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| **3D PRINTING**<br>How to create a 3D Print on MakerBot printer | | |

| **NOTES:** |
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**Key Terms:**
- **Inventor**
- **STL**
- **MakerBot**

**Create your model:**
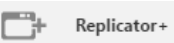- Produce a 3D model using CAD software
  - Inventor
- Go to the `File` icon in the upper left hand corner of inventor
  - Export
    - CAD-Format
      - In the "Save file type as" drop down choose STL file
      - Save to your H:Drive in IDEA FOLDER
        - Save
- Open the MakerBot software
  - Log in
    - Username: whsfablab1
    - Password: Warrior2019
  - Click on File
    - Insert File
    - Find the location of your STL file
      - Open

**Using MakerBot software:**
- Using the scale button
  - Check Uniform Scaling
  - If you need to change the size of your part this is where
  - Check the convertion of mm → inches (google)

- Rotate your object based on the best printing practice
  - Using the least amount of supports
    - Place Face on Build Plates
    - Find face you want to be the bottom (click)
    - Press the bottom button
- The other 3 buttons are View, Move and Scale
  - You may need to use these in the future to place your object on the printing bed

**Print Settings:**
- At the bottom of the screen    Add a Printer    +
  - Add an Unconnected Printer
  - Click on    Replicator+
  - Colapse printer menu
- Click on settings in MakerBot
  - Extruder Type: Smart Extruder +
  - Balanced
  - Support Type
    - Widgets - None
    - 3D Print Rotation – You may need supports

- ▪ Supports: Only needed if you have an object that has an overhang or something that is not supported by the printing bed
- Export Print File
  - o Bottom of the screen click **Export**
  - o Find your CLASSROOM FLASH DRIVE
  - o Name your file with your FirstLastObject
    - ▪ Customize for your project
  - o Save
- Click on the print preview button
  - o Play your annimation and make sure that your part is being built correctly
  - o Use the slider on the left side to see the layers
  - o Take a snipping tool of the preview for your website
  - o Check the Time Estimate

  Today 10:45 am  **Time Estimate** 31m
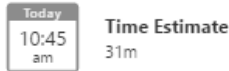
**Printing on MakerBot:**
- Changing the filament
  - o Scroll to the Filament icon
    - ▪ Unload filament if there is already loaded
      - Follow the screen prompts
    - ▪ Load filament
      - Make sure you have the filament wheel on in the right direction
      - Follow the screen prompts
- Take your flash drive/file on it down to the Innovation Center
  - o Insert your flash drive into the front of the printer
  - o Use the wheel to scroll to USB
    - ▪ Scroll to find your file
      - Press the wheel to select
      - Wait for the machine to heat
      - Stay with the printer until your raft is complete and the ojbect has started to print
- Prints can take minutes/hours/days to print depending on the size and complexity of the object