**Year 9 Science, Technology, Engineering and Maths**

**Catapult Challenge**

**Aim**

In your group design a catapult using the Makers Empire 3D software. Your catapult will compete against other group’s catapults for distance.

**Design Criteria**

1. You must use a 100mm x 100mm grid in Makers Empire.
2. Your catapult design must consist of 2 separate pieces that will be connected to form the working catapult.
3. You must design and print the object that you will be fired from your catapult.
4. Your catapult must be self-powered. You cannot use bodily force to fire your catapult for example hit it with your hand.

**Student Expectations**

1. Each person spends 1-2 lessons designing their own catapult.
2. Each group member shares their catapult ideas regardless if they are complete or not.
3. As a group decide on on a final concept based on the best ideas.
4. The catapult has to be designed in two parts. Select two students in the group whose accounts will be used to design the two parts.

**Hints**

1. Consider using shapes from Basic Shapes, Advanced Shapes, Flat Shapes and Connectors.
2. How will your catapult be powered? For example rubber band.
3. Consider carefully the size, shape and weight of your projectile. It will influence the distance it travels.

**Reflection**

Once completed and tested you will be required to complete a reflection on your catapult.

* What worked well and what didn’t?
* How would you change your design if you could reprint it?

**Assessment**

Your catapult will be assessed in the following ways based on its ability to fire the object you created as far as possible.