following the requirements on the Flipgrid slide. This part is worth 15 points.
4. Students should measure the objects and complete Part One of the project in order to be able to complete Part Two.
 5. For early finishers, they can go onto various websites to practice solving for the volume of prisms.
 - [Volume Shape Game](#)
 - [Minecraft Volume](#)
 - [Net Volume Practice](#)

Day 2

1. Students will complete Part Two of the Volume at Home Project. Students will have to set up the volume equations and then solve each one. Students will practice either multiplying fractions or multiplying decimals in this part, as each measurement is rounded to the nearest half inch. Work should not be completed on a calculator, but by paper and pencil or whiteboard and dry erase marker. If you wish to have students submit work, you can add an extra slide or two into the slide show and have the students attach photographs of the pictures into the slideshow. You made need to demonstrate this if students are unsure how to do this in Google Slides.
2. Students will complete Part Three in the project. Students will analyze the data from Part Two. Remind students to label answers.
3. Students will complete Part Four by creating a Flipgrid discussing the points required by the project
4. Students will then complete the [Volume Extension Worksheet](#). This will provide students more practice finding the volume of rectangular prisms. You can use the provided worksheet, or you can choose a different one depending on the grade level standards you wish to address.



Volume at Home (Volume at School) Project

By: Jessica Shaffer

5th grade teacher; M.A. in Administration and Leadership, Georgian Court University, NJ

Math
Grades 6–8



Continued from page 2

*This project can be done over two class periods in school if you wish to make it an in-school project. You may need to move into a third period depending on the length of your math block. This also can be completed at home over the course of a week. This project is also a great option for online learning and would require about the same amount of time as if it were given as an at-home assignment.

Evaluation

There is a rubric to grade the project with (in the Google Slideshow). The [Volume Extension Worksheet](#) can be counted as a classwork grade.