

WORK LIKE AN ENGINEER

Planning and Implementing STREAM Challenges

St. Dominic Academy

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3 TIMES

From 2000 to 2010, STEM jobs grew at three times faster than non-STEM jobs.

2.4 MILLION

In 2018, it is projected that 2.4 million STEM jobs will go unfilled.

WHAT IS STEM?

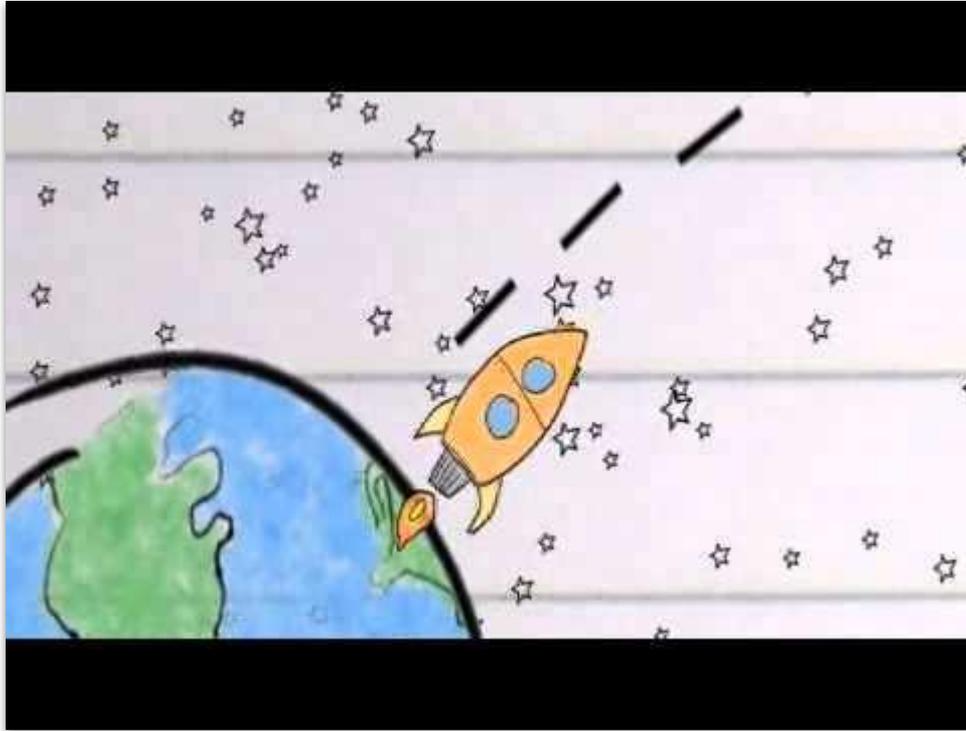
- Science
- Technology
- Engineering
- Math

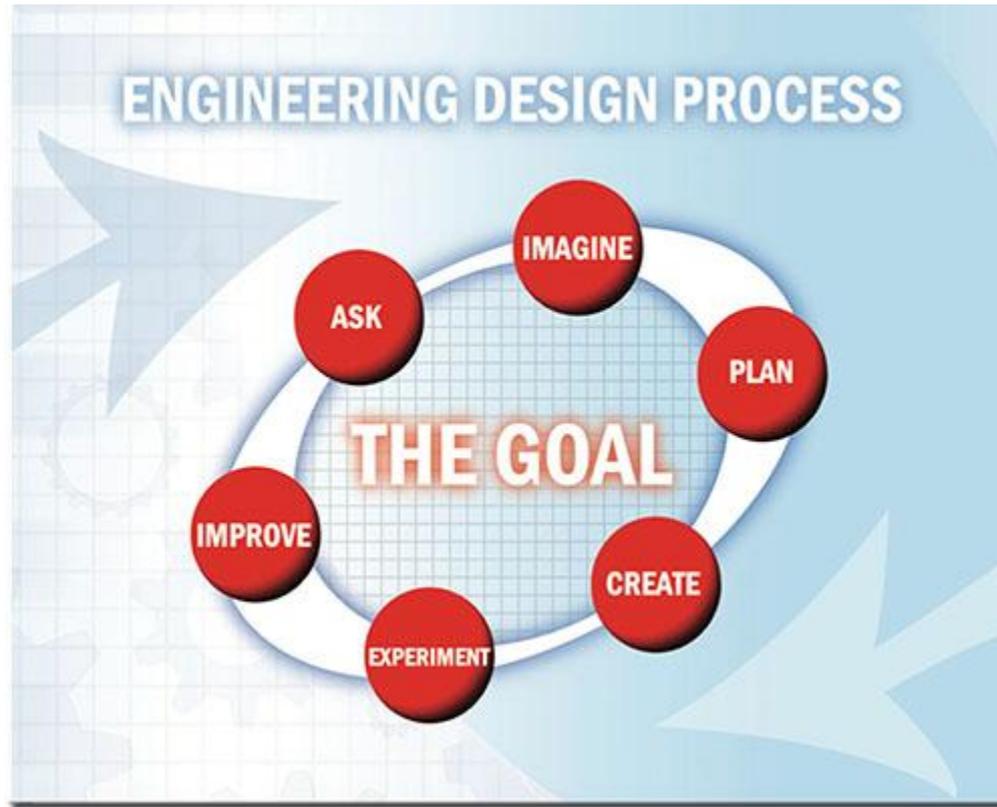
But it is more than the individual subjects. It is how they work together.

WAYS WE HAVE INCORPORATED STEM

- Science activities
- Open ended challenges with a variety of materials
- Have set units where students are given a situation/problem and try getting to a solution, sometimes in small groups, sometimes whole groups.
- A butterfly unit with real Monarch caterpillars.

ENGINEERING DESIGN PROCESS





ENGINEERING DESIGN PROCESS

- Students will need to identify the problem
- Students will figure out what requirements need to be met
- Students will find the constraints they need to consider for the project.

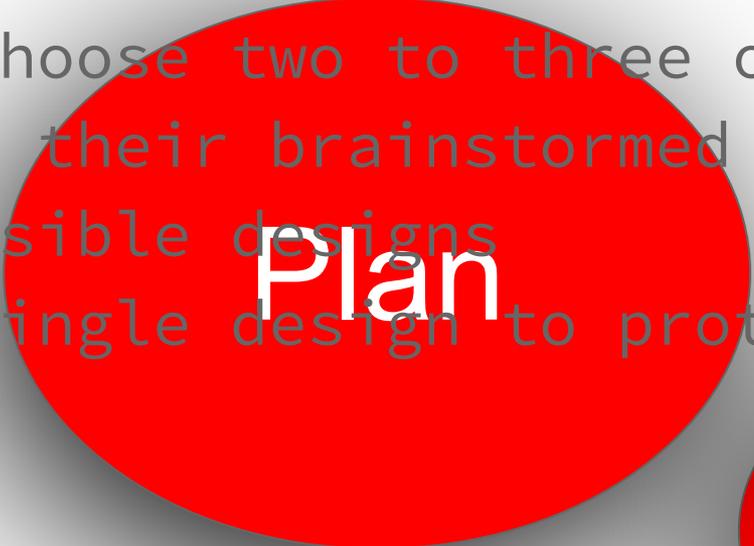
Ask

Ask

- Brainstorm solutions
- Research ideas
- Think about what others have done to solve similar problems

Imagine

Imagine



Plan

- Students choose two to three of the best ideas from their brainstormed list
- Sketch possible designs
- Choose a single design to prototype.



Plan

- Students build a working model, or prototype
- Needs to aligns with design requirements
- Needs to fit within design constraints.

Create

Create

- Students evaluate the solution through testing
- They will collect and analyze data
- They summarize strengths and weaknesses of their design that were revealed during testing.



Test



Test

- Based on the results of their tests, students make improvements on their design.
- They also identify changes they will make and justify their revisions.

Improve

Improve

DISCUSSIONS

5E LESSON PLANS

- Engage
- Explore
- Explain
- Elaborate/Extend
- Evaluate

THANK YOU