|  |  |
| --- | --- |
| **Day 1**  **Learning Activities:** **- Introduction to Class - Class Expectations - What is an Autodesk Account? Why is it Important? - Assign Seats** | **Day 2**  **Learning Activities:** **- Intro to the 3D Printer - Day 1 - Different types of 3D printers. - Parts of the Printer and how they work.** |
| **Day 3**  **Learning Activities:** **- Intro to 3D printer Day 2 - What can we make with a 3D printer? - What are the limitations of a FDM 3D Printer?** | **Day 4**  **Learning Activities:** **- 3D printer technology test - half period  - Test will cover parts of the printer, types of printers and how they differ, component terminology and reference the limitations of FDM printers.   - Students when finished will go on to 123D design and become comfortable with the software on their own. They should use the worksheet to write down 3 things they learned how to do on their own as well as 3 things they didn't understand or would like to learn to do.** |
| **Day 5**  **Learning Activities:** **- Introduction to 123D design and 3D CAD  - What is 3D CAD? What does C.A.D. stand for?  - Menus and tools and how to manipulate the basics of the sofware and workspace.** | **Day 6**  **Learning Activities:** **Introduction to 123D Design and 3D CAD Day 2  - Keychain tutorial day 1 - Worksheet  - Students will use a worksheet with direction for creating their keychain,  - This worksheet will give proper dimensions for the keychain as well as provide a space for the student to draw (on graph paper) a 2D version (from TOP perspective) of what their keychain will look like.** |
|  |  |
| **Day 7**  **Learning Activities:** **- Introduction to 123D Design and 3D CAD Day 3  - Students will use the last secition of the worksheet to critique their own design. They will be asked to tell what they feel will be successful in their design when moving into 3D and how they can change their design to best suit a 3D design.   - The new design will be drawn (Iteration) on the provided graph paper block on the worksheet two.  - This version will also have dimensions written as well as any special angles that need to be noted.** | **Day 8**  **Learning Activities:** **- Introduction to 123D Design and 3D CAD Day 4  - Students will begin drawing their design in 123D Design using the sketch tools.   - At this point there are no 3D elements in the design file.** |
| **Day 9**  **Learning Activities:** **- Introduction to 123D Design and 3D CAD Day 5  - Students will begin drawing their design in 123D Design using the sketch tools.   - At this point there are no 3D elements in the design file.** | **Day 10**  **Learning Activities:** **- Introduction to 123D Design and 3D CAD Day 6  - Students will begin drawing their design in 123D Design using the sketch tools.   - Students will begin extruding from their sketch. Special attention should be on skinny areas etc.** |
| **Day 11**  **Learning Activities:** **- Introduction to 123D Design and 3D CAD Day 7  - Students will begin drawing their design in 123D Design using the sketch tools.   - Students will begin extruding from their sketch. Special attention should be on skinny areas etc.   - Introduction to combine tools, fillet and champher.** | **Day 12**  **Learning Activities:** **- Introduction to 123D Design and 3D CAD Day 8  - Students will begin drawing their design in 123D Design using the sketch tools.   - Students will begin extruding from their sketch. Special attention should be on skinny areas etc.   - Introduction to combine tools, fillet and champher.** |
|  |  |
| **Day 13**  **Learning Activities:** **- Introduction to 123D Design and 3D CAD Day 9 (Final)  - Students will begin drawing their design in 123D Design using the sketch tools.   - Students will begin extruding from their sketch. Special attention should be on skinny areas.  - Introduction to combine tools, fillet and champher.  - Exporting as STL and submitting for printing.** | **Day 14**  **Learning Activities:** **- Custom Flower Pot/Vase Design - Day 1  - Introduction to Rails, Lofts, Revolves, Offsets and Holes.   - Students will use new tools to create a custom, one of a kind, flower vase.   - A real flower will be planted  - Students should keep in mind the limitations of the FDM Printers and possibly designing their flower pot to help aid the growth and upkeep of a planted flower.        - Example, extended watering, hanging etc.** |
| **Day 15**  **Learning Activities:** **- Custom Flower Pot/Vase Design - Day 2  - Introduction to Rails, Lofts, Revolves, Offsets and Holes.   - Students will use new tools to create a custom, one of a kind, flower vase.   - A real flower will be planted  - Students should keep in mind the limitations of the FDM Printers and possibly designing their flower pot to help aid the growth and upkeep of a planted flower.        - Example, extended watering, hanging etc.** | **Day 16**  **Learning Activities:** **- Custom Flower Pot/Vase Design - Day 3  - Introduction to Rails, Lofts, Revolves, Offsets and Holes.   - Students will use new tools to create a custom, one of a kind, flower vase.   - A real flower will be planted  - Students should keep in mind the limitations of the FDM Printers and possibly designing their flower pot to help aid the growth and upkeep of a planted flower.        - Example, extended watering, hanging etc.** |
| **Day 17**  **Learning Activities:** **- Custom Flower Pot/Vase Design - Day 4 (Final)  - Introduction to Rails, Lofts, Revolves, Offsets and Holes.   - Students will use new tools to create a custom, one of a kind, flower vase.   - A real flower will be planted  - Students should keep in mind the limitations of the FDM Printers and possibly designing their flower pot to help aid the growth and upkeep of a planted flower.        - Example, extended watering, hanging etc.** | **Day 18**  **Learning Activities:** **- 3D printed Logo Day. 1 - Using the provided worksheet, students will draw on graph paper, a design for a custom logo that they will eventually turn into a 3D printable design - Once the design is drawn and to scale, the students will begin sketching their design in 123D  - The design will be extruded and edited for artistic quality. The logo should have multiple levels in the Z direction to add depth.** |
|  |  |
| **Day 19**  **Learning Activities:** **- 3D printed Logo Day. 2 - Using the provided worksheet, students will draw on graph paper, a design for a custom logo that they will eventually turn into a 3D printable design - Once the design is drawn and to scale, the students will begin sketching their design in 123D  - The design will be extruded and edited for artistic quality. The logo should have multiple levels in the Z direction to add depth** | **Day 20**  **Learning Activities:** **- 3D printed Logo Day. 3 - Using the provided worksheet, students will draw on graph paper, a design for a custom logo that they will eventually turn into a 3D printable design - Once the design is drawn and to scale, the students will begin sketching their design in 123D  - The design will be extruded and edited for artistic quality. The logo should have multiple levels in the Z direction to add depth** |
| **Day 21**  **Learning Activities:** **- 3D printed Logo Day. 4 - Using the provided worksheet, students will draw on graph paper, a design for a custom logo that they will eventually turn into a 3D printable design - Once the design is drawn and to scale, the students will begin sketching their design in 123D  - The design will be extruded and edited for artistic quality. The logo should have multiple levels in the Z direction to add depth** | **Day 22**  **Learning Activities:** **- 3D printed Logo Day. 5 - Using the provided worksheet, students will draw on graph paper, a design for a custom logo that they will eventually turn into a 3D printable design - Once the design is drawn and to scale, the students will begin sketching their design in 123D  - The design will be extruded and edited for artistic quality. The logo should have multiple levels in the Z direction to add depth** |
| **Day 23**  **Learning Activities:** **- 3D printed Logo Day. 6 (Final) - Using the provided worksheet, students will draw on graph paper, a design for a custom logo that they will eventually turn into a 3D printable design - Once the design is drawn and to scale, the students will begin sketching their design in 123D  - The design will be extruded and edited for artistic quality. The logo should have multiple levels in the Z direction to add depth** | **Day 24**  **Learning Activities:** **3D Scanning and You Day 1**  **What is 3D Scanning?**  **How Accessible is 3D Scanning?**  **What types of 3D Scanners are there?** |
|  |  |
| **Day 25**  **Learning Activities:** **3D Scanning and You Day 2**  **What is 3D scanning?**  **How accessible is 3D scanning?**  **What types of 3D Scanners are there?** | **Day 26**  **Learning Activities:** **3D Scanning and You Day 3**  **What is 3D scanning?**  **How accessible is 3D scanning?**  **What types of 3D Scanners are there?** |
| **Day 27**  **Learning Activities:** **3D Scanning and You Day 4**  **What is 3D scanning?**  **How accessible is 3D scanning?**  **What types of 3D Scanners are there?** | **Day 28**  **Learning Activities:** **3D Scanning and You Day 5**  **What is 3D scanning?**  **How accessible is 3D scanning?**  **What types of 3D Scanners are there?** |
| **Day 29**  **Learning Activities:** **3D Scanning and You Day 6**  **What is 3D scanning?**  **How accessible is 3D scanning?**  **What types of 3D Scanners are there?**  **VIP Students Head Scan and Print…** | **Day 30**  **Learning Activities:** **Assessment Day** |