

# Finding the Epicenter

## Summary

Students will learn how to find the epicenter of an earthquake using p and s waves and triangulation.

## Time Frame

1 class periods of 70 minutes each

## Group Size

Pairs

## Materials

- [student sheet](#)  
(attached)
- compass

## Instructional Procedures

Students should be familiar with p and s waves. A good warm up activity is to have the students stand in a circle and create p waves by bumping the shoulder of the person next to them and passing the wave. To create an s wave, hold hands and pass the wave by pulling the person next to you down and bending your knees. Describe the p wave as fast (and it will be faster) and the s wave as slower. Point out that the longer they travel the greater the time in between them (lag time)

Read the directions with the students and do several examples with them. There are several steps to each calculation and it is easy to make a mistake.

Allow students to work and check with you when they have an answer.

If you have any difficulties with the formatting of the activity, email Barbara Gentry for original documents.

## Assessment Plan

### Scoring Guide

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### Answers:

Epicenter should be located in approximately Southeast Idaho for earthquake 1 and in Missouri for earthquake 2.

### Analysis:

p-wave arrives first, s-wave second. The p-wave travels more rapidly.  
a seismograph

The cities are different distances from the epicenter so it takes different amounts of time for the waves to arrive.

The lag time gets larger the further you are from the epicenter.

You could go to the place you think it happened and look for geological evidence.

## Bibliography

Lesson Design by Jordan School District Teachers and Staff.

Authors

[Utah LessonPlans](#)