



LESSON GUIDE

Animation

CREATE A ZOETROPE THAT SHOWS AN ANIMATION WHEN SPUN

In this challenge we want you to use PolyJet™ technology to 3D print in multiple materials and colors and create moving images.

RULES

- The entire structure must be composed of all 3D printed parts. No adhesives allowed.

GUIDING DESIGN QUESTIONS

- How can you create contrast for the images?
 - Brightness
 - Color
 - Depth
- How can these components be combined to create an interesting lighting effect?
- What are the structural parameters needed to create a good animation in this device?
 - How many different images? What is the maximum difference between images that will be interpreted by the eye as motion?
 - Placement and size of slits
 - Axle design / rotation mechanism

TIPS FOR DESIGN FOR POLYJET PARTS

- Use cyan, magenta and yellow, or a combination with black and white to create different color combinations. Use VeroBlack or a mixture of colors as a dark background. Use VeroClear to create transparent areas.
- To be completely opaque, a part must be more than about 4 mm thick.
- Create areas with intermediate colors and transparencies using Digital Materials. Digital materials are mixtures of the base resins at different ratios and they span the spectrum of properties between the base resins.
- To create an “image” that can be assigned different colors at different areas you need to divide the complete image into parts in the CAD software. Then you need to export each part as a separate STL file and then insert all the parts together as an assembly into Objet Studio. This will create an assembly on the virtual tray (the complete structure) in which a material (base resin or digital material) can be assigned separately to each part.

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