

Lesson 5

Sphericons

When you rotate a symmetric polygon around a mirror axis, cut the solid into two equal parts, and then put the parts back together differently, you produce a sphericon, a three-dimensional solid with one side and two edges.

Why does it work? Create sphericons to explore the relationship between cones, cubes and octahedrons and find out.

Recommended age range 10+

Category: Beginner lesson

Tags: 3D CAD, 3D printing, 3D printed, beginners, design, education

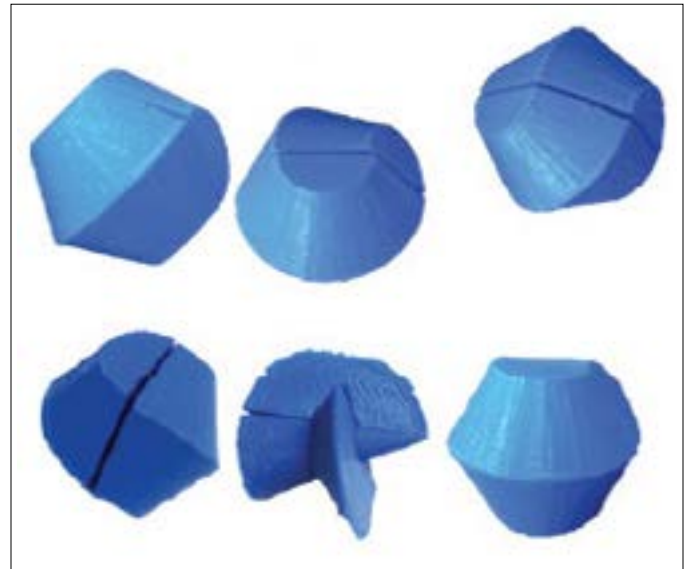
Software: Tinkercad, Fusion 360

Lesson Duration: One 45 minute class (additional time to print)

Estimated filament use (per person):
~1.6-3m/~12g-24g

PROJECT OBJECTIVES

- Understand geometry and geometry transformations
- Understand and execute boolean operations
- Prepare a model for 3D printing
- Assemble sets of parts (magnets)
- Produce a 3D model from a 2D design
- Use the Revolve command to transform a 2D sketch to 3D object



See [Lesson 5](#) for Instructor Slideshows, including Lesson Overview and Walkthroughs, Student CAD help sheets, and Example files.