Stem Action Plan

Marshall Primary School
Fall Fairy Tale Unit

In this unit TSW

- build Rapunzel's castle with an escape route

- build a bow and arrow for Robin hood and successful shoot a given target

- build a parachute for Jack to jump from the top of the top of the beanstalk and land safely on a given platform
Fairy Tale Unit

Second grade Standards:

ELA Standard 8: Analyze characters, settings, events, and ideas as they develop and interact within a particular context.

- The students will read and analyze different fairytales during this STEM/literacy unit.
- Examples of book covered: Rapunzel, Robin Hood, Goldilocks and the Three Bears, The Three Little Bears, Jack in the Beanstalk, etc.

Math Standards: Measurement and Data: 2.MD.1: Select and use appropriate tools to measure the length of an object.

- The students will measure different materials to solve the appropriate challenges/problems.
RaPUnzel'S CaStLe

- TSW use materials available to build a castle for Rapunzel, but the castle must include an escape route for her. It may be traditional like the book or movie, but the teacher will encourage them to come up with their own way for Rapunzel.

- Assessment: TSW be required to use the given STEM journal to record all information of project. They will write down all ideas, findings, materials used, and sketches. TTW assess the projects based on the process the student takes during the design/building and also on if the final project solves the given problem.
Robin hood’s Bow

- TSW create a bow and (nerf gun type) arrow in order to help him fight for the queen and steel from the king.
- TSW be paired up, given materials, and challenged to design and bow that will be accurate enough to knock over cardboard cut outs.
- Assessment: TSW be required to use the given STEM journal to record all information of project. They will write down all ideas, findings, materials used, and sketches. TTW assess the projects based on the process the student takes during the design/building and also on if the final project solves the given problem.
BUILD JACK’S PARACHUTE

- TSW build a parachute for Jack to jump off the top of the bean stalk in order to save him from the giant.
- TSW use materials in the classroom to build a parachute that will safely land Jack (army men) to the ground from a 6 ft drop. TTW drop Jack from a step ladder.
- Assessment: Assessment: TSW be required to use the given STEM journal to record all information of project. They will write down all ideas, findings, materials used, and sketches. TTW assess the projects based on the process the student takes during the design/building and also on if the final project solves the given problem.
RESOURCES NEEDED

TTW need:

- popsicle sticks, glue, plastic bags, string, masking tape, wood, fishing line, styrofoam, blocks, construction paper, coffee filters, scissors, saws, goggles, miter boxes, glue guns, protection gloves

TTW may also need other materials (such as recycled resources) to encourage students to be creative in their designs of their task.
SPRING ANIMAL UNIT

- build a bridge for 21 elephants to cross
- measure Penny (stuffed animal) the dog using non-standard units of measurement and then build a doghouse that will appropriately fit her.

ELA 2nd grade Standard: 3.1 Develop a plan of action for collecting relevant information from multiple sources through play, observation, texts, websites, and conversations with adults/peers.

3.2 Select the most important information, revise ideas, and record and communicate findings.

Math 2nd grade Standard: Measurement and Data: 2.MD.1: Select and use appropriate tools to measure the length of an object.

Science 2nd grade Standard: 2.L.5 The student will demonstrate an understanding of how the structures of animals help them survive and grow in their environments.
21 ElePhAntS and still standing

TTW Read aloud the story.

TSW use materials provided to build a bridge that can carry the weight of 21 elephants.

Assessment: TSW be required to use the given STEM journal to record all information of project. They will write down all ideas, findings, materials used, and sketches. TTW assess the projects based on the process the student takes during the design/building and also on if the final project solves the given problem.
MeAsurIng Penny

TTW begin by reading the Measuring Penny book.

TTW break the class up in groups and provide students with a small stuffed dog. The group will then measure the height and width of the dog using unifix cubes.

TSW then use available materials to build a doghouse that will accommodate their dog.
Resources needed

TSW need:

- Elephant counters, cups, straws, popsicle sticks, masking tape, graph paper, a variety of pieces of cardboard, unifix cubes, string, hammer, nails, safety goggles, and a glue gun/glue sticks.