

Celebrate Science Indiana Presentation

Discipline STEM (Engineering)

Grade level Elementary and Intermediate/Middle School

Goal(s) of the activity Learners will be introduced to concepts related to the engineering design process and forces affecting airplanes in flight via the construction of 1 or 2 paper airplanes as time allows

Materials

Required

2-4 pieces of paper to construct the paper airplanes. Basic copier/printer paper will work great, but learners can experiment with other types and weights of paper after the activity.

Optional

Tape measure and Stopwatch/Timer (to record how far their plane travels and for how long it stays airborne)

Scotch or masking tape (to help keep parts of their plane together, other types of paper to experiment with.

Simple procedure (may want to include especially if recorded presentation)

Learners will watch a recorded presentation that will briefly introduce the engineering design process. The recorded presentation will then walk them through how to fold a paper airplane that “boomerangs” back to the thrower. At the end there will be a brief explanation of the forces impacting the flight of their airplane and how they can possibly change their design to help it fly better. Live time will be used to answer questions and assist with folding when possible. If time allows there will be a second video for a more traditional airplane designed for long distance throws.

Explain “How It Works” Folding of airplanes will be shown in video along with engineering and concepts of force on airplanes.

Extended Activities/Resources and Websites for Further Study Learners can try folding the same airplanes using different paper types and compare results by measuring distance and time in air. Alternatively, they can redesign the 2 planes shown to them, try to design their own, or find other designs on YouTube.

Safety Concerns Learners should make sure not to throw their airplane at other people or animals