

Grade Levels: 1st grade

Time: Total time 40 minutes. 5 minutes for pre discussion, 15 minutes for building, 5 minutes to learn about a tape measure, 10 minutes for students to write down observations, 5 minutes for post discussion.

Brief Description of Lesson: Student's will be challenged with creating the tallest standing structure out of limited resources.

FIU-EOW offers ways to **differentiate** to provide opportunities for all students to access the curriculum or standards. These are being provided as **suggestions**.

SCIENCE	TECHNOLOGY	ENGINEERING	MATHEMATICS
Standard: Big Idea 13 SC.1.P.13. Forces and change in motion	Standard: ISTE: 1.4. Innovative Designer: Students use a variety of technologies within a design process to identify and solve problems by creating new, useful, or imaginative solutions.	Standard: 3-5-ETS1-3 Engineering Design Plan and carry out fair tests in which variables are controlled, and failure points are considered to identify aspects of a model or prototype that can be improved.	Standard: Standard 1 MA.1.M.1. Compare and measure the length of objects.
Activity: Students will observe how the paper moves and how to adapt to ensure their structures are standing. They will also understand the force gravity has while working with the paper and if the structure is not strong enough that force will not allow their structure to stand. Steps: - The mentor and volunteers will go over force (gravity) and play the video of the link below. - Discuss that everything is effected by this force so engineers need to take that into consideration when building along with any other forces such as: wind, material type, and weight. - Students will be given a few sheets of construction paper and tape and will be instructed to make the tallest structure out of only those materials, and it	Activity: Students will use measuring tapes in order to get the length of their paper buildings. After the students build before they measure their buildings play the video with the link below to discuss how to use a tape measure. https://www.youtube.com/watch?v=DqKIVmu6grM	Activity: Hook: A civil Engineer that just graduated college has been asked to build a skyscraper. The Civil engineer needs the students' help with coming up with ideas on how to make the building stable with all the forces acting upon it and that is two feet or 24 inches tall. Problem: The students were given the problem of building a skyscraper that can withstand forces such as gravity and wind. With the students' help engineers can decide how to build their skyscraper. Measurable Goal: Having a structure made of paper that is at least 2 ft or 24 inches tall that is freestanding for more than 2 minutes, 120 seconds, and can measured by a tape measure.	Activity: Students will be challenged to create a free-standing structure out of paper and tape. At the end of the challenge, they must measure their paper buildings to see how tall they are. And students must go around the classroom and collect the heights of their classmates' structures.

has to be standing when time is up - Students will record their observations and write what they learned Materials: - Craft paper - Tape - Measuring tapes https://www.pbs.org/video/gravity-m3swlv/			
Differentiation: Students will be able to ask mentors and volunteers for help if they are having trouble manipulating the paper. They can also look at the 'way to build a tall paper structure' for ideas. Visual Ideas of Paper Structures	Differentiation: The mentors and volunteers assist with using the tape measures and how to read them correctly.	Differentiation: Students will be allowed to see pictures of other paper structures to reference something for their own structures. Visual Ideas of Paper Structures	Differentiation: Students will have a worksheet to fill out that includes space for them to record the heights of their peers structures. Observation Worksheet 1 Observation Worksheet 2