



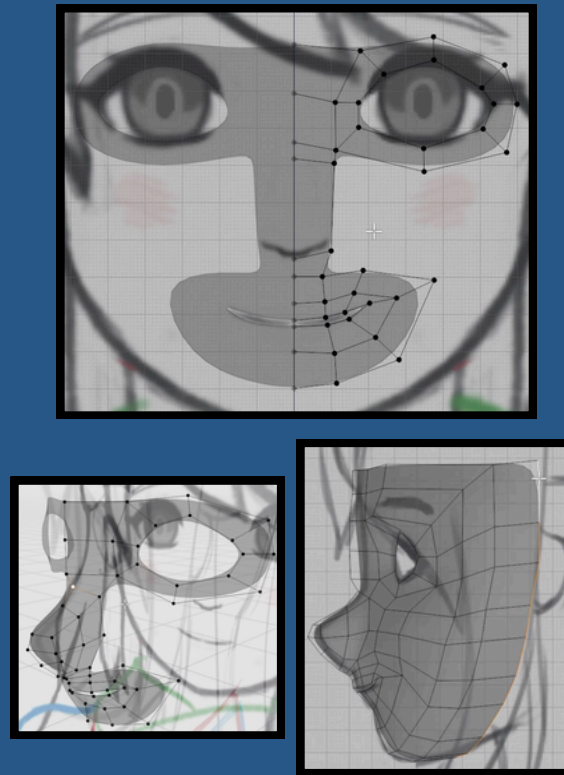
COMPLETE 3D CHARACTER CREATION CHEAT SHEET

The Process

- 1) Reference images
- 2) Model core face loops
- 3) Make face loops 3-dimensional
- 4) Fill in face/create jaw
- 5) Extrude to back of head and neck
- 6) Model ears
- 7) Model eye and mouth sockets
- 8) Model eyebrows
- 9) Model eyelashes
- 10) Model eyes
- 11) Model torso
- 12) Model crotch and legs
- 13) Model arms
- 14) Model hands
- 15) Model breasts / buttocks
- 16) Configure Bezier curves for hair
- 17) Convert hair to mesh
- 18) Adjust hair in Sculpt Mode
- 19) Model clothing
- 20) Create base texture
- 21) UV unwrap
- 22) Configure shader
- 23) Adjust normals (optional)
- 24) Add outlines (optional)
- 25) Add simple Rigify metarig
- 26) Add secondary bones
- 27) Weight paint the model
- 28) Animate the model
- 29) Shape Keys
- 30) Export the model

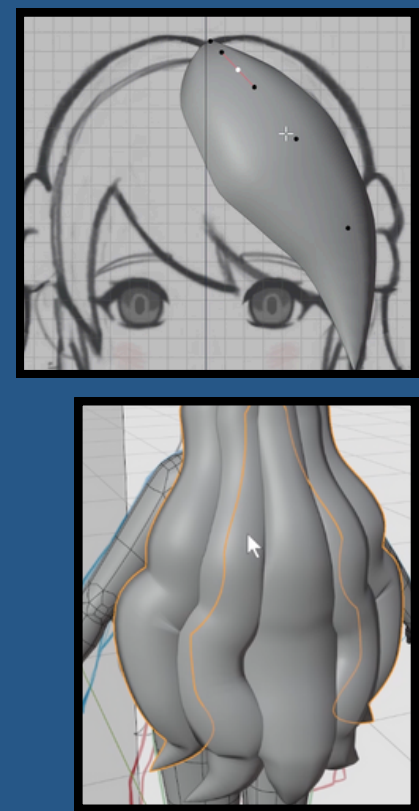
Modeling

- Basic principle is “Build, Adjust, Repeat”
- Topology is important around parts that bend (ie. facial features, knees, elbows, shoulders)
- Much easier to build proper topology first, then build model around it (especially for face)



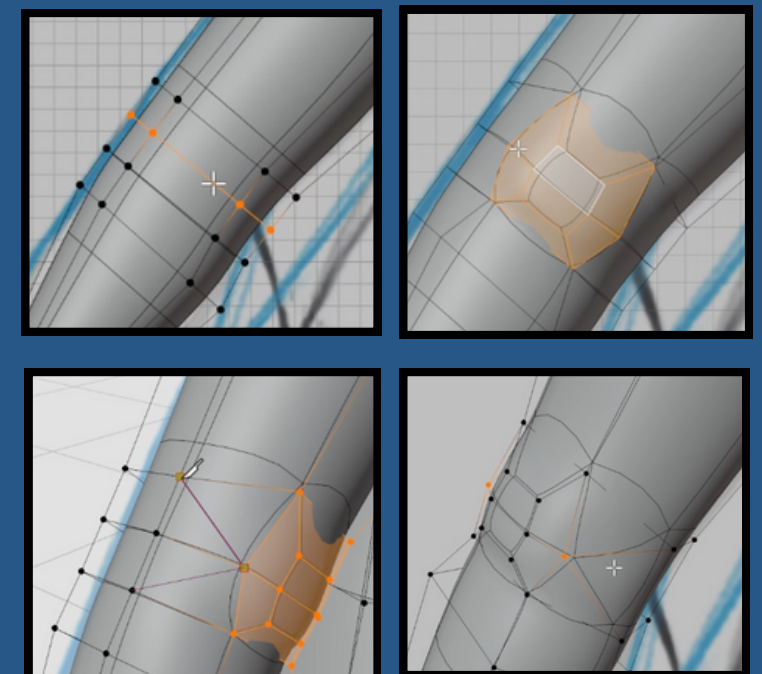
Hair

- Bezier curves are the most efficient for blocking out hair on stylized characters
- Add a main Bezier curve and a second curve as the bevel for the main curve
- Duplicate and shape curves to form hair
- Convert to mesh and adjust hair with Sculpt Mode



Joint Topology

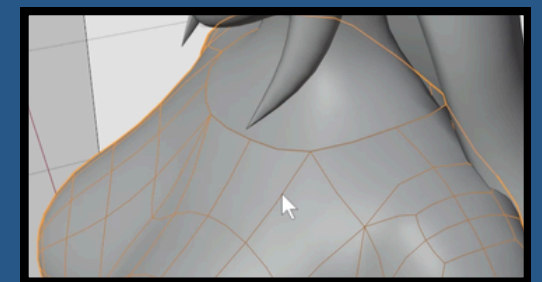
1. Select faces around set of three edge loops around where joint is located
2. Inset the faces
3. Use Knife tool to make outside cuts
4. Dissolve middle edge loop where cut opening is



Clothing

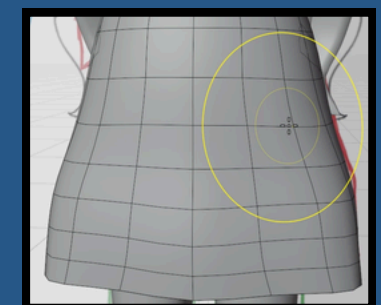
Duplicate + Sculpt

Best for shirts, pants, jackets



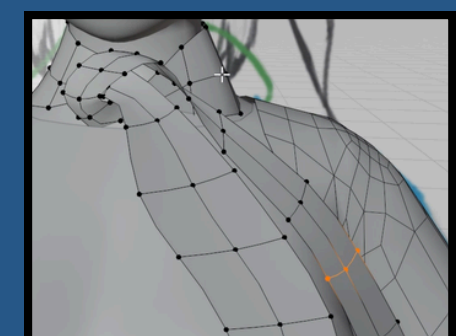
Cloth Physics

Best for skirts and looser clothing



Direct Modeling

Scarfs and bows, etc.



Rigging

- Rigify is built-in and has a large support community, so is generally recommended
- Use a basic human metarig as a base and remove unneeded bones
- Secondary parts of the model can also be rigged (ie. clothing, hair, breasts)
- Preserve bends on arms and legs for better IK function
- Weight paint each bone individually to have more control



Export

- For Godot - .glb or .gltf work best
- Include Visible
- NO Apply modifiers (for shape keys)
- NO Export materials
- Export Deformation Bones Only
- Animations - Actions

The Tools

Move/Grab	G	Select All	A	Front Ortho	NP1	Extrude	E
Rotate	R	Delete	X	Right Ortho	NP3	Loop Cut/Slide	CTRL R
Scale	S	Add Object	SHIFT A	Perspective	NP5	Fill Faces	F
Shrink/Fatten	ALT S	Rename	F2	Camera View	NPO	Merge	M



<https://www.youtube.com/watch?v=dd6G2S6MQ6U>



<https://codernunk.com/tutorials/complete-3d-character-guide/>