

INTRODUCTION TO Pixologic ZBrush 2020

ZBrush is a modeling and sculpting software used to create realistic 3D models. It was developed by Pixologic Inc. in the year 1999. It has a unique blend of 2D, 2.5D, and 3D features. ZBrush consists of different tools that enable you to create or import 3D models, and then add high level details to them. This software enables you to sculpt on high resolution models that consist of millions of polygons. ZBrush is used by all the major animation studios worldwide. It has been used in the movies such as 300, Pirates of the Caribbean, Avatar, Hulk, and so on. ZBrush is compatible with different 3D software applications such as Maya, 3ds Max, CINEMA 4D, and Modo. Although ZBrush is a vast software to deal with, yet all the major tools available in ZBrush 2020 are discussed in this textbook. In this chapter, you will learn about the ZBrush interface.

STARTING ZBrush 2020

To start ZBrush 2020, double-click on the shortcut icon of ZBrush 2020 displayed on the desktop of your computer, as shown in Figure 1-1. This icon is automatically created on installing ZBrush 2020 on your computer. Double-click on the icon; the default ZBrush interface will be displayed along with its various components. Additionally, the **ZBrush : Home Page** window will be displayed, refer to Figure 1-2 and Figure 1-3.



Figure 1-1 Starting ZBrush 2020 by choosing the icon from desktop

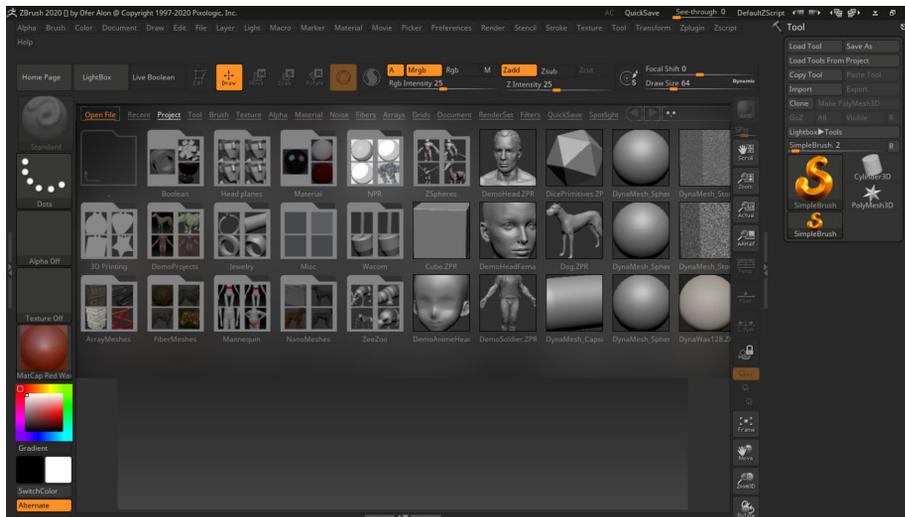


Figure 1-2 The default ZBrush 2020 interface

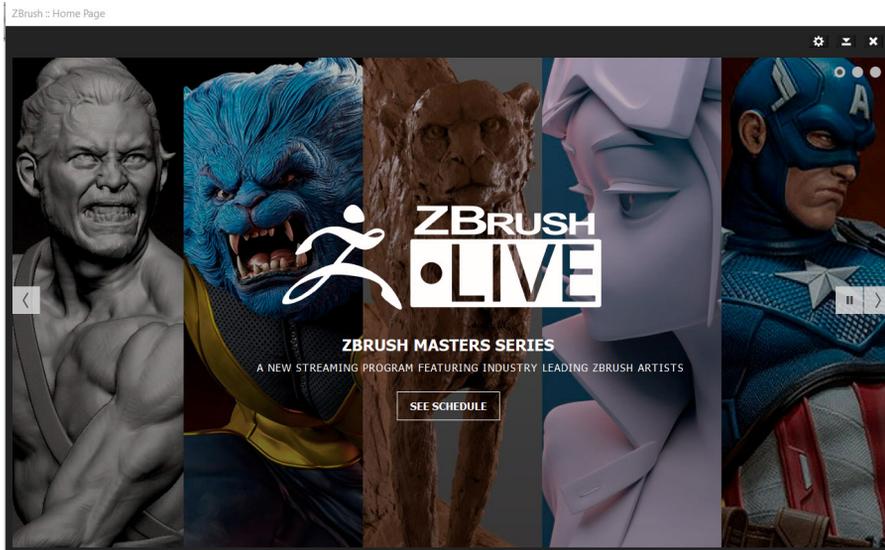


Figure 1-3 The ZBrush : Home Page window

EXPLORING THE ZBrush 2020 INTERFACE

ZBrush interface consists of components such as title bar, palettes, shelves, trays, and canvas. When you start ZBrush 2020 for the first time, the default interface will display various components of ZBrush 2020, refer to Figure 1-4. These components are discussed next.

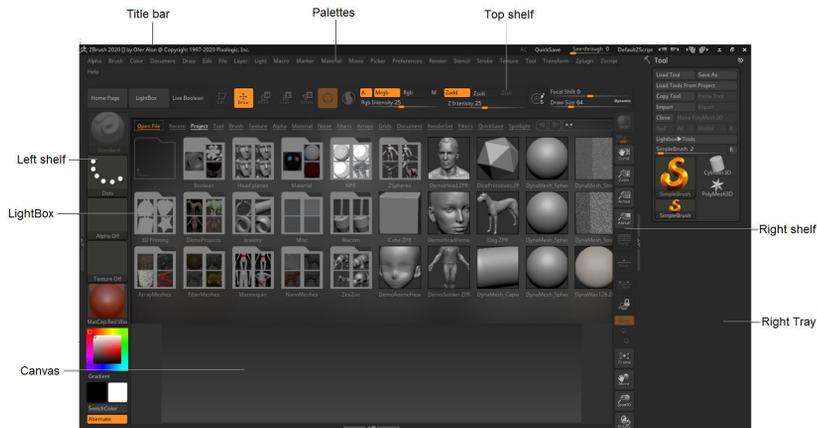


Figure 1-4 Various components of the ZBrush 2020 interface displayed

Title Bar

The title bar is located on the top of the ZBrush screen. In the title bar, various information such as version number, hardware ID, and memory usage is displayed on the left, refer to Figure 1-5. Besides this, the **QuickSave Project** button and the **See-through** slider are also present in the title bar. The **QuickSave Project** button is used to save the different stages of a file sequentially. These files can be accessed from the **QuickSave** tab of the **LightBox** browser. The **See-through**

slider is used to increase or decrease the transparency in the ZBrush interface so that you can view the background screen. This slider makes it convenient for you to view the reference images in the background without importing a reference image or toggling back and forth between the image and interface. For example, if you are following the steps of a tutorial of ZBrush then you can view these steps in the background and follow the instructions with ease.

On the right side of the title bar, various buttons are displayed, as shown in Figure 1-6. The **Menus** button is used to toggle the display of the palettes. The **DefaultZScript** button is used to run the default scripting language present in ZBrush if it has been edited. The **Load Previous User Interface Colors**, **Load Next User Interface Colors**, **Load Previous User Interface Layout**, and **Load Next User Interface Layout** buttons are used to change the color and the layout of the screen, respectively. These presets enable you to customize the ZBrush screen.

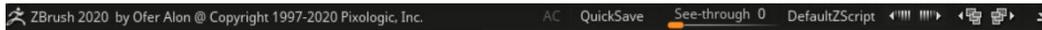


Figure 1-5 Partial view of the Title bar

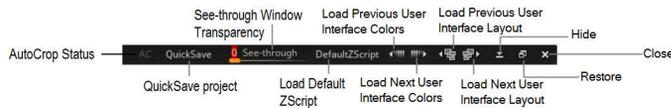


Figure 1-6 Partial view of the title bar (right side)

Canvas

The canvas is the drawing area where you can sculpt or create 3D models. It covers most of the area of the ZBrush interface, refer to Figure 1-4. The 3D models thus created can be saved as 2D illustrations. A 2D illustration is called ZBrush document and is saved in the ZBR format. The 3D models are called ZBrush tools and are saved in the ZTL format. By default, the Alpha icon is displayed at the left corner of the canvas. On choosing the **Edit** button, the CamView will be displayed at the right corner of the canvas, as shown in Figure 1-7. You can also access the CamView from the **Preferences** palette. To do so, choose the **Preferences** palette; the subpalettes will be displayed, refer to Figure 1-8. Next, choose the **CamView** subpalette; the **CamView** subpalette is expanded. Notice that in this subpalette, the **CamView On** button is chosen. The **CamView On** button allows the model to be oriented in different directions like front, back, left, right, top, and bottom. The **Size** slider is used to set the size of CamView. The **Next** button is used to change the existing default CamView icon. When you click on the **Next** button, you will notice that the CamView icon in the canvas area is replaced by the presets, refer to Figure 1-9. The **Make Camview** button is used to create custom preset for the Camview icon. When you choose this button, the selected model is converted as a custom preset that replaces the existing icon. Also, the model and the Camview icon are rotated by 360 degrees. Additionally, an image of model in different orientations is created in the **Texture** palette and displayed on the thumbnail of the **Current Texture** button. You can use this image as a texture for any model.



Note

While creating custom CamView presets, it is important to ensure that the model faces front side along the blue Z axis line.

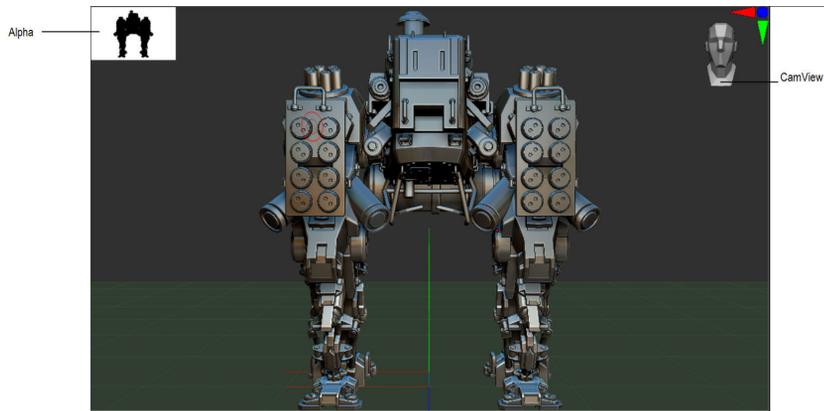


Figure 1-7 The Alpha and CamView in the canvas



Figure 1-8 The CamView subpalette in the Preferences palette

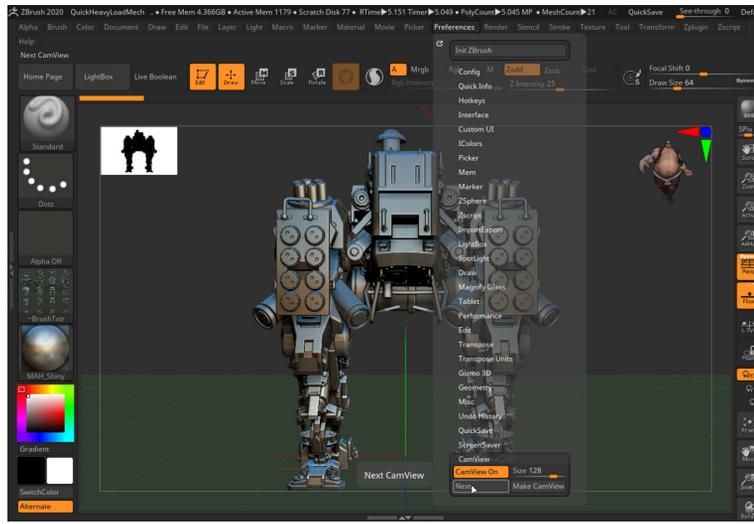


Figure 1-9 The CamView icon changed

Palettes

Palettes are located below the Title bar. They are organized alphabetically, starting from the **Alpha** palette and ending at the **Zscript** palette, refer to Figure 1-10. These palettes are discussed next.

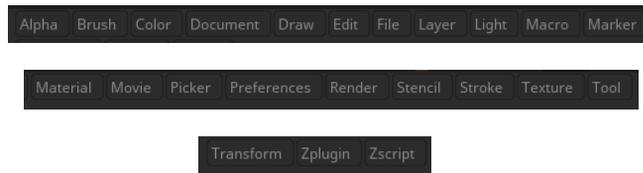


Figure 1-10 The palettes

Alpha

The **Alpha** palette consists of various gray scale images known as alphas. Alphas are available in different patterns. They determine the shape of the brush used in painting and sculpting. This palette also contains different subpalettes that are used to modify the alpha images as required.

Brush

The **Brush** palette consists of different types of 3D sculpting brushes. Besides this, it has different subpalettes that are used to modify the brush settings. The **Standard** brush is the default sculpting brush in ZBrush.



Tip

You can change the size of the brush by using the [and] keys. The [key is used to reduce the size of the brush tip while the] key is used to increase the size of the brush tip.

Color

The **Color** palette consists of different buttons and sliders that are used to select solid and gradient colors for filling the canvas or an object.

Document

The options in the **Document** palette are used to open, import, export, resize, and save a ZBrush document. A ZBrush document is a 2D illustration and is saved in the *ZBR* format. If you save a 3D object using the **Document** palette, it will be converted into a 2D illustration and cannot be edited further. You can also import a Photoshop file using the **Document** palette.

Draw

The **Draw** palette consists of different options that can be used to modify the settings of the 3D as well as 2D sculpting brushes. These options enable you to change the size, focal shift, and intensity of the brush stroke. In addition to this, these options help you to determine whether a sculpting brush will raise the surface of an object or push it in.

Edit

The **Edit** palette consists of options that enable you to undo or redo the modifications made in ZBrush. Alternatively, you can press CTRL+Z to undo an operation and CTRL+SHIFT+Z to redo an operation.

File

The options in the **File** palette are used to open and save a ZBrush project. A ZBrush project is a combination of different files. If you save a 3D model using the **Save As** button in the **File** palette, its 2D illustration, Zscript, materials, alphas, and different textures will be saved along with the 3D model. You can also save multiple 3D models in a ZBrush project. The models are saved in the *.ZPR* format.



Note

*A ZBrush document is a still 2D image that can be used as an illustration. Therefore, if you save a 3D model as a document, you will not be able to edit it further in the 3D space. To avoid this, you should always save your 3D work using the options available in the **Tool** palette. In ZBrush, a 3D model is referred as ZTool. A ZBrush project contains a ZTool as well as its 2D illustration. A ZBrush project can save multiple ZTools simultaneously. However, it is not recommended to save multiple ZTools in a single ZBrush project as it results in a bigger file size which takes more system resources and slows down the system.*

Layer

The **Layer** palette enables you to work in 16 different layers. Each layer represents a separate canvas. You can merge different layers into a single ZBrush document.

Light

The **Light** palette consists of different types of lights that can be used to light up a scene. Besides this, the **Light** palette also contains different subpalettes that are used to modify light settings in a scene.

Macro

The different options in the **Macro** palette are used to record the series of actions performed in ZBrush. Instead of repeating the same actions again and again, you can save different actions in a macro. The recorded macro can be loaded whenever required.

Marker

The **Marker** palette stores information about the orientation, colors, brush strokes, and position of the ZTools modeled by you. You can redraw a model by using the properties stored in the **Marker** palette.

Material

The **Material** palette consists of a library of different materials that can be applied to an object to give it an appearance of different materials such as glass, silver, water, gold, chrome, and so on. This palette also enables you to modify the settings in the materials as required.

Movie

The options in the **Movie** palette are used to record small movies from the canvas. These movies can be used for illustrating your workflow to other users.

Picker

The options in the **Picker** palette are used to pick information such as color, orientation, depth, and so on from the canvas.

Preferences

The options in the **Preferences** palette are used to customize the ZBrush interface and its behavior. Using these options, you can restore the default interface of ZBrush after making any changes in the interface, load and save hot keys, change the color and layout of the ZBrush interface, and record the ZScript automatically.

Render

The **Render** palette consists of options that are used to render a scene. When you render a scene, the rendered output of the scene will be displayed in the canvas instead of a separate window.

Stencil

The options in the **Stencil** palette are used to create patterns with different shapes. A stencil is used to mark out the areas where strokes will be applied. An alpha can be converted into a stencil by choosing the **Make St** button in the **Transfer** subpalette of the **Alpha** palette, refer to Figure 1-11.

Stroke

The **Stroke** palette consists of options that determine the strength and behavior of brush strokes on the canvas.



*Figure 1-11 The **Make St** button in the **Transfer** subpalette*

Texture

The options in the **Texture** palette help in applying textures to an object. Textures are the 2D images and can be created in ZBrush or can be imported from other sources.

Tool

The **Tool** palette is one of the most important palettes in ZBrush. It consists of various buttons that are used to open, save, import, and export ZTools. In addition to this, it contains a library of inbuilt 3D primitives, ZTools, and 2.5D brushes. When you choose the Current Tool button from the **Tool** palette, a flyout will be displayed, as shown in Figure 1-12.

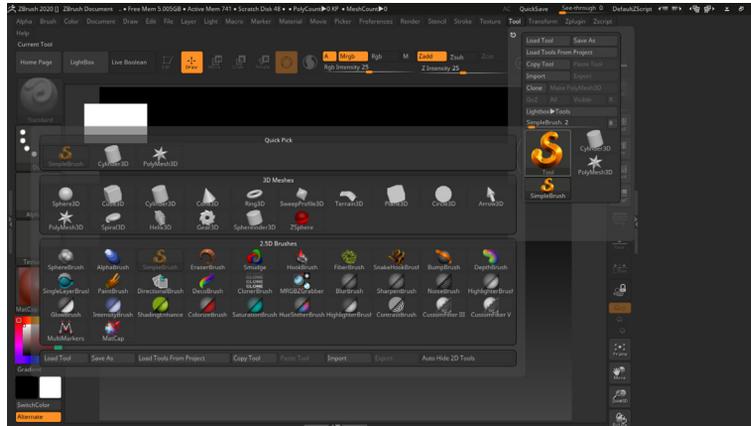


Figure 1-12 The flyout displayed on choosing the Current Tool button from the **Tool** palette

This flyout is divided into three areas namely, **Quick Pick**, **3D Meshes**, and **2.5D Brushes**. The **Quick Pick** area stores a library of 3D primitives and 2.5D brushes that were used recently. The **3D Meshes** area contains a library of default 3D models in ZBrush. It also contains primitive 3D objects such as sphere, cube, rectangle, cone, and so on. You can select any one of these 3D primitives and draw it in the canvas by pressing and holding the left mouse button and then dragging the cursor in the canvas area.

The third area of the **Tool** palette is **2.5D Brushes**. It consists of a library of brushes that are used to add detail to a 2D illustration. The options in the **Tool** palette will be discussed in depth in the later chapters.



Note

If you use a 2.5D brush on a 3D object, the object will be converted into a 2.5D illustration.

Transform

The **Transform** palette consists of different buttons and sliders that are used in modeling, positioning, scaling, rotating, and editing 3D objects.

Zplugin

The options in the **Zplugin** palette are used to access different ZBrush plug-ins that are installed on the computer.

Zscript

ZBrush has an in-built scripting language known as Zscript. ZScripts can be loaded by using the options in the **Zscript** palette.

Trays

Trays are the areas on the ZBrush interface in which you can store different palettes and buttons. The trays are located on the left, right, and bottom of the canvas. By default, the **Tool** palette is docked in the right tray. The left and right trays can be opened or closed by clicking on the arrows adjacent to the left and right shelves. The bottom tray can be opened and closed by double-clicking on the arrow keys below the canvas.

Shelves

Shelves are the areas that contain the most commonly used buttons and controls. The shelves can be classified into top, left, and right shelves. These shelves are discussed next.

Top Shelf

The top shelf is located below the palettes. It consists of different buttons and sliders, as shown in Figure 1-13. Most commonly used buttons and sliders in the top shelf are discussed next.



Figure 1-13 The top shelf

Home Page

On choosing the **HomePage** button, the **ZBrush: Home Page** window will be displayed. This button is located at the top shelf where the Projection Master used to be in the previous releases.

LightBox

On choosing the **LightBox** button, the **LightBox** browser that contains a library of ZBrush documents, ZTools, ZBrush projects, brushes, alphas, textures, materials, array, and so on will be displayed, refer to Figure 1-14. All ZBrush files can be easily accessed by using the **LightBox** browser; without navigating through different folders on your system. The browser also contains a library of default 3D models which can be modified, as required.

Live Boolean

The **Live Boolean** feature allows you to perform the boolean operations on two or more meshes. With the help of this feature, you can create a complex design with ease. To understand the functioning of the boolean operation, choose the Current Tool button from the **Tool** palette; a flyout will be displayed. Choose the **Sphere3D** primitive from this flyout and then drag the cursor on the canvas; a sphere will be created in the canvas. Next, choose the **Edit** button from the top shelf and then choose the **Make PolyMesh3D** button from the **Tool** palette; the sphere will be converted into a polymesh. Now, add another object of your choice from the **Subtool** palette by choosing the **Append** button. Next, choose the **Live Boolean** button from the top shelf and click one of the icons located at the top of the appended primitive in the **Subtool** palette; the boolean operation will be displayed in the viewport. Figure 1-15 shows the boolean operation when the Subtraction icon is clicked.



Figure 1-14 The LightBox browser

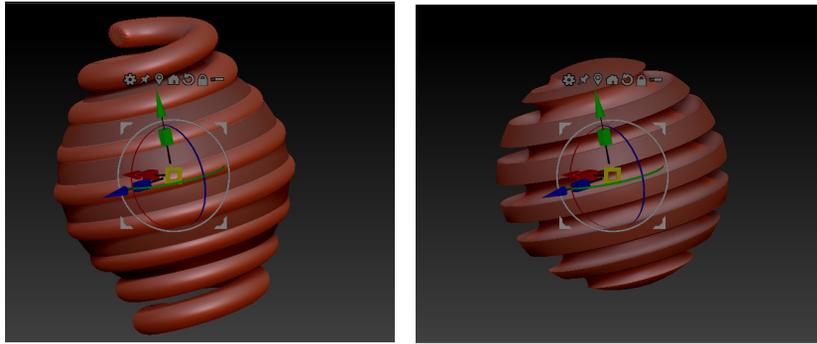


Figure 1-15 The live boolean operation



Note

There are four icons available for boolean operations: Addition, Substraction, Union, and Intersection. 

Edit

The **Edit** button is used to enable the sculpting brushes so that you can add details to a 3D model. Whenever a 3D primitive is created in the canvas, you need to choose the **Edit** button from the top shelf. If this button is not chosen, ZBrush will remain in paint mode and dragging the cursor on the canvas will simply place copies of 3D objects in it, refer to Figure 1-16. To make changes in a 3D model, you need to make sure that the **Edit** button is chosen.

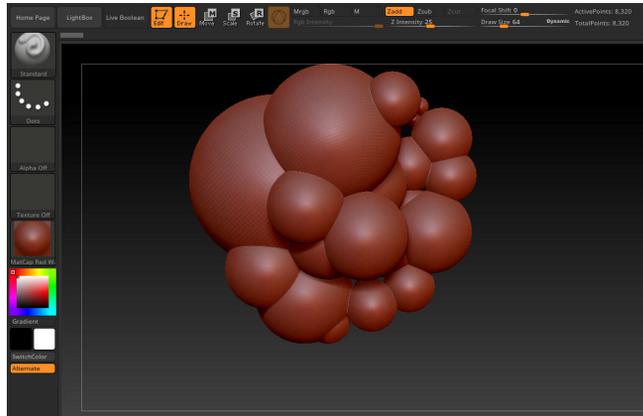


Figure 1-16 Copies of the 3D objects placed in the canvas

Draw

The **Draw** button allows you to draw a 3D object by first choosing a 3D model from the **Tool** palette and then dragging the cursor in the canvas. It allows you to sculpt 3D objects when the **Edit** button is chosen. However, if the **Edit** button is not chosen, dragging the cursor on the canvas will simply place copies of 3D objects in it.

Move, Scale, Rotate, and Gizmo 3D

The **Move**, **Scale**, and **Rotate** buttons are used to position, scale, and rotate the 3D object in the canvas, respectively. The **Move**, **Scale**, and **Rotate** buttons can also be invoked by pressing the W, E, and R, keys, respectively. When any of these buttons is chosen, and the **Edit** button is not chosen then a gizmo parallel to the canvas will appear, as shown in Figure 1-17. If you want to move the object around the canvas, choose the **Move** button and then drag the cursor on the area inside the gizmo.

For scaling the object uniformly, choose the **Scale** button, and then drag the cursor on the canvas. For scaling the object vertically, drag the cursor on the pink arc on the gyro vertically. For scaling the object horizontally, drag the cursor on the cyan arc horizontally, as shown in Figure 1-18. For rotating the object freely by using the **Rotate** button, drag the cursor on the area within the gizmo but not on the rings. On doing so, the orientation of gizmo will change, as shown in Figure 1-19.

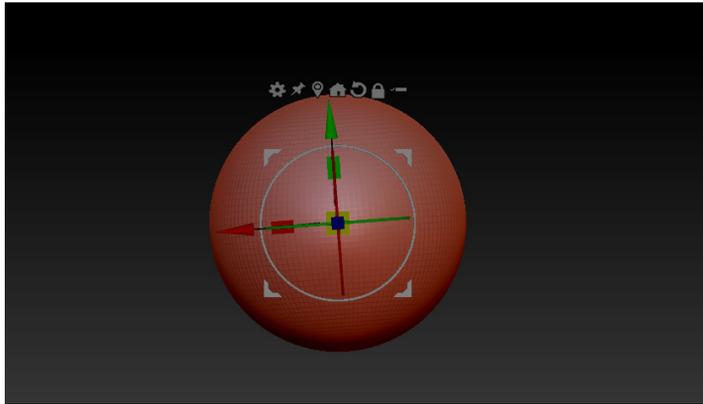


Figure 1-17 Gizmo displayed on choosing the **Move** button

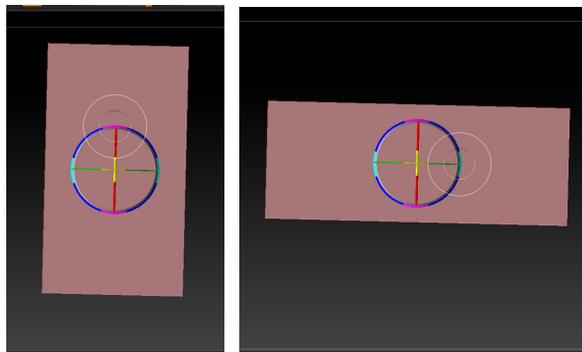


Figure 1-18 The vertical and horizontal scaling using gyro

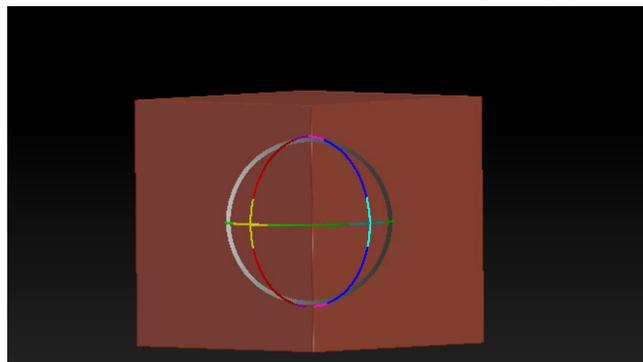


Figure 1-19 Rotating the object using gyro

If you choose the **Move** button when the **Edit** button is chosen, only the vertices of the object will move and not the entire object. If any of the manipulator buttons is chosen, the **Gizmo 3D Y** button will be automatically chosen and gizmo will appear in the model.

The Gizmo 3D manipulator will appear automatically to transpose the model in the scene. You can disable the gizmo by choosing the **Gizmo 3D Y** button.

When the **Gizmo 3D Y** button is active, you can work with some options in the **Preferences** palette. You can set the size, show/hide the information, and reset the gizmo in the scene.



Tip

You can move an object in the canvas in the edit mode by dragging the cursor on the canvas with the ALT key pressed. To scale an object, press and hold the left mouse button with the ALT key pressed, and then release the ALT key. To rotate an object, press and hold the left mouse button and drag the cursor.

Sculptris Pro Mode



The **Sculptris Pro Mode** button gives you the freedom to easily sculpt your model. When you activate this button and start sculpting, the model will be more smoother. The smoothness is determined by the brush size.

Mrgb, Rgb, and M

These buttons are used to fill colors and apply materials to an object. The **Mrgb** button is used to fill an object with both material and color. The **Rgb** button is used to fill an object only with color. The **M** button is used to fill an object with the material only.

Rgb Intensity and Z Intensity

The **Rgb Intensity** slider is used to control the intensity of the color applied to an object. The higher the value specified for the slider, the more will be the intensity of color.

The **Z Intensity** slider is used to control the depth of the brush stroke. The higher the value specified for slider, the more will be the depth of stroke.

Zadd, Zsub, and Zcut

The **Zadd** and **Zsub** buttons are used to determine whether a sculpting brush will raise the surface of an object or push it in. If you choose the **Zadd** button, the surface of the object will be elevated and if you choose the **Zsub** button, the surface will be pushed in. The **Zcut** button is used to create holes in a surface. It is activated when the **Edit** button is not chosen.

The ALT key toggles the alternate mode for the **Zadd** and **Zsub** buttons. If you sculpt a surface by choosing the **Zadd** button and holding the ALT key, it will be pushed in instead of being raised. Similarly, holding the ALT key with the **Zsub** button chosen will raise the surface of an object. The **Z Intensity** slider controls how much each stroke of the brush raises, lowers, or cuts into the surface of the 3D object.

Remember Draw Size Per Brush



The **Remember Draw Size Per Brush** button is used to remember the size of brush previously set. By default this button is deactivated. When you activate this button, it allows you to remember the size you set for each sculpting brush excluding the Smooth and Mask brush types.

Focal Shift and Draw Size

The **Focal Shift** slider is used to change the softness or fall off of the edge of the brush. The **Draw Size** slider is used to change the size of the brush. The higher the value of this slider, the bigger will be the size of the brush. The sculpting brush in ZBrush will be displayed as

two concentric circles. The diameter of the outer circle determines the size of the brush and the diameter of the inner circle determines the focal shift. The **Dynamic** option located on the right of the **Draw Size** slider helps in sculpting. If this option is chosen then the brush size is adjusted automatically depending on the scale of the model.

Remember Dynamic Mode Per Brush

 The **Remember Dynamic Mode Per Brush** button is used to control the dynamic size for each brush independently. When this button is deactivated and the **Dynamic** option located at the right of the **Draw Size** slider is off, the radius of brush changes with the zoom level in the canvas. When the **Remember Dynamic Mode Per Brush** button is activated, the radius of the brush remains same even if the zoom level is changed.

Left Shelf

The left shelf consists of different buttons that contain libraries for various brushes, strokes, alphas, textures, and colors, as shown in Figure 1-20. All these libraries can also be accessed through the palettes. However, the left shelf enables easy access to these libraries. The brushes, strokes, alphas, textures, and materials will be discussed in later chapters. The different buttons in the left shelf are discussed next.

Current Brush

The Current Brush button is used to invoke a flyout that has different types of sculpting brushes, refer to Figure 1-21. Whenever you select a brush from the flyout, its icon will be displayed on the Current Brush button.

By default, the **Standard** brush icon is displayed on this button. This flyout consists of the **Quick Pick** and **3D Sculpting Brushes** areas. The **Quick Pick** area consists of the recently chosen brushes and the **3D Sculpting Brushes** area consists of all the brushes in ZBrush.

Current Stroke

The Current Stroke button is used to invoke a flyout that consists of different types of strokes, as shown in Figure 1-22. A stroke is a pattern which determines how the painting and sculpting will be done.

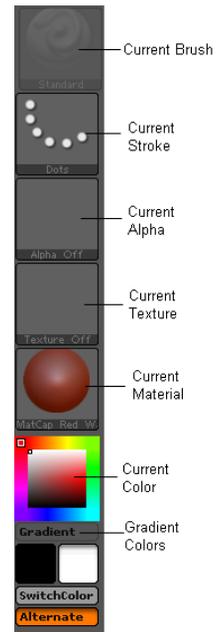


Figure 1-20 The left shelf

Evaluation Copy. Do not reproduce. For information visit www.cadcam.com



Figure 1-21 The flyout displayed on choosing the Current Brush button

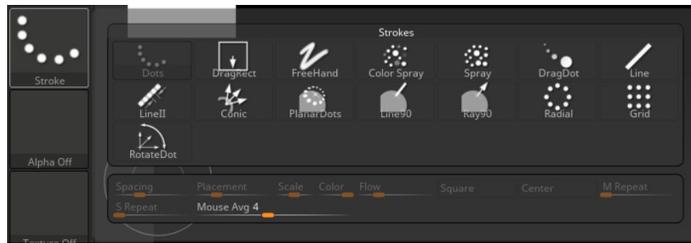


Figure 1-22 The flyout displayed on choosing the Current Stroke button

If you select a stroke from the flyout, its icon will be displayed on the Current Stroke button. By default, the **Dots** stroke icon is displayed on this button.

Current Alpha

The Current Alpha button is used to invoke a flyout that consists of different types of alpha images, as shown in Figure 1-23. The different gray scale images in this flyout are known as alphas.



Figure 1-23 The flyout displayed on choosing the Current Alpha button

Alphas come in different shapes and determine the shape of brush that will be used in painting and sculpting.

Current Texture

The Current Texture button is used to invoke a flyout that consists of different types of texture images, as shown in Figure 1-24. Textures are the 2D images that can be created in ZBrush or can be imported from other sources.



Figure 1-24 The flyout displayed on choosing the Current Texture button

Current Material

The Current Material button is used to invoke a flyout that consists of different types of materials such as glass, silver, water, and gold, as shown in Figure 1-25. These materials can be applied to an object to give it the appearance of the specified material.



Figure 1-25 A flyout displayed on choosing the Current Material button

Current Color

The **Current Color** swatch is located just below the Current Material button. It is used to pick a color from the canvas and fill a 3D object with the selected color. If you hover the cursor on the color picker, the RGB value of the color is displayed beneath the cursor, as shown in Figure 1-26.



Figure 1-26 The RGB value of a color displayed

Gradient Colors

The **Gradient Colors** button is used to produce a gradient effect with the help of the **Secondary Color** and **Main Color** swatches available below it. The gradient will be produced from the main color to the secondary color. The color swatch below the **Gradient Colors** button represents the secondary and the main color used for gradient filling. The **SwitchColor** button located below this button is used to interchange the primary and secondary colors.

Right Shelf

The right shelf consists of different buttons and sliders that are used for rendering and navigating through canvas, refer to Figure 1-27. These buttons and sliders are explained next.

BPR

BPR stands for Best Preview Render. This button is used to produce high quality realistic renders on the canvas. It displays details including shadows, depth, transparency, and so on in the rendered scene. This button will render an object only when the **Edit** button is chosen.

SPix

SPix stands for Sub Pixel. This slider controls the quality of antialiasing in the render. Antialiasing is a technique used to smoothen the uneven projections on the edges of an image, thereby producing high quality images. These uneven projections occur because the screen does not have the required resolution to represent a smooth line. The value of the **SPix** slider varies between 0 and 7. If you set the value of the **SPix** slider to 7, the highest quality of antialiasing will be achieved.

Scroll

The **Scroll** button is used to move the canvas. Press and hold the left mouse button on the **Scroll** button and then drag the cursor to scroll the canvas.

Zoom

The **Zoom** button is used to zoom in and zoom out the canvas. To zoom in and zoom out the canvas, place the cursor on this button and drag the cursor upward or downward. Alternatively, you can zoom in and zoom out the canvas by using + (plus) and - (minus) keys, respectively.

Actual

The **Actual** button is used to display a document at its 100% size. If you have zoomed in or zoomed out the canvas, you can return to the actual



Figure 1-27 The right shelf

canvas size by choosing this button. Alternatively, press the 0 key to return to the actual size of the canvas.

AAHalf

The **AAHalf** button is used to reduce the display of canvas to half of its original size. Alternatively, press CTRL+0 to reduce the canvas to half of its original size.

Persp

The **Persp** button is used to enable the perspective distortion in the canvas. This button gets activated when an object is created in the canvas.

Floor

The **Floor** button is used to display the floor grid in all the axes. This button gets activated when an object is created in the canvas. By default, the Y-axis is selected. If you select all the axes in the floor grid, the floor grid in all the selected axes will be activated, as shown in Figure 1-28.

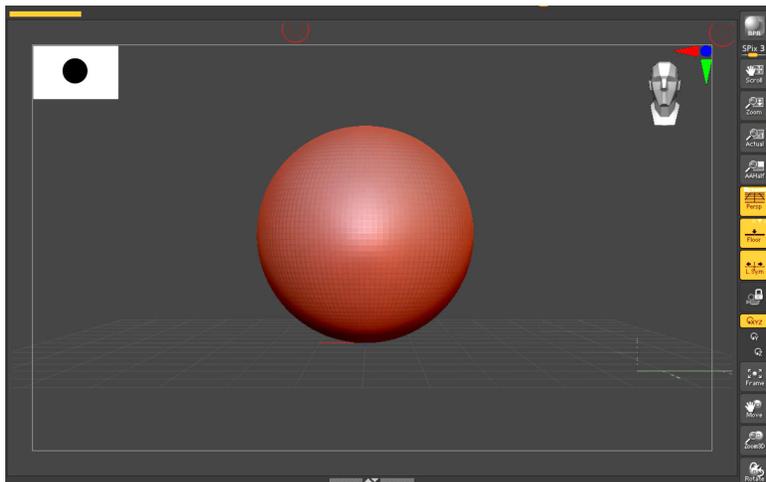


Figure 1-28 Floor grid activated in all the axes

Local

The **Local** button is used to transform the last edited area of a 3D object into the center point of rotation or scaling.

L. Sym

The **L. Sym** button is used with the subtools. In ZBrush, subtools are different 3D objects which combine to form a single 3D object. For instance, if you have modeled a character and its clothes separately, both of these will be referred to as subtools. The **L. Sym** button activates the mirroring of symmetry across the subtool axes.

Rotation Buttons

The three rotation buttons are located just below the **L. Sym** button. These buttons control the rotation of an object along different axes. The **XYZ** button rotates the object in all the

axes. The **Y** and **Z** buttons rotate an object in Y and Z axes, respectively. For rotating an object along any of the axes, press and hold the left mouse button and drag the cursor over the canvas.

Frame

The **Frame** button is used to fit an object into the canvas, as shown in Figure 1-29. To choose this button, the **Edit** button should be already chosen. Alternatively, press F to fit an object into the canvas.

Move, Scale, and Rotate

The **Move**, **Scale**, and **Rotate** buttons are used to move, scale, and rotate a 3D object in the canvas, respectively. These buttons are used when a 3D object is in the **Edit** mode. These operations can be carried out by placing the cursor on these buttons and then dragging them.



Note

*All these buttons are also available in the **Transform** palette.*



Figure 1-29 The object fitted into the canvas

PolyF

The **PolyF** button is used to display the polygon edges of a 3D object, as shown in Figure 1-30.

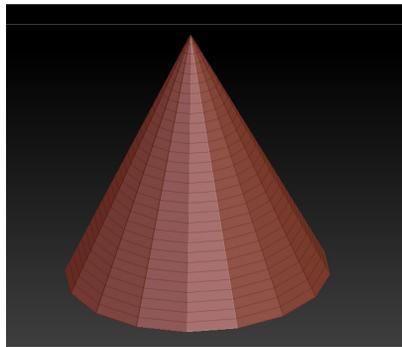


Figure 1-30 The polygon edges of a 3D object

Transp

The **Transp** button activates the transparency of different subtools that are not selected in the list of subtools present in the **SubTool** subpalette, refer to Figure 1-31. On choosing

this button, different subtools such as clothes and accessories used in the 3D model become transparent, as they are not selected in the **SubTools** subpalette.

In Figure 1-31, the default 3D model present in the **LightBox** browser has been used. To load this model in the canvas, choose the **Tool** tab in the **LightBox** browser. Next, double-click on the **DemoSoldier.ZTL** file in the **LightBox** browser. Press and hold the left mouse button and drag the cursor in the canvas; the model will be created in the canvas. After loading the model, choose the **Edit** button from the top shelf to switch to the edit mode. Next, choose the **Transp** button.



Figure 1-31 Transparency created in the subtools

Ghost

The **Ghost** button is used in combination with the **Transp** button. When you choose the **Transp** button, the **Ghost** button is automatically activated. However, if this button is not activated, the subtools will remain transparent but their color and texture will be displayed, as shown in Figure 1-32.

Solo

The **Solo** button is used to hide all the deselected subtools used in the model. On choosing this button, only the selected subtool will be displayed, as shown in Figure 1-33. In this figure, all the clothes and accessories of the 3D model have disappeared, as only the 3D model is selected. The subtools that have disappeared can be restored back by choosing this button again.

Xpose

The **Xpose** button is used to separate the subtools from the base model, as shown in Figure 1-34. On choosing this button, the subtools start moving and are separated from the base model.



Figure 1-32 Color in transparent subtools displayed

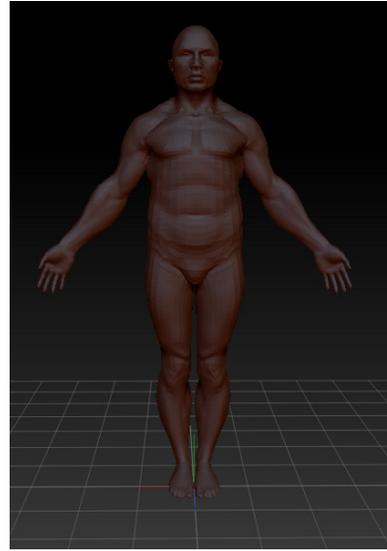


Figure 1-33 The selected subtool displayed



Figure 1-34 The subtools separated from the model

OPENING AND SAVING A ZTOOL AND ZBRUSH DOCUMENT

In ZBrush, a 3D model is known as ZTool. In order to save the ZTool, you need to save your 3D model using the **Tool** palette. The model will be saved in the *ZTL* format by choosing the **Save As** button in the **Tool** palette, refer to Figure 1-35. The saved ZTool can be opened later by using the **Load Tool** button in the **Tool** palette. You can load the project file by using the **Load Tools From Project** button in the **Tool** palette, refer to Figure 1-32. When you choose the **Load Tools From Project** button, the **Load Project** dialog box will be displayed, refer to Figure 1-36.

The ZBrush document only contains the 2D illustration and not the full 3D model. Therefore, if you save a 3D model as a document, only the 2D version of its current view will be saved. This document cannot be edited further in 3D space and can only be used as an illustration. If you want to save a 3D object as an illustration, you must save your 3D model using the **Document** palette by choosing the **Save As** button, refer to Figure 1-37. It will be saved in the *ZBR* format. Once saved, the ZBrush document can be opened by using the **Open** button from the **Document** palette.

You can also save all your ZTools as a project using the **File** palette. To save a project, choose the **File** palette to expand it. In this palette, choose the **Save As** button, refer to Figure 1-38; the **Save Project** dialog box will be displayed, refer to Figure 1-39. In this dialog box, enter the desired name in the **File Name** text box and then choose the **Save** button. It will be saved in the *.ZPR* format.

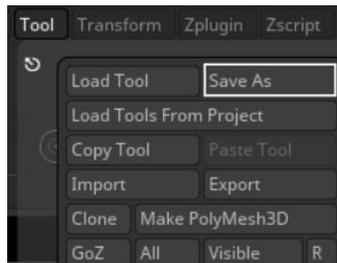


Figure 1-35 The Save As button in the Tool palette

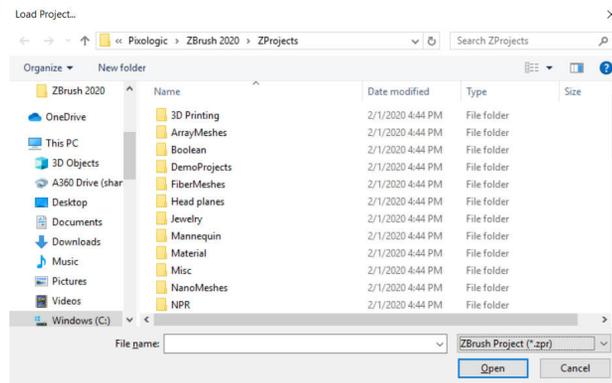


Figure 1-36 The Load Project dialog box



Tip

On hovering the mouse pointer on different buttons and sliders in ZBrush, the full names of these buttons and sliders will be displayed. If you press and hold the CTRL key while hovering the mouse pointer on the buttons and sliders, a brief description about them will also be displayed.

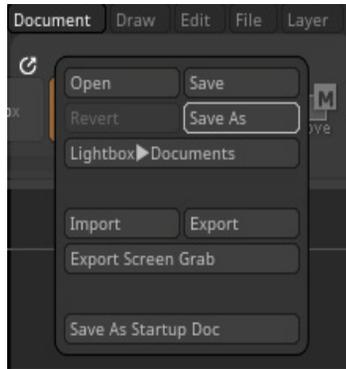


Figure 1-37 The Save As button in the Document palette

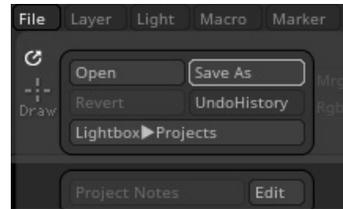


Figure 1-38 The Save As button in the File palette

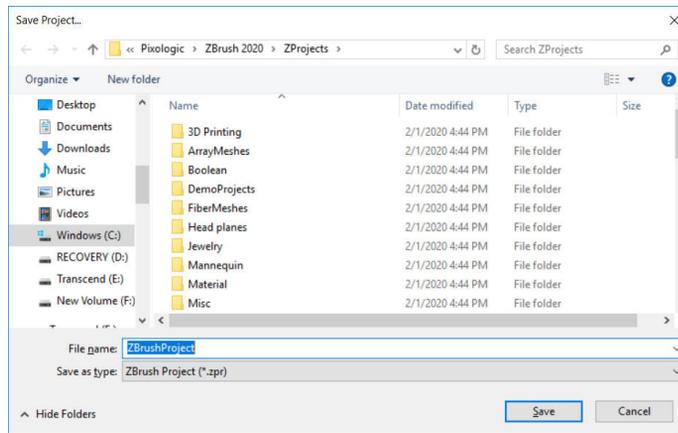


Figure 1-39 The Save Project dialog box

HOT KEYS

In ZBrush, you can use shortcut keys to invoke the commonly used features. These keys are also referred to as hot keys which help you work efficiently and faster. The most commonly used keys and their functions are listed in Table 1-1.

Table 1-1 Commonly used keys and their functions

Key	Function
CTRL+S	Saves a complete ZBrush Project
SHIFT+CTRL+T	Saves a 3D model
9	Quick Save
CTRL+Z	Undo
SHIFT+CTRL+Z	Redo
Tab	Show/hides floating palettes
, [comma key]	Show/hides Lightbox

Key	Function
G	Invokes the Projection Master tool
T	Activates the 3D edit mode
Q	Activates the Draw mode
W	Activates the Move tool
E	Activates the Scale tool
R	Activates the Rotate tool
I	Changes the Rgb Intensity
U	Changes the Z Intensity
O	Changes the Focal Shift
S	Adjusts the draw size of the brush
V	Switches colors in the color swatches
0	Displays the actual size of the canvas
P	Activates Perspective Distortion
F	Fits the mesh to view
SHIFT+R	Invokes BPR renderer
CTRL+R	Cursor Selective Render
CTRL+0	Displays the antialiased half size of the canvas
SHIFT+P	Displays Floor Grid
SHIFT+F	Draws Polyframe

Self-Evaluation Test

Answer the following questions and then compare them to those given at the end of this chapter:

- In which of the following formats a ZBrush document is saved?
 - .ZBR
 - .ZTL
 - .ZBD
 - None of these
- Which of the following palettes is used to change the focal shift and intensity of the brush stroke?
 - Brush**
 - File**
 - Document**
 - Draw**
- The **HomePage** button is located at the _____ .
- The _____ brush is the default sculpting brush in ZBrush.
- The term BPR stands for _____ .
- The value of the **SPix** slider varies from _____ to _____ .
- The ZBrush canvas can be zoomed in and zoomed out with the help of the [and] keys. (T/F)
- The **Transp** button is used to hide all the deselected subtools used in the model. (T/F)
- The **Actual** button is used to display a document at its 100% size. (T/F)

Review Questions

Answer the following questions:

- In which of the following shelves is the **QuickSave** button located?
 - Top shelf
 - Title bar
 - Left shelf
 - Right shelf
- In which of the following shelves is the **Current Color** button located?
 - Top shelf
 - Left shelf
 - Right shelf
 - None of these

3. Which of the following buttons is used to control the quality of antialiasing in the render?
 - (a) **Material**
 - (b) **Texture**
 - (c) **Local Symmetry**
 - (d) **SPix**

4. Which of the following buttons is used to display the polygon edges of a 3D object?
 - (a) **PolyF**
 - (b) **Xpose**
 - (c) **SPix**
 - (d) **Frame**

5. The _____ button is used to enable the sculpting brushes.

6. The _____ key toggles the alternate mode for the **Z Add** and **Z Sub** buttons.

7. The palettes in ZBrush are organized alphabetically, starting from _____ to _____.

8. The **LightBox** browser is located on the right side of the canvas. (T/F)

9. In ZBrush, a 3D model is known as ZProject. (T/F)

10. The **Marker** palette stores information about the orientation, colors, brush strokes, and position of the 3D object. (T/F)

Answers to Self-Evaluation Test

1. a, 2. d, 3. top shelf, 4. **Standard**, 5. Best Preview Render, 6. 0 to 7, 7. F, 8. F, 9. T