

3D Drawing - Group Activity

Target age group: grades 2-8 (but high schoolers might enjoy it as well!)

Number of students: minimum 2, no maximum

Purpose of activity: To practice 3D drawing skills while at the same time engaging in constructive social interaction with peers

Materials needed: paper and pencils

Time needed: Very flexible, but at least an hour (not including preparatory instruction time for students who need to review how to draw in 3D). You could also do several shorter sessions instead of one long one.

Prior knowledge needed:

IMPORTANT: Your participants will need to be able to draw simple 3D shapes. If they need a review, take the time to go over each figure on the following page, using a step-by-step approach (Example for cube: 1) draw a diamond, 2) add lines going down, 3) add parallel lines at the bottom) If you have students who already draw fairly well, this preparatory drawing review might only take 15-20 minutes. If you have students that don't have much 3D drawing experience, you might need to spend a considerable amount of time teaching these basic shapes.

Please note the importance of shadows in making the drawings look 3D. Shadows tell the viewer where the object is and where the light is coming from. I recommend choosing a light source and actually drawing a little sun indicating where the light is coming from. The sun can be drawn very lightly and later erased.

What to do:

If you have a large group, divide the students into smaller groups, with a maximum of 7 per group. Do the "warm up" demonstration drawings first, with an adult reading each step out loud and allowing for drawing time after each step. It is important that the students understand how the activity works before they try it on their own in their small groups.

After doing the demonstration drawings, tell the students that they will now be thinking up the drawing steps themselves, with each student adding one of the steps. (Each student does their own drawing-- the only cooperative part is adding ideas.) Choose who will go first in each group and in which direction (clockwise or counterclockwise) the turns will proceed. The students will need to be mindful of the others in their group and make sure everyone is ready before going on to the next step. The group dynamics will vary from group to group. The adult should be listening for any interpersonal problems that crop up and helping the students to resolve the problems peacefully and creatively.



BASIC SHAPES YOU NEED TO BE ABLE TO DRAW:

Round shapes:



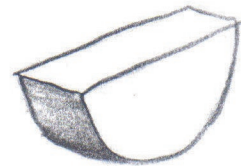
sphere



dome

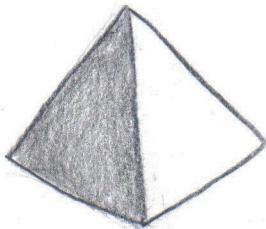


bowl



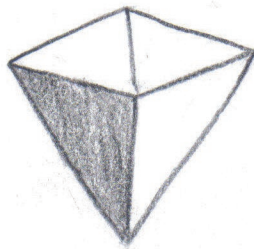
wedge

Pointy shapes:



pyramid pointing up

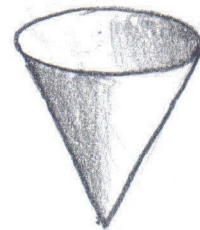
pyramid pointing down



cone pointing up

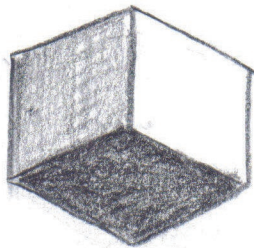
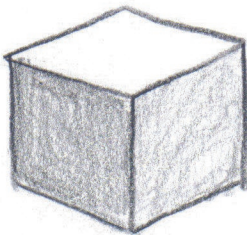


cone pointing down



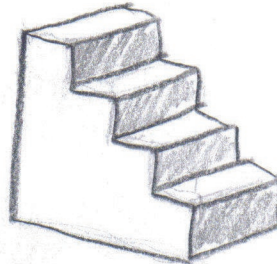
Square shapes:

cube from top

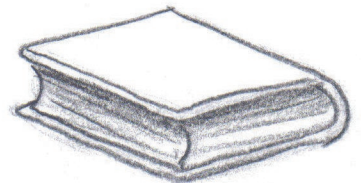


cube from bottom

stairs



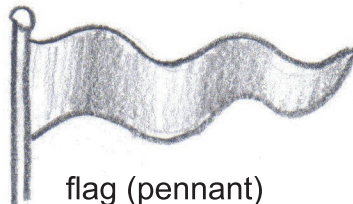
book



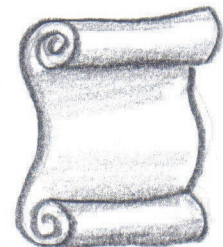
Other fun shapes:



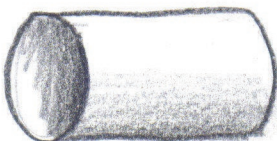
donut



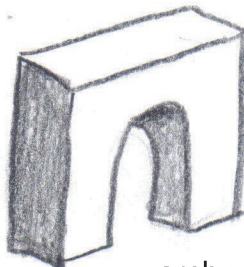
flag (pennant)



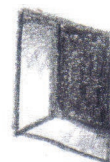
scroll



tube



arch



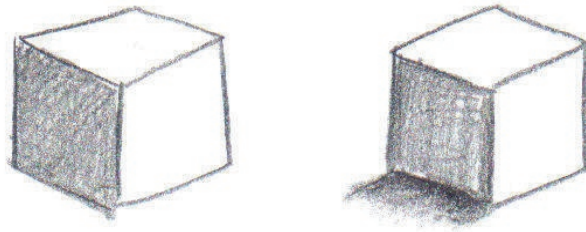
window



rope

SHADOWS:

Notice the importance of shadows. The cube on the right looks like it is sitting on a surface. You don't know where the left cube is.

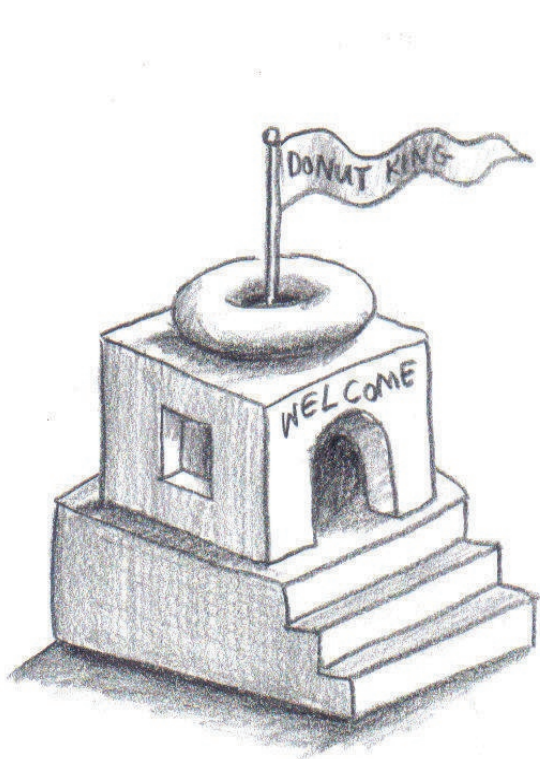
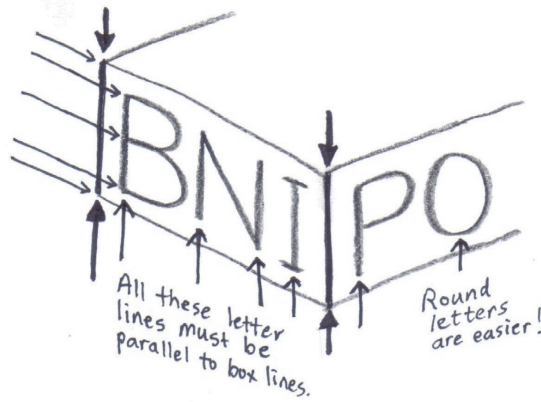


The sphere on the left could be anywhere. The one in the middle is sitting on a surface, and the one on the right is floating. The only difference between these three spheres is the shadow.



TIP FOR DRAWING LETTERS:

Make sure the straight sides of letters are parallel with the edges of the shape you are drawing them on.



LIGHT SOURCE

Establish a light source by drawing a little sun. Now it will be easy to determine which side of a shape needs to be shaded.

“WARM-UP” DRAWINGS

for an adult to read out loud to the whole group

(Pause after each step and allow for a bit of drawing time before proceeding to the next step.

Also, feel free to substitute your own ideas for any of these!)

DRAWING 1:

- 1) Draw a box.
- 2) Make the box sitting on stairs.
- 3) Put a donut on top of the box.
- 4) Make a flag sticking out of the donut. (The flag can stick out at any angle.)
- 5) Add a door and a window to the box.
- 6) Add some words. (Try to make them look like they are actually on the object.)
- 7) Complete all shading.

DRAWING 2:

- 1) Draw a box.
- 2) Draw a cylinder in the box.
- 3) Draw a hole in the box. (Note: You will be able to see through the hole and into the box.)
- 4) Make a box sitting under the box. (Make very light guidelines first, then erase extra lines.)
- 5) Make a sphere under the book. (This will be a challenge. Shadows will be extra-important.)
- 6) Add a mouse somewhere.
- 7) Complete all shading.

DRAWING 3:

- 1) Draw a box.
- 2) Draw a window on one side of the box.
- 3) Draw your initials on the other side of the box.
- 4) Draw a box sitting on top of that box.
- 5) Draw a pyramid on top of that top box.
- 6) Draw a sphere balancing on top of the pyramid.
- 7) Add a piece of rope somewhere.
- 8) Complete all shading.

DRAWING 4:

- 1) Draw a box.
- 2) Make three holes in each side of the box.
- 3) Make the top of the box look like a 4 by 4 checkerboard.
- 4) Draw an upside-down pyramid under the box.
- 5) Make the pyramid balancing on a sphere.
- 6) Make a snake going in and out of the holes in the box.
- 7) Complete all shading.

When the students understand what to do, they can begin working on their own in their small groups. Choose who will go first and in what direction the turns will go. (Each student makes their own individual drawing, but everyone gets at least one turn to decide the next element to be added.) Decide ahead of time how many elements will be added and how many each student will contribute.

A few samples of
student work:

