

3D PRINTING

SAINTS GLOBAL MEMBER

NAME: _____ BATTALION: _____ TROOP: _____

SKILL BADGE ADVISOR

NAME: _____ EMAIL: _____ PHONE: _____

STEP 1 | DISCOVER

INITIALS

- a) Explain why safety matters in 3D printing, including tool safety, digital safety, and precautions when using heated or hazardous materials. _____
- b) Explain different types of models (architectural, mechanical, process, industrial) and how 3D printing supports each. _____

STEP 2 | PLAN

INITIALS

- a) Design an original 3D-printable model (not from a kit) using CAD software, scaled appropriately for its purpose. _____
 - a.1) Explain why you chose this subject _____
 - a.2) Prepare a scaled digital design _____
 - a.3) List materials and printer settings needed _____
 - a.4) Identify tools and software used _____
- b) Explain how CAD, slicing software, and the printer work together from design to finished object. _____

STEP 3 | ACT

INITIALS

- a) Print the designed model and demonstrate proper printer setup, operation, and shutdown under supervision.
 - a.1) Prepare the build plate correctly
 - a.2) Load filament or resin safely
 - a.3) Start and monitor the print
 - a.4) Shut down and clean the printer properly

- b) Evaluate the printed model for accuracy, strength, and fit, then revise the design or settings and reprint if needed.
 - b.1) Identify at least one flaw or improvement
 - b.2) Explain the cause of the issue
 - b.3) Adjust the design or slicing settings
 - b.4) Explain the result of the change

- c) Explain intellectual property considerations in 3D printing, including file licensing, remixing, and responsible sharing.

STEP 4 | REFLECT

INITIALS

- a) Explain what you learned about design thinking, iteration, and responsibility through this project, and identify one improvement you would make next time.

- b) Identify three careers related to 3D printing or digital fabrication and explain the training required for one.

Continue to next page for certification signature

END OF REQUIREMENTS

BY SIGNING BELOW, I CERTIFY TO THE BEST OF MY KNOWLEDGE THAT ALL REQUIREMENTS WERE MET AT OR ABOVE THE REQUIRED STANDARDS AS OUTLINED IN THE BADGE REQUIREMENTS CHECKLIST.

SKILL BADGE ADVISOR

DATE (YYYY-MM-DD)