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# Printable Hotkey Map Guide

Learning hotkeys will help increase your speed and efficiency. This translates to less time needed to learn and build your creations within Blender.

| General Hot Keys | Modeling Hot Keys |
|---|---|
| LMB - select | 1,2,3 in Edit Mode - vertex, edge and face select |
| RMB - context menu | E - extrude |
| A, Alt+A - select, deselect all | I - inset |
| X / Delete - delete | Ctrl B - bevel |
| Shift A - add | F - make face |
| G,R,S - grab, rotate, scale | J - connect vertices |
| Tab - toggle edit mode | G - (double tap) - edge slide |
| X,Y,Z (while transforming) - constrain to axis | Ctrl V - vertex menu |
| Z - viewport shading menu | Ctrl E - edge menu |
| Ctrl S - save | U - UV unwrapping menu |
| T - toggle toolbar | |
| N - toggle sidebar | |
| Shift RMB - set 3D cursor | |
| Ctrl (Holding while transforming) - toggle snapping | |
| F12 - render image | |

| Sculpting / Painting Hot Keys | Animation Hot Keys |
|---|---|
| F - change brush size | I - insert keyframe |
| Shift F - change brush strength | Space - play / pause animation |
| | Right / Left Arrow - next / previous frame |
| | Up / Down Arrow - next / previous keyframe |
| | Shift Right / Left Arrow - jump to start / end |

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# Glossary of key Blender terms

Similar to space-traveling astronauts, 3D artists (*Yes I compared 3D artists to astronauts*) have developed a few terms along the way that are specific to our field.

## Polygon

A **Polygon** is a 2D plane shape with a finite number of straight sides and angles, but at least three.

## Vertex

A **Vertex** is a single point in 3D space with a location and the end point of edges. More than one **Vertex** is known as **Vertices**, you may hear this term shortened to “vert” or “verts.”

## Edge

An **Edge**, simply put, is a straight line connecting two **Vertices**

## Face

Not the type with eyes, a nose, and a mouth. A **Face** in Blender is an element that defines a part of the surface of an object. A **Face** can only have a minimum of three vertices. The three types of **Face** you will encounter are **Tri** , **Quad** and **N-gon**.

- **Tri** aka **Tri**angle, is a **Face** with only 3 edges connecting only 3 vertices.
- **Quad**, think **Quad**ruple, meaning four. You guessed it, a **Face** with four vertices and four edges. • **N-gon**, combining the word poly**gon** and the mathematical symbol '**n**', meaning natural numbers, to form **N-gon**. Theoretically, this could mean any **Face**, but in Blender and Computer Graphics in general, only **Faces** with 5 or more Edges are called **N-gons**.

## Mesh

A 3D object in Blender is constructed of vertices, edges and faces. Combined together they are known as a **Mesh,** or **Mesh** object.

## Primitive

A **Primitive** is a starting object before any modifications, not necessarily a basic or simple object. The Suzanne monkey head in Blender is a **Primitive** object, every object in its default state is a **Primitive** when first added into the 3d viewport.

## Pole

A single vertex that is the end point of three, five or more edges is known as a **Pole**. If it connects to one, two or four edges, that vertex is NOT a pole.

## Normal

A rather complex term, but the main thing to take away from the start, is that a **Normal** can be used to distinguish between the front and back of a Face.

The direction perpendicular to a face is often referred to as the **Normal** direction.

## Transform

The **Transform** (of an Object), tells you where something is (Location), what it is looking at (Rotation) and how big it is (Scale).

## UV

**UV** is the letters designated to the coordinates of a flat 2D image. '**U**' being the horizontal direction of the image and '**V**' the vertical direction. These coordinates are used to map 2D textures onto 3D objects through a process called **UV** Mapping.

## Parent / Child

A **Parent** will take their **Child** wherever they go, and A **Child** may wander off on their own. Applying this in 3D modeling, you would preferably model different parts of a complex model separately. For example, when modeling a car, model the wheels as separate objects from the main body of the car. Then **Parenting** each wheel to the car, with the car as the **parent** and each wheel as a **child** means wherever the car goes the wheels go. However, the wheels can be removed from the car.

## Render

**Render** is the process of producing a 2D image from a 3D scene.

## Bake

The process of computing some time-consuming calculations is known as **Baking**, the result can be stored as a file, known as a **Bake**. The reason we **Bake** is to avoid calculating over and over again.

## Node

A little box of tricks, a **Node** contains a set of calculations within, by adjusting some parameters on the **Node** we can achieve the desired output. When connected together correctly some really complex calculations can be achieved.

# Blender Specific Terms

## 3D Cursor

The **3D Cursor** is a point in Space represented by three small axes drawn through a red and white circle, that has many uses, but one important one is that it indicates the Location, where a new object will be added. Users can place the **3D Cursor** wherever they like.

## World Origin

In Blender, the **World** is defined as the entire 3D space. The **World Origin** is the point at the center of 3D space, represented by the point at which the red (x), green (y) and blue (z) reference grid lines intersect and the grid location (x)0, (y)0 and (z)0.

## Object Origin

The **Object Origin** is the point that represents where the object is in 3D space. It is represented by an orange dot and it appears when you select an object.