



Interface & Navigation

Viewport Navigation

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| Orbit (Rotate View) | 1 + Left Mouse Button |
| Pan (Move View) | 2 + Left Mouse Button |
| Zoom | 3 + Left Mouse Button |
| Zoom All | Shift + V (Configure View) |
| Frame Selected | O |
| Perspective/Orthographic Views | V |

Key Interface Elements

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| Objects Manager | Hierarchy of objects in the scene. |
| Attributes Manager | Properties of selected objects. |
| Material Manager | Create, edit, and apply materials. |
| Timeline | Animation control and keyframing. |
| Tool Bar | Access to modeling, sculpting, and animation tools. |
| Content Browser | Access to preset assets, materials, and objects. |

Basic Shortcuts

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| Move Tool | E |
| Rotate Tool | R |
| Scale Tool | T |
| Undo | Ctrl + Z |
| Redo | Ctrl + Y |
| Save | Ctrl + S |

Modeling Essentials

Primitive Objects

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| Cube | Basic box shape. |
| Sphere | Round shape. |
| Cylinder | Tubular shape. |
| Cone | Pointed shape. |
| Plane | Flat surface. |
| Torus | Ring shape. |

Generators

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| Extrude | Creates 3D objects from splines. |
| Lathe | Revolves a spline around an axis. |
| Sweep | Extrudes a profile along a spline. |
| Loft | Creates a surface between two or more splines. |
| Boolean Object | Combines or subtracts shapes using boolean operations (A+B, A-B). |

Polygon Modeling Tools

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| Extrude (Polygons) | Extrude selected polygons to create new geometry. |
| Bevel | Adds a chamfered edge to polygons. |
| Knife Tool | Cut polygons manually. |
| Bridge Tool | Connect two selections of edges or polygons with new polygons. |
| Subdivision Surface (SDS) | Smooths the geometry by subdividing the polygons. |

Materials & Texturing

Material Creation

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| <ol style="list-style-type: none"> Create New Material: In the Material Manager, click <code>Create > New Material</code>. Edit Attributes: In the Attribute Manager, adjust settings like Color, Reflectance, Transparency, and Bump. |
| Color Channel: Defines the base color of the material. |
| Reflectance Channel: Controls the reflections and highlights. |
| Transparency Channel: Adjusts the transparency of the material. |
| Bump/Normal Channel: Adds surface detail without modifying the geometry. |

UV Mapping

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| UV Editor | Edit the UV coordinates of the object. |
| UV Projection Methods | Cubic, Cylindrical, Spherical, Flat, etc. |
| Automatic UV Unwrapping | Cinema 4D can automatically unwrap complex shapes. |
| Texture Tag | Applies a material to an object and controls the texture's placement and properties. |

Applying Materials

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| <ol style="list-style-type: none"> Drag and Drop: Drag the material from the Material Manager onto the object in the Objects Manager or Viewport. Texture Tag: A Texture Tag will be created on the object. Adjust the tag's properties (e.g., projection, tiling) in the Attribute Manager. |
| Selection Sets: Apply materials only to specific polygons or selections. |

Animation & Rendering

Keyframing

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| Adding Keyframes | Click the small circle next to the attribute in the Attribute Manager at the desired frame. |
| Timeline Navigation | Use the timeline controls or arrow keys to move between frames. |
| Keyframe Interpolation | Linear, Spline, Step. Control the transition between keyframes in the Timeline. |
| F-Curves | Fine-tune animation curves in the F-Curve Manager for precise control. |

Lighting

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| Light Types | Point, Spot, Area, Infinite. |
| Shadow Types | Hard, Soft, Area. |
| Global Illumination (GI) | Simulates realistic light bounces for natural-looking scenes. |
| Ambient Occlusion (AO) | Adds subtle shadows in crevices and corners to enhance depth. |

Rendering

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| Render Settings | Adjust resolution, output format, and render quality. |
| Physical Render | Realistic rendering engine simulating camera and lighting properties. |
| Standard Render | Faster rendering engine, suitable for stylized visuals. |
| Output Formats | PNG, JPG, TIFF, EXR, MOV, MP4. |