



Science Experiment: 3D Printing and Design

Project: Crafts

Supplies:

- *3D Printing Pens*
- *3D Printing Pen Filament*
- *Cardboard or plastic sheets*
- *Recommended Pens: Intelligent 3D Pen, Amazing Pagreberya V3 3D Drawing Pen for Kids*

Time: 30 minutes

What to Do:

1. Allow youth time to discuss 3D objects and what they know about 3D Objects.
2. Give youth approximately 20-25 minutes to experiment with the 3D Printing Pens. They can complete their designs on the cardboard or plastic sheets. The designs easily peel off of most surfaces in a few seconds after hardening. (*Very little instruction is given by the instructor during this time. The goal is for participants to experiment with the pens and make discoveries on their own.*)
3. Give each child time to share with the group about what they created with the 3D Printing Pens.
4. **Variation on the Experiment:** If you do not have access to 3D Printing Pens, you can replicate this experiment by having children create 3D objects using a variety of materials.

Reflect:

1. What is the biggest difference between using a 3D Printing Pen and a regular pen?
2. Was it difficult to get the pen to work as you were creating your design?
3. What did this experiment teach you about using patience and perseverance?

Apply:

Have you learned about 3D objects and geometrical solids in school? *Name some geometrical solids that you know. Where do you see geometrical solids in your everyday life?* 3D Printers are being used to help move the world forward in a variety of ways. Did you know 3D Printers are currently being used to replicate organs for the human body and for prototyping in the auto industry? *In what ways do you think 3D Printers can be used in the future?*