

Entry Activity

Sticker on STEM Poll



Create a Play Dough Model of
Your Perception of Engineer



What is an Engineer? & The Engineering Design Process

R. E. McNair Discovery Learning Academy
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Professional Learning Facilitator: Kaija Spencer
Presentation provided by Hannah Maharaj





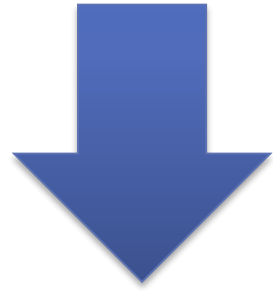
The S.T.E.M. Plan at R. E. McNair Discovery Learning Academy

- The 2014-2015 School Year
- At a Glance:
 - STEM Days Monthly
 - Student Questioning
 - Interactive Engineering Notebooks
 - Unit Roll-out

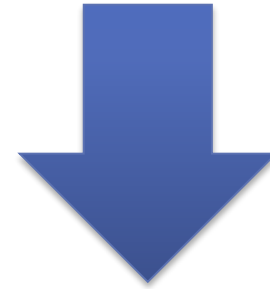


Technology

- In S.T.E.M. technology is defined in 2 ways:



Instructional
Technology



Almost anything
created to solve
a problem or
meet a need.

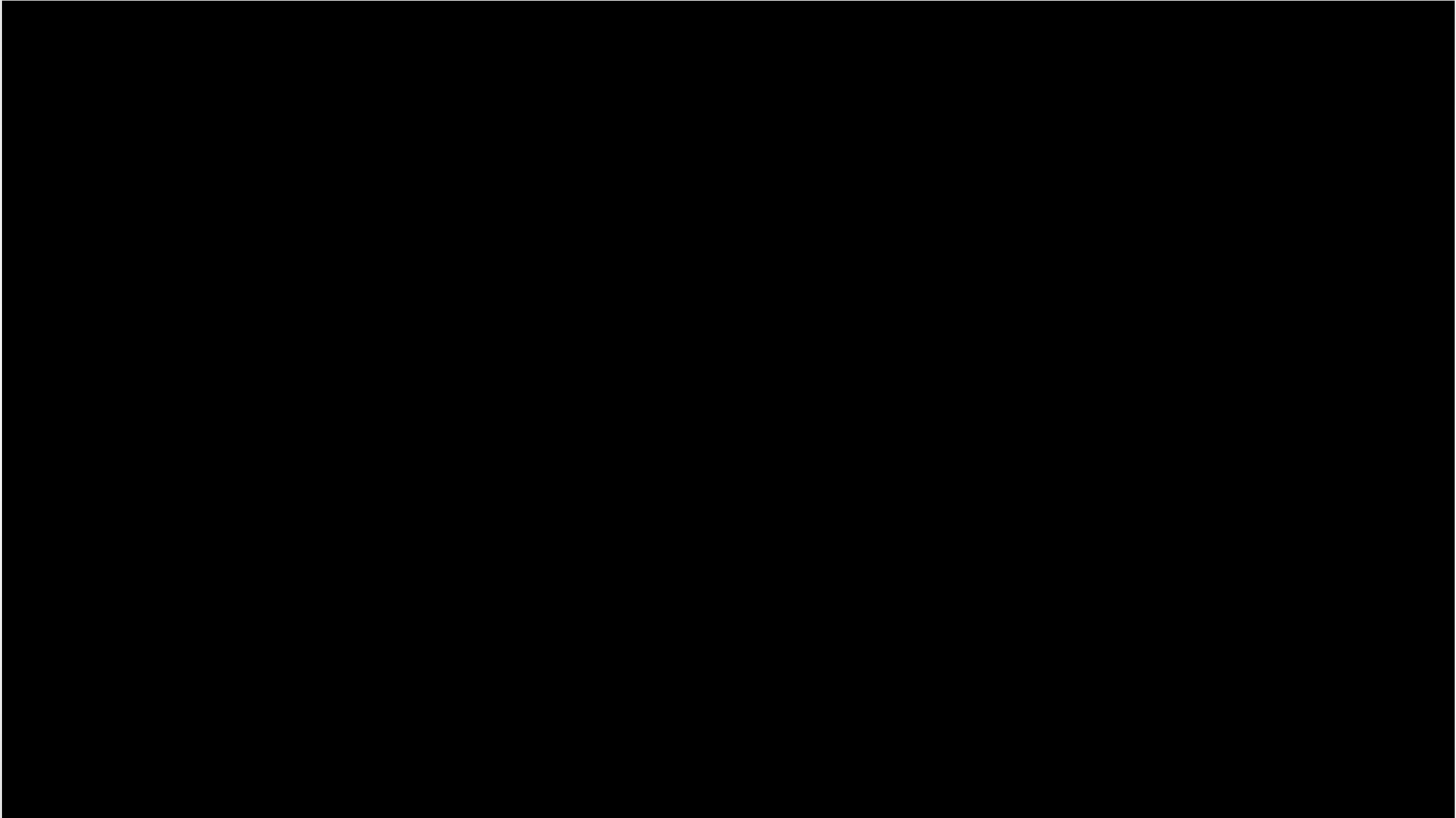
Engineering

- “An engineer is someone who uses his/her knowledge of science, math and creativity to design objects, systems or processes to solve problems.”
- With this definition in mind complete the worksheet- What is an Engineer?
- Engineers design technology to solve problems!

- From Engineering is Elementary

The Engineering Design Model





Sail Track Design Challenge

Background

It is fairly simple to explain how a sailboat sails when going downwind. (When the wind is behind you.) You simply let the sails out as far as they will go and the wind pushes on them and the boats hull follows along. It is important to remember that different materials capture the wind in a different manner; an example of this would be sailcloth versus a sail made out of cotton.

Challenge

You and your friends want to create a sailboat for a stream in your neighborhood. You have been given the sailboat but the sail for the boat was broken. So, your job is to design a sail for the sailboat. You will be given a variety of materials along with rulers (to be used for measuring only), scissors and tape to construct your sailboat. You will use a mock boat (made from a Styrofoam plate) and attached to a sail track to test your wind sail, this will be powered by a fan.

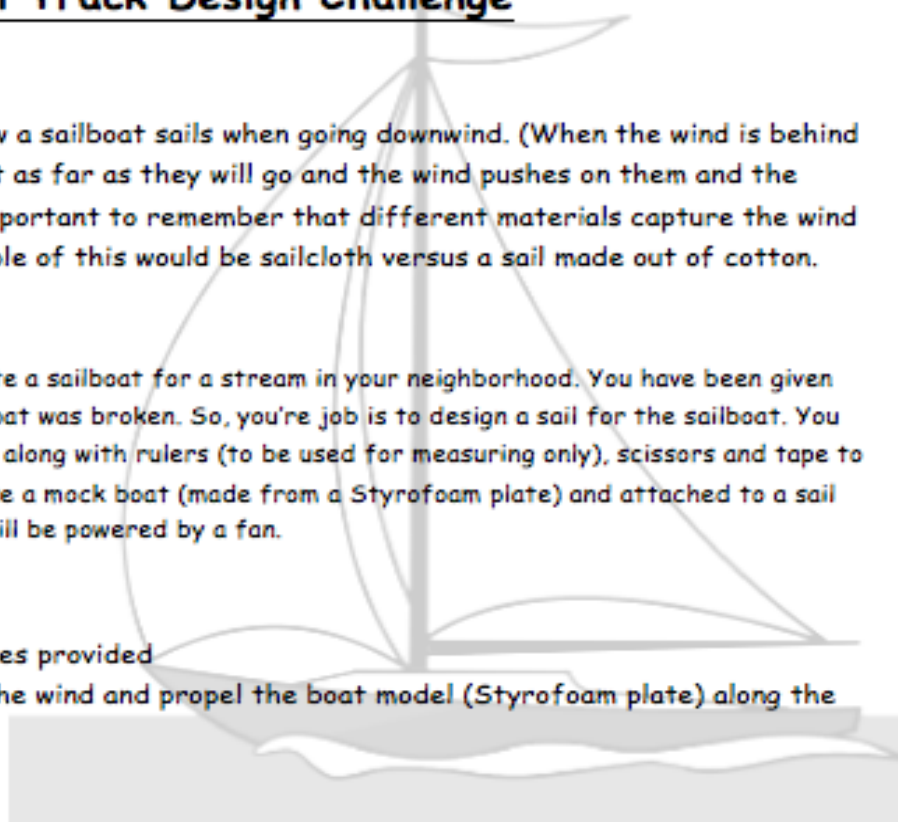
Constraints

- Limited to only the supplies provided
- The sail needs to catch the wind and propel the boat model (Styrofoam plate) along the track

Materials

You may only use the materials listed below. You do not need to use all of the materials

- Individual Group Supplies:
 - Wax Paper
 - Tape
 - Square portion of a plastic grocery bag
 - 2 Popsicle Sticks
 - Napkin
 - Paper Lunch Bag
 - 1 Straw
 - 3 Notecards



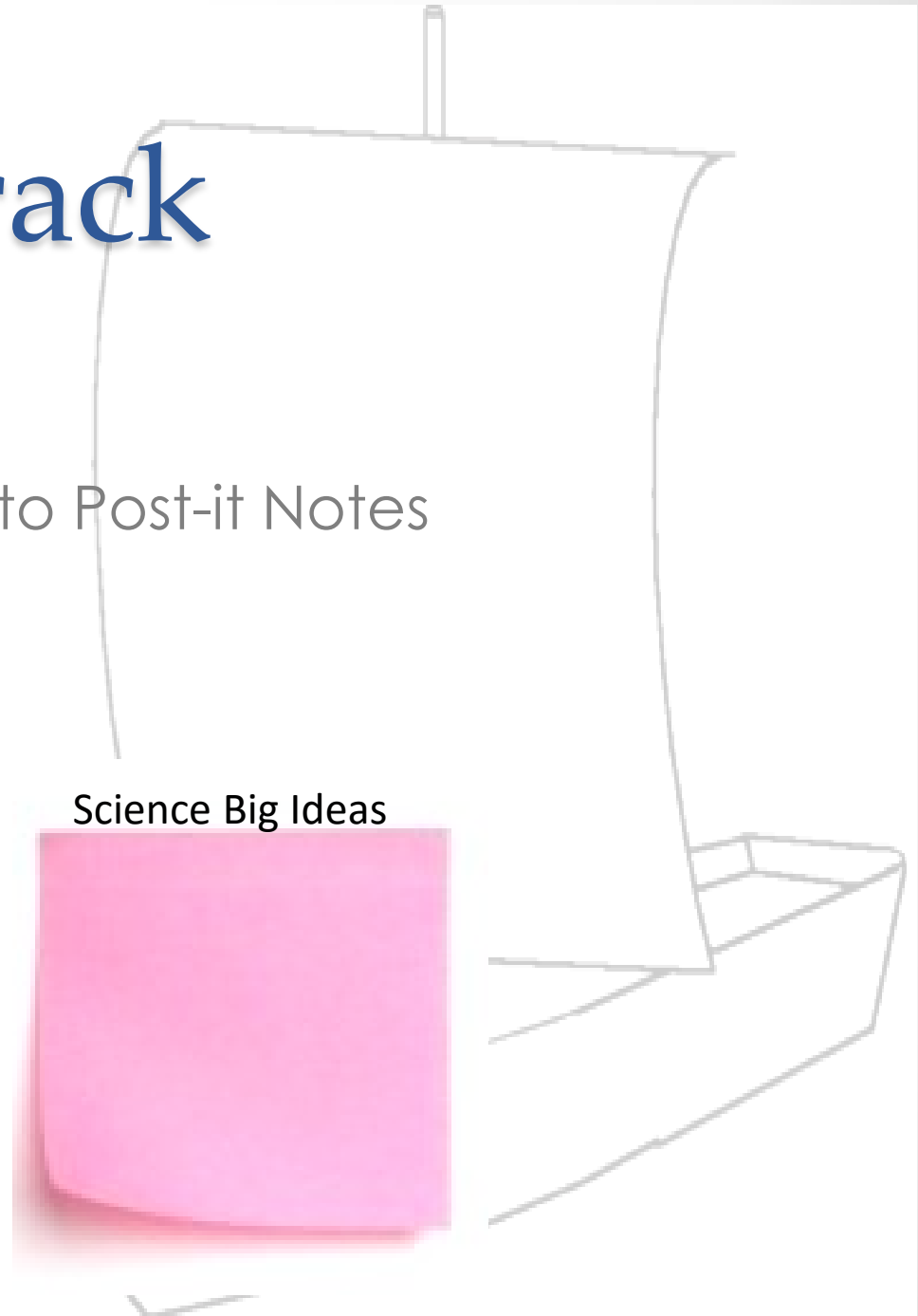
Sail Track

- Build with your team
- Correlate Instructional “Big Ideas” onto Post-it Notes

Math Big Ideas



Science Big Ideas



Design Model: Step-by-Step

Create an Interactive Notebook

- Ask
- Imagine
- Plan
- Create
- Improve





Thank You !!!!!

And Goodnight!!!

