

# 3D Educational Resources

## EXPLORE BUTTER MOULDS AND STAMPS

Historically butter moulds were used to shape the butter. Many moulds also contained a stamp that would mark the butter for either decorative purposes or so that consumers would know where the butter was made.

### ONTARIO CURRICULUM LINKS

Through this activity, your students will learn how Canadian farmers in the 19th century used butter moulds and stamps to shape and mark butter by hand. They will also have the chance to create their own butter stamps. This activity can be connected to multiple aspects of the Ontario School Curriculum, our suggested links are:

- Grade 3: Social Studies (Heritage and Identity: Communities in Canada, 1780 – 1850)
- Grade 7: History (Canada, 1800-1850: Conflict and Challenges)

### MATERIALS

- |   |   |
|---|---|
| 1 – Computer                            | 1 – Plasticine (size: 11 cm x 4 cm x 3 cm, length x width x height) |
| 1 – 3D editing program (Sketchup Make)* | 1 – Butter stamp file (Editable butter stamp.skp)                   |
| 1 – 3D butter mould                     |   |

\* There are many different 3D editing programs that you can use, for this activity we suggest Sketchup Make (which is free to download). Some other possibilities include Blender and Tinkercad.



Grades

3 – 8

Age Range

8 – 14 years



## INSTRUCTIONS

There are two parts to this activity. In Part 1, you and your students can explore how a butter mould was used. In Part 2, you and your students can design your own butter stamp.

For Part 1 we suggest that you use plasticine instead of real butter because currently there is no way to 3D print an object that is entirely food safe

### Part 1: How to use a butter mould

1. Put the plasticine on a flat surface (such as on a cutting board or a table). Try to make it so that the plasticine covers the same area as the butter mould.
2. Lower the butter mould over the plasticine, and press down on the stamp (the plunger part).
3. Lift up the butter mould and press down on the stamp to push the plasticine out. You should have a piece of plasticine in the shape of a bar of butter with a stamp of the logo of the butter company, just like a real piece of butter!

### Part 2: Design a butter stamp

There are many ways for you and your students to design and customize a butter stamp. For this activity, we'll have you put your name on one that has already been created in the program Sketchup Make (Editable butter stamp.skp). **Note:** If you are using a different program, we've provided you with a .stl file that you can use. You can download either of these files from the same website where you obtained this activity.

### Install Sketchup Make

1. Download Sketchup Make at: [sketchup.com/download/all](http://sketchup.com/download/all)
2. Install Sketchup Make. If you have any problems, please visit: [help.sketchup.com/en/setting-up](http://help.sketchup.com/en/setting-up) for troubleshooting tips.

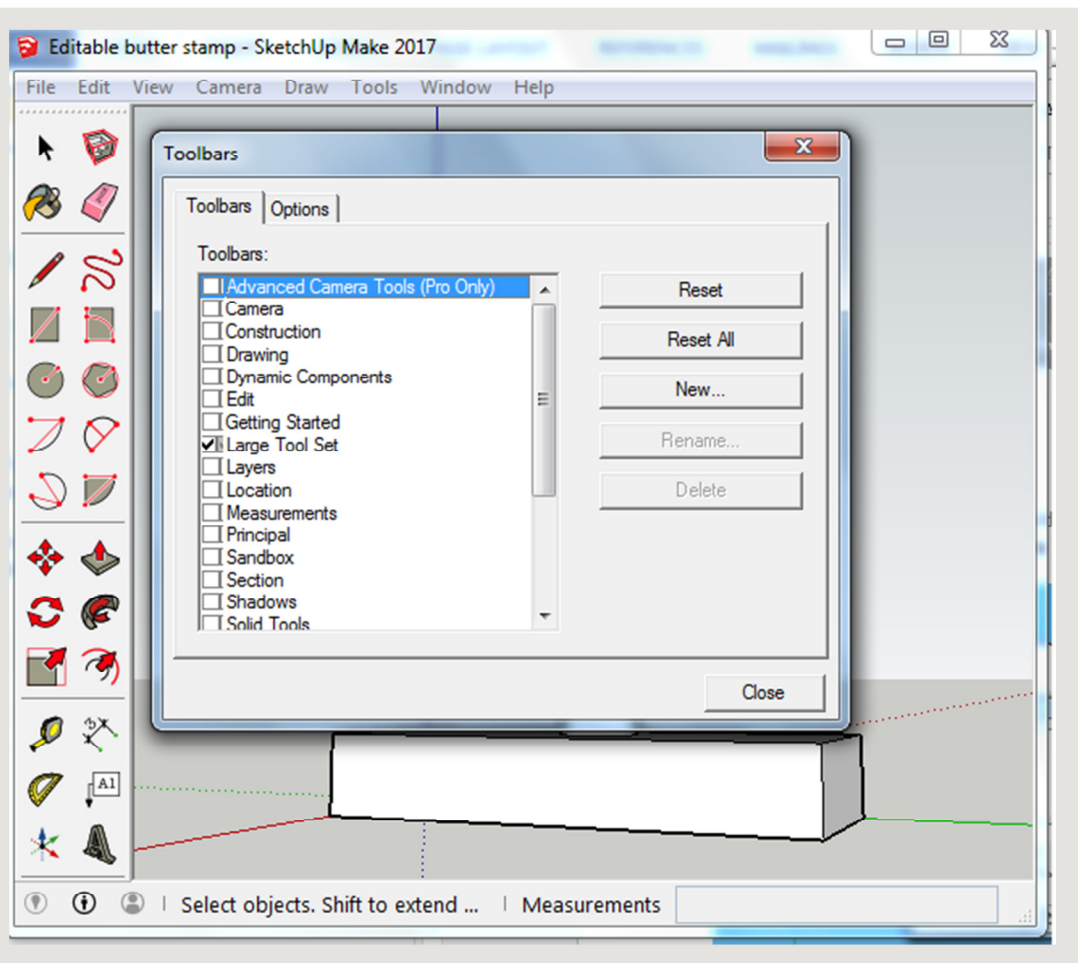
### Make your own butter stamp


You can also view the instructions below in a video that is found on the same website where you obtained this activity

1. Start Sketchup Make. This will take you to the Welcome page, click on "Start using Skecthup" to start the program.
2. Load the Sketchup Make file of the editable butter stamp into the program (Editable butter stamp.skp).






3. Familiarize yourself with the program. Here are some general hints:
  - a. Activate the “Large Tool Set” toolbar; this is the toolbar that will have the most useful options for this activity. To do this, go to the “View” menu and click on “Toolbars”. Then make sure “Large Tool Set” is checked. Also, if there are other options selected, click on them to deactivate them. For instance, if you just installed the program, the “Getting Started” toolbar is likely checked.

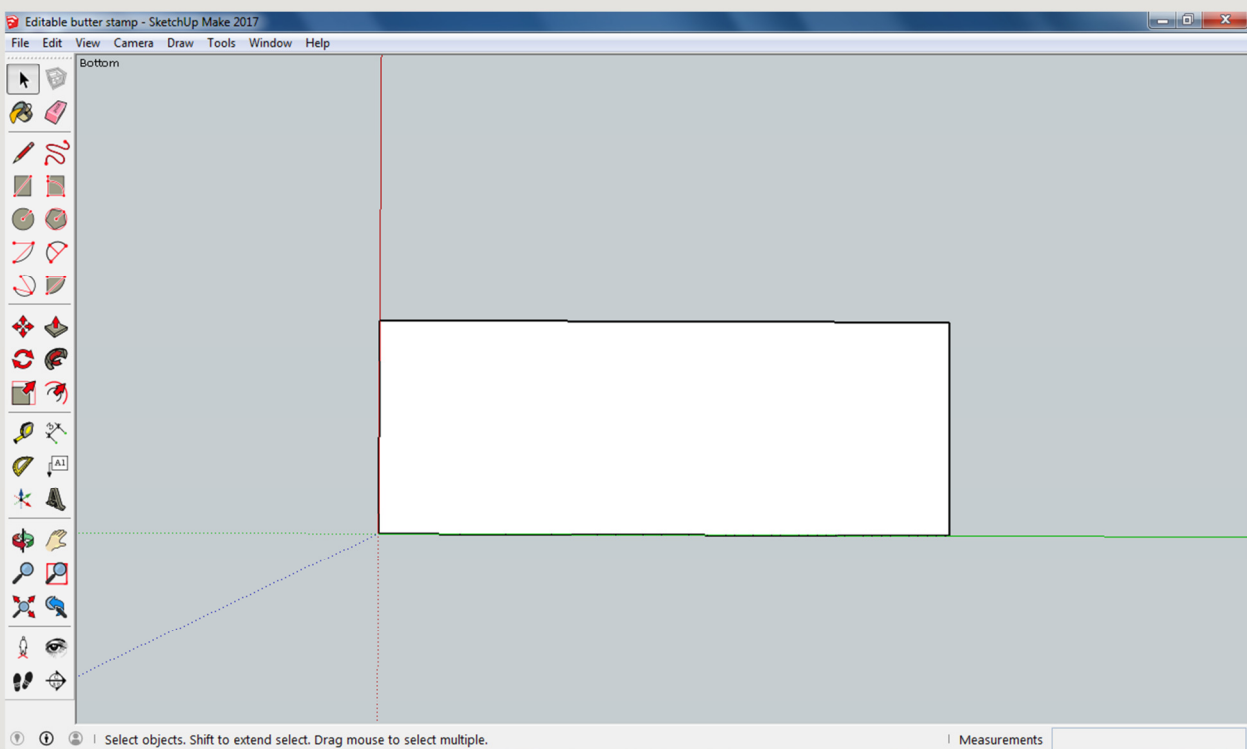



- b. In most cases, to draw something you need to click and then move your mouse. You do not need to hold the mouse button while you move it.
- c. To zoom in and out, you can use the scroll wheel on your mouse button. If you cannot do this, you can use the “zoom” button (  ). Click on the “zoom” button, click and hold the left mouse button where you want to zoom and move the mouse up and down.



- d. To rotate the camera, click and hold the middle mouse button (usually the scroll wheel) and then move the mouse. If you cannot do this, you can use the “orbit” button (  ). Click on the “orbit” button, click and hold the left mouse button where you want to rotate and move the mouse back and forth.
- e. To pan/move your viewpoint, click and hold the middle mouse button (usually the scroll wheel), hold “Shift” and then move your mouse. If you cannot do this, you can use the pan button (  ). Click on the “pan” button, click and hold the left mouse button where you want to start to pan the view and move your mouse back and forth.
- f. To select things, click on the “arrow” icon (  ) on the toolbar and then click on what you want to select.

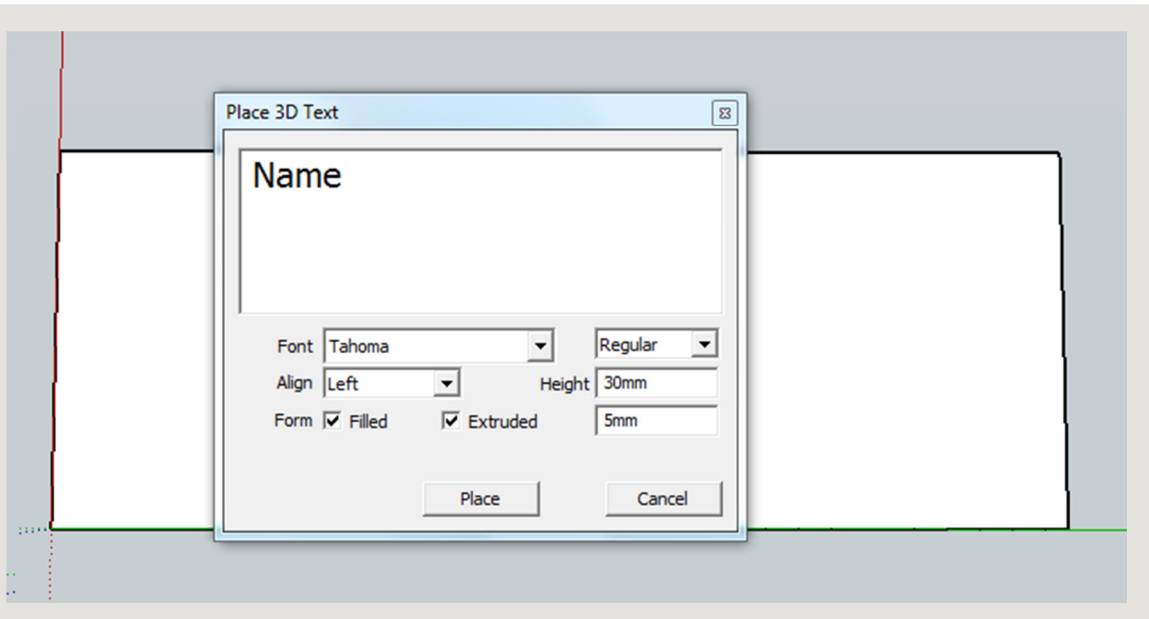
4. Rotate the camera so that you are looking at the bottom of the butter stamp.



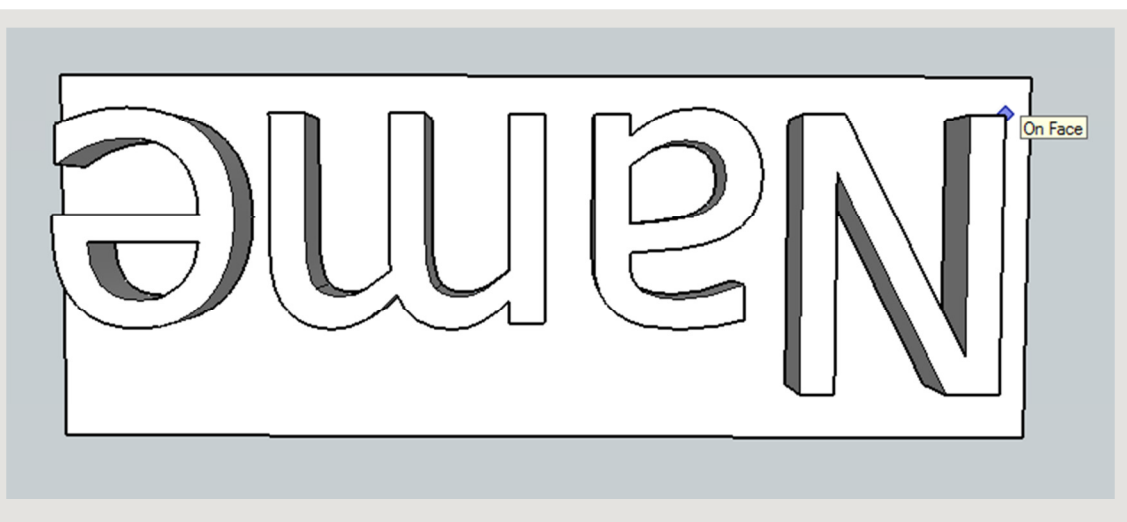
5. Click on the 3D text button (  ) that is found on the toolbar. Click on the bottom of the butter stamp and a new window should appear.



6. Type your name in the box. Set the height to 30 mm. Make sure that, in the “Form” row, both “Filled” and “Extruded” are checked. Set the extruded value to 5 mm.




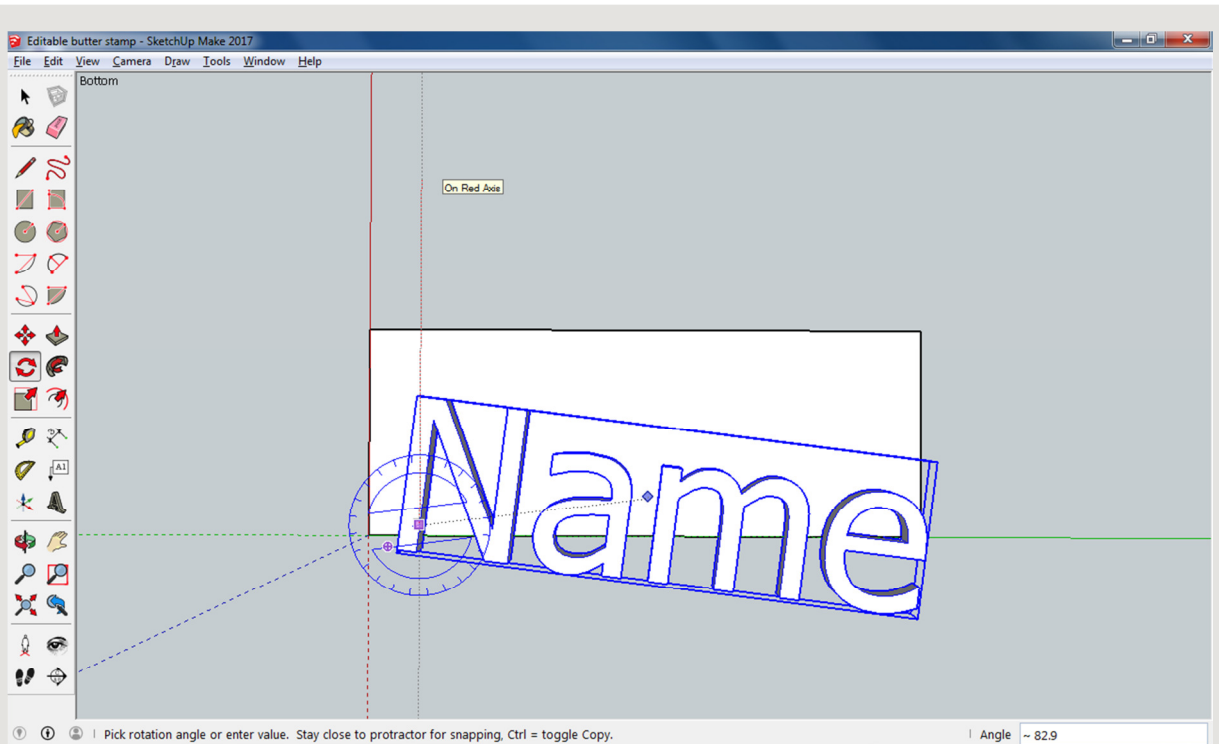
7. Press “Place”. Now you can move the text to where you want to place it. To place it just click the left mouse button. Before clicking, make sure that it says “On Face” near your cursor; this text will appear once you stop moving the cursor. Also don’t worry if the text isn’t oriented the way that you want it or is too big, we will be addressing this in the following steps.








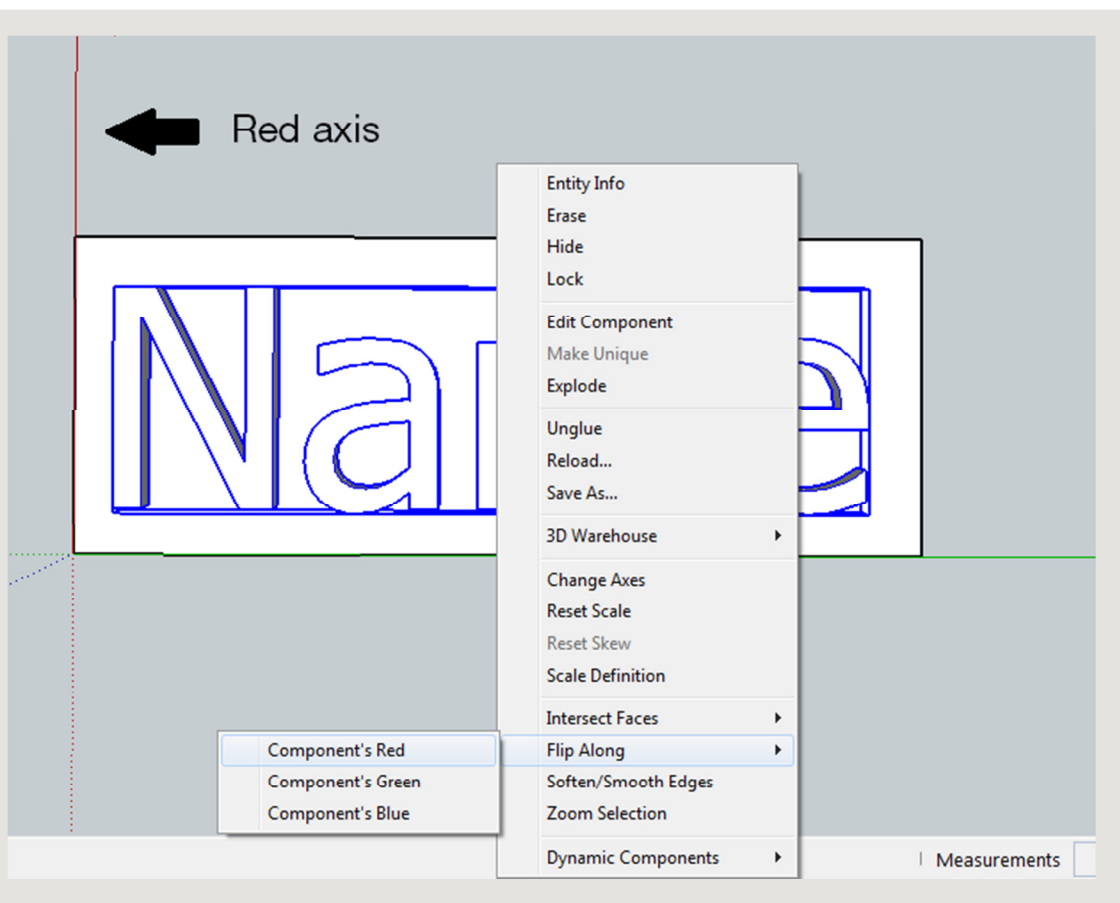
8. To rotate the text (if needed):

- a. Click on the rotate button (  ). A protractor-like image will now appear when you are in drawing area. Move the protractor over the text to the point that you want to rotate the text around. As you move over the text, you might see the protractor tool flip between being parallel to the top surface of the text and parallel to the side surface of the text. This is defining your plane of the rotation. Make sure that the protractor is parallel to the top surface of the text. Once you have chosen your rotation point, click on the mouse button (your name should now be outlined in blue).
- b. Now you will need to determine the length of the rotation arm. To do this, move the mouse back and forth to vary its length. A longer rotation arm means that you can rotate over smaller angles, though this is not that important for this activity. Once you have selected your arm length, click the left mouse button.
- c. Now you can rotate your text. Move the mouse back and forth to do this. Click the mouse button once when you are done. Note, don't worry if, after rotating the proper angle, the text is not on the butter stamp, we will be moving the text in the next step.



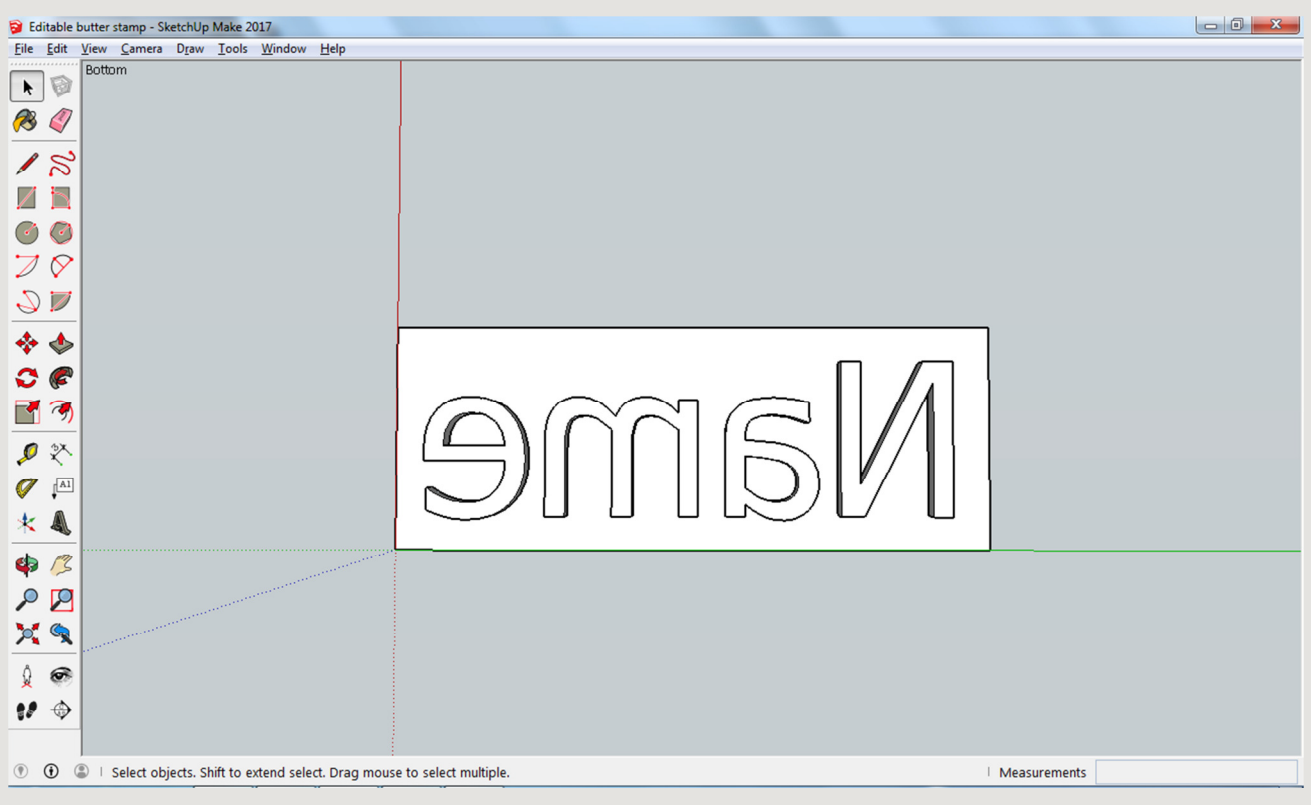


9. Move the text (if needed):
  - a. Click on the move tool (  ). Click on your name (it should now be outlined in blue). Now you can move the text anywhere you wish.
  - b. Once you have placed the text where you want it, click the mouse button to place the text.
10. Resize the text (if needed):
  - a. Click on the scale tool (  ). Click on your name (it should now be outlined in yellow with green boxes surrounding your name).
  - b. Click and hold one of the boxes and then move the mouse back and forth to resize your name. We recommend that you use one of the squares found in a corner. When you are done release the mouse button.
11. Flip the text. This is needed so that when the stamp is used, it will make an imprint of your name in the correct orientation. To do this:
  - a. If your name is not currently selected, select it using the “arrow” icon (  ).
  - b. Right click your name. This should bring up a menu.
  - c. Click on “Flip along”, which should bring up another menu. What you choose next will depend on the orientation of your name. You want to flip along the axis that is running vertically to your name. In the case below, you will be flipping along the red axis, so you would select “Component’s Red”.





12. Your personalised butter stamp is done! Print it off and then use it in the butter mould with butter or plasticine.



**TRY THIS!** Have your student add other elements to their butter stamp. For example, they can add squares and circles to create their own patterns and designs.

Ingenium – Canada’s Museums of Science and Innovation has more than 110 000 artifacts in its collection, including many ones related to butter stamps and moulds. You can explore other objects in the collection at: [ingeniumcanada.org/ingenium/collection-research/collection.php](http://ingeniumcanada.org/ingenium/collection-research/collection.php).