Event 3 - Engineering Project: Enraged Fowls
Supplies Needed per Team:

1- Tube Roll

1- Clear 9oz Cup

3- Medium Wooden Spool (3/4 x 1 inch)

1- Beading Twine

1- Box of clay

5- Jumbo Paper Clips

10-Pipecleaners

2- 8x10 chipboard

3-Corks

1-Plastic Spoon

2-1" Foam ball

2-1.5" Foam Ball

5-Standard Paperclips

5-Straws

5- Craft Spoons

4- Pom-Poms

4- Small Foam Marshmallows

3- Large Foam Marshmallows

2-2oz portion cups

4-Wooden Dowels

4- Large Rubber Bands

10-Regular Popsicle sticks

10-Coffee Stirrers

Testing Materials- 6 Tube Rolls and flat wood rulers. Do not hand these materials to students since these will be used to test their Engineering Project.

Rovio, a small games developer was going broke. Funds were limited and the company only had enough money for one last ditch effort to create a successful game. Realizing that the gaming industry was in the process of changing after the release of the iPhone in 2007, Rovio focused on trying to create an app for the newest generation of mobile gaming. As developers submitted idea after idea, Rovio continued to deny them. Either they were too boring, too complicated, too easy, or too expensive to make.

Then, a Rovio developer named Jaakko Lisalo had an idea while playing video games at home. He dreamed of a flock of fat, round, legless birds with thick eyebrows running towards a castle with crazy expressions on their faces. He paused his game and started to draw them out. A week later he presented his idea to his bosses at work and it was an instant hit. Developers and management poured over notes from focus groups it had put together over the years in order to figure out what people wanted in a game and what they didn't. Using this information, they created a checklist of what the "perfect" mobile game would look like. It couldn't be too easy, but it also couldn't be too hard. Spending too much time learning how to play the game would also be a drawback, so game play needed to be intuitive. They also needed to create a strong brand name for the game. Naming it something simple like "Launch" or "Catapult" would do nothing to help the games success. As time passed, Rovio decided on "Angry Birds" - a simple but effective name that would catch a user's eye and help it stand out from the over 300,000 other apps.

After two years in development, Angry Birds was launched on the Apple App store in 2009 where it quickly became the most download game in history at the time. As of 2016, the app has been downloaded more than 3 billion times, has spawned 2 major movies, cartoons, stuffed animals, backpacks, toys, board games, and has become one of the most recognizable games ever.

Challenge:
For this engineering challenge, teams will play "Enraged Fowls." Students will need to create their own launching system and "birds" to fire into our AIL Bird Blast Tower. Teams will be scored depending on how many pieces of the tower are knocked down, and the effectiveness of their designs.

Project guidelines:

1) The objective of this project is to engineer a launcher that can fire 3 objects no larger than 3 ½ inches wide.
2) The Launcher must be mobile. Although it may have a fixed base, the launcher must be able to be moved from the team's working area to the testing area. The launcher can be as long or as short as each team wants.
3) Teams will need to build 3 birds that meet the following criteria:
   -Bird One will need to have a circumference of 1 ½ inches, at most.
   -Bird Two will need to have a circumference of 2 ½ inches, at most.
   -Bird Three will need to have a circumference of 3 ½ 1inches, at most.
4) When testing, teams will be <u>able to launch 4 times</u>. They will need to launch each bird they make, with the final launch consisting of the bird that they determined worked best.
5) Teams need to be advised that they have <u>60 seconds to launch</u> their birds at the Bird Blast Tower. Each piece that is knocked down will be worth 5 points, if all blocks are knocked down at the end of the 60 seconds a 10 point bonus will be added to their score.
6) Each team will receive one free trial to check if their birds and launcher will survive the testing phase. They may launch **one** bird at the blast tower during the building time. It is up to the team to discuss which bird they would like to test. Advise each team that they must allow enough time to test and go back to rebuild in case their project fails or needs adjustments. We usually cut off testing at 5 minutes left of the challenge building time.

*NOTE: Teams should keep in mind that a strong and well-built launcher will be imperative to the success of the project. Time management will also play a pivotal role in this challenge. Successful teams allow time for proper planning, building, and revision of the initial designs.

Scoring Guidelines:

Please refer to the electronic grading rubric for further guidelines.