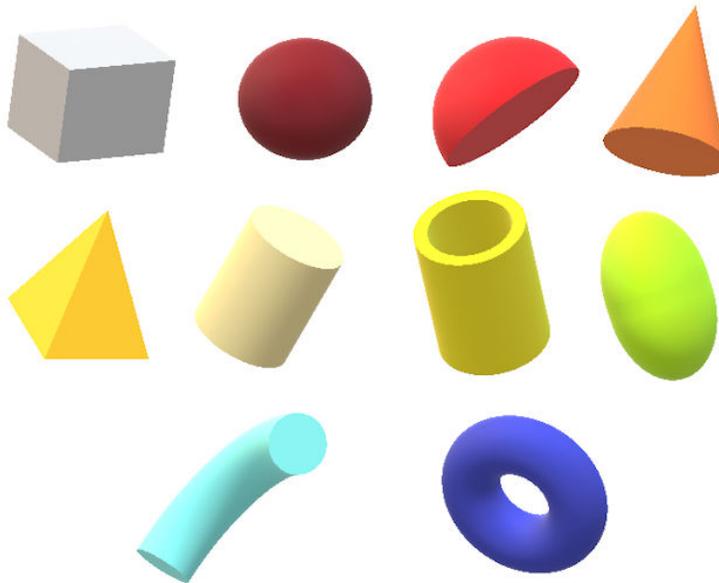


# Beginning Paint 3D

## A Step by Step Tutorial

*By Len Nasman*

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By Len Nasman

This tutorial is designed for new users to Microsoft Paint 3D. It uses a step by step approach to instruction.

## Introduction

Microsoft has included a simple paint program with all earlier versions of Windows. In the latest update to Windows 10, a new version of Paint, called Paint 3D, is included. The addition of being able to create and edit 3D images is a significant change to the Paint program. You can open Paint 3D from the Start menu.

If you search YouTube for Paint 3D you will find a long list of efforts by various individuals to create Paint 3D tutorials. Microsoft has provided their own introduction video. The problem with these videos is that either they were created by amateurs who do not have professional experience creating instructional materials, or they assume that the user already knows quite a bit about the software.

Unfortunately, Microsoft has not provided a user manual for Paint 3D. Instead they seem to be relying on YouTube videos to demonstrate various features of the program. If you are new to this stuff, it will be helpful to learn some of the basics of the user interface.

I have been creating instructional materials for several decades, and have developed a project oriented approach to introducing computer software that many have found useful. Of course, each person has their own preferred learning style. However, if you are starting to use Paint 3D, and have no background in the program at all, you should find this tutorial useful. This tutorial starts by describing the basic user interface, and then goes step by step through the different functions and features moving from drawing simple lines to creating complex 3D models.

As you go through this tutorial, note that paragraphs with a green background are steps you should complete as you read the related explanations.

- ✓ Open Paint 3D

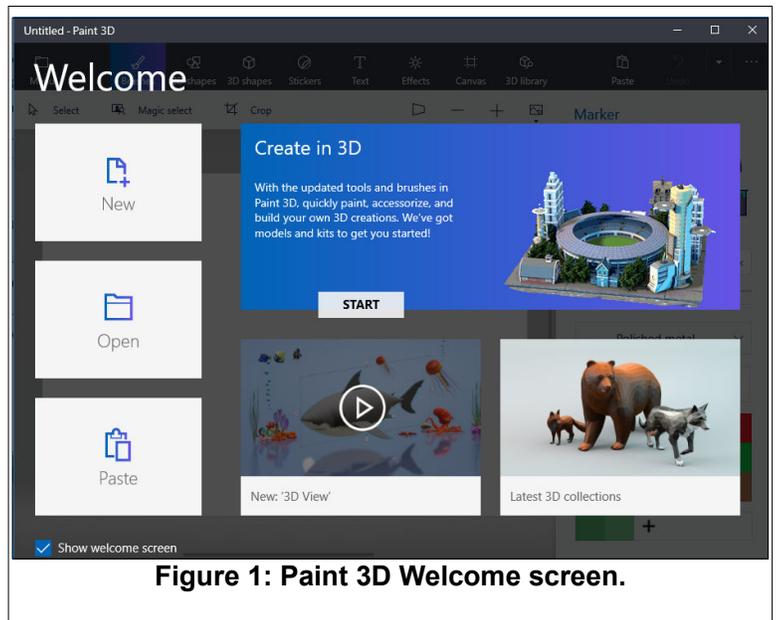


Figure 1: Paint 3D Welcome screen.



## The Paint 3D User Interface

Before starting with a new program, it is a good idea to review the user interface and the vocabulary used in that particular program.

*Select* means to move the mouse cursor over an item and then click the *left* mouse button *once*.

- ✓ Open Paint 3D.
- ✓ Select **New** to start a new project.

There is a *toolbar* across the top of the display. The far right side of the toolbar has an option for toggling tool names on and off. The illustrations here show the tool names toggled on.

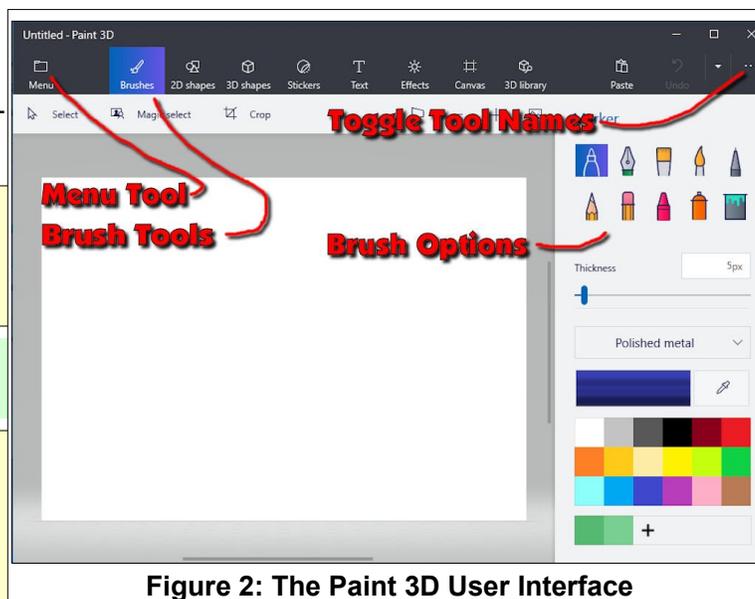


Figure 2: The Paint 3D User Interface

- ✓ Select the **Brushes** tool from the top menu.

Selecting the **Brushes** tool displays 10 brush options in the right side panel. This panel also provides options for controlling *Thickness*, *Opacity*, *Material*, and *Color*. You can adjust *Thickness* and *Opacity* either by entering a value in a text box, or by using a slider found beneath the option. There is also an option for setting *Materials* for 3D objects.

**Windows tip:** Whenever you want to undo an action, for example drawing a line in a Paint program, press **Ctrl+Z**.

If you hover the mouse cursor over a brush, a *tool tip* will pop up showing the name of the brush.

- ✓ Choose a brush and draw lines by clicking the *left mouse button* at a start point, and then (with the left button pressed) *drag the cursor* to make a line.
- ✓ Experiment with the different brushes. Try different colors and thickness settings.

If you have a *wheel mouse*, you can use the wheel to **zoom** in and out of your drawing. The position of the mouse cursor when you roll the mouse wheel will be the center of the zoom area.

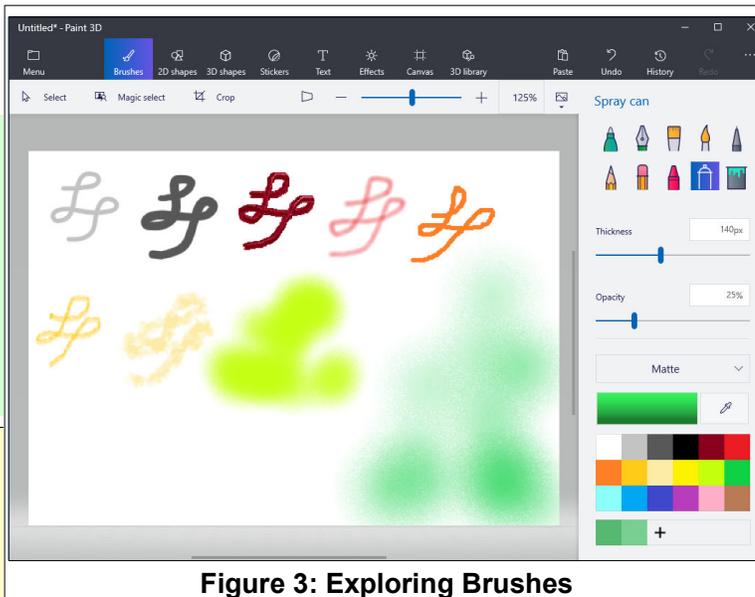


Figure 3: Exploring Brushes

- ✓ From the **Menu tool**, select **New**. You will get options to *Save*, *Don't Save*, or *Cancel*.



## Creating 2D Shapes

- ✓ Experiment with the **2D shapes** options.
- ✓ Once you have selected a shape, drag out (*left click* at the start point and hold down the left mouse button and *drag* to the end point) the shape on your drawing.
- ✓ Once you drag out a shape, the right side panel will show options for modifying the shape. You can change the *Fill*, *Line Type*, *Thickness*, and *Opacity* options.

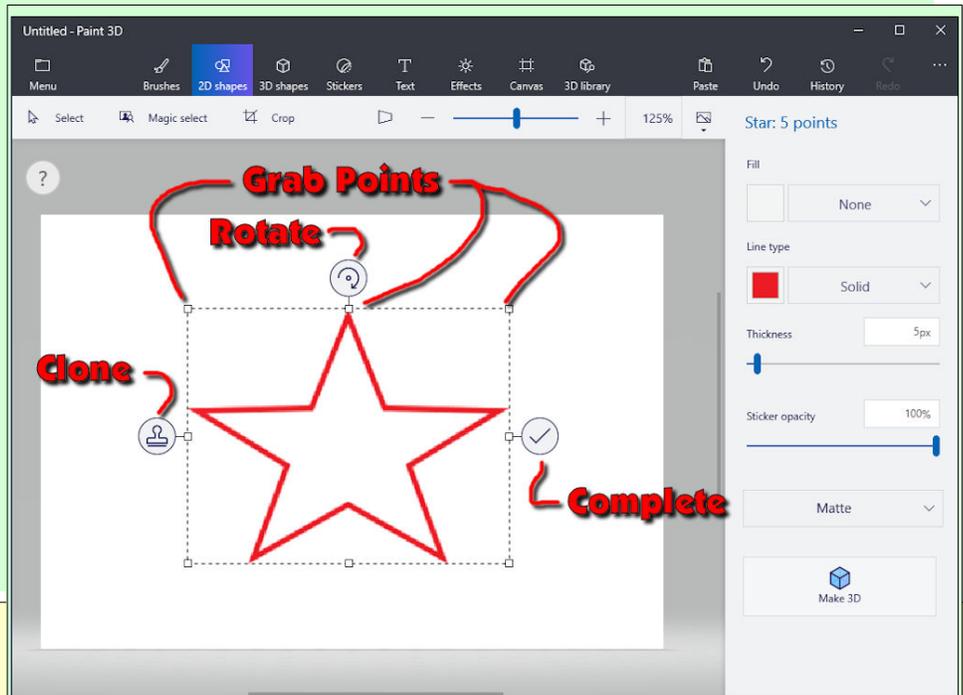


Figure 4: Creating a 2D Shape

You will see **Grab Points** at the corners and mid points of the shape. You can drag these points to change the size and proportions of the shape.

There is a **Rotate** tool that is used to rotate the shape.

There is a **Check mark** tool that completes the shape. You can also complete a shape by left clicking somewhere away from the shape.

There is a **Clone** tool that makes a copy of the shape.

**Hint:** When you create a 2D shape, hold the *shift* key down as you create the shape. This will constrain the aspect ratio of the shape. For example, if you hold the shift key down while using the circle tool, you will get a true circle. If you do not hold the shift key down you will get an ellipse.

When an object is selected it can be dragged to a new location. Move the mouse cursor over the object until you see the cursor change to a four way arrow. At this point you can click the left mouse button down and, while holding it down, move the selected object to a new location.



Figure 5 has an example of using the **Clone Tool**.

- ✓ See if you can duplicate Figure 5.
- First a multipoint star was dragged out.
- The clone tool was selected and the new star was moved, resized, and the color was changed.
- This clone process was repeated to make the third star.
- The process was repeated and the red star was moved, resized, rotated, and filled.

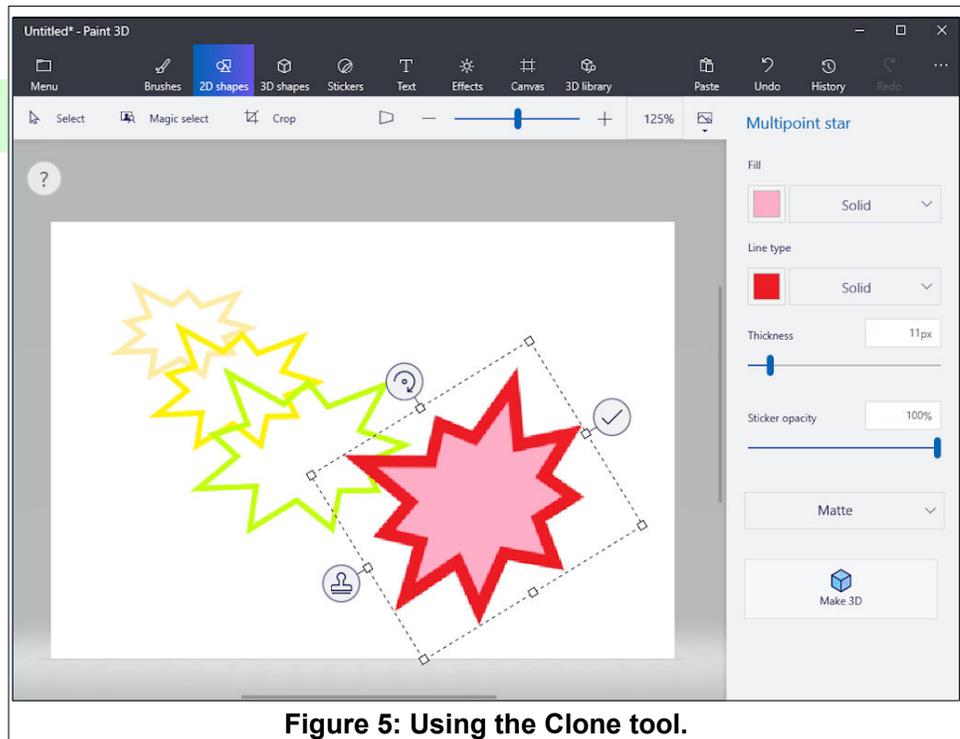


Figure 5: Using the Clone tool.

## Drawing Lines with Paint 3D

The 2D shapes tool includes options for drawing lines.

- ✓ Select the 2D shapes tool.

### Straight Lines

- ✓ Select the **Straight** line tool.
- ✓ Left click at the starting point for a line and drag to the end point of a new line.

You can control lines to be either *horizontal*, *vertical*, or at a *45 degree angle*, by holding the **shift** key down while you are drawing a line.

### Multi-Point Curves

- ✓ Select the 2D shapes tool.

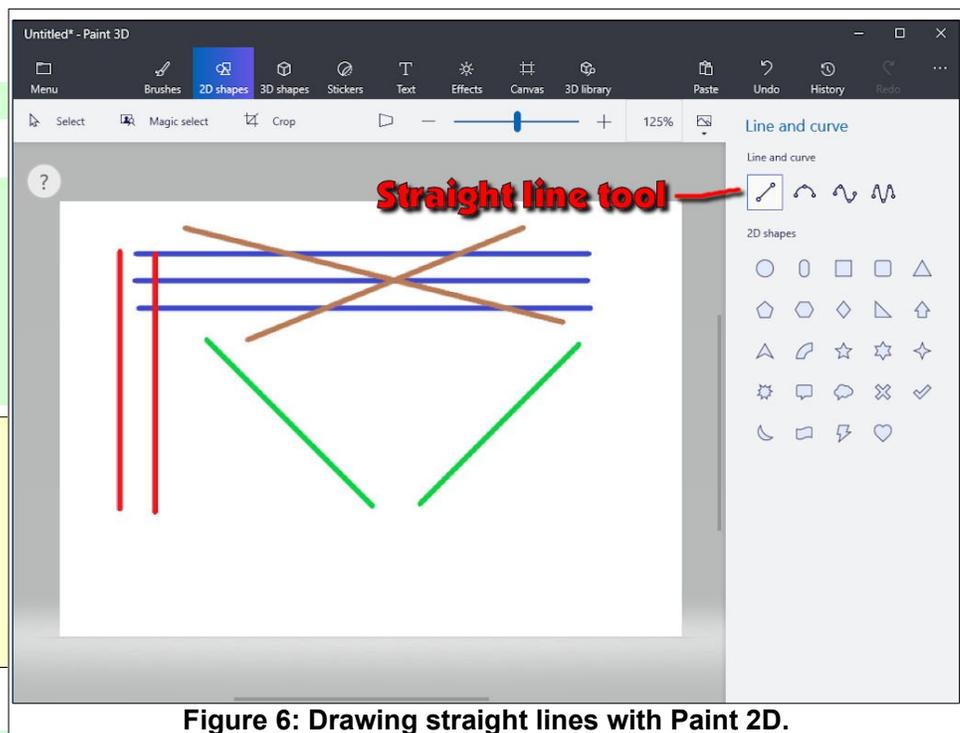


Figure 6: Drawing straight lines with Paint 2D.



- ✓ Select the **3-point curve** tool.
- ✓ Drag a new line.

The 3-point line tool provides 3 drag points that can be used to change the shape of the line.

- ✓ Experiment with your 3-point curve by moving the drag points.



- ✓ See if you can create a face similar to that shown by using 2D shapes circles and 3-point lines.

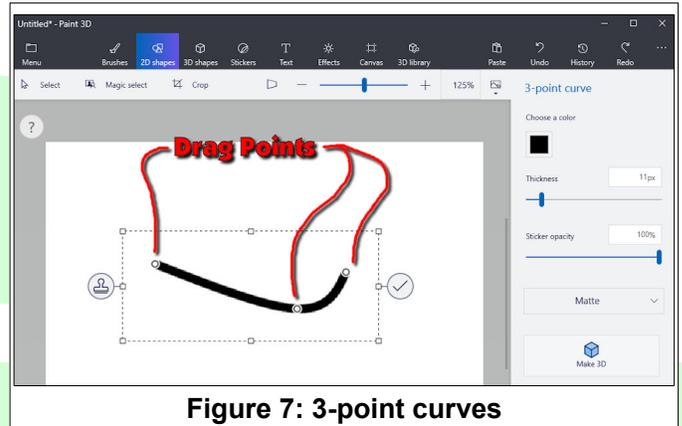
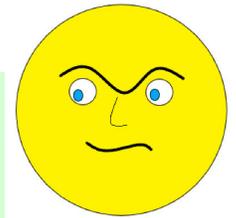


Figure 7: 3-point curves

- ✓ Select the **2D shapes** tool.
- ✓ Select the **4-point curve** tool.
- ✓ Drag a new line.

The 4-point and 5-point lines are similar to the 3-point line except there are more drag points.

- ✓ Select the **2D shapes** tool.
- ✓ Select the **5-point curve** tool.
- ✓ Drag a new line.
- ✓ See if you can replicate the face using **2D shapes** tools.



### The Paint 3D World

The 3D world is typically visualized using three axes, X, Y, and Z. In Paint 3D, the X axis is horizontal, the Y axis is vertical, and the Z axis is in and out of the display. The Z axes appears as a point in the normal view. When you create a 3D object, there are tools for rotating the object around the three axes.

When you draw with 2D tools in Paint 3D, the drawing is placed on what is called a *Canvas*. Once 3D objects are added, they can be moved in and out of the plane of the Canvas.

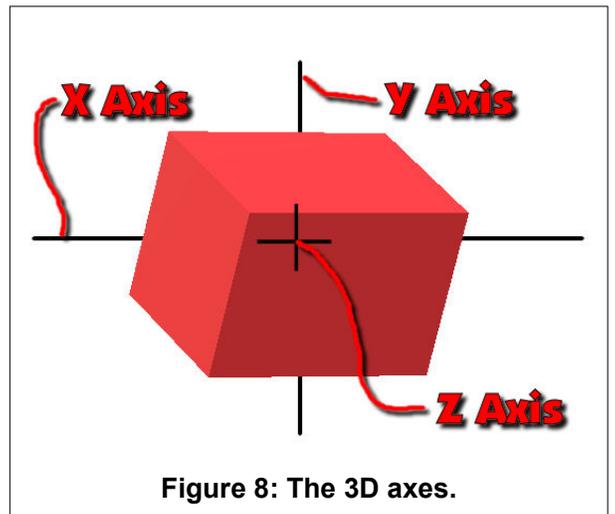


Figure 8: The 3D axes.

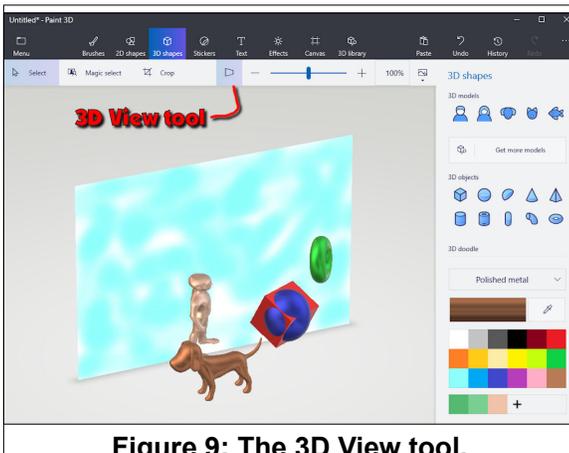


Figure 9: The 3D View tool.

A *3D View* tool toggles the scene in and out of 3D to show where objects are relative to a *Canvas* backdrop.



## Creating 3D Shapes with Paint 3D

There are three types of 3D shapes in Paint 3D, *3D models*, *3D objects*, and *3D doodles*. We will start with 3D objects, since they are basic geometric figures.

### 3D objects

- ✓ Select the **3D shapes** tool.
- ✓ Select the **Cube** object.
- ✓ Drag out a cube.

When a 3D object is created, tools are available to rotate the object around each of the 3 axes, and a fourth tool to move the object with respect to the plane of the *Canvas*.

When a 3D object is selected, the side panel provides tools for changing the *color and material* of the object, *editing*, and *Flipping* the object horizontally or vertically.

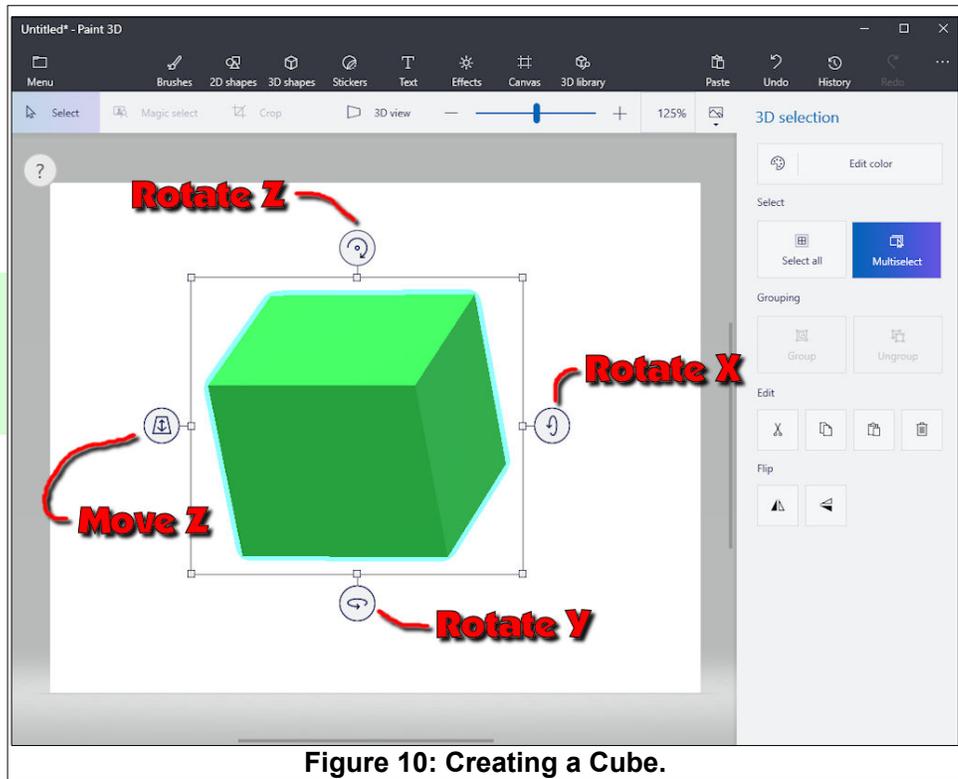
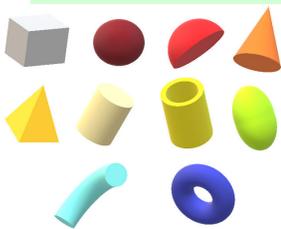


Figure 10: Creating a Cube.



- ✓ Select the **3D shapes** tool.
- ✓ Experiment with creating different 3D objects.

Observe that selecting a material before creating a 3D object controls how the surface of the object will appear.

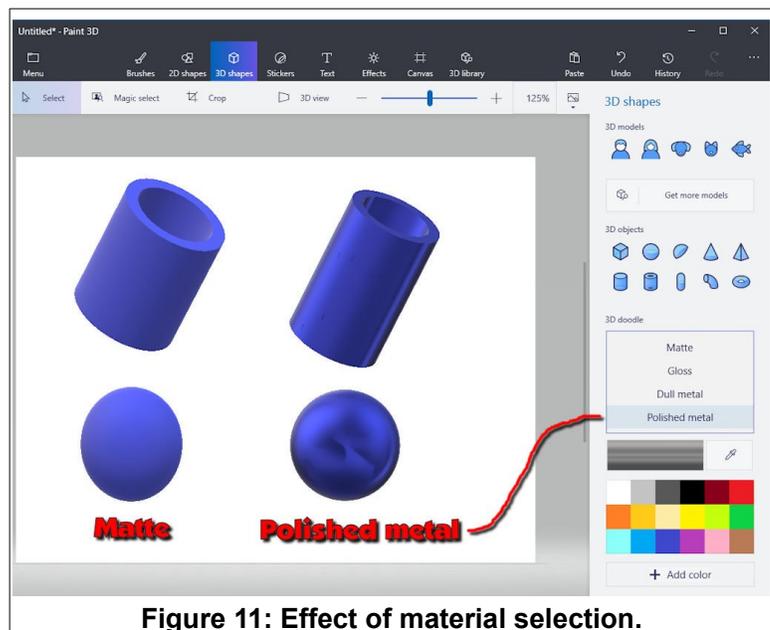


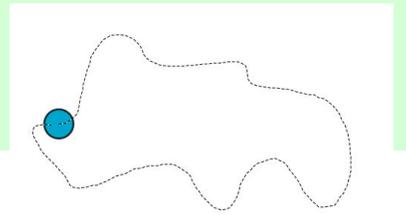
Figure 11: Effect of material selection.



### 3D doodles

Next, some *3D doodle* objects will be created.

- ✓ Select the **3D shapes** tool.
- ✓ Select the **3D doodle** option.
- ✓ Drag out a closed curve. When you close the curve a 3D shape will be created.



The curve shown resulted in the 3D doodle shown in Figure 12. You can modify a 3D doodle the same as any 3D object.

If you want to increase the depth of a doodle, first rotate the object more than 45 degrees around the X axis. Then use the top middle grab point to stretch the object.

There are two different 3D doodle options; *Sharp edge*, and *Soft edge*.

- ✓ Create a few *Hard edge* and *Soft edge* doodles.

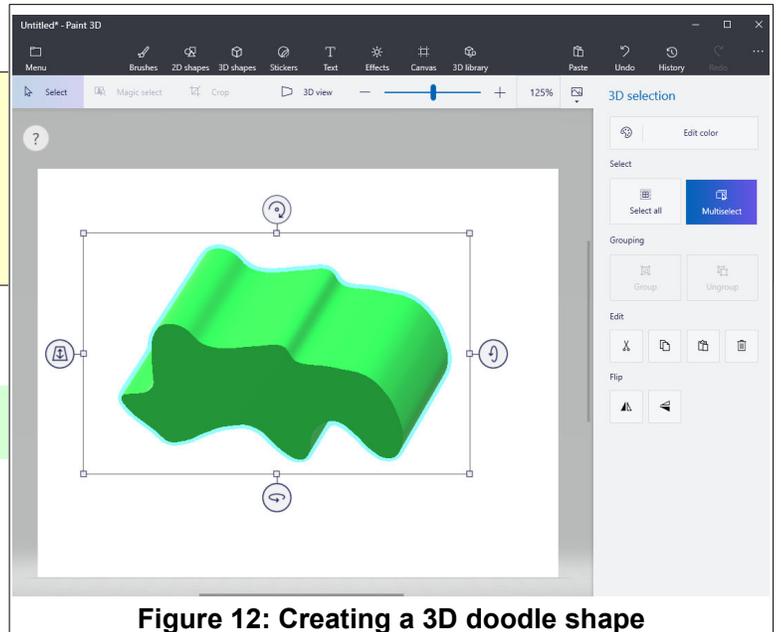
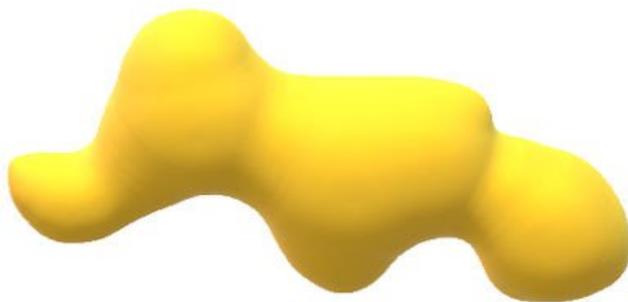


Figure 12: Creating a 3D doodle shape



**Soft edge doodle**



## 3D Models

Paint 3D provides five standard 3D model options. However, there are many more 3D models available online.

- ✓ Select the **3D shapes** tool.
- ✓ Create some **3D models**.

**Note:** When a new model is created, it will have whatever color has been set in the *Brushes* menu.

There are many more models available in the 3D Library that can be downloaded into Paint 3D.

- ✓ Select the **3D library** tool.
- ✓ Scroll through the 3D model categories and download some models.

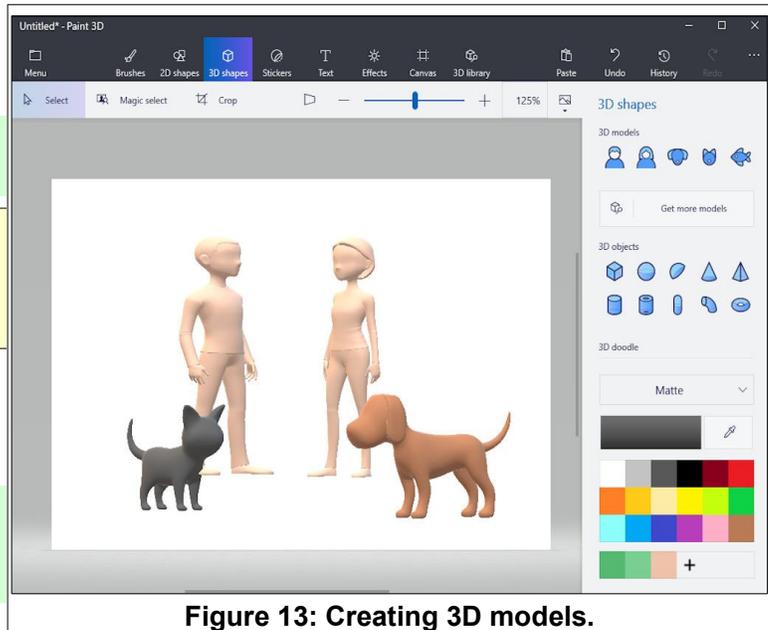


Figure 13: Creating 3D models.

In addition to scrolling through the 3D model collections, you can search for models by entering a key word in the search text box.

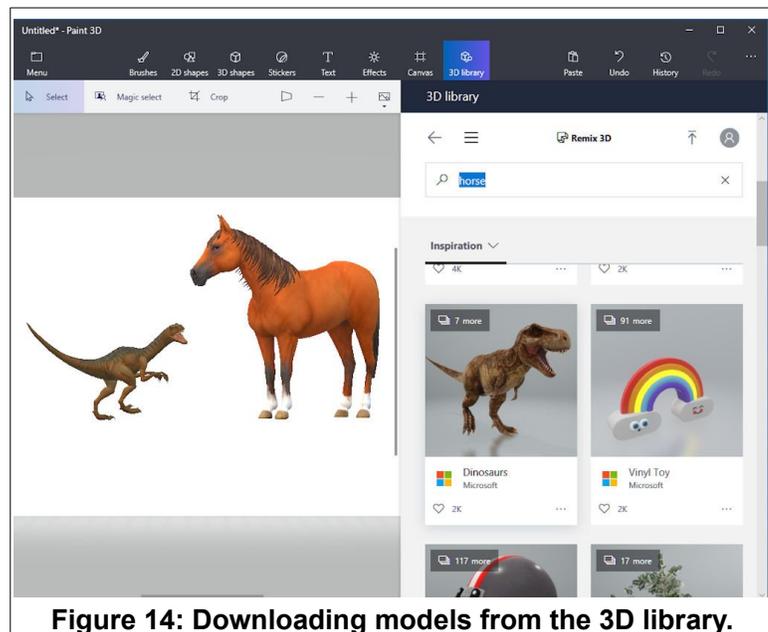
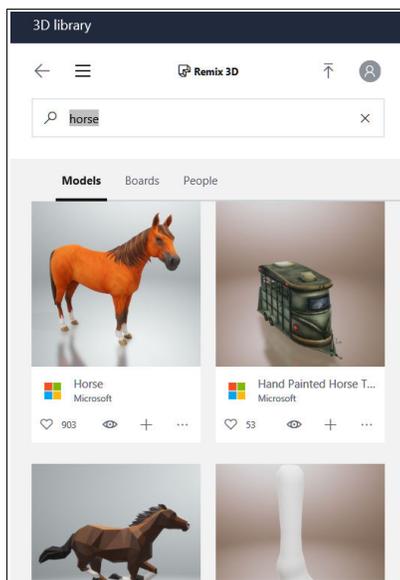


Figure 14: Downloading models from the 3D library.

## Painting A 3D Model

The good news is that when you use *Brushes* with a 3D model, you can paint onto the curved surfaces of the model. Here is an exercise to try.



- ✓ Select the **Brushes** tool.
- ✓ Select the **Brown** color.
- ✓ Select the **Add color** option, then choose a color to represent a flesh color for your model.
- ✓ Select the **3D shapes** tool.
- ✓ Select the **Man** 3D Model, and drag out a new model.

The new model will have the most recently selected color. However, you can now use the **Brushes** tool to paint different surfaces of the model.

- ✓ Select the **Brushes** tool. Experiment with painting different parts of the model using different brushes and colors.

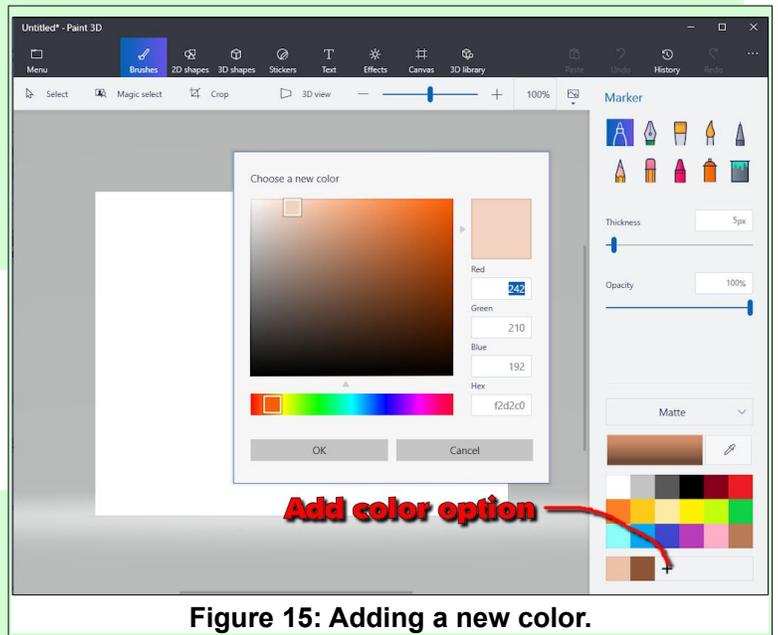
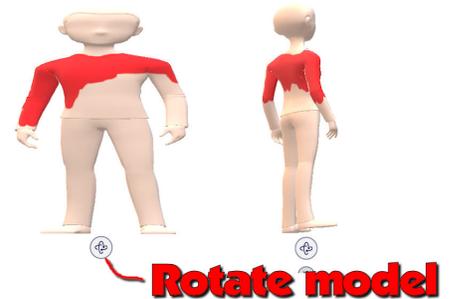


Figure 15: Adding a new color.

If you keep your paint brush within the boundaries of the model, the paint will be applied to the model surface. However, if you paint outside the model boundary, the paint will be applied to the **Canvas**.

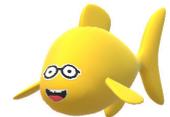


When you start painting a model, a Rotate tool will appear near the bottom of the display. Use this to turn the model so that you get paint on all sides. It will be useful to zoom in and adjust the brush thickness as you paint your model.



### Applying Stickers and Texture

Stickers are like pieces of clip art that can be applied to 3D models. In this exercise, we will create a 3D model fish, and then add a mouth and eye glasses using stickers. We will also apply some texture to the model.



- ✓ Select the **3D shapes** tool.
- ✓ Select the **Fish** object and drag out a large fish.
- ✓ Rotate the fish around the **Y axis** until the fish is pointing directly at you.

**Hint:** If you keep the *Y axis tool* selected, you will see a series of *position dots*. You can use the *left* and *right cursor control keys* to fine tune the position. Also, if you hold down the *shift* key while rotating the model, it will snap into pre-set angles.



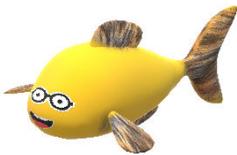


- ✓ Select the **Stickers** tool.
- ✓ Add *mouth* and *eye glasses* stickers to the fish.
- ✓ Rotate the fish and see how the stickers are attached to the 3D model.

If you want to set the color of the fish, do so before you add the stickers.

In addition to image stickers, there are also some texture stickers. In this example, some fur texture will be added to the fish.

- ✓ *Zoom in* on the fish tail.
- ✓ Select the **Stickers** tool, then select the **fur texture**.
- ✓ Add some texture to the fish. *Size* and *rotate* the texture as desired.



OK, it might seem silly to add fur to a fish, but at least you see how textures can be added to 3D models. As a matter of fact, you can import images to use as your own textures.

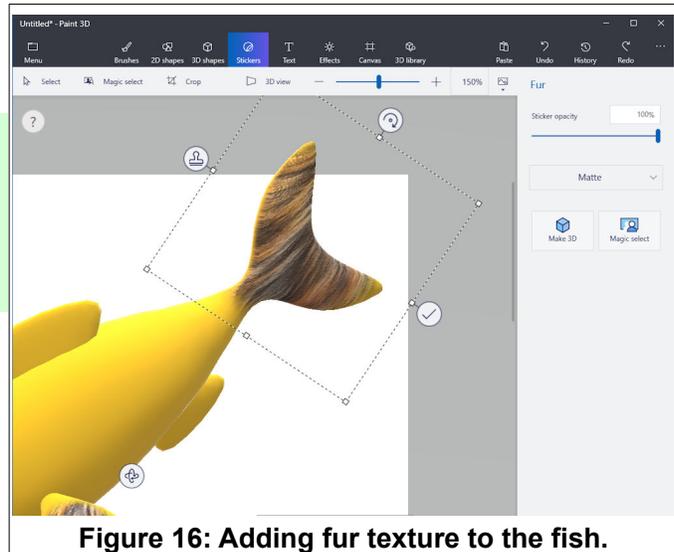
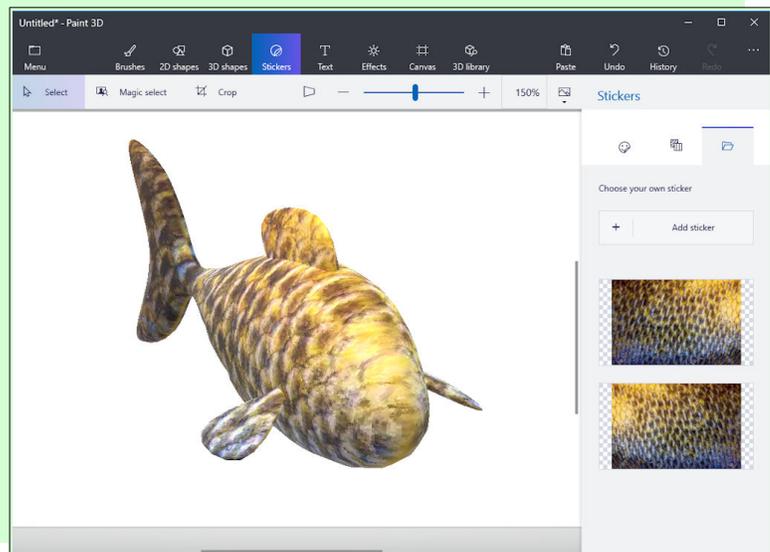


Figure 16: Adding fur texture to the fish.

- ✓ Select the **3D shapes** tool, and then create a **fish** model.
- ✓ Open your web browser, go to **Google.com**, search for *fish scales* using the **Images** option.
- ✓ Scroll around until you find an image you like, and the **select it**.
- ✓ **Right click** on the selected image and save the image to a folder you can find later.
- ✓ Select the **Stickers** tool, then select the *Choose your own sticker* option.
- ✓ Select **Add sticker**, and locate your new image file.
- ✓ Select your **new sticker** and apply it to your fish model.



Here is a cropped scene with a water sticker texture added to the Canvas background.





## Creating 3D Text

Next, we will create some *3D text*.

The **Text** tool provides options for *3D text*, *font*, *size*, *color*, *style*, and *alignment*.

- ✓ Select the **Text** tool, then select the **3D Text** option.
- ✓ Choose your preferred *font*, *font size*, *color*, *style*, and *alignment* and then create some text.
- ✓ When you are done editing your text click at a point outside of the text box.

This will open the standard 3D object control tools.

To increase the text depth, use the right side rotate tool to rotate the object more than 45 degrees. The use the top mid point grab point to drag the text to a new depth.

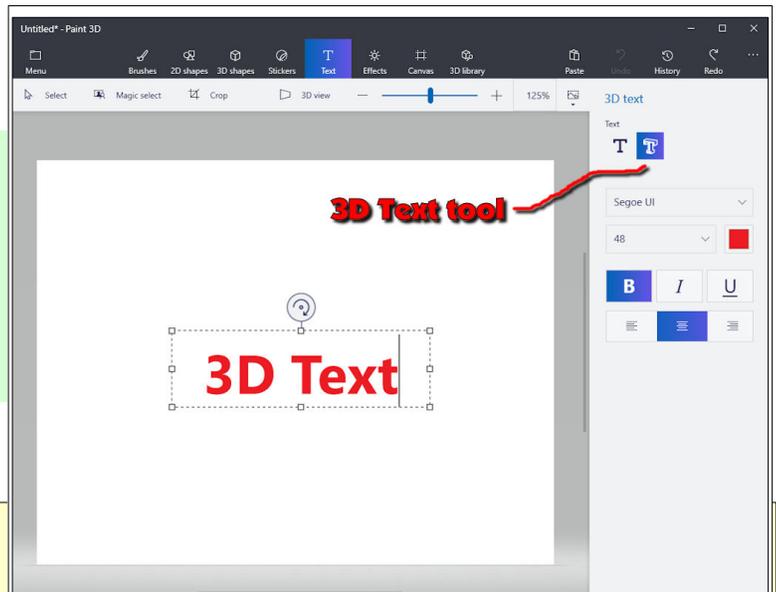


Figure 17: Creating 3D Text.

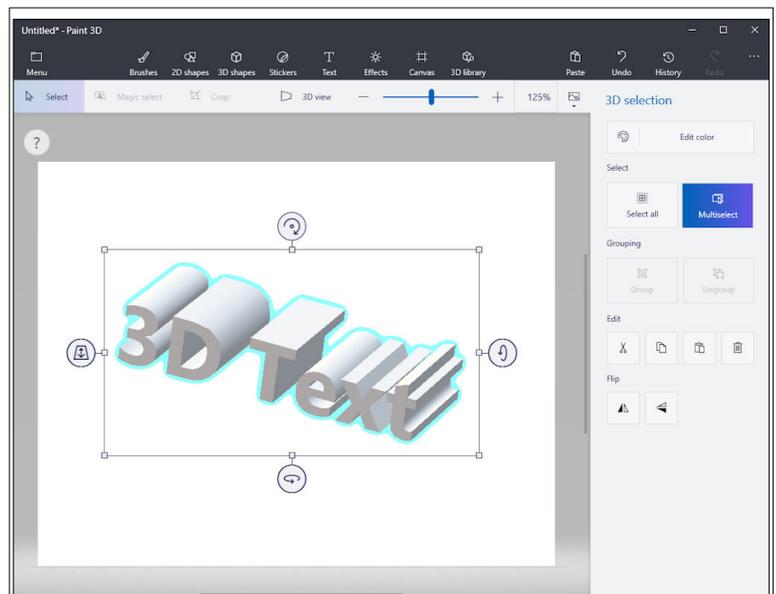


Figure 18: Adjusting 3D text.



## Adjusting Effects

Paint 3D provides adjustments for special effects. There are options for selecting a *Filter* color, or the *lighting source* position.

- ✓ Select the **Effects** tool.
- ✓ Select different **Filters** and observe the results.
- ✓ Drag the **light tool** around the light wheel and observe the results.

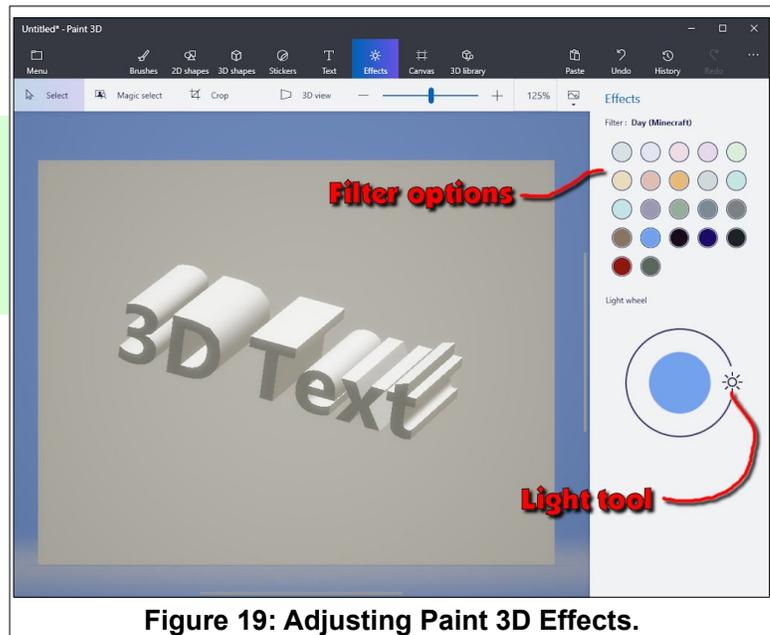


Figure 19: Adjusting Paint 3D Effects.

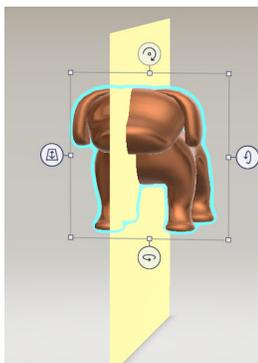
## The Canvas

The *Canvas* is like a 2D sheet of paper. It lives in 3D space, and 3D objects can be moved in front of, behind, or intersecting with the plane of the Canvas.

- ✓ Select the **Canvas** tool, and observe the different options.

There is a size option for the canvas. Observe that when you zoom the display in and out, the canvas size remains constant.

You can use *Brush* tools to paint directly on the canvas.



The illustration shows a dog model that is partly in front of and partly behind a painted canvas.

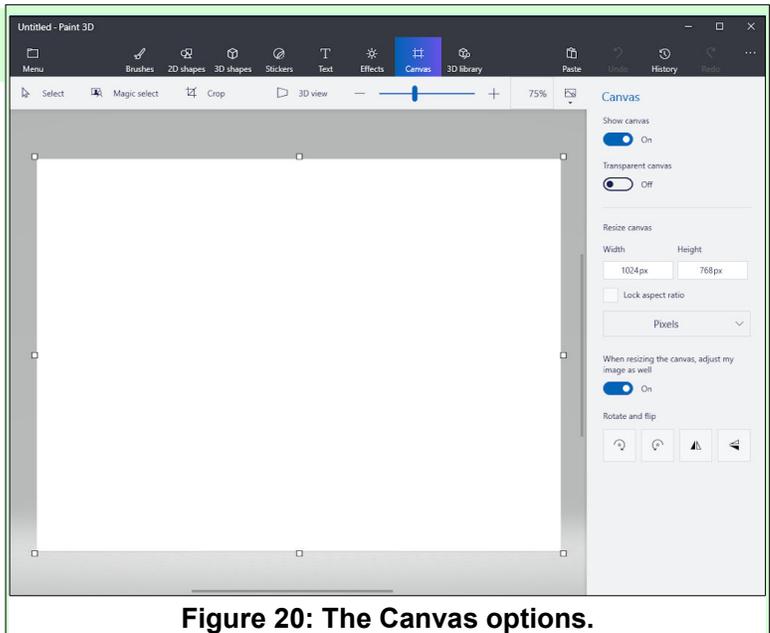
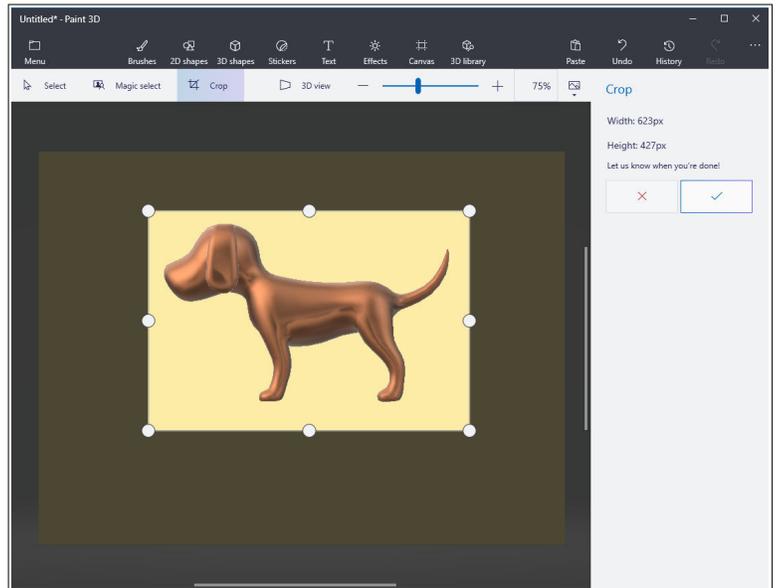


Figure 20: The Canvas options.

## The Cropping Tool

The **Cropping** tool basically creates a new *Canvas size*. The crop can be smaller or larger than the current Canvas.



## The History Tool

The **History** tool keeps a record of each procedure you use while creating a new Paint 3D model.

By moving the *History Slider*, you can replay the steps you used in creating a drawing.

There is also an *Export as video* option for exporting an *mp4* file of your *History* steps. This file can be opened in any media player app.

