 **Ready, Aim…Fire**

*Students will be expected to:*

* *Demonstrate preparedness for technological problem solving*
* *Document the design process*
* *Independently demonstrate appropriate application of skills learned*
* *Communicate ideas using technical drawing and sketching*

**Problem:**

Use the materials listed below to create a device that will launch the Q-tip across the room.

**Materials:**

* 1 popsicle stick
* 1 Q-tip
* Dental floss

Tools: Utility Knife

**Limitations:**

* Your device can only use the materials provided and you must use all the materials
* You cannot physically throw the Q-tip- you must have a device that will launch it or shoot it
* You must have at least 3 thumbnail sketches of ideas
* You must have at least 1 refined sketch of your best idea showing a top and side view of your device
* You must have a working drawing on graph paper taking scale into consideration

**Research:**

1. List and describe at least 5 devices used to launch or shoot objects over a distance with accuracy.

**Ideas:**

1. Include at least 3 different ideas as **Thumbnail Sketches**
2. Choose your best idea and create **a Refined Sketch** illustrating at least 2 different views of your device.
3. Create **a Scale drawing** of your design. Include measurements and labels.

**Evaluation:**

1. Did your device solve the problem? How far did your device launch the Q-tip? What was a positive feature of your design? What were some challenges with this design project?
2. How did you change or modify your design during the building process?
3. How could your design be improved or innovated?