

Earthquake FAQs Worksheet

Objective: To learn about seismic waves and the differences between P waves and S waves. Then, to explore and research three or more additional topics of interest related to earthquakes.

Materials: Work in small groups, sharing one computer or other device with Internet access. Explore the Earthquakes Living Lab, including a resource of frequently asked questions (FAQs) provided by the U.S. Geologic Survey about common and uncommon questions about earthquakes.

Engage:

1. Take a moment to think about what you already know about earthquakes. Write in your journal (or on paper) at least three facts you know about earthquakes.
2. Write any questions you have about earthquakes.
3. Brainstorm within your group and then write some reasons why engineers need to know about earthquakes.

Explore: Navigate to the *Earthquakes Living Lab* at <http://www.teachengineering.org/livinglabs/earthquakes/>.

4. Notice that the *Earthquakes Living Lab* has four main sections based on four historic earthquakes and active seismic areas, as well as real-time and recent data from earthquakes around the world. For this activity, select the “Chile” box > then under the “**What is the difference between a P wave and an S wave?**” section on the right side, click on the “Click to learn!” link.
5. Examine the diagrams and read the information on the screen about P waves and S waves.

Explain: Record your notes about P and S waves.

6. Start with a title such as: “The differences between S waves and P waves.”
7. Record your notes from this source (and other sources if needed).

Elaborate:

8. Summarize the answer to the original question: **What is the difference between P and S waves?**
9. To help illustrate your answer, make a sketch that includes labels and notes.
10. Show your journal entries to your teacher to verify that you have enough detail and information, and then proceed with the next step.

More Exploration: While on the Chile page, notice that the right side of the page has additional FAQ categories: <https://www.teachengineering.org/livinglabs/chile>.

11. Explore a few categories and follow the links to see what information is provided. Don’t spend a lot of time on any one topic. The purpose of this step is to survey the wide range of options available to you. Notice that each category has more questions, with links to even more information.
12. Find at least three additional questions that you are interested in. Follow the links and research your questions.

Explain/Elaborate: For each question, record the following in your journal:

13. Your original question.
14. Notes, facts, observations related to your question.
15. A conclusion or summary answer for your question.
16. Sketches, drawings and graphic organizers are great tools to improve your research notes—include at least one for each question.

When you have finished your research and journal entries for the original question and at least three additional questions, turn in your journal/writing for teacher approval.

Congratulations—you have completed this activity! This is only a small part of all there is to know about earthquakes, and researchers are learning new things all the time. Feel free to come back to this resource to keep learning as often as you like.