**Bridge Webquest – Scientific Research & Inquiry**

1. Open the ***Building Big Bridges* website**: <http://www.pbs.org/wgbh/buildingbig/bridge/index.html>
2. Click on **“Bridge Basics”** , and answer the following questions about the different types of bridges:
   1. **Beam bridges** are made when a \_\_\_\_\_\_\_\_\_\_\_\_ is supported by two or more \_\_\_\_\_\_\_\_\_. They are \_\_\_\_\_\_\_\_\_\_\_ if their pillars are far apart.
   2. **Truss bridges** use the \_\_\_\_\_\_\_\_\_\_\_ shape to make them strong. Arms that stretch out like diving boards are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
   3. **Arch bridges** can be really heavy because they are commonly made of \_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_ in a semi-circle shape.
   4. **Suspension bridges** have the largest \_\_\_\_\_\_\_\_\_\_\_\_\_ out of all bridge types – and are supported by **cables attached to two towers or pillars**.
3. Click on **“Bridge Challenge”** and visit locations 1-4, answering the question *‘****What kind of bridge to build and why?****’* for each:
   1. **Location 1 Bridge: drawbridge changed to cable stayed bridge**

**Reason(s) why:**

* 1. **Location 2 Bridge: beam with deep piers**

**Reason(s) why:**

* 1. **Location 3 Bridge: suspension with open truss**

**Reason(s) why:**

* 1. **Location 4 Bridge: arch made with steel**

**Reason(s) why:**

1. Go back to the ***Bridges homepage***, and **select 3 different types of bridge** from the list of famous bridges, and fill in the chart below with info about each bridge.

|  |  |  |  |
| --- | --- | --- | --- |
| **Bridge Name:** |  |  |  |
| **Type of Bridge:** |  |  |  |
| **Location:** |  |  |  |
| **Cost:** |  |  |  |
| **Materials:** |  |  |  |
| **Problems:**  **1.** |  |  |  |
| **2.** |  |  |  |
| **It’s famous because:**  **1.** |  |  |  |
| **2.** |  |  |  |
| **3.** |  |  |  |

|  |
| --- |
|  |

**Spaghetti Bridge Design Competition – PROJECT**

Together as a class, we need to decide on some criteria and assessment guidelines before planning, building, and testing our bridges.

**Criteria**

Span:

Materials allowed (amounts included):

Maximum weight of structure:

Testing:

Other:

**Assessment:**

Plans for bridge – completed, connect to knowledge from class, and explained:

Prediction – explained:

Strengths and weaknesses - explained:

Results of testing:

Reflection – explained: