

Name: _____

DUE Date: _____

Summative 1: Forces Acting on Structures

Overall Expectation: Identify forces that act on and within structures and mechanisms, and describe the effects of these forces on structures and mechanisms (5s17).

Your Goal: Demonstrate an understanding of the following topics:

- Forces
- Identify **internal forces** acting on a structure and describe their effects on the structure
 - Tension
 - Compression
 - Torsion or Torque
 - Shear
 - Identify **external forces** acting on a structure and describe their effects on the structure
 - Gravity
 - Symmetry
 - Load
 - Use appropriate science and technology vocabulary, including tension, gravity, symmetry, compression, torsion, shear, torque, system, load, etc.

Option 1: Forces Acting on Structures Mind Map

Mind maps are used to generate, visualize, structure, and classify ideas, and as an aid in study, organization, problem solving, decision making, and writing. A mind map is a diagram used to represent words, ideas, tasks, or other items linked to and arranged around a central key word or idea. Start your graphic organizer with the words “Forces Acting on Structures” in the middle. Use a pencil so you can make changes as you learn more information. Add to your graphic organizer with pictures and science vocabulary as you continue through the unit.

Option 2: Forces Acting on Structures Review

Using any of the following imaginative ideas, create a review of internal and external forces. Make sure to include pictures and science vocabulary. Some ideas to consider for your graphic organizer:

- | | | | | |
|---|---|--|------------------------------------|-------------------------------------|
| <input type="checkbox"/> advertisement | <input type="checkbox"/> cheer | <input type="checkbox"/> fable | <input type="checkbox"/> myth | <input type="checkbox"/> speech |
| <input type="checkbox"/> announcement | <input type="checkbox"/> comic strip | <input type="checkbox"/> haiku | <input type="checkbox"/> poem | <input type="checkbox"/> spell |
| <input type="checkbox"/> autobiography | <input type="checkbox"/> postcard or brochure | <input type="checkbox"/> interview | <input type="checkbox"/> rap | <input type="checkbox"/> story |
| <input type="checkbox"/> card or letter | <input type="checkbox"/> design a flag | <input type="checkbox"/> journal entry | <input type="checkbox"/> riddle | <input type="checkbox"/> storyboard |
| <input type="checkbox"/> cartoon | <input type="checkbox"/> diary | <input type="checkbox"/> menu | <input type="checkbox"/> song text | <input type="checkbox"/> _____ |

Assessment Criteria - Summative Evaluation

| | Level 4 | Level 3 | Level 2 | Level 1 |
|---|---|---|---|--|
| Identify forces that act on and within structures and mechanisms (internal and external forces) | Student demonstrates a high degree of understanding of different types of forces. | Student demonstrates considerable understanding of different types of forces. | Student demonstrates some understanding of different types of forces. | Student demonstrates limited understanding of different types of forces. |