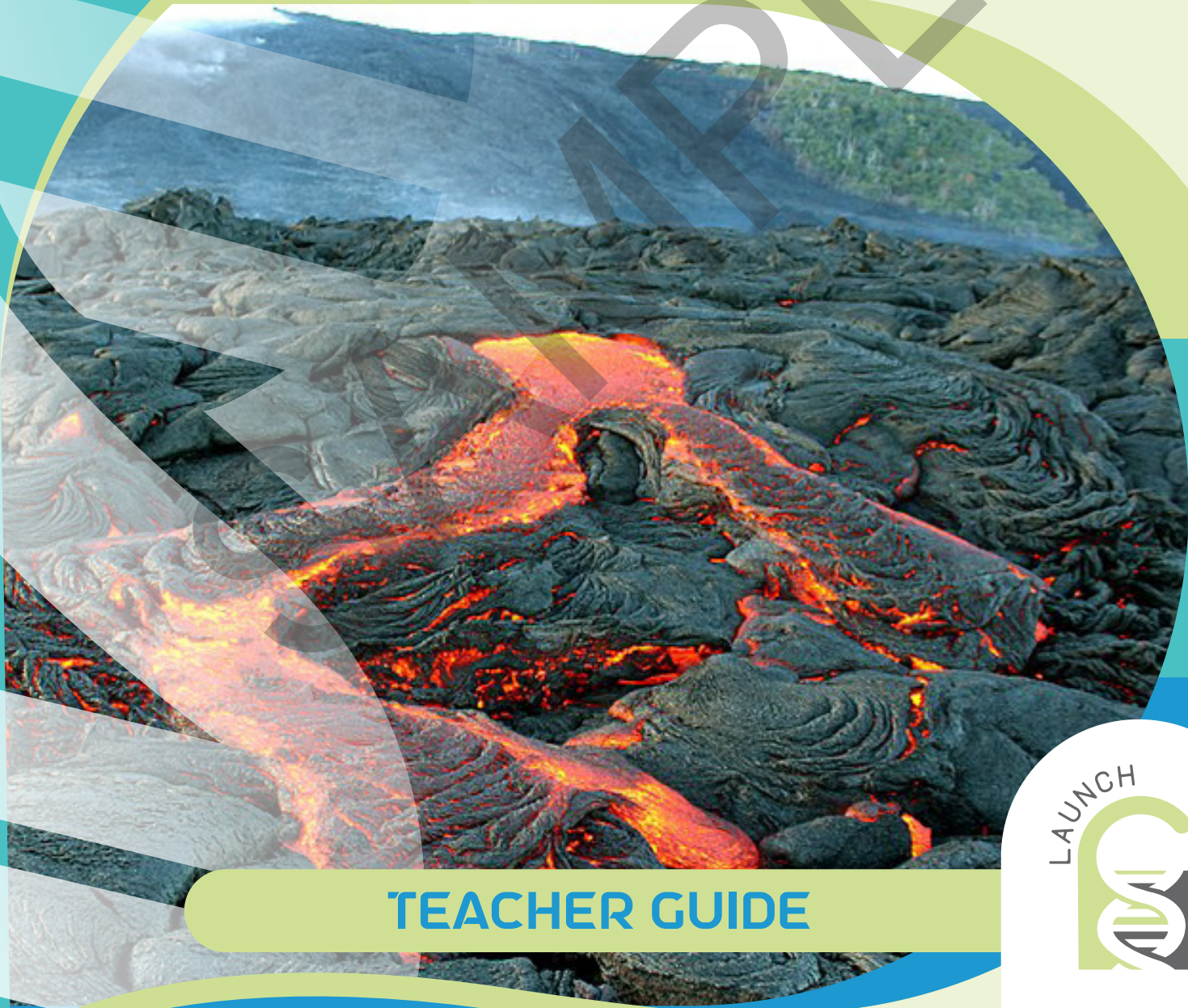


RESTLESS ROCKS



TEACHER GUIDE

LAUNCH



PLANNING

Here's a suggested schedule for this kit! The activities should be completed in order, but you can choose when the lessons take place over time.

ACTIVITY INFORMATION	SECTION (S)	TIME REQUIRED	DAY/ LESSON
ACTIVITY 1: REMARKABLE RING Model the seafloor and its movement over time. Time required: 1 h	<input type="checkbox"/> Paper Seafloor	60 minutes	Day 1
ACTIVITY 2: ON THE MOVE Uncover the movement of Earth's plates. Time required: 2 h 45 min	<input type="checkbox"/> Seafloor Spreading	45 minutes	Day 2
	<input type="checkbox"/> The Theory of Plate Tectonics	60 minutes	Day 3
	<input type="checkbox"/> Continental Cycles	60 minutes	Day 4
ACTIVITY 3: CONTINENTAL CHANGES Discover Earth's layers and how they relate to natural events. Time required: 1 h 30 min	<input type="checkbox"/> Earth's Layers	30 minutes	Day 5
	<input type="checkbox"/> C-		

Full schedule available with purchase

1

activity

REMARKABLE RING

Earth moves around the Sun, but can the features of Earth's rocks move all the way down to its core?

PAPER SEAFLOOR

PREPARATION AND SUPERVISION

- Students will be creating a model of seafloor spreading using two sheets of paper.
- Student models will simulate how the seafloor changes over time.
- While students do not have to do the drawing in Step 1, the colored boxes in Step 8 are necessary.



THINK ABOUT IT!

? Question 1: What are the benefits and limitations of the model you made of the seafloor spreading?

Answer:

- Some benefits include:
 - Easy to use
 - Demonstrates changes
 - Demonstrates movement
- Some limitations include:
 - Doesn't demonstrate all processes
 - No labeling to identify locations

How to Help: *Students do not need to include all the benefits or limitations listed, but should have listed at least one benefit and one limitation in their response that is justified by the model they made.*

? Question 2: Have you experienced any of the following natural features? If so, explain your experience.

- Volcano
- Earthquake
- Ocean ridges and trenches

Answer: Answers will vary.

How to Help:

- *There is no correct or required response.*
- *This question is intended to connect students with the material.*

? Question 3: Are there any similar natural features in the area where you live to the following? If so, explain the similarities.

- Volcano
- Ocean ridges and trenches

Answer: Answers will vary.

How to Help:

- *There is no correct or required response.*
- *This question is intended to connect students with the material.*
- *You can help you student recognize regional landforms that look like volcanoes, or ocean ridges and trenches.*
 - *Some examples of formations that look similar to volcanoes include mountains and hills.*
 - *Some examples of formations that look like ocean ridges and trenches include canyons.*

Spring Science

- Students will be modeling compression waves and shear waves with a spring toy.
- Your student will describe the motion of the spring toy as it mimics the different types of waves.

MULTIPLE AGES AND ABILITIES:

If you are working with multiple students, you can have one student hold each end of the spring toy rather than only one end being held. Another opportunity is for students to work in pairs and have each student to only model one type of wave and then have the two students compare their wave types.



THINK ABOUT IT!

? Question: How are the motions of the spring toy representative of the waves produced by earthquakes?

Answer: Both types of waves modeled by the spring toy are like the two types of seismic waves that come from earthquakes.

How to Help: Students are not expected to know the answer provided as they will learn about this in the next subsection. Instead, the question is intended to engage students further with the experiment.

What a Wave!

- Students will learn about four types of seismic waves that are produced from earthquakes.
- Compression waves are also referred to as primary waves or p-waves.
- Shear waves are also referred to as secondary waves or s-waves.
- Love waves are also referred to as quer waves or q-waves.
- Your student will learn the following vocabulary terms: compression waves, Love waves, Raleigh waves, seismic waves, shear waves, and surface waves.



THINK ABOUT IT!

? Question 1: Which type of wave did you model with the spring toy when you pushed and pulled it to and from itself?

Answer:

- Students can use one of the following wave names.
 - Compression waves
 - Primary waves
 - P-waves

? Question 2: Which type of wave did you model with the spring toy when you slid it side to side?

Answer:

- Students can use one of the following wave names.
 - Shear waves
 - Secondary waves
 - S-waves



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Kit	SU-GRAVST
Instructions	IN-GRAVSTT
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