

lesson plan with vocabulary list and hands-on activity to teach how folding paper increases its strength for paper engineering

Objective: Students will practice paper engineering by creating a paper crane, while exploring how folding increases the strength of paper.

Materials:

- Paper (colored, blank, or with patterns)
- Scissors
- Glue
- Construction paper

Vocabulary:

- Paper engineering: Use of paper to create mechanical structures, designs, and artwork.
- Folding paper: Bending of paper to create form and structure.
- Paper strength: Ability of paper to withstand bending, tearing, or other forces.

Hands-On Activity:

STEP 1: Give a brief overview/ overview of paper engineering. Explain how folding paper can increase its strength and how this can be used for paper engineering.

STEP 2: Provide students with a sheet of paper and a pair of scissors to cut out and create a template for a paper crane. This template can include instructions, a drawn picture, or a pre-made template.

STEP 3: Once the template is complete, have the students fold the paper along each line of the template. Have them explain why they think folding would make the paper more durable.

STEP 4: Once the paper crane is folded, have the students glue the parts together and let it stand for a few minutes so it will hold its shape.

Step 5: Ask them to explain why they think folding paper increases its strength and how this can be applied to paper engineering.

Conclusion: Explain how folding increases the strength of paper and how it can be used in paper engineering, such as creating sculptures and artwork.

Evaluation: Ask the students to draw a picture of the paper crane and explain why folding paper increases its strength.