BEGINNER MATH ACTIVITY
FINDING SHAPES AND SYMMETRY IN ARCHITECTURE

The architecture of Mount Vernon is made up of a lot of shapes. Looking at this photograph of the Mansion, find as many different shapes as you can, and record the numbers below!

Triangles _________  Squares _________  Rectangles _________  Ovals _________

George Washington tried to make certain parts of Mount Vernon symmetrical. Draw a line through each architectural feature to show its symmetry.
BEGINNER DRAWING AND WRITING ACTIVITY
EXPRESS YOURSELF!

George Washington carefully designed Mount Vernon’s architecture and décor to express who he was. For example, in the New Room, Washington included symbols and images related to farming because he considered it an important part of who he was. If you were to design a room or a building to express who you are, what would you put in it? What would it be made of? What color would it be? What special features would it have to tell the world something special about you?

Draw your room or building below. At the bottom, write a brief description of why you designed it the way that you did.

This room/building shows who I am because: ____________________________________________
______________________________________________________________________________
______________________________________________________________________________
Based on the definitions, match the architecture terms with the Mansion’s features and write them in the correct places on the photograph:

A. Cupola: a decorative, small, projecting tower at the top of the roof of a building, often square, round or octagonal in shape.
B. Colonnade: a long row of columns supporting a roof, open arcade, or walkway between two structures.
C. Pediment: a triangular space created by a front facing gable roof, often seen in classical Greek architecture.
D. Elliptical Window: an oval shaped decorative window, also sometimes called a “bull’s eye window.”
E. Tuscan column: a basic column with a simple base and capital (the decorative top of the column).
F. Gabled Dormer: a window opening at roof level, topped by a front gable.
INTERMEDIATE MATH ACTIVITY
FINDING PERIMETER IN THE MANSION

Using these floor plans of the Mansion, determine the perimeter for each question. Notice that the Mansion’s floor plan is symmetrical, meaning the measurements on one side of the house are equal to the measurements on the other side.

The piazza has a perimeter of ____________ feet.

The New Room has a perimeter of ____________ feet.

The original house built by Augustine Washington had a perimeter of ____________ feet.

The entire Mansion, including the piazza, has a perimeter of ____________ feet.
When George Washington inherited Mount Vernon in 1754, he inherited a house built by his father in 1735. Over the next several decades, Washington slowly transformed the house into the mansion you see today. Using the images and the descriptions, answer the questions below to write a short summary of architecture at Mount Vernon. For more detailed information about the Mansion’s architecture, visit Mount Vernon’s Digital Encyclopedia at http://www.mountvernon.org/digital-encyclopedia/article/exterior-architectural-details/

How is the 1735 house, built by George Washington’s father, an example of Georgian architecture?

How is the Mansion, designed and renovated by George Washington, an example of Palladian architecture?

In your opinion, what are the biggest changes that Washington made to the original house built by his father? Did he keep anything the same?
When designing and constructing a building, architects use scale to represent the actual measurements of the building in a drawing. A scale uses inches or fractions of inches to represent feet. Using the floor plan of the first floor of the Mansion below, answer the following questions about the measurements of the Mansion. Measure the floor plan with your ruler, and convert the measurements from inches to feet.

**SCALE:** $\frac{1}{4}$ inch = 5 feet

1. If $\frac{1}{4}$ inch on this floor plan represents 5 feet on the actual Mansion, how many feet is represented by an inch?

2. Measure the longest side of the piazza on the floor plan.
   - How many inches is it? __________________
   - How many feet long is the actual piazza? ________________

3. Measure the space between two of the columns on the piazza.
   - How many inches is it? ________________
   - How many feet apart are the actual columns of the piazza? ________________

4. Measure the length and width of the Mansion (not including the piazza) using your ruler.
   - Length in inches: ________________
   - Width in inches: ________________
   - Length in feet: ________________
   - Width in feet: ________________

5. In feet, what is the area of the interior of the Mansion?