

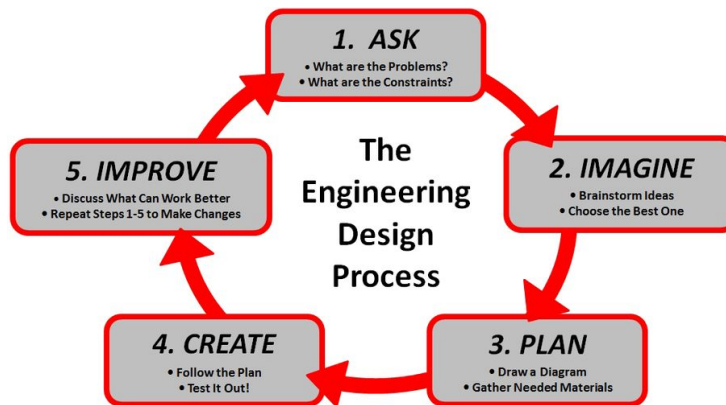
Maker Mindset! Week 6: Grades K-2

Day	Topics	Related Story
1	Investigating Flight	<i>Rosie Revere, Engineer</i> by Andrea Beaty
2	Bridge Building	<i>The Three Billy Goats Gruff</i> by Jerry Pinkney
3	Testing Buoyancy	<i>What Floats in a Moat</i> by Lynne Berry
4	Design a Great Escape	<i>Rapunzel</i> by Merideth Hairston
5	Build a Chair for Little Bear	<i>Goldilocks and the Three Bears</i> illustrated by Gavin Scott

Maker Mindset! Week 6

Day 1: Investigating Flight

Teacher/Parent Background:



Featured Story:

Rosie Revere, Engineer by Andrea Beaty

- Read Aloud Link: <https://www.youtube.com/watch?v=3sNVhNThxcc>

Key Terms:

- Engineering Design Process
- Challenge

Materials List:

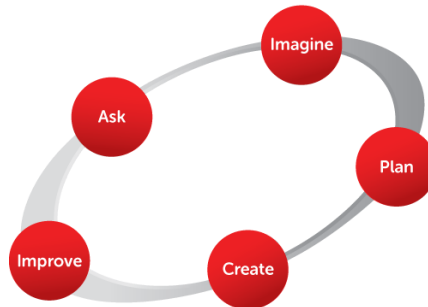
- Ruler
- Paper
- Straws
- Scissors
- Paperclips
- Tape
- Measuring tape
- Journal or Notebook

Activity Description:

- In this activity, students will read/listen to the story; *Rosie Revere, Engineer* by Andrea Beat and David Roberts. After the reading, students will create

their own plane out of paper using a variety of materials to test flight path, distance, and if adding weight makes a difference in design. Below are two links with two types of planes you can work with your student on.

- Paper airplane: <https://www.youtube.com/watch?v=l0a0p8ygfQM>
- Paper Glider: <https://www.youtube.com/watch?v=cdfWS-rRFY>
- Read/ Listen to the story; *Rosie Revere, Engineer*
 - *What do you think Rosie's process was to build her own flying machine?*
- Introduce the Engineering Design Process below
 - *Ask the student if they can see what parts of the story fit the Engineering Design Process*



- Now introduce the challenge: build your own paper airplane or flying contraption that will go the furthest. You will need to go through the Engineering Design Process to do so before testing your design.
 - Work with your student to get through the constraints of the challenge. Example questions below:
 - *What materials are available?*
 - *Is there a time constraint?*
 - *How many tries do you get?*
 - In a journal or notebook, have your student draw and imagine what their design could look like.
 - Move on to the planning phase. Make sure your student is checking with the constraints of the challenge as well as their brainstorming to make a plan.
 - Create. If you need a reference for yourself on different ideas for gliders or paper airplanes, see below:
 - Paper airplane: <https://www.youtube.com/watch?v=l0a0p8ygfQM>

- Paper Glider:
<https://www.youtube.com/watch?v=cdffWS-rFY>

- *Ask your student throughout the process why they chose one material over another?*
- *How far do you think your glider will go?*
- Before testing, fill out the the first three columns in the table below to make predictions:

Test #	What is the design made of?	How far do you think it will go (inches)	How far did it actually go?	What can you do differently to improve?

- Begin the first test.
 - *Use measuring tape in advance to measure the glider/ plane when it lands.*
- After the first test, be sure to have your student fill out the last two columns on the table. Next, let your student work on their design and continue documenting their results. They may want to add materials like paper clips or other materials to test and see if weight makes a difference in the distance covered.
 - *Once they have a final design that they are happy with and feel is most successful, have the student document it in their journal/ notebook.*

Closure:

- After completion of the tests and final build ask your student to reflect on the story and how what they did was similar
 - *Why do you think the Engineering Design Process is so important?*
 - *What do you think you would tell Rosie if she was in your class and was working on this project too?*
 - *What did you learn from building a flying contraption?*
 - *What would you do differently?*

Extension:

Make!

[Rosie Revere Paper Plate Hovercraft](#)