



Element 7 Share It: The Shape of Love

| Geometry, Art, Drafting | The Shape of Love |
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| <p>Age Level: 7-18 (Vary the complexity based on age)</p> <p>Time: 2 hours without diorama 15 minutes preparation 45 minutes drawing 20 minutes math 40 minutes presentation</p> <p>Resources:</p> <p>Paper Pencil Straight edge (ruler or envelope evenly marked) Kahn Academy video on geometric shapes Cardboard and art supplies or clay made from earth - optional (See clay pot video in Resiliency Unit, Element 8)</p> | <p>Teacher Caregiver or Self-Guided Learner</p> <ol style="list-style-type: none">1. Read about home building and think about materials.2. Study how to make and measure three-dimensional shapes based on videos or drawings. Study area.3. Create a village and find the cubic feet needed to add imaginary homes for those in need. (Turn the blueprint into a clay diorama if desired.)4. Invite a guest official to review the plans. Offer to assist with building or improvement programs to welcome people into homes. |

Introduction

Humans need shelter from the weather. As the only animals to build homes mostly from manufactured rather than found objects, humans use adobe, molded clay, timber, straw bales, shingles and other items crafted together from raw materials found in nature. Humans plan, measure and create, to show love for those who will need those homes.

In some towns, not every family has a home. Today, you have a chance to show love for everyone by creating a plan for a village with enough homes to house those who had none. You can include homes for families large and small.

Creating a Home Design

Homebuilding begins with math and art skills. Urban planners draw cities, sometimes using a computer. Architects draw the blueprint--or pattern--for a house, to guide those who will build it.

Everything you draw today will begin with a geometric shape. Geometry is the kind of math we use to study shapes.

Understanding Shapes

Please look at the shapes in the video. You will see include rectangles, squares, triangles pyramids, square pyramids, cylinders, and spheres. The video will show you how to draw them.

Think about the shapes of a house and the shapes of objects outside a house. Name the shapes of any of these objects that you know: A square-frame house, a fireplace, an igloo, a Hogan, a roundavel, a cookstove, a hut, an apartment building, a picnic table, a chimney, a gazebo, a trash bin, a street light, or the other objects you have in mind. What about rooftops? Draw at least three such items as geometric shapes. Think about how near they

will be to one another. Sketch the outlines of the and the topographical features on the landscape, such as hills, mountains, ponds, and gullies. These have shapes as well.

Prepare to Build

To get the supplies. The workers will need to know the measurements of the new buildings. We must measure the cubic feet for each building we will add. Imagine 12 x 12 cubes within an area. This is what we mean by cubic feet. We will multiply to find the number.

Remember the formula *area = length x width*.

Look at your drawing. Use a ruler to measure each side of a building. (If you do not have a ruler, make one by marking equal lengths on the edge of an envelope or paper. Make the marks close together, as centimeters would appear on a ruler.)

On each of the three main shapes, write a measurement beside each panel. Write the total area beside each panel. Add all sides to find the cubic feet needed for the building itself. For example, a house with four sides will have an area measurement on each side. Add those together and you will know the cubic feet of materials needed. If an object is round, estimate the distance around its middle.

If you like, turn your blueprint into a diorama using paper and cardboard or handmade clay.

To review, these steps include:

1. Watch the geometry video or look at the pictures of shapes.
2. Find these shapes all around you.
3. Draw a village using geometric shapes such as rectangles, squares, triangles, tall pyramids, squares, and pyramids.

4. Use a ruler or make a ruler and mark off equal measurements.
5. Measure at least three of the buildings in your village.
6. Find the area of each building's parts, as if to help get the supplies to build it. If it is round, find the diameter. Find the cubic feet of material needed and write it by each of three buildings.
7. Experiment with materials to make your own diorama if you like.
8. Send your design to a local builder, mayor or land use planner.



Offer the Design as a Gift

- Send a message to a local builder, official or land use planner. Thank them for their work in helping the community.
- Invite this representative to receive your blueprint as a suggestion to help provide housing in the community—especially if some have lost jobs due to a time of pandemic.

- Ask if you can help with some part of the work, such as sorting or collecting materials, volunteering to work, or bringing songs and welcome gifts for new neighbors. Ask how you can best offer love and help.

About the photos: *On the last page, students of Liberia’s Kingdom International school created a diorama of a village. What shapes do you see in their version?*

Below, Maureen Mungai shows an empty street on Calle Marqués de Larios, in Spain, at a time when people stayed inside due to the Covid-19 pandemic. How many shapes do you see among the apartment buildings, street lights and streets? Could you draw a get-well card with such a place?

Knowing how to draw, to build, to invent, to cook and to write can help us share love. Which of these will you do today?

