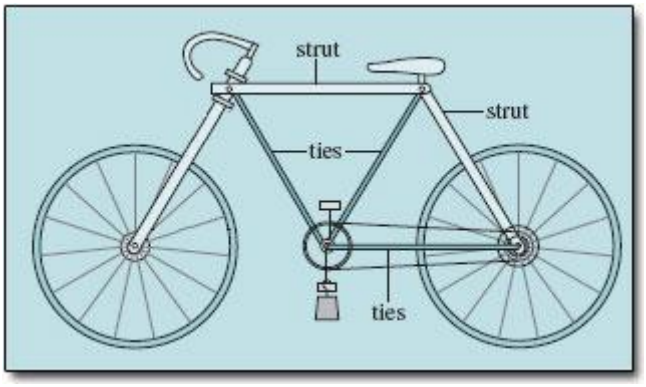
Name: _____ Date: _____

Increasing Strength

The purpose of a structure is to support a load. However, some loads are much heavier than others. For this reason, different structures have to be made in different ways. Some structures can be made from a simple shell, or a few beams and columns. Other structures need to use struts and ties to transfer and support the load.

Strut A beam or bar used to stop two parts of a structure from being pushed together.

Tie A beam or bar used to stop two parts of a structure from being pulled apart.



Your experiment today will involve using methods, such as struts and ties, to increase the strength of a structure.

Equipment:

- Straws
- Pins
- Variety of Objects

Procedure:

1. Use 8 straws and pins to make a basic cube structure. CAUTION: Take care when using the pins.
2. Place a light book on top of your structure.
3. Place items on top of the book, one at a time, until your structure fails.
4. Record all the items that were on the structure BEFORE it failed.
5. Build a second, identical structure.
6. Use an additional 8 straws to add strength to your structure. These straws can be used in any way you wish, you may bend them, cut them, or leave them as is.
7. Repeat steps 3 and 4.

Observations:

Structure	Items Supported
Initial	
Reinforced	

Notes:

_____

_____

_____

Discussion:

Was your re-build a success? Explain why or why not.

_____

_____

_____

Based on your results, what have you learned about strength?

_____

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