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:

- advertisement
- announcement
- autobiography
- card or letter
- cartoon
- cheer
- comic strip
- design a flag
- diary
- fable
- game
- haiku
- interview
- journal entry
- menu
- myth
- poem
- rap
- riddle
- song text
- speech
- story
- storyboard

Assessment Criteria - Summative Evaluation

<table>
<thead>
<tr>
<th>Identify forces that act on and within structures and mechanisms (internal and external forces)</th>
<th>Level 4</th>
<th>Level 3</th>
<th>Level 2</th>
<th>Level 1</th>
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</thead>
<tbody>
<tr>
<td>Student demonstrates a high degree of understanding of different types of forces.</td>
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<td>Student demonstrates considerable understanding of different types of forces.</td>
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<td>Student demonstrates some understanding of different types of forces.</td>
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<tr>
<td>Student demonstrates limited understanding of different types of forces.</td>
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