

transform

G Move
R Rotate
S Scale
E Extrude

0, 1, 2, 3... **R R** Free rotate
X, Y, Z **0, 1, 2...**

Supr Delete *Dissolve vertices, faces, edge loops...*

***Shift + X, Y, Z + ...** Exclude axis on action

A Select all **A A** Deselect **↑Shift** Accumulate selection
L Select linked **Ctrl + L** Select linked all
Ctrl + L Select shortest path
Alt + L Select loop
Ctrl + Alt + L Select ring

Ctrl + I Invert selection
C Circle select
Ctrl + + Grow selection
Ctrl + - Shrink selection

selection

Tab Edit mode ↔ Object mode

↑Shift + S Snap pie menu **Z** Shading pie menu

M Merge **Ctrl + L** Extrude to click *new vertex or add*

Ctrl + R Loop cut

F Create face *or close vertex shape*

↑Shift + D Duplicate
Alt + D Duplicate linked

Ctrl + B Bevel (+ **Shift** vertices)

↑Shift + W Bend **V** Rip

I Inset faces **K** Knife *Also "Bisect"*

Ctrl + A Apply transformations

O Toggle proportional editing

↑Shift + Tab Snap tool toggle

Ctrl + Shift + Tab Increment, Vertex...

viewports

Top **7** **8** **9** **Opposite**
4 **5** **6**
Front **1** **2** **3** **Right**
Camera view **0** **Supr**

Isolate object **/**
+ Zoom in
- Zoom out

Smart UV project
U UV Mapping menu **Unwrap**
Project from View (Bounds)

T Toggle toolbar menu (left)
*Modifying "Transform" values, press **Alt** for apply to all selected*
N Toggle sidebar menu (right)

↑Shift + N Recalculate normals

Alt + Z Toggle X-Ray

Home Show all objects

P Separate selection

Ctrl + J Join objects

↑Shift + A Add item menu

↑Shift + L Place cursor

↑Shift + C Reset cursor to origin

↑Shift + L Drag view position

↑Shift + R Repeat last action

Texturing: Apply Rotation & Scale → Smart UV Project → Scale UVs → Configure modifiers UVs

Mix textures: **Noise Texture** → **ColorRamp** → **Mix Shader** → **Material (Surface)**

Ctrl + G Group texture nodes **F** Connect nodes

Ctrl + T Add Texture Setup

Ctrl + Shift + T Add Principled Setup

Ctrl + Alt + O Set camera **I** Add keyframe on frame

Vertex Groups

Face → Tris to quads **Mesh** → Clean up *Merge by distance Regenerate dissolve*

Edge → Subdivide **View** → View lock → Lock: Camera to View

Mesh → Transform → Randomize

Mesh → Bisect

Images as planes: Add → Image → Images as Planes

Ctrl + Alt + Space Fullscreen **Ctrl + Space** Maximized **Ctrl + Alt + Q** Quad view

Animation: Select objects, **Object** → Track: to Constraint
 Then Add Constraint → Clamp To *(i.e. a curve object)*

modifiers Displacement Subdivision Decimate Array Mirror Curve Remesh Boolean Shrinkwrap Solidify

Color (Albedo) **Normal Map** **Displacement**
 Texture: Color *Color Space: sRGB* Texture: Color *Non-Color (Opt. Cubic)* Texture: Color *Non-Color, Linear (Opt. Cubic)*
 To BSDF: Base Color To BSDF: Normal To Material: Displ.
Ambient Occlusion **Specular, Metallic...** **Roughness**
 Texture: Color *sRGB* Texture: Color *Non-Color* Texture: Color *Non-Color*
 Mix: Multiply Optional Multiply: Value Optional Multiply: Value
 To BSDF: Base Color To BSDF: Spec/Meta... To BSDF: Roughness

Tips & tricks

- 1 Remove duplicated vertices, faces or edges. Use **Merge Vertices** → **By Distance**
Solves many workflow problems with transforms, modifiers...
- 2 Apply scale (+) and other transforms (rotation/location) if needed.
Solves many workflow problems with transforms, modifiers...
- 3 Check Normals. Use **Mesh** → **Normals** → **"Recalculate Outside"** (or +) for fixing.
Verify it in checkbox: "Viewport Overlays" → Face orientation
- 4 Check Object origin. Correct it in **Object** → **Set Origin** (select geometry in **Edit Mode** if needed).
Solves many problems with scale, modifiers like Array, Mirror...
- 5 Better use **quads** (4 edges). Avoid **ngons** (+4 edges). Also avoid, if possible, **tris** (3 edges).
- 6 Check **Render** (and other options) icons marked on object/collections in the **Outliner** to your needs.
- 7 Check if **"Snap"** or **"Proportional editing"** are activated, causing bad behaviors.
- 8 In **Edit Mode**, check **Options** → **Transform** → **"Correct Faces Attributes"** if needed.
For correctly transform meshes with applied UV map & textures.

Node Wrangler

- + **Disconnect/cut nodes**
- + **Create a **Mix** node**
Select one or more for auto-mixing
- + **Auto-connect nodes**
 Connect selected nodes

More shading nodes

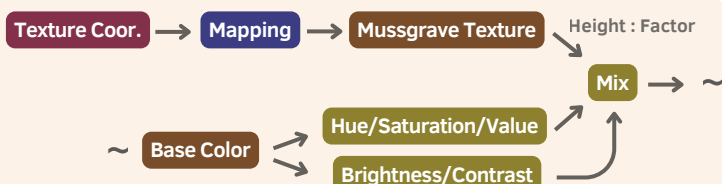
Hue/Saturation/Value & **Brightness/Contrast** : Change texture properties, like color, contrast...

Blackbody : Node for light temperature color, for example in an Emission surface (**1500K to 12000K**).

Ambient Occlusion : Add shadow in the object folds.
You can add "dirt" or remark this zones with this setup:



Add texture dirt with this setup:



Optimization tips

- 1 File → Clean Up → **Recursive Unused Data-Blocks**
Clean unused materials, textures, images... in the scene.
- 2 Right Click in Collection at Outliner: **Instance to Scene**
Make instances, optimizing the polygon count.
- 3 Use instances (+) and share materials in objects whenever possible.
- 4 File → External Data → **Automatically Pack Resources**
Activate for pack textures and resources into the .blend file.
- 5 Modifier: **Decimate**
Optimize polygon count in the scene.
- 6 Add-on: **Material Utilities** → + → **Specials** → **Merge Base Names**
Merge duplicated materials used by assets (then, Clean Up).
- 7 Bake textures and reduce model polygon count.
Select blank image and bake type in Render → Bake.
- 8 Use Simplify, **"Persistent Data"** and other options detailed in **"Default file start-up config"**.

Other

+ **Walk/fly navigation shortcut**
Or accent grave, depending your keyboard region

Hide + **Show all hidden**

+ **Link/transfer data**
For copy modifiers to multiple selected objects

in a menu: Search in opened menu content

Interesting basic free add-ons

- | | | | |
|---------------------|----------------------|---|------------|
| Node Wrangler | Material Utilities | Extra Objects | Loop Tools |
| Bool Tool | Images as Planes | ANT Landscape | Real Snow |
| Scatter Objects | Copy Attributes Menu | <u>Easy HDRI</u> * | |
| <u>UV Squares</u> * | <u>BlenderKit</u> * | <i>All in Preferences → Add-ons, except *</i> | |

Default file start-up config

- In **Viewport shading**: **Random & Cavity**.
- In **Output**, check **"Render region"**.
- In **Render**
 - Select **Cycles**. Config your samples.
 - In **Eevee** config, check **"Ambient Occlusion"**.
 - **Simplify**: Config to your liking/project, useful.
 - **Performance**: check **"Persistent Data"**.
 - **Color Management**: I prefer AgX (choose yours).
- In the outliner filters, activate **"Selectable"**.
- In **World**: Set **"Sky Texture"** at 0.130 strength.
- In **Blender preferences**: Up the **"Undo steps"** number and select **Cycles Render Device** if possible.