****

**Findley Oaks STEM Challenge**

**2nd Grade Design Brief**

|  |  |
| --- | --- |
| **Challenge**  **Don’t Lose Your Peaches** | **Unit**  **Forces of Energy** |

**Standard:** Prioritized Standard: S2P2.c Obtain, evaluate, and communicate information to demonstrate changes in speed and direction using a force (a push or a pull). Record and analyze data to decide if a design solution works as intended to change the speed or direction of an object with a force (a push or a pull).

Students should follow the **Engineering Design Process.**

**Background/Problem:**

A shipment of Georgia Peaches (marbles) from the *producers* need to be delivered efficiently to the *consumers*. The engineers working on this project need your help designing a conveyer belt.

**Design Challenge:**

Your challenge is to create/design a free-standing structure that has a track on which the peaches can travel.

* You will be awarded points for the **height of the structure at the point where the marble begins its ascent down the track.**
* Points will also be awarded for each **right angle turn in the track.**
* You will be allowed 5 marble runs.
* You will start each marble at the top of the track and let it go.
* You will receive points for each marble that successfully travels all the way down the track. Additional points will be awarded for marbles caught in a container at the end of the track. You will receive points for meeting the following criteria.
* **1 point – for each centimeter of height**
* **5 points – for each 90-degree angle turn in the track**
* **1 point – for each marble that successfully travels the entire length of the track, but dos not land or stay in a container at the end of the track.**
* **5 points – for each marble that travels the track and stays in a container at the end of the track**.

**Criteria:**

Your conveyer belt should:

* have a start and a stop point
* have at least 4 angles in it
* the peaches (marbles) must drop into a cup at the end
* travel without stopping.
* be at least 30 centimeters tall

**Constraints:**

* you will be allowed 5 marble rolls
* each marble must start at the start line
* if the structure breaks, make repairs or start again
* the structure must remain standing when completed
* you have 30 minutes to complete your build

**Materials:**

* 6 straws
* 10 Q-tips
* 6 index cards
* ½ stick modeling clay
* 12” inches of masking tape
* 1 small paper cup
* 1 marble
* 1 copy paper/shoe box lid (Any box lid that has sides can be used

**Tools:**

* rule
* paper/pencil for design planning
* scissors