

# MAKER SPACE

because the world needs people that do

**Subject-** Chemistry

**Unit -** Molecules

**Objectives--** “By 3D printing and having a tangible object, students can better visualise and understand the molecular world.”

**Materials -** 3D printer, filament, computer, Tinkercad, guided instructions

**Duration -** research time (?), computer lab time (not MakerSpace specific): 2 days, 3D printing: 1 day per student (only 6 printers available)

**Student Capacity -** This could be individual or partner work. Only several students per day need to be in the MakerSpace.

**Student Organization-** Individual or groups of 2

**Activities-** 1. Research the structure of the molecule assigned, 2. Teacher teaches class how to use TinkerCad and has them work through the TinkerCad beginner tutorials, 3. Create the pieces necessary to fit together to make molecule, 4. Assign times for students to come to MakerSpace to print, 5. Paint pieces (if desired)

**Closure-** See Assessment

**Assessment -** “In the final lesson of the project, each group will present their 3D printed model along with their research.”

**Special Considerations-** 3D printing 20-30 different objects will take anywhere from several days to a week or two but can be hastened by putting several projects on one print plate.

**Lesson Plan taken from:**

<http://weareprintlab.com/blog/3d-printing-chemical-structures-lesson-plan>