



Origami Polyhedra Grades 4 - 8

Learning Objectives: Explore three dimensional shapes, work with angles, find properties of symmetry, and create your own polyhedra

Source:

<https://mathcraft.wonderhowto.com/how-to/modular-origami-make-cube-octahedron-icosahedron-from-sonobe-units-0131460/>

Activity Plan:

First, you are going to learn how to make an origami shape, called a Sonobe Unit, that you can use to make 3D shapes. Then, combine six copies of this shape together to make a cube. After that, explore and see what other 3D objects (polyhedra) you can make with these units. I have some photos to inspire you, but you can go in any direction you like.

Materials and Tools

- Paper (square origami paper is preferred as it folds much better)
- Scissors (if paper isn't square)

Step 0. If you don't have origami paper, then start here: [How to Make Square Paper](#)

Step 1. You will need 6 copies of this unit: [How to Make a Sonobe Unit](#)

Step 2. Put the units together to make a cube. You can try it on your own as a puzzle first, or just go straight to the directions: [How to Make a Cube from 6 Sonobe Units](#)

Step 3. Take a photo, and post it to your class project board!

Now that you got your feet wet with the cube, what other polyhedra can you construct using sonobe units?

You can try a stellated octahedron (8 triangular faces, each with a little corner sticking out):



...or the stellated icosahedron (20 triangular sides with the corner sticking out):



Can you make a different closed shape? Maybe one that is not regular?