ARCHIVED: 3D printing inductions, Character & Diorama

SLQ Wiki Fabrication Lab 2024/08/20 14:27

ARCHIVED: 3D printing inductions, Character & Diorama

Teens from the Deception Bay Flexi School and teens attending the book club series at the library will be learning to use Tinkercad and 3D printing skills.

They will then design a small 3D printed character and a make a diorama for them to live in.

The Plan: Session 1 - 3D Printing Induction

1. Introductions

2. 3D printing induction- make a key ring.

ARCHIVED: 3D Printing Induction is the induction activity used. This can be adapted to use any available 3D printer.

The Plan: Session 2 - Tiny Epic (diorama)

This workshop was run as a Try It

See here what Tryit workshops are at The Edge: TRYITS

The following is the plan for the running this workshop:

- Introductions (introduce yourself, and any questions first up)

- Show an example of what we will be making

- Break off into pairs to design a miniature character (are the 2 characters friends? related, strangers?)

- Now take these character ideas and design them in Tinkercad on the computers

- 3D Print the characters

- Ask the group to think of an apocalyptic world that their characters could live in (out of space, a dark world, a stormy night, someone is leaving, on Mars, a discovery etc)

- Ask the group to share their world ideas as a way to decide on the final idea

- In their pairs they will now cut out the diorama template and add texture and elements to the

diorama that capture the feel of the world they decided upon

- Add the characters to the diorama

- Write/ Tell (possibly make a sound recording of the participants describing the story) the story of your diorama.

Explain your diorama to the group (record these explanations so that you can use these potentially as the story that goes next to the work when displayed as a story in the young person's own voice)

(EXTENSION activity is that the diorama can have moving capabilities as well as Lights (led))

Resources Required

- Laptops with Internet access for Tinkercad
- Laptops with 3D printer management software
- 3D Printers
- 3D printer filament
- 5 x laptops
- 20x Laser cut dioramas
- 20 LEDs
- Cr2032 button cell batteries (to power LEDs)
- Hookup wire
- Coloured paper
- Glue sticks
- Scissors
- Utility knives
- Cutting mats
- Hot glue guns
- Hot glue
- Rubber bands
- Electrical tape
- Sticky tape
- Fine line black pens

Stimulus

Here are some links that you can look at tiny worlds for ideas. You may want show the group some of these to get ideas flowing!

https://www.youtube.com/channel/UC09jljgpnK3lNrfO9AfnIcg

http://www.abc.net.au/news/2017-10-11/brisbanes-tiny-red-door-burnett-lane-unveiled-guerilla-artist/9033390

tiny worlds

https://www.pinterest.com.au/pin/61009769926697791/

http://www.thisiscolossal.com/tags/dioramas/

Reflection: Deception Bay

The workshop today went well for the first time that it was run. There were also some learnings from the experience. The main ones being:

- Make sure your 3D printers are running and fully working before people use them. It is difficult when they are not your 3D printers that you are using. Good practice to personally check them.

The order that this workshop happens in is really important. It is important to think about the order in terms of what will keep them most engaged. Engaged in creating/making the world and characters.

After this test run all three of us (Mick. Leonie from Deception Bay and myself) agree that the best order for the workshop would be:

Order of workshops based on learnings

Session 1: Introduce 3D printing

3D printing Inductions

Session 2: Make Dioramas

1. See an example of the diorama

2. Brainstorm apocalypse world and choose one

3. Make the diorama (with lights)

4. Choose a colour of coloured paper for the diorama floor. Glue it on

5. Go to a computer and choose a backdrop colour/texture/image and print in the correct size

5. Glue the backdrop

6. Choose a proscenium texture/image and do it

7. Maybe draw or cut out shapes of the flats to add in

Session 3: 3D Design & Print

Have something being 3D printed in the space while everyone arrives. This way everyone sees the 3D printing in motion and if they do not have time to print their own designs they would have been able to see printing in motion.

1. Decide on a hero for you diorama (someone/something that is in the world)

2. Draw it - think about it

3. Design it in Tinkercad

4. 3D print it (or leave it to be printed)

Photos

There were 10 in the group. We split them up into 2 groups. One started on 3D printers and the other half with putting the dioramas together

Working to put the dioramas together

Using glue guns to glue some of the walls together as well as the led lights and battery

We went over to the library computers to research and to find images that could be used as backdrop as well as the floor. We copied and then pasted the images into a Word Doc and sized them to fit in the diorama (10×12 for backdrop & 12×7.8 for floor). Then colour printed them

Cut out the colour prints and glue with glue sticks into the diorama

Attach led lights as well as the batteries

Possible Session Three - Mask your Face for the End of the World

Participants design a lace masquerade ball mask on paper with sharpies.

Some examples can been found here: https://cre8ive-shop.com/products/sexy-elegant-eye-mask-masquerade-ball-carnival-fancy-party-half-face-cover-lace-masks-for-halloween-christmas-party-dress-up

Photograph the design on paper with you smart phone and then import the image into Adobe Illustrator (or similar graphics software)

Size the image down to fit

'Trace' as a one colour logo

'Expand' as outlines..

Export as an .svg file

Import the svg file into Tinkercad as a 3-5mm high extrusion and scale to fit face. For smaller 3D printers halve the mask (to print just half at a time)

Export as an .stl file and print on the 3D printer

When printing is complete place mask on a plaster cast mould of a face and uniformly heat the plastic with a hot air gun until the plastic conforms to the topography of the mould

Allow to cool and try it on for fit

Paint and further embellishment can be added

If there is no access to Adobe Illustrator you can use the free software https://inkscape.org/en/

Mask process using inkscape

1. Draw half of the mask using the template
2. Take a photo of it
3. Import it into inkscape
4. Trace it as a bitmap (2 colours)
5. Trace as pixel art
6. Save to desktop as a SVG
7. Import into tinkercad

Logistics of running mask workshop in Deception Bay

Possible to follow the above guidelines and then as well as having the 3D printers from the Deception Bay Library, we also have one from The Edge available to print masks. Both can be printing examples at the beginning; this way will open up a way to have conversations about 3D printers and the different options and capabilities of them. For example we could also talk about http://reprap.org/wiki/Build_A_RepRap

The group then designs their own masks by drawing in the template and uses inkscape and we print the masks after the session.

Files

stage2610.cdr

stage1510c.ai

stage1510b.ai

stage1510c.ai

stage3110e.cdr

stage3110d.cdr

stage3110c.cdr

stage3110b.cdr

stage3110.cdr

Rather than 3D print masks we decided to make it a little less reliant on technology working. Deception Bay 3D printers have not proved to be reliable along with The Edge only being able to offer to take one out and the main 3D printers at The Edge not having a wide enough print option for the masks. Soooo we decided to go with making cardboard full face masks.

Mask workshop in Deception bay

We ran with the following workshop with the flexi school in deception bay

Preparation

Hot glue guns

Cloths for wetting there for just in case accidents with the glue

Staplers

thin strips of cardboard (for getting the shape of your head)

Cardboard sheets

Stanley knives

An example

Pinterest board of examples

The plan

- Hellos

- set the context (making head masks for an end of the world party or is a new world?)

- ask the group if they have seen any dystopian/apocayptic movies, read books/comics etc recently.

- brainstorm ideas of what quality would you take into the new world with you?

- Brainstorm what this could look like (see Mick's)

- refer to pinterest boards

- Begin measuring self up and building up the mask.

- have music playing

- need mirrors? or can get your mate to try it on and see as well

- Think about textures

- Hot glue gun safety chat (have a bowl of cold water with wash cloth available at all times for anyone who gets hot glue on their hands)

- See if anyone want to leave them behind for the event (talk about the date for it and what will be happening)

Reflection

This session was a very successful and engaging session. It was great to start with a conversation around apocalypse and what they have seen recently- walking dead a game discussions came up. There were 10 young people and a couple of them were new faces. One of these young men seemed quite aloof and too cool to begin with. As soon as he began to make the mask and get his hands busy he was off and created a full mask with lights and all. The music really helped to engage him I noticed that he was singing away as he was using the hot glue gun.

I only used my iphone as the dbay library does not have a small speaker or sound system (something which they have discovered that they need after having had one for a book club session or 2 from a community member. They noticed that it made the teenagers relax and be more engaged in the library)

Photos