P- and S-Waves Earthquake Activity Sheet

**Name:**

**Class Period:**

STUDENT LEARNING OBJECTIVE:

Students will learn how scientists use P- and S- waves to understand earthquakes

ASSIGNMENT:

1. Go to [newpathonline.com/api\_player/enus\_54\_6304/LXX/index.html](http://newpathonline.com/api_player/enus_54_6304/LXX/index.html)
2. Click on one of the maps to get started.
3. Work through each window of the interactive as instructed.
4. Answer questions below for the map that you select.
5. You are required to complete two of the three maps
6. If you complete all three maps you can earn EXEMPLARY

NOTE: BE SURE THAT YOU USE THE UNITS FOR YOUR MEASUREMENTS, OTHERWISE THEY ARE JUST NUMBERS!

NORTH AMERICA (Top Map)

1. What three cities do the seismograms come from?

|  |
| --- |
|  |

1. How many seconds between the P- and S- Waves in each of the three cities recording data?

|  |
| --- |
|  |

1. What is the distance from each of the stations to the epicenter? (Record data from each city below:

|  |
| --- |
|  |

1. Based on the data, which of the statements about the epicenter distance is true? Write the statement below:

|  |
| --- |
|  |

1. How did you figure out where the epicenter of the earthquake occurred? Explain why you put the dot on the map where you did…

|  |
| --- |
|  |

1. What measure the magnitude of an earthquake what pieces of data do you need?

|  |
| --- |
|  |

1. What is the amplitude of the largest S-waves in each of the three cities?

|  |
| --- |
|  |

1. Explain how you determined the magnitude of the earthquake using the distance and the amplitude.

|  |
| --- |
|  |

1. What was the magnitude of the earthquake?

|  |
| --- |
|  |

1. What type of impact would you expect from an earthquake with this magnitude?

|  |
| --- |
|  |

1. What plates were involved in this earthquake?

|  |
| --- |
|  |

SOUTH AMERICA (Middle Map)

1. What three cities do the seismograms come from?

|  |
| --- |
|  |

1. How many seconds between the P- and S- Waves in each of the three cities recording data?

|  |
| --- |
|  |

1. What is the distance from each of the stations to the epicenter? (Record data from each city below:

|  |
| --- |
|  |

1. Which city would you expect to be least impacted by the earthquake?

|  |
| --- |
|  |

1. How did you figure out where the epicenter of the earthquake occurred? Explain why you put the dot on the map where you did…

|  |
| --- |
|  |

1. What measure the magnitude of an earthquake what pieces of data do you need?

|  |
| --- |
|  |

1. What is the amplitude of the largest S-waves in each of the three cities?

|  |
| --- |
|  |

1. Explain how you determined the magnitude of the earthquake using the distance and the amplitude.

|  |
| --- |
|  |

1. What was the magnitude of the earthquake?

|  |
| --- |
|  |

1. What type of impact would you expect from an earthquake with this magnitude?

|  |
| --- |
|  |

1. What plates were involved in this earthquake?

|  |
| --- |
|  |

JAPAN (Bottom Map)

1. What three cities do the seismograms come from?

|  |
| --- |
|  |

1. How many seconds between the P- and S- Waves in each of the three cities recording data?

|  |
| --- |
|  |

1. What is the distance from each of the stations to the epicenter? (Record data from each city below:

|  |
| --- |
|  |

1. Which statement is FALSE based on the data you collected?

|  |
| --- |
|  |

1. How did you figure out where the epicenter of the earthquake occurred? Explain why you put the dot on the map where you did…

|  |
| --- |
|  |

1. What measure the magnitude of an earthquake what pieces of data do you need?

|  |
| --- |
|  |

1. What is the amplitude of the largest S-waves in each of the three cities?

|  |
| --- |
|  |

1. Explain how you determined the magnitude of the earthquake using the distance and the amplitude.

|  |
| --- |
|  |

1. What was the magnitude of the earthquake?

|  |
| --- |
|  |

1. What type of impact would you expect from an earthquake with this magnitude?

|  |
| --- |
|  |

1. What plates were involved in this earthquake?

|  |
| --- |
|  |