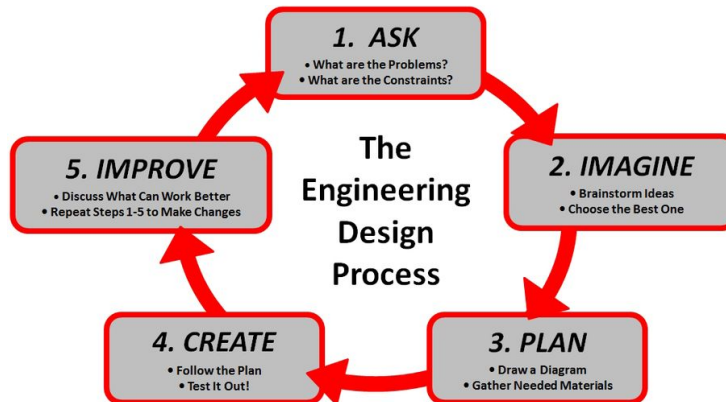


Maker Mindset! Week 6

Day 4: Design a Great Escape

Teacher/Parent Background:



Featured Story:

Rapunzel by Merideth Hairston

- Read Aloud Link: <https://www.youtube.com/watch?v=qsUgCkufZZo>

Key Terms:

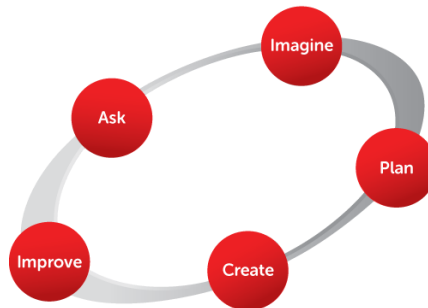
- Engineering Design Process
- Challenge

Materials List:

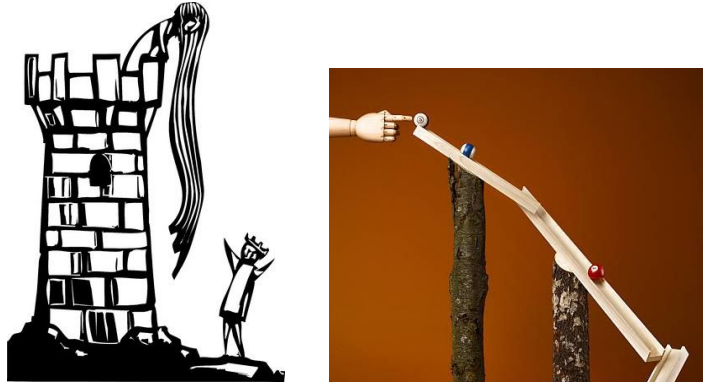
- Ruler
- Paper
- Straws
- Scissors
- Paperclips
- Marble or small ball
- Tape
- Measuring tape
- Journal or Notebook

Activity Description:

- In this activity, students will read/listen to the story; *Rapunzel* by Merideth Hairston. After the reading, students will create their own tower and an escape for a marble representing Rapunzel.
- Read/ Listen to the story; *Rapunzel*
- *Introduce the Great Escape Challenge*
 - *Students will design a tower for Rapunzel to live in. They will also need to design and build an escape for her pet marble. Feel free to color and draw your own Rapunzel, or other character to help escape, however you will be helping a marble or small ball escape for the second part of the challenge.*
- *Introduce the Engineering Design Process below*



- You will need to go through the Engineering Design Process to do so before testing your design.
 - Work with your student to get through the constraints of the challenge. Example questions below:
 - *What materials are available?*
 - *Is there a time constraint?*
 - *How many tries do you get?*
 - *What will the tower be built with?*
 - *How will your marble escape?*
 - In a journal or notebook, have your student draw and imagine what their design could look like.
 - Move on to the planning phase. Make sure your student is checking with the constraints of the challenge as well as their brainstorming to make a plan.
 - Create. If you need a reference for yourself on different ideas for towers see below:



- *Ask your student throughout the process why they chose one material over another?*
- *How easily will your marble be able to escape?*
- Test your design.
- After the first test, let your student work on their design and continue documenting their results. They may want to add materials like paper clips or other materials to test and see if it makes a difference in their design, and how fast the marble can get down.
 - *Once they have a final design that they are happy with and feel is most successful, have the student document it in their journal/ notebook.*

Closure:

- After completion of the tests and final build ask your student to reflect on the story and how what they did was similar
 - *Why do you think the Engineering Design Process is so important?*
 - *How fast did your marble go?*
 - *What could you add to try and get it to run slower?*
 - *What did you learn from building a tower and escaping?*
 - *What would you do differently?*

Extension:

Watch!

[Rube Goldberg Machine Music Video](#)