**Lesson Plan**

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| **Topic:** *“I am Strong and Stable”—*A Lesson aboutStability and Structures  **Subject:** Science  **Grade:** 3  **Duration:** 75 minutes |
| **Learning Goal:**  Students will explore different structural shapes and investigate what characteristics will make a stable structure. Students will be asked to make a variety of structural shapes and poses using their own bodies. |
| **Overall Curriculum Expectations:**  Students will be able to:   * Investigate strong and stable structures to determine how their design and materials enable them to perform their load-bearing function. * Demonstrate an understanding of the concepts of *structure, strength,* and *stability* and the factors that affect them.   **Specific Curriculum Expectations:**  Students will be able to:   * Use appropriate science and technology vocabulary in oral and written communication. * Define a structure as a supporting framework, with a definite size, shape, and purpose, that holds a load. * Identify structures in the natural environment (*e.g. a tree, a bees’ nest/hive*) and in the built environment (*e.g. a totem pole, a fence, a pyramid, the CN Tower*) * Identify the strength of a structure as its ability to support a load. * Identify the stability of a structure as its ability to maintain balance and stay fixed in one spot. |
| **Learning/Teaching Resources:**   * Book: *“I am Strong and Stable: An Interactive Book about Structures”* * Video: Read-aloud of *“I am Strong and Stable: An Interactive Book about Structures”* * Handout: *Stability and Structures Pose- Handout and Ranking Sheet* * Handout: *Structures from Around the World* |
| **Lesson Sequence:**   * Ask the following question to the students: “Do different shaped structures have the same stability?” * Read the book, *“I am Strong and Stable: An Interactive Book about Structures”* to the student OR play the video of the read-aloud for *“I am Strong and Stable: An Interactive Book about Structures.”* * Explain to students that they will pretend to be structures as they act out the various poses shown in the book. * Have student volunteers create the different poses shown in the book. The teacher will apply a light force on the student while the student is in the pose. If the student moves or loses his/her balance, then the structure is viewed as “unstable.” If the student does not move, it is viewed as being “stable.” * As the student volunteers create the different poses, make sure to reinforce the vocabulary introduced in the story, such as: *triangles, bend, warp, wall, push, dome, round, flexible, compression, bridge, support, tension, strong, stable.* * Provide students with the handout, “*Stability and Structures Pose- Handout and Ranking Sheet.”* Students will work in partners or small groupsand create the different poses shown on the handout. The students will determine which pose is the most stable, and which was the least stable. This will be done by ranking the poses as the most stable (1) to the least stable (12). * As a large group discussion, students will share and discuss what the characteristics are of a stable and/or unstable structure and will answer the question introduced at the beginning of the lesson. |
| **Assessment & Evaluation:**   * This lesson will be conducted at the beginning of the structures unit. Anecdotal notes will be recorded based on whether the students could identify the characteristics of a stable structure during the large group discussion. |
| **Follow-Up Ideas/ Next Steps:**   * Final culminating project (to be conducted at end of the structures unit) * Students will complete a chart where they find pictures of the tallest structures (e.g. building, tower or skyscraper) from around the world or from a community of their choice. They will sketch or copy the picture into a chart provided (in Handout: “*Structures from Around the World”*). They will also include the country from where it is located, the year it was completed and what makes the structure stable. * Students will choose one of the structures from their chart and they will recreate the structure using playdough and one of the following: popsicle sticks, wood matchsticks or toothpicks. |

**Resources Used:**

<http://www.edu.gov.on.ca/eng/curriculum/elementary/scientec18currb.pdf>

<https://rover.edonline.sk.ca/system/guides/plankton_structures.pdf>



From: <https://rover.edonline.sk.ca/system/guides/plankton_structures.pdf>

**Structures from Around the World**

Find pictures of the tallest structures (towers or skyscrapers) from around the world and sketch or copy the picture into the chart below.



From: <https://rover.edonline.sk.ca/system/guides/plankton_structures.pdf>