

## Thunder & Lightning WebQuest

**WebQuest Description:** Welcome to the Thunder & Lightning WebQuest. While visiting this site you will be exploring Thunder and lightning, the various types of lightning, and what you should do when lightning and thunder are near.

**Grade Level:** 9-12

**Curriculum:** Science

**Keywords:** In-Cloud Lightning, Cloud-to-Ground Lightning, Sheet Lightning, Straight-line Winds, Ribbon Lightning, Bead Lightning

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**WebQuest URL:** <http://zunal.com/webquest.php?w=159225>

### Introduction

Introduction: Thunder and lightning is both a beauty and hazard of nature. As an introduction here are some interesting base level facts that will help you start your exploration into thunder and lightning. Thunderstorms happen in every state and every thunderstorm has lightning. Lightning can strike people and buildings and is very dangerous. Thunderstorms affect small areas when compared with hurricanes and winter storms. The typical thunderstorm is 15 miles in diameter and lasts an average of 30 minutes. Nearly 1,800 thunderstorms are happening at any moment around the world. Despite their small size, all thunderstorms are dangerous. Every thunderstorm produces lightning, which kills more people each year than tornadoes. Of the estimated 100,000 thunderstorms that occur each year in the United States, about 10 percent are classified as severe.

### Tasks

Tasks: The students will be able to: 1) Define the process by which thunder and lightning form. 2) Describe the different types of lightning. 3) Describe the hazards associated with thunder and lightning. 4) Develop a safety plan to prevent injury and damage associated with thunder and lightning.

### Process

Step by step instructions: 1) Read each question carefully before starting (1 through 12). They can be found at the resource site below. 2) Each section (website) has three questions for you to solve. Re-read the questions and then go to the website provided and post your answers. They can be found at the resource site below. 3) Once you have completed your questions they can be e-mailed to me, posted on my school's google doc's board, or handed in as a hard copy. 4) Once you have completed your questions, complete the quiz that is posted and send or hand in the assignment on Google doc's, e-mail, or print and hand in as a hard copy. 5) For bonus points you may complete the Bonus/follow up activities on Thunder & Lightning safety procedures. 6) Present the web quest to your class, and field any questions that they may have.

### Evaluation

Complete the quiz located in the resource tab below. Check the rubric below for further evaluation.

| Category and Score |  |  |  |             | Score |
|--------------------|--|--|--|-------------|-------|
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|                    |  |  |  | Total Score |       |

### Conclusion

## Teacher Page

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### **Standards**

Standards

Content Standard A: As a result of activities in grades 9-12, all students should develop:

- o Abilities necessary to do scientific inquiry
- o Understandings about scientific inquiry

New York State Regents Core Curriculum Alignments

Standard 1: Students will use mathematical analysis, scientific inquiry, and engineering design, as appropriate, to pose questions, seek answers, and develop solutions.

Key Idea 2: Beyond the use of reasoning and consensus, scientific inquiry involves the testing of proposed explanations involving the use of conventional techniques and procedures and usually requiring considerable ingenuity.

Performance Indicator 2.1: Devise ways of making observations to test proposed explanations.

Performance Indicator 2.3: Develop and present proposals including formal hypotheses to test explanations; i.e., predict what should be observed under specific conditions if the explanation is true.

Performance Indicator 2.4: Carry out a research plan for testing explanations, including selecting and developing techniques, acquiring and building apparatus, and recording observations as necessary

Key Idea 3: The observations made while testing proposed explanations, when analyzed using conventional and invented methods, provide new insights into natural phenomena.

Performance Indicator 3.1: Use various methods of representing and organizing observations (e.g., diagrams, tables, charts, graphs, equations, matrices) and insightfully interpret the organized data.

### **Credits**

Thank you to all of the websites that have been included in this project.

### **Other**