Understanding the ZBrush Interface

"ZTool Corral"

Top Shelf

"CamDude"

Left Shelf

Right Shelf

Custom Interface
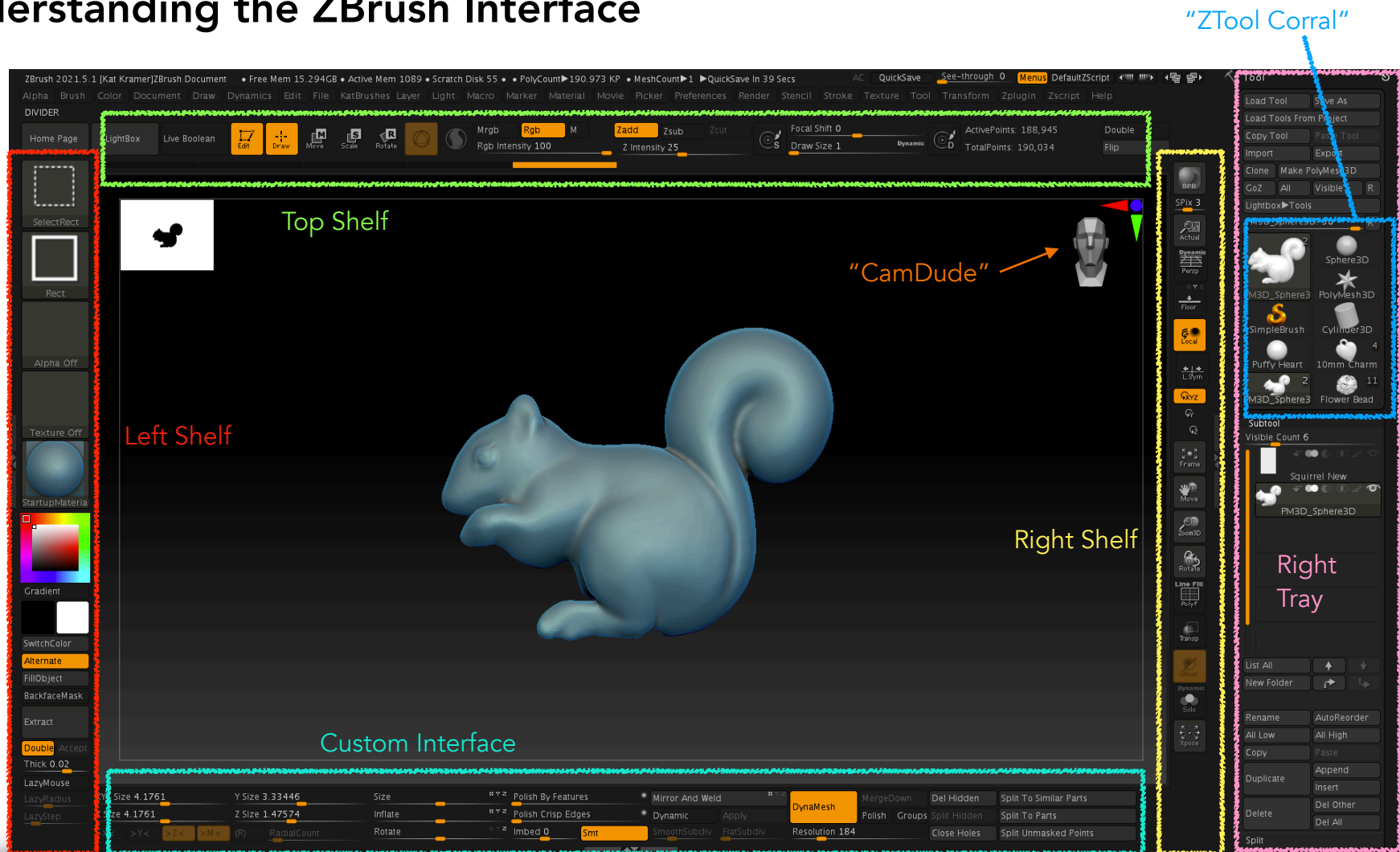
Right Tray

The ZBrush interface can be pretty overwhelming, but it can be broken down into different areas by functionality, and it will become easier as you familiarize yourself with the features. We will also be loading a custom user interface that will place the most commonly used tools at your fingertips. You'll also get to know **CamDude**, who will help you navigate your new 3D world.

The areas adjacent to the main stage or canvas are called "shelves," and the areas further to the right and left are called "trays." There is a left tray hidden to the left of the brush pickers. Look for a vertical gray bar with arrows. Double-click to access or hide the tray. On the right, there's a collection of models I call the "ZTool Corral." It's a Texas thing…

Left Shelf

Brush Picker: Different sculpting brushes are chosen by clicking on the brush picker, but adding modifier keys such as Shift, Command/Ctrl, or Command-Shift/Ctrl-Shift will allow access to Smoothing brushes, Masking brushes, or Select/Trim/Clip/Slice brushes, respectively.

Stroke Picker: Each brush has a particular Stroke associated with it.

Alpha Picker: These are essentially brush shapes. For example, the Standard brush has no alpha associated with it, but the ClayBuildup brush has a square alpha. Alphas can be created in other programs, or even within ZBrush. Alphas are grayscale images. With this picker, alphas can be selected, imported, or saved.

Texture Picker: Textures can be selected or imported with this picker. Textures can have color information.

Material Picker: Different materials can be chosen or imported with this picker. To apply different materials to a model, M or MRGB must be enabled in the Top Shelf. However, photorealistic materials can be applied in rendering software such as Keyshot. These materials will transfer over, but better quality materials are available in Keyshot.

Color Pickers: Colors can be applied to a model or painted onto the surface of models. We'll use this in the course to apply guidelines to a model for alignment. In order to apply a color, RGB or MRGB must be enabled in the Top Shelf.

Fill Object: Applies the material or color to a model.

Extract: Uses masking to create a new three-dimensional Subtool. Can be used to create rings, shells, and hollow jewelry pieces. Can be a positive number, which causes the new model to extend outwards, or a negative number, which retains the design while extending back from the surface. Adding **Double** causes the extracted piece to extend from both the front and back. After clicking Extract, you'll need to click the **Apply** button. A **Thickness** of 0.12 will usually produce a shell that's approximately 1mm thick, but this can vary.

LazyMouse: LazyMouse adds a "leader" to your brush that can help create smooth curves. The **LazyRadius** determines the length of the leader; I usually set this around 25-30. The **LazyStep** can help smooth brush strokes if there is "chatter;" a lower number will smooth the brush stroke, but will also cause material to accumulate faster. Adjust the ZIntensity lower to compensate.

Top Shelf

Home Page: This brings up an informative page from Pixologic about special events and software updates. The gear at the top left corner of the Home Page allows the user to hide the page on startup.

LightBox: The LightBox contains models, extra brushes, textures, and all sorts of resources. Different file types, like ZTools, ZProjects, .PSD (Photoshop) files can be saved where they are easy to access. In the course, we will create a **Jewelry Toolbox** here to store reusable components and models. To save items to the LightBox, save them in the ZBrush folder in the ZProjects folder. Also, if you ever experience a crash, the QuickSave section is where you will find auto-saved files.

Live Boolean: When models are added and subtracted to create complex shapes, we'll use something called Boolean operations. To preview these operations, Live Boolean can be enabled. *Live Boolean will not work if Transparency is enabled.*

Modes:
    Edit: In order to sculpt, Edit needs to be enabled. After placing a model on the stage, press T to switch to this mode. A white line appears around the stage if the Edit mode is enabled.
    Draw: To sculpt, the Draw mode must be enabled. The shortcut is **Q.**
    Move: The Move mode allows the model to be manipulated easily with the Gizmo 3D or Transpose Line. These tools allow the artist to scale, rotate, or move. *We will perform most of these operations in the Move mode.*
    Scale: This mode is used more frequently by character artists, and was essentially replaced by the Gizmo 3D.
    Rotate: This mode is used more frequently by character artists, and was essentially replaced by the Gizmo 3D. However, I use This to bend prongs on my models for photorealistic rendering.
    Gizmo 3D: The Gizmo 3D is a tool that allows scaling, rotation, clipping, and access to other transformations like BendArc and Extender. Toggling it off provides access to the **Transpose Line**, which we use take precise measurements in ZBrush.
    Sculptris: A mode that automatically adjusts the mesh for detail. I don't use this that often.

Mrgb, Rgb, and M: These toggle the modes for applying materials and color to your models. M is for Material, Rgb is for Color, and Mrgb is for Materials + Color. However, if you are just modeling with a single material, you won't need to make any changes here. Mask brushes will by default have the Rgb channel turned on, and the intensity of the mask can be controlled by the Rgb Intensity slider.

ZAdd and ZSub: These reflect whether a sculpting brush is adding or subtracting material. For example, the ClayBuildup brush will add material by default. Adding Option/Alt while sculpting will *subtract* material while the key is held. These buttons can be toggled to reverse the effect of any brush.

ZIntensity: Affects how much material is deposited or removed while sculpting, or the intensity of smoothing brushes. If used with IMM brushes like a tube setting or a prong, changing the ZIntensity can affect how much the applied setting protrudes from the surface. Since this scale is 0-100, it can essentially be used as a percentage.

Focal Shift: This is the amount of "blur" or falloff on the edge of your sculpting brush. A lower number is a sharper edge. Very similar to the Hardness brush setting in Photoshop. It can also determine the blur on the edge of masks.

Draw Size: The size of your brush. Applies to all brushes. However, for precise sizes of IMM Brushes, you can use the IMM Draw Size ZPlugin. If you're sculpting actual size, and the brush size is too small, double-click the **Dynamic** option here.

ActivePoints: This relates to the complexity and resolution of your ACTIVE Subtool. Roughing out a design will happen at very low ActivePoints counts, and as more detail is needed, the ActivePoints count can be increased with a combination of the **Divide** command and **DynaMesh.** The DynaMesh Utility (formerly DynaMesh Master) in the ZPlugins menu can be used to achieve a particular ActivePoints count.

TotalPoints: This is the total ActivePoints counts of ALL Subtools in the current ZTool.

Double: This option allows the user to view the inside or back side of single-pixel surfaces that might otherwise disappear. It is helpful when working with Plane3D or Terrain3D.

Flip: This button enables "Flipped Normals," which allows us to look inside any piece. It is helpful for measuring the thickness of models, prongs, or viewing the interior surface of a hollow model to ensure that the inside is free of any features that might create turbulence when casting. Flip will NOT work if Double is enabled.

Right Shelf

BPR: "Best Preview Renderer" is the button we use to transfer the model to Keyshot for photorealistic rendering.

Perspective: Keep this turned off. It distorts the model and can cause problems when masking or manipulating the model.

Floor Grid: This adds a grid to the scene to help understand orientation. The default Floor Grid is on the Y Axis, and is green, which corresponds with the green Y Axis. The Z axis floor grid is blue, and X axis floor grid is red. One or more of these axes can be toggled on in the Floor Grid button. Also, images can be attached to these floor grids for tracing in the Draw menu (we cover this in the course).

L Sym: Turns on Local Symmetry, which can be helpful with radial symmetry on objects that aren't in the center of our universe.

Frame, Move, Zoom3D, and Rotate: If you have difficulty getting used to navigating with key commands, you can use these to adjust the view of your model.

PolyF: The "PolyFrame" is something we will make extensive use of. It allows the user to view the underlying mesh, but also reveals colored **Polygroups** which allow us to separate parts of the model for operations like masking. You can also turn off the **Line** option or the **Fill** option separately. Being able to view the mesh is also helpful when using ZModeler to do hard-surface modeling.

Transp: "Transparency" is incredibly helpful for aligning objects when multiple Subtools are present. Be aware that some functions, like Boolean Folder, don't work when Transparency is turned on.

Ghost: Provides a different transparency that can be helpful. I rarely use this.

Solo: Isolates a single Subtool so it can be manipulated independently of the other active Subtools. Toggles on and off.

Bottom Shelf: Custom Interface

XYZ Size: Also includes X Size, Y Size, and Z Size. If working entirely in ZBrush, these can be used to create accurately sized pieces. These numbers will represent millimeters.

Symmetry: Not titled "Symmetry," these represent the axes. To toggle symmetry on, press **X**, then click these buttons to enable symmetry on the different axes. Radial symmetry is represented with the **R**, and the RadialCount can be entered here.

Size: This Size slider can also be used to change the size on any single axis, or any combination of axes. This slider can also represent precise percentage increases. I use it frequently while watching the XYZ Size sliders scale a piece proportionally.

Inflate: This is one of my most-used tools. It can be used to raise text from a surface, but also to thicken jump rings. It can also be used on a single axis or multiple axes at once.

Rotate: This slider allows you to rotate items precisely. I rarely use this one.

Polish by Features: This slider works most effectively when the white dot is clicked, turning into a white circle. Polish by Features will respect Polygroups, keeping relatively sharp edges where Polygroups meet. It is a GREAT method for smoothing the edges of Extracted pieces, which almost always have rough sides.

Polish Crisp Edges: This is another one of my most-used tools. Click the white dot to make it a white circle. Sometimes applying a small polish to pieces will address pixelation issues. I'll aggressively use this one with masking to smooth the inside surfaces of hollow items. If polishing doesn't seem as effective on a DynaMeshed object, re-DynaMesh.

Imbed: Adjusts the depth of IMM brushes or CurveTubes. Great for applying beaded decorations with the IMM Primitives brush. With an Imbed of "0," beaded decorations have no undercuts.

Smt: When Dividing models, this must be turned on to smooth.

Mirror and Weld: Using this feature will allow you to mirror parts of a model to make it symmetrical. If this ever doesn't work, make sure that your Gizmo 3D is centered on the model and that the model is centered in the ZBrush universe (Home button above Gizmo 3D). You could also try **L Sym** and local symmetry. If you'd like to only Mirror an item, you'll find a Mirror function in the Deformation section in the right tray.

Dynamic: This is Dynamic Subdivisions. It allows you to toggle smoothing on and off to check results. The **SmoothSubdiv** will create additional divisions and will help smooth, but BEWARE. I almost never use a SmoothSubdiv of over 3 or 4. Once the **Apply** button is clicked, the ActivePoints count will increase significantly. The model will also have multiple subdivisions that most likely need to be removed. If my hotkeys are installed, press 3 to delete the lower subdivisions.

DynaMesh: This function allows ZBrush to refresh the mesh once it's become stretched. The **Resolution** will directly affect the ActivePoints count. The **Polish** feature will sometimes make a cleaner model with sharper edges, like in the Happy Bell project.

MergeDown: Merges Subtools together. Move Subtools around by clicking and dragging them, then select the topmost Subtool. Use MergeDown to merge them. ZBrush will alert you that this is "not undoable." It's actually not true. Until the merged Subtools are DynaMeshed (or Boolean Folder is used), they can be separated with one of the "Split" commands. If you've already DynaMeshed, you can also use UndoHistory to go back to the point just before the DynaMesh, then use Split.

Del Hidden: When an object has been hidden with one of the Select tools (SelectRect, SelectLasso), Del Hidden will permanently remove the hidden part of the model. This will result in a non-watertight model, though, and the holes will need to be closed.

Split Hidden: This works well with Polygroups and SelectRect. After hiding Polygroups, they can be split off into another Subtool.

Close Holes: After part of a model is cut away, Close Holes will make sure the model is watertight. This automatically creates a new Polygroup for the new part of the model.

Split to Similar Parts: This can be used with a merged model to separate "like" parts. A good example is how I apply stones. I'll have a merged stone setting and stone unit, apply it to my piece, then use Split to Similar Parts to move the settings to one Subtool and stones to another Subtool.

Split to Parts: Similar to Split to Similar Parts, but will separate every unit into a different Subtool. If Split to Similar Parts doesn't work, try this one.

Split Unmasked Points: I use this one a lot. Whenever an IMM brush is applied to another model, or a CurveTube brush, the original model is masked. You can easily separate the new design from the base with this tool. I use this with creating scrolls with a CurveTubeSnap brush, or stone settings.

Right Tray

By default, the **Tool** palette is loaded in the right tray.

Load Tool allows the user to load ZTools that have been created. ZTools are a collection of Subtools.

Save As is the easiest way to save your designs as you get started with ZBrush. **Using this feature saves a collection of Subtools as a ZTool.** Imagine you have a puffy heart Subtool and a jump ring Subtool, and you want to save this as a charm. You could save the ZTool containing the heart and the jump ring as Puffy Heart Charm.ZTL. We will do this in the course.

Import and Export functions for both .OBJ and .STL are located here. If you need more options, there is a 3D Print Hub in the ZPlugins menu.

Make PolyMesh3D: Each time we place an object on the stage, we need to switch to the Edit mode (T) and make it a PolyMesh3D in order to sculpt. However, we will sometimes place the object on the stage, press T, then use the **Initialize** function at the bottom of the right tray to adjust attributes. Once we have the desired shape, we click Make PolyMesh3D. We will do this in the course.

ZTool Corral: I may be the only person in the world that calls it the ZTool Corral. This is where you find the **SimpleBrush,** which is where you choose "primitives," the basic building blocks of ZBrush. As you place primitives on the stage, and as you convert them to PolyMesh3D models, this area will populate. ZTools will contain multiple Subtools.

Subtools: This is where you can find the Subtools contained in the current model you're working on. If you were to save that collection of Subtools using **Save As** in the Tool palette, you would be saving a ZTool. You can organize Subtools in folders, and even Copy and Paste Subtools between ZTools.