



## Engineering Design Process (EDP) in Review

Composite Airplane Activity

Spotlight on Project Planning

Virtual Workshop via Zoom

March 27, 2021

### ***“Pre-Session” Tasks & Planning for teachers***

**Complete the following Pre-session tasks prior to workshop**

#### **Pre-Session tasks for teachers:**

- ✓ **REVIEW** the design activity (ASK; IMAGINE) in the EDP Notebook provided.
- ✓ **RESEARCH:** Define “composite” and be ready to discuss during the workshop.
- Look for three (3) examples of interesting things made of composite materials and be ready to share.
- ✓ **LOCATE** a Flight Testing Station location that can accommodate a flight path of 15 feet or at least 10 feet by 5 feet. It can be indoors or outdoors (weather permitting). If space is not available please email Davin Sasaki (sasakidy@hawaii.edu) and adjustments will be suggested (sasakidy@hawaii.edu). Please email by Thu, Mar 25.
- ✓ **PRACTICE** throwing the enclosed paper airplane provided 5 times and record the data on the enclosed Pre-Trial Data Sheet.
- ✓ Construct **three** (3) different composite sheets using combinations of **ONLY 2** each of the materials provided (ex: Aluminum foil and Newspaper; Newspaper and copy Paper; copy Paper and Aluminum foil). They must be bonded with the glue from the Glue Stick provided. The two materials that make up your composite **SHOULD NOT** come apart. Keep the three (3) composite materials that you make flat. DO NOT have any folds in them prior to the workshop. Label each one of your composites as “A”, “B”, and “C”.
- ✓ **REMINDER:** Set up Flight Testing Station before start of the workshop on Sat, March 27th. Refer to Test Station Diagram.

#### **Check your materials and supplies**

Your Design Challenge Kit 2-gallon bag contains:

1. Workshop Portfolio
  - a. Composite Airplane Activity Engineering Design Process Notebook
  - b. Profile of Two (2) Guest Speakers
  - c. Pre- Trial Data Sheet
2. Design Activity Materials
  - a. Open and examine contents provided.
    - i. 4 pcs. Aluminum Foil 8 ½” X 11”
    - ii. 4 pcs. Newspaper 8 ½” X 11”
    - iii. 4 pcs. Copy Paper 8 ½” X 11”
    - iv. 1 each Glue Stick
    - v. 1 folded paper airplane
    - vi. 1 each Copy paper for test of folding instructions DURING the workshop
    - vii. *Optional* – camera to capture and share photos (or camera on mobile device or phone)

- b. Examine and decide how you can **position your laptop-computer** so that workshop presenters can observe your “**Create Step.**”
- 3. Flight Testing Station Materials
  - a. Open and examine contents provided.
    - i. 15 feet of string with wooden sticks tied on ends (**wrapped on cardboard** with markings every 5 feet)
    - ii. 5 feet of string with wooden sticks tied on ends
    - iii. **PLEASE PROVIDE** an area 15 feet long by 5 feet wide (can be located indoors or outdoors)
  - b. Refer to the instructions on how to unroll the strings and set up the Flight Testing Station per Testing Station diagram. Instructions also includes how to measure and collect the data. (Red marks on both strings should be on each other and the strings should be at 90 degrees to each other when set up properly.)

Email Davin Sasaki at: [sasakidy@hawaii.edu](mailto:sasakidy@hawaii.edu) if you have any questions.

Electronic copies will also be provided.