

## **Autodesk 3ds Max Cheatsheet**

A comprehensive cheat sheet covering essential Autodesk 3ds Max commands, tools, and workflows for digital illustration and 3D design. This guide provides quick references for modeling, texturing, animation, and rendering in 3ds Max.



## **Interface & Navigation**

## Viewport Navigation

| Orbit                              | Alt + Middle<br>Mouse Button                           |
|------------------------------------|--|
| Pan                                | Middle Mouse<br>Button                                 |
| Zoom                               | Alt + Ctrl + Middle<br>Mouse Button<br>(Vertical Drag) |
| Zoom Extents                       | Z  |
| Zoom Extents All                   | Shift + Z  |
| Perspective/Orthographic<br>Toggle | Р  |

#### **UI Elements**

| Command<br>Panel     | Right side of the interface.<br>Contains tools for creating,<br>modifying, and animating objects. |
|----------------------|---|
| Timeline             | Located at the bottom of the interface. Used for animation playback and keyframe manipulation.    |
| Main<br>Toolbar      | At the top, provides quick access<br>to common functions like open,<br>save, undo, and redo.      |
| Viewport<br>Controls | Top-left corner of each viewport, allows changing the viewport display and shading modes.         |
| Status Bar           | At the bottom, shows coordinate information, tool tips, and prompts.                              |

## Basic Hotkeys

| Undo | Ctrl + Z |
|------|----------|
| Redo | Ctrl + Y |
| Save | Ctrl + S |
| Open | Ctrl + O |
| New  | Ctrl + N |
|      |          |

## **Modeling Fundamentals**

## **Primitive Objects**

| Box      | Creates a rectangular prism. Define length, width, and height.                    |
|----------|---|
| Sphere   | Creates a spherical object. Define radius and segments.                           |
| Cylinder | Creates a cylindrical object. Define radius, height, and segments.                |
| Cone     | Creates a cone-shaped object. Define radii, height, and segments.                 |
| Tube     | Creates a tube-shaped object. Define inner and outer radii, height, and segments. |
| Torus    | Creates a donut-shaped object. Define radii and segments.                         |

## Modifier Stack

The Modifier Stack is a list of modifiers applied to an object, allowing non-destructive editing.

- Each modifier performs a specific operation (e.g., Bend, Twist, Taper).
- Modifiers can be reordered, enabled/disabled, and their parameters adjusted.
- Common modifiers include Edit Poly, Turbosmooth, and UVW Map.

## Transformations

| Move     | W - Moves an object along the X, Y,   |
|----------|---|
|          | Of Z axis.  |
| Rotate   | E - Rotates an object around the X, Y, or Z axis.   |
| Scale    | R - Scales an object uniformly or non-uniformly along the X, Y, or Z axis.                  |
| Snapping | S - Toggles snapping to vertices,<br>edges, faces, or grid points for<br>precise placement. |
| Align    | Alt + A - Aligns objects based on their pivot points or bounding boxes.                     |

## **Texturing & Materials**

#### Material Editor

# materials applied to objects. • Compact Material Editor: A simplified interface for quick material assignments.

The Material Editor is used to create and edit

- Slate Material Editor: A node-based interface for complex material creation.
- Common material types include Standard, Physical Material, and Arnold Standard Surface.

#### **Basic Material Parameters**

| Diffuse Color      | The base color of the material.           |
|--------------------|---|
| Specular Color     | The color of the highlights.              |
| Glossiness         | The size and sharpness of the highlights. |
| Opacity            | The transparency of the material.         |
| Bump/Normal<br>Map | Adds surface detail using textures.       |

## **UVW Mapping**

| UVW Map<br>Modifier    | Applies texture coordinates to an object.  |
|------------------------|--|
| Mapping<br>Types       | Planar, Cylindrical, Spherical, Box  |
| Real-World<br>Map Size | Ensures textures are scaled correctly based on the object's real-world dimensions. |
| Channel                | Specify UV channel to use for mapping.   |

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# **Animation & Rendering**

# Keyframe Animation

| Set Key                | Creates a keyframe at the current time for selected objects.          |
|------------------------|---|
| Auto Key               | Automatically creates keyframes when object properties are changed.   |
| Timeline<br>Navigation | Use the timeline to scrub through the animation and adjust keyframes. |
| Curve Editor           | Fine-tune animation curves for smoother motion.                       |
| Dope Sheet             | Edit and manage keyframes in a spreadsheet-like interface.            |

## Rendering Setup

| Render Setup<br>Window | F10 - Opens the render setup window to configure rendering settings.               |
|------------------------|--|
| Renderer               | Choose a renderer (e.g., Arnold, Scanline, V-Ray).                                 |
| Output Size            | Set the resolution and aspect ratio of the rendered image.                         |
| Render<br>Elements     | Output additional render passes (e.g., diffuse, specular, shadow) for compositing. |
| Environment            | Set background color or image, add atmospheric effects.                            |

# Lighting

| Standard<br>Lights  | Omni, Spot, Directional, Area             |
|---------------------|---|
| Arnold Lights       | Skydome, Mesh Light,<br>Photometric Light |
| Light<br>Parameters | Intensity, Color, Shadows                 |
| Shadow Types        | Ray Traced, Shadow Map                    |

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