



Long Activity
Ages 9–12
45–60 minutes

3D Virtual Sculpting

Description

Virtually sculpt clay to create a 3D creature from your imagination, using a computer and the SculptFab website.

Competencies

- Creative and imaginative thinking
- Eye-hand coordination
- Creative expression
- Computer literacy
- Development of fine motor skills

Materials

- An internet enabled laptop or desktop with a up-to-date web browser

Preparation

- Watch the tutorial videos on the [SculptFab website](#)
- Spend 30-60 minutes before the activity to feel comfortable and confident with the 3D design tool

Implementation

1. Set up participants on the [SculptFab website](#)
2. Introduce SculptFab and the concept that it is similar to a virtual ball of clay that you can carve and manipulate
3. Introduce and practice the basic mouse controls for viewing your 3D model at the start of the activity:
 - a. Hold the right click mouse button in the 3D preview window and move your mouse, using your mouse scroll wheel up and down to zoom in and out, holding down your middle scroll wheel button to pan your viewpoint
 - b. Use the left click mouse button to activate the tool selected on your virtual ball of clay
 - c. Talk about the symmetry option and how it can be used to mirror anything you do automatically on the sphere
 - d. Explore the menu bar and the essential options (File, History, Reset sphere)
 - e. Review how to use the tool menu on the right of the screen
4. Let the participants explore on their own and see what they can create
5. Talk about how they can save their work as a *.STL* or an *.OBJ* file to edit or view later on
6. Tell them that Windows 10 has a built-in 3D preview program called Print 3D to open these file formats to view on their home PCs

Book Suggestions

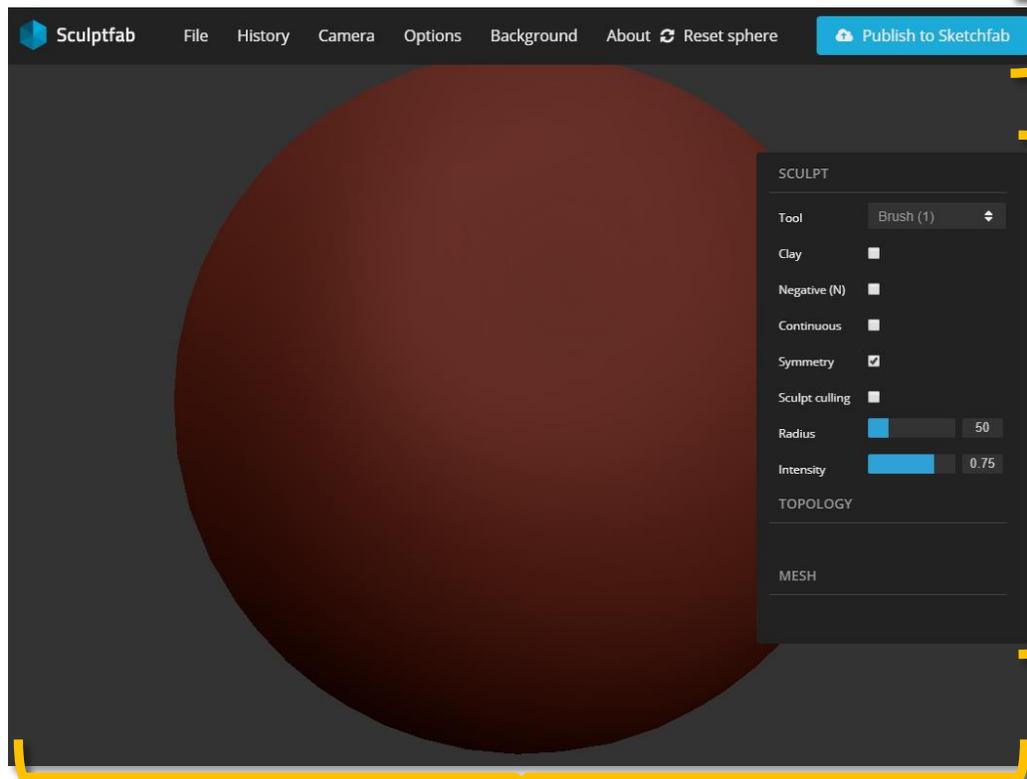
Drawn from Nature by Helen Ahpornsiri

Life by Cynthia Rylant

Images and Templates

For additional information on how to use this virtual sculpting 3D tool, please view this video tutorial, <https://labs.sketchfab.com/sculptfab>.

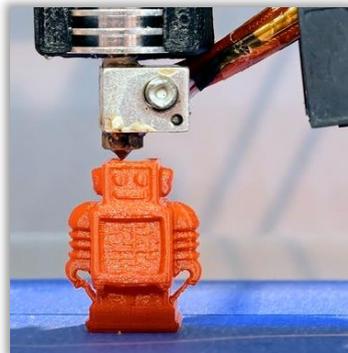
Here are some of the basic controls to get you started below:



In the menu bar, **File** is used to save or load your 3D files, **History** is for undo and redo if you make a mistake, **Reset sphere** is used to delete your 3D object and start over

Sculpting tools is used to select a tool and show its properties)

3D preview of the virtual ball of clay



Bonus

If you feel confident, you can tell the participants that they could get their creatures 3D printed. Using software like this one, we can design and then print 3D objects in the real world. That means we could see what we made in our hands and touch it if we ever wanted to!

If you enjoyed using SculptFab for your program or class, there are other online resources you can try just for fun to see if anything interests you as an instructor.

[Tinkercad](#) (3D design / programming and electronics)

- Design 3D objects using primitive shapes that can be joined together or used to deduct from each other
- Create virtual Arduino microcontrollers and components using a feature called Circuits—a way to practice and learn electronics, microcontrollers, breadboards and components

[Blockly Games](#) (programming logic game)

- Introduces the logic of programming
- Uses drag and drop puzzle pieces to solve brainteasers

[BlocksCAD](#) (programming via puzzle pieces)

- Uses drag and drop puzzle pieces to create accurate 3D designed parts

[Scratch](#) (programming via puzzle pieces)

- Uses drag and drop puzzle pieces to program
- Creates animations or interactive games using Scratch

[MIT App Inventor](#) (Android app development)

- Develop an Android application using only a web browser
- Create and download your application and run it on an Android phone

[Canva](#) (graphic design)

- Create graphics easily with an online editor using pre-made templates

[Pixlr](#) (graphic design)

- Create graphics with a web-based design tool, which is very similar to Photoshop