

# Lightning in the Peaks: Overview

## Summary of Lightning in the Peaks:

You can return to the quizzes (resume) after you start - to enable you to take screenshots and ask questions using those screenshots. The exception to resuming is the tutorial quiz; you have to finish that in one sitting (but you get 7 attempts).

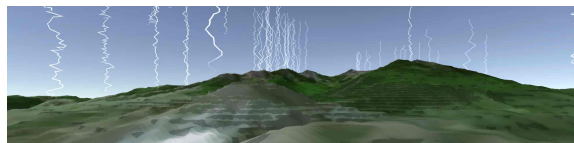
The video on the right is a brief overview of the structure of all of these activities.

## GPH112 Lightning in the Peaks Intro



Lightning and the thunderstorms that generate lightning are an important part of physical geography. Unfortunately, the nature of data used to analyze lightning are normally not something that can be used in a 100 level lab science course -- that is until now. The ability to display lightning strikes in a video-game format is the key to being able to offer students a chance to study lightning.

The San Francisco Peaks in northern Arizona is the ideal site for students to study lightning. The North American Monsoon (called the Arizona Monsoon locally) occurs regularly every July and August. The mountainous topography plays an important role in generating thunderstorms and potentially impacting lightning distribution. SGSUP has access to real research-quality lightning data in this area. Our game-developer partner did special processing of Landsat satellite research data so students can interact with surface temperature, air temperature, and the natural landscape. Also, visitors to the Grand Canyon almost always go through this area and so many students will have an impression of the landscape from such a visit.



Lightning strike over San Francisco Peaks Credit: Mike K, National Weather

Service <https://www.weather.gov/images/fqz/LightningBrianK.jpg>

(<https://www.weather.gov/images/fqz/LightningBrianK.jpg>), and credit Two Bent

Coppers [https://gamejolt.com/games/2BC\\_LightningLabSFP/506498](https://gamejolt.com/games/2BC_LightningLabSFP/506498)

([https://gamejolt.com/games/2BC\\_LightningLabSFP/506498](https://gamejolt.com/games/2BC_LightningLabSFP/506498)).

## This is the website to obtain the geovisualization:

[https://gamejolt.com/games/2BC\\_LightningLabSFP/506498](https://gamejolt.com/games/2BC_LightningLabSFP/506498)

([https://gamejolt.com/games/2BC\\_LightningLabSFP/506498](https://gamejolt.com/games/2BC_LightningLabSFP/506498)).

## YOU WILL NEED TO COMPLETE THESE:

- Lightning Tutorial - you must complete the tutorial quiz with 100% accuracy to gain access to the rest of the quizzes.
- Basic Background on the North American Monsoon and Lightning: Lecture and Quiz (you do not have to get 100%, but just submit the quiz)

Then, you will get access to these Lightning Geovisualization labs

- ⋮ ⚡ **Lightning in the Peaks: Helicopter Data Tour**  
9 pts | [View](#)

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- ⋮ ⚡ **Lightning in the Peaks: GeoFinder**  
2 pts

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- ⋮ ⚡ **Lightning in the Peaks: How Tall Were the Peaks?**  
3 pts

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- ⋮ ⚡ **Lightning in the Peaks: Northern Arizona Climate and Lightning Strikes**  
4 pts

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- ⋮ ⚡ **Lightning in the Peaks: Lapse Rates and Stability**  
5 pts

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- ⋮ ⚡ **Lightning in the Peaks: Upslope Winds**  
6 pts

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- ⋮ ⚡ **Lightning in the Peaks: Why is Lightning Here?**  
6 pts