3D Modeling and Design Terminology

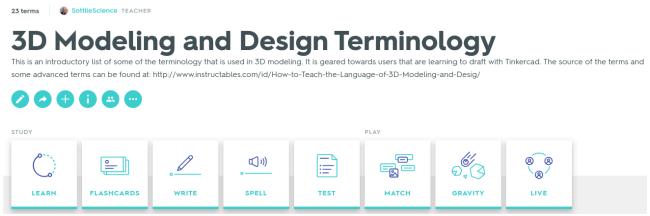
This is an introductory list of some of the terminology that is used in 3D modeling. It is geared towards users that are learning to draft with Tinkercad.

[The source of the terminology and some more advanced terms can be accessed by clicking here.]	[A video overview of these concepts can be accessed by clicking here.]
	

Align	To place or arrange (things) in a straight line. To use the Align tool, select at least two objects by Shift left-clicking on them or by dragging a box around them. Once selected, click on the Align icon at the top. Simply move your mouse over a node (the black dots) to preview the move.
Angle	A figure formed by two rays, called the sides of the angle, sharing a common endpoint, called the vertex of the angle. It also measures the amount of turn an object is rotating, for example: 45 degrees or 90 degrees (also called a "right angle.")
Boolean operation	In 3D design, the action of adding, subtracting, or combining primitive shapes.
CAD	Computer-aided design is the use of computer systems to aid in the creation, modification, analysis, or optimization of a design. CAD software is used to increase the productivity of the designer and to assist in the fabrication process. Using CAD is often faster than drafting by hand, and it also allows you to easily export files, such as for 3D printing.

Diameter	A straight line going through the center of a circle connecting two points on the circumference.
Dimensions	A measurable extent of some kind, such as length, width, or height. In its simplest form: a line describes one dimension, a plane describes two dimensions, and a cube describes three dimensions.
Duplicate	To make or be an exact copy of. To duplicate an object, use Ctrl + D and then drag it out or use the arrow keys.
Export	To convert a file into another format than the one it is currently in. For example, you must export your design in order to print it. Tinkercad also allows you to "share" your design in the form of a PNG image file.
Fabricate	To construct or manufacture. To "make" your design. You can make almost anything through 3D printing or laser cutting.
Flip	A tool that allows you to create the mirror image of an object or to flip it along the x, y, or z axis. Use the Flip icon after you have selected the object. Use Flip and Duplicate together to create complex designs more efficiently.
Gallery	A collection of creations grouped together. Creations in the Tinkercad gallery typically can be copied and tinkered for analysis, modification, and inspiration. You can publish your design by changing the setting to public when you are ready for an audience.
Group	To combine two or more shapes into a part. Do this by selecting them and then choosing the Group icon at the top.
Handle	The little squares that appear on the shape when you select it that allow you to resize it by pulling and pushing them.
Hole	A tool used to subtract from a solid shape.
Import	To bring a file from a different program into the one you're using. In Tinkercad, you can import STL files in order to analyze and build upon the 3D designs of others, or SVG files in order to add 2D images like logos and patterns to your designs.
Millimeter	A millimeter is 1/32 or 0.039 of an inch. This is the default unit of measurement in Tinkercad.
Pan	To rotate a camera on the horizontal or vertical axis. Use the right mouse button to do this.
Perpendicular	At an angle of 90 degrees to a given line, plane, or surface.

Primitive (Shape)	A starting point or building block for 3D design. These shapes can be added, subtracted, and combined with one another to build just about anything. They include: Cube (Box), Cylinder, Tube, Sphere, Torus, and Cone.
Rotate	To move in a circle around an axis or center. When you select an object, the arrows are for rotation. You can rotate on any of the planes.
Scale	To change the size of an object so that its dimensions are proportional to the original size. You can do this by holding down the Shift key while pushing and pulling the handles to resize.
Workplane	The large, blue grid where you create your designs. You can drag out new work planes onto the surfaces of your shapes for easier stacking and more precise measuring.
Zoom	To move a camera from a long shot to a close-up gradually. Use the wheel on the mouse to do this.

Ready to practice with these terms and test your knowledge?	
[Visit the Quizlet page for these vocabulary terms by clicking here.]	

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