

## EXPLORATION IDEA PROFILE: DESIGN AND FABRICATION – PAPER CUTTING

### EXPLORATION IDEA

2D Printing is an exciting tool for developing a design cycle as a representation of a real world object. The first step is to become efficient in the actual use of a 2D printer, to render an image on a flat sheet of paper. Once this is accomplished, go one step further and cut and fold your design to transform it into a 3D model. With an electronic cutting machine you can precisely cut designs that you have created online. This technique can be used to design and fabricate any three dimensional object including paper machines, popup books, and other 3D Maker Projects. The sky's the limit!

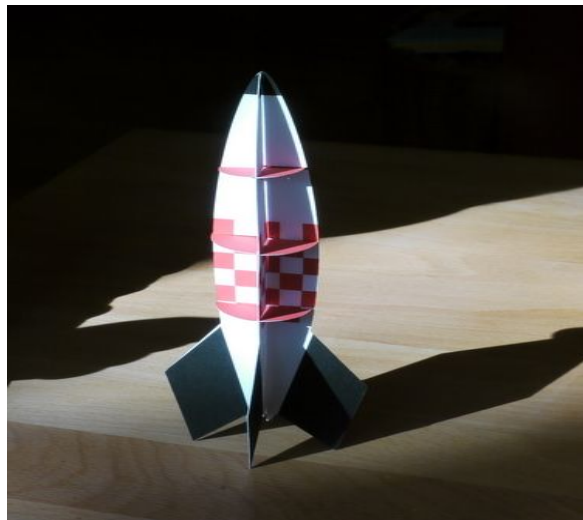
This tool will be helpful and less expensive to beginners learning to design 3D models. It is also fun for crafters.

### TARGET AUDIENCE(S)

K-16 STEM and arts classes, amateur and professional makers/inventors, engineers, scientists, entrepreneurs, and artists.

### POTENTIAL IMPACT

By doing multi-part model building and scaling, the user will develop problem solving skills. In addition to the 2D and 3D skill development, the user gains a more intimate knowledge and understanding of sounding rockets, spacecraft missions and other 3D Maker Projects.



### RELATED IDEAS/INNOVATIONS

- Creating other mission models
- Adapt a model to different scales
- 3D printing

### MATERIALS/EQUIPMENT

- 2D printer
- Free or Third Party Modeling Software
- Fab School Maker Studio
- Cardstock
- Exacto Knife
- Vinyl for printing

### PROJECT TEAM

- Team Lead: Eddie Gonzales, 301-286-3337, [edward.v.gonzales@nasa.gov](mailto:edward.v.gonzales@nasa.gov)
- Partners: University of North Texas
- Team Members: Lani Sasser

*Exploration Idea Profiles* are developed through a guided process involving a step-by-step guide/worksheet where participants are invited to consider additional topics that include:

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- Connections to other technologies
- Connections to existing information/research
- Connections to educational standards
- Connections to existing activities/projects
- Universal design
- Next steps

## ***HOW TO CONNECT***

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