Spaghetti Bridge Design Project Outline

Criteria:

**Span:** 1 ft, 12 inches or 30 cm – unsupported and free standing (not connected to anything else)

**Materials:** Spaghetti (unlimited), glue (white / stick), elastic bands to help build, water, scissors, paint / glue

**Max weight of bridge:** 3 lbs.

**Testing:** Bridge crusher – applied force in the center of the span using a hydraulic jack. Measure the amount of force that is needed to cause structural failure using a scale (kg or lbs).

**Other:**

**Groups** – student choice, 1-3 people

**Class time to plan / build** – 3-4 classes **(testing on May 16th)**

Assessment:

**Design Report including:**

* *Problem / challenge* – explain what designed and why
* *Criteria* – rules about function, content, etc.
* *Brainstorming –* parts to include / make & reasoning
* *Planning* – drawing / plans for bridge (before building), steps to build and materials, safety
* *Testing* (criteria, test used explained)
* *Test results* – bridge weight & force held before failure, prediction and actual results, explained
* *Evaluating / Improving* – reflection, final sketch / photo of bridge before and after testing

Groups:

1. Brendon, Aiden, Chris
2. Kaenen, Braden, Ryan
3. Ethan, Dylan, Chase
4. Brooklyn, Taylor, Paige
5. Rebecca, Sera, Abby
6. Amy, Hunter
7. Phoenix, Lily, Katie

\*Each group will be provided with one package of spaghetti on May 12th to begin building. Extra spaghetti may be provided from home as/if needed. Plans must be approved by teacher before building may start.