

Maker Mindset! Week 6

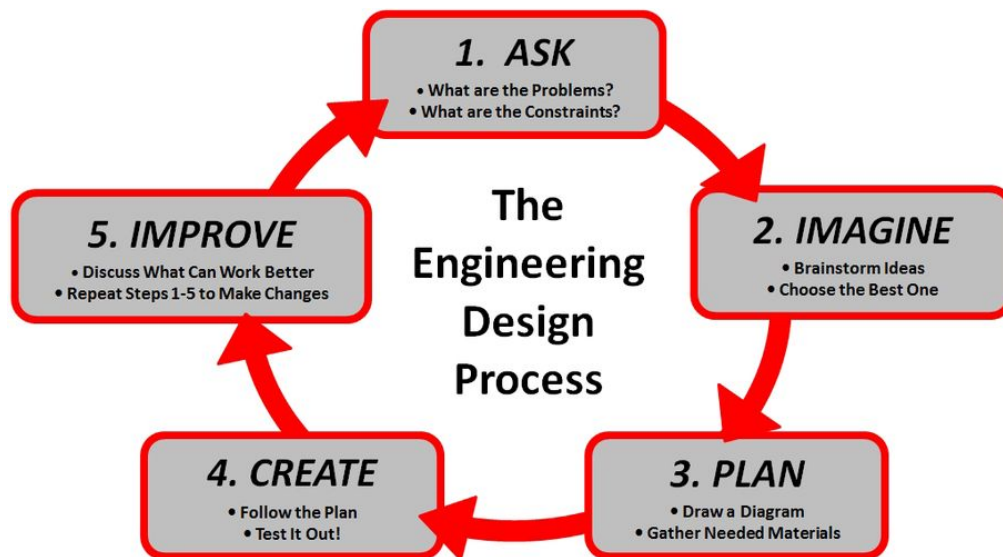
Day 5: Create and Improve!

Teacher/Parent Background:

Students will be using the information gathered in the previous days to create and design their own arcade or board game inspired by *Caine's Arcade*. Students will go through the Engineering Design Process to work through the planning, building, and improving of their design.

Related Information:

- Engineering Design Process:



Key Terms:

- Iteration
- Connection
- Adhere
- Engineering Design Process

Materials List:

- Cardboard
- Glue
- Scissors
- Paper
- Marble
- Journal/Notebook
- Markers, crayons, colored pencils
- Any other recycled or found objects around your home

Activity Description:

- Discuss with students their plan from the previous day.
 - *Have them describe the constraints (materials, time, etc.) that led them to their brainstorming and planning phases.*
 - *Ask the student what their plan is for the day and how they will construct their arcade/ board game.*
 - *Ask if Caine's Arcade has inspired any pieces to their design.*
- Allow for students to have uninterrupted creation time.
 - *Advise students to use their plan and brainstorm as they work*
- After some time working on their design, have the student test their design.
- In their notebook/journal record result of the test, as well as any improvements that need to be made.
 - *How can the student make their game include different levels of difficulty?*
- Improve: more creation until student gets the final design the way they want
 - *Remind the student this is their first prototype and it's ok if it's not perfect the first time, that is how learning occurs.*

Closure:

- Students: Test final design.
- Share your design with other family members. Reflect in your notebook about the final design. Write down some other possibilities now that you now know how to go through the Engineering Design Process and assemble your own arcade/board game.

Extension:

Research!

- Look into the National Cardboard Arcade challenge (<http://cainesarcade.com/cardboardchallenge/>)
- Reflect on the design, and see what improvements can be made to enter into the contest.

Share! (With Parent permission)

- Video or take a picture of your creation and share it with Arizona Science Center! Either email it to us at c11@azscience.org, or tag us through social media at #azsciencecenter #scienceathome #virtuallearning #TheArizonaWay #NeverStopWondering