

## Analyze Building Materials

Design an experiment to determine and apply tensile strength, elasticity, and compression strength of building materials and report results.

### Detailed Description

In groups of four, students design experiments to test various building materials for tensile strength, elasticity, and compression strength and report results in quantitative terms of their choice. Each student writes a report which includes:

1. Statement of hypothesis.
2. Experimental design.
3. Laboratory procedures.
4. All calculations and a drawing.
5. Graph or table of the results.
6. Explanation of where and why he/she would use various building materials (bridges, a crane, buildings, etc.).

**Students graded on:** written report, drawing

**Time to complete:** 2 weeks

### Specific Grading Criteria

- All scientific terms correctly spelled and applied.
- Clear and proper use of scientific method and experimental design.
- Measurements and calculations accurately and properly made and explained.
- Results properly, clearly, and fully applied to drawing.
- Explanation of application of building materials logical and clear.

### General Grading Criteria

- Followed directions (on time, as assigned).
- Correct mechanics (spelling, punctuation, capitalization).
- Sentences and word choice correct.
- Sentences complete.
- Organized (logical and clear) and easy to follow.
- Complete (included all details).
- Work neatly done.
- Artwork effectively done.
- Used care in producing products.

### Productivity Skills

- Stays focused on completing responsibilities.
- Uses critical thinking strategies.
- Interacts effectively as a member of a group.

### Main Standard Assessed

Eighth Grade Science

Standard 2: Be able to apply science knowledge and skills to a variety of purposes.

Performance Indicators

- A. Be able to solve problems using the scientific method.
- B. Be able to conduct research.
- C. Be able to use scientific equipment appropriately.
- E. Possess technical skills: read/write/present reports (progress, research, lab).

### Other Standard Assessed

Eighth Grade Science

Standard 1: Develop abilities in science.

Performance Indicators

- A. Higher thinking (analyze, evaluate, solve, decide, relate).

**Difficulty:** 1

**District Code:** \_\_\_\_\_

**Difficulty:** .5

**District Code:** \_\_\_\_\_

