SculptGL: Design Challenge

SculptGL: He Wero Hoahoa

How to use these design challenges:

- ⇒ Preparation or extension activities before, during and after viewing Episode 2 of the Raranga Matihiko TV series (view on TVNZ On Demand)
- ⇒ Weekly challenges to support students' regular learning program by incorporating your current theme or term topic into the chosen challenge.
- ⇒ Part of the daily tumble for independent work to integrate digital technologies with Science/Social Sciences (Topic Related), Maths (Geometry) and including Technology.
- ⇒ A lead up to a more extended use of SculptGL and other Computer-aided design programs like Tinkercad; for example, 3D Printing, Collaborative Virtual Worlds.

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Design Challenge Beginners

TAHI

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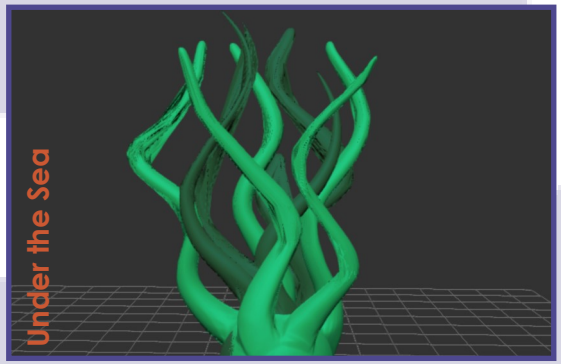
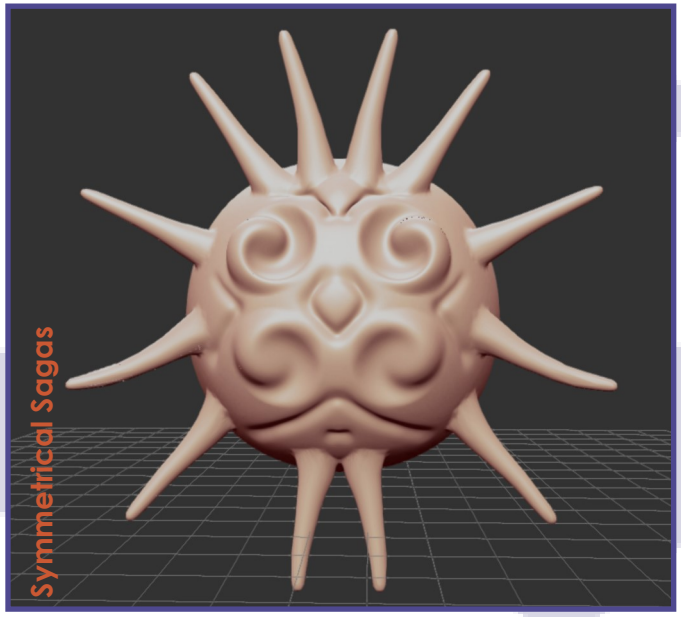
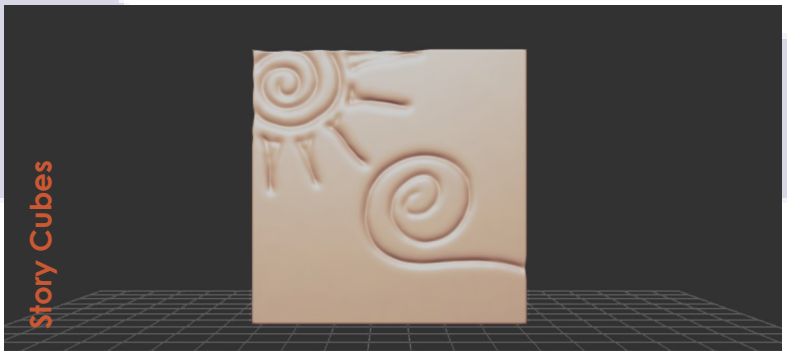
1. **Under the Sea:** Add one object to the workplane and use any of the sculpting tools to transform it into something you might find beneath the ocean (coral, fish, rocks, seaweed). Allow students to discover what every tool does. Encourage tutū as a form of learning through experience.



2. **Symmetrical sagas:** Add one object to the workplane and make sure symmetry is selected (you can also choose to show '*mirror line*' in Scene options). Create an object that is completely symmetrical. Encourage students to rotate the scene and compare views.



3. **Story Cubes:** Add a cube to the workplane. Design a setting/section for each part of a story/myth/legend/historical account etc. Using the crease tool and with symmetry turned OFF, carve a scene into each face of the cube. Encourage the use of designs to tell the story instead of drawing objects.



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Design Challenge Advanced

RUA

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1. **Doughnuts for Everyone!:**

   ⇒ Add a torus to the workplane and use *'Paint All'* in the Paint tool settings to recolour the whole object. Encourage using the slider bars to change the *'intensity', 'radius' and 'hardness'*.

   ⇒ Change the texture to square and the radius to 8, then use different colours to produce 'sprinkles' over the surface of the doughnut.

2. **I Like to Move It:** Use the 'Transform' tool to resize and move objects around the workplane to create a pattern out of 4-8 different objects. Objects can be painted, carved or sculpted, but every matching object must have the same alterations.

3. **In the Background:** Prepare a background image in advance (photos, digital drawings, downloaded images). In the Background menu, select Import and choose your background image. Turn off the grid in the Extra Scene menu. Create a SculptGL object to make it look like it is a part of the background image and use the Transform tool to move the object into the right place.

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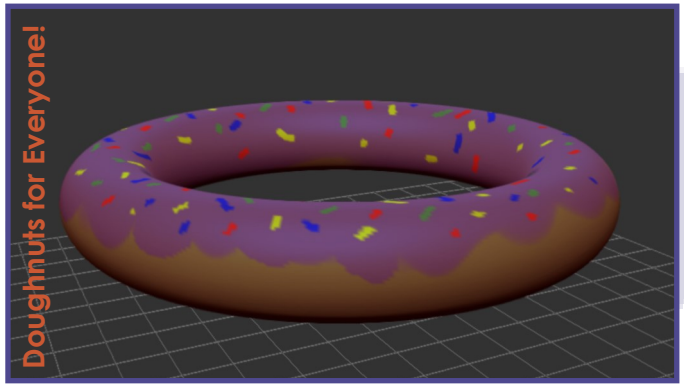

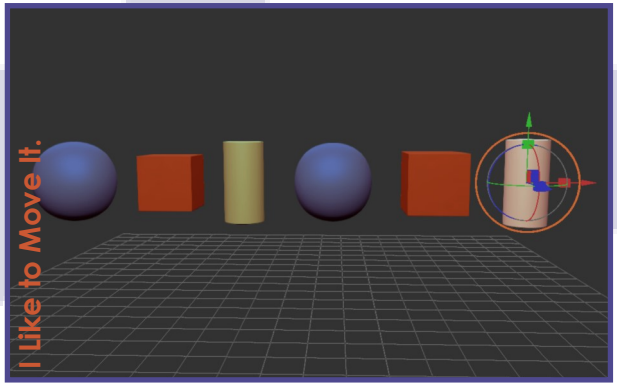

Design Challenge Experts

TORU

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The Problem:

Your whānau are planning on building a new whare with pou whakairo | carved posts, sculptures and hanging ornaments decorating it. They want each display to show a part of the family history or myths and legends related to the area.

The Task:

As a digital designer, you have been asked to help design the new whare.

⇒ You must upload an image of inside or outside a whare (your own home, room at school or a fictional room/whare) to SculptGL.

⇒ Use this background image to place objects into.

⇒ Sculpt, carve and colour the objects with designs that reflect your whānau, rohe | area or school.

The Tools: SculptGL, Device with a camera for background image

Completing:

⇒ All objects in the design can be saved as .obj and used in a virtual world, such as Tilt Brush by Google

⇒ Saved objects can also be 3D printed or uploaded to a 3D object repository such as Sketchfab or Poly

⇒ The finished project can be saved with a screenshot/snipping tool and printed or used in students' websites/blogs.

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