

Build a Spaghetti Bridge Design Challenge

Names: _____

Date: _____



Problem Scenario: Alaska Department of Transportation intends to build new bridges in several locations in the next few years and they need your help to design bridges that are aesthetically interesting, safe and functional. The span of the bridges will vary by location.

Challenge:

Create a 18 inch prototype for a bridge.

Criteria:

- You may only use the materials provided (spaghetti and marshmallows).
- You must work in a team of **5**.
- You will have 20 minutes to design, build, and document your solution.
- The bridge must be free standing
- The bridge must span 18 inches

1. Brainstorm: Use the space below to brainstorm with your team the design of your bridge and to identify roles in the group.

Questions to consider:

- What role will each team member hold?
- What information do you need about bridges to complete this challenge?
- What kind of bridge will you design? Beam, Arch, Truss, Cable-Stayed or Suspension?

2. Design: *Based upon your team's brainstorm and the materials available, sketch your bridge design in the space below.*

3. Build: *Implement your design!*

4. Evaluate: *Did your team's design result in a standing bridge? What are some ways to improve your design and make your bridge stronger?*

5. Modify: *What modifications will/did you make?*

6. Share:

- 1. Share with your colleagues your bridge design. What other designs did you see you would like to incorporate in future bridge designs?*
- 2. Answer the reflection questions on the "Take Aways" sheet.*