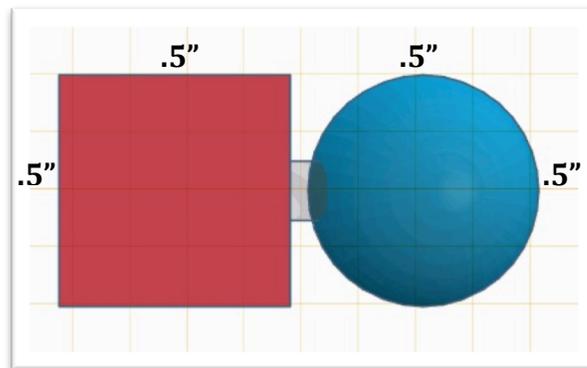


## The Challenge

### Peg, Cube and Sphere - (40 pts.)



**Purpose:** Students will develop their CAD skills by successfully attaching a Cube to a Sphere with a peg. The peg sits in a hole that was formed in both shapes. This skill is the basis for the car that the students will soon create.

**Directions:** Go to “tinkercad.com,” set up an account. Go to the “Learn” tab and follow the tutorials to learn the basics on how to use this CAD program.

**Note:** Don’t get frustrated. I had to watch the videos a second and third time to actually see the details of how I could build the objects I wanted. Most of my learning came from “Trial and Error.” Please approach me for solutions if you just can’t figure out how to achieve a specific goal that you have.

**Specifications:** *(In inches.)*

- Create a Cube: H: .5" x W: .5 x L: .5". *(20 pts.)*
- Create a Sphere: H: .5" x W: .5 x L: .5". *(20 pts.)*
- Create a peg that can slide in one side of each of these geometric shapes, but not out the opposite side. The two shapes should be able to touch when the peg is inside of them. *(20 pts.)*

### Helpful Hints:

- Convert the Grid from “Millimeters” to “Inches” (Change can be made by clicking on the “Edit Grid” button). Then set the “Snap Grid” to 1/64”.
- Remember, you can only make edits to your shapes after changing the View or Angle by reapplying the “Work Plane.”
- The hole is a cylinder.
- The hole will only appear when it has been “Grouped” with the other shapes.
- When you are ready to Export this object to be printed, the object should be visible in “Top View” and the grid behind it should be Light Blue in color – this is done by clicking the background grid (not the object) with the “Work Plane.”