

## Remote Learning Packet

*NB: Please keep all work produced this week. Details regarding how to turn in this work will be forthcoming.*

**April 6 - April 9, 2020**

**Course:** Science

**Teacher(s):** Mr. Weyrens

### **Weekly Plan:**

Monday, April 6

- Work on the Star-Splitter
- 9.6 Vocabulary

Tuesday, April 7

- Work on the Star-Splitter
- Deformation, Stress, and Faults

Wednesday, April 8

- Work on the Star-Splitter
- Volcanoes and Mountains

Thursday, April 9

- Work on the Star Splitter
- 9.6 Review

Friday, April 10

- Enjoy your holiday! I Hope you are all doing well.

### **Statement of Academic Honesty**

I affirm that the work completed from the packet is mine and that I completed it independently.

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Student Signature

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Parent Signature

I affirm that, to the best of my knowledge, my child completed this work independently

## Monday, April 6

- Spend 5-10 minutes reciting the star splitter, starting from “He had been heard to say by several...” and try to get to the line “And he could wait-- we’d see him tomorrow.”
  - As you continue with the poem, keep adding to the personalities, thinking about the characters you identified last week.
- On a sheet of notebook paper or on index cards, write each of the key terms and their definitions (omitting land subsidence) for section 9.6

## Tuesday, April 7

- Spend 5-10 minutes reciting the star splitter, starting from “He had been heard to say by several...” and try to get to the line “If one by one we counted people out.”
- Review the definitions for deformation, stress, fault and the specific types of faults.
- On page 347 of the book, read about the different kinds of deformation (shearing, tension, compression).
- On a sheet of notebook paper, draw a table with three rows and three columns. In the top row, label each column with a different kind of plate boundary. Then, in the second row, write the kind of deformation that you think occurs at those kinds of plate boundaries. Last, in the third row, write the kind of fault that occurs at those kinds of plate boundaries. Underneath the table, in complete sentences, briefly explain your answer.

## Wednesday, April 8

- Spend 5-10 minutes reciting the star splitter, starting from “He had been heard to say by several...” and try to get to the line “To get so we had no one left to live with.”
- Using the information on pages 349-350, briefly describe the two ways that mountains form from the movement of the plates and state what kind of boundaries they occur at.
- Using the information on pages 352-353, briefly describe the three ways that volcanoes form in complete sentences.
- Look at the map on page 351 and write down what you notice about the location of the volcanoes. What can you infer about the plates at those locations where volcanoes are? What can you infer about the plates at those locations where the volcanoes aren’t?

## Thursday, April 9

- Spend 5-10 minutes reciting the star splitter, starting from “He had been heard to say by several...” and try to get to the line “For to be social is to be forgiving.”
  - Take a few moments to think about what it means to forgive. Why do you think the narrator links being social to forgiveness?

- Think about times in your past when you've chosen to forgive. In what ways do you think fortitude (courage) and forgiveness are linked? Take a moment to think of a concrete way you can practice fortitude through forgiveness even in this time of social-distancing.
- On page 353, answer question 5 in complete sentences, explaining your reasoning.

## **Friday, April 10**

- Get some rest, have some fun, and enjoy your holiday! You've earned it!

# **Answer Key for Last Week's Packet**

## **Earth's Interior**

1. The crust is about 40 km thick, measures 1000 degrees Celsius near the mantle, and is composed of solid rock. The Lithosphere is also made of solid rock, is the topmost layer of the mantle and extends another 100 km. The asthenosphere is composed of partly or nearly melted rock and is just below the Lithosphere, extending another 350 km. The mantle is composed of solid rock, reaches a temperature of 2200 degrees Celsius near the outer core, and extends 2900 km; it is the thickest layer of the Earth's interior. The Outer core, just below the mantle, is composed of liquid rock (mostly iron and nickel), and extends another 2250 km. The inner core is composed of solid rock (mostly iron and nickel), is 1200 km thick, and reaches a temperature of 5000 degrees Celsius.
2. Both pressure and temperature are increasing as your depth below the surface of the Earth increases.
3. Answered last week.
4. Geologists use seismology, the study of seismic waves, to learn about the Earth's interior. How the different kinds of seismic waves change in speed helps us learn about the pressure, temperature, and composition of the Earth at various depths.

## **Continental Drift and Sea-Floor Spreading**

1. Continental drift is the idea that the continents are slowly moving across the surface of the Earth. Several pieces of evidence support the idea. First, the edges of the continents seem to fit together like puzzle pieces (most evident between South America and Africa). Second, mountain ranges in various continents appear to have at one time been the same mountain range. Third, there are fossils of land plants and animals which have been found on continents now separated by vast oceans. Fourth, there is evidence that the climates of various locations were once very different, indicating a change in latitude.
2. Sea-Floor spreading is the idea that the ocean floors are moving (in a way similar to how conveyor belts are moving). Several sources of evidence support the idea. First, rocks shaped like pillows indicate magma from the mantle has been coming to the surface at the ocean floor. Second, there is evidence that layers and layers of rocks have formed over time, indicated by rocks at various depths with different "magnetic memories." Third, the oldest rocks are near the trenches while the youngest rocks are near the ridges.
3. Subduction is the process of one piece of crust sinking below another piece, and it occurs where we find trenches.
4. More subduction than sea-floor spreading is occurring in the Pacific Ocean, causing it to shrink. Conversely, more sea-floor spreading than subduction is occurring in the Atlantic Ocean, so it is expanding.

## **Plate Tectonics**

1. Plate tectonics is the theory that the crust and lithosphere are in constant slow motion.

2. Convergent boundaries occur where two plates are moving into one another. Divergent boundaries occur where two plates are moving away from each other. Transform boundaries occur where the plates are sliding past one another (see image on page 342).
3. At a convergent boundary with two continental plates, the crust folds upwards forming mountains. At a convergent boundary with two oceanic plates, the denser plate subducts underneath the less dense plate forming a trench. At a convergent boundary with a continental plate and an oceanic plate, the oceanic plate sinks below the continental plate, also forming a trench.
4. At a divergent boundary on land, a gap or basin called a rift valley forms. At a divergent boundary in the ocean, a ridge forms.
5. At transform boundaries, earthquakes occur from the two plates catching on one another and then slipping.

## Section 9.2

1. Heat transfer is the movement of heat from a warmer object to a cooler object. In order for it to occur, a temperature difference needs to be present.
  2. The three kinds of heat transfer are conduction, convection, and radiation. An example of conduction is when a child grabs a hot pan and burns his hand. An example of radiation is the toasting of a marshmallow over a fire. An example of convection is the wind.
  3. There is a temperature difference as there is a change in depth. Conduction may be occurring between the layers as they touch one another. In addition, the more plastic and fluid layers (the asthenosphere and outer core) may have convection occurring in them. There is a temperature difference between the top of these layers and the bottom, and their material is fluid enough to move around, allowing for the internal transfer of heat through conduction.
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1. Convection occurs in the asthenosphere and not elsewhere in the mantle because the material is fluid, allowing for it to move around in the way necessary for a convection current. The solid rock that makes up the rest of the mantle cannot move in this way.
  2. You can think about a ball on the surface of a pool when people are swimming in it and jumping into it. The waves in the water that the ball is floating on cause it to be carried away. Likewise, when the convection currents move the asthenosphere, the lithosphere (which is floating on it; remember isostasy!) also moves.
  3. Convection currents occur in the asthenosphere and outer core. The convection currents in the asthenosphere cause the plates to move, and thus cause continental drift.

## Star-Splitter

"Don't call it blamed; there isn't anything  
More blameless in the sense of being less  
A weapon in our human fight," he said.  
"I'll have one if I sell my farm to buy it."  
There where he moved the rocks to plow the ground  
And plowed between the rocks he couldn't move,  
Few farms changed hands; so rather than spend years  
Trying to sell his farm and then not selling,  
He burned his house down for the fire insurance  
And bought the telescope with what it came to.  
He had been heard to say by several:  
"The best thing that we're put here for's to see;  
The strongest thing that's given us to see with's  
A telescope. Someone in every town  
Seems to me owes it to the town to keep one.  
In Littleton it may as well be me."  
After such loose talk it was no surprise  
When he did what he did and burned his house down.

Mean laughter went about the town that day  
To let him know we weren't the least imposed on,  
And he could wait—we'd see to him tomorrow.  
But the first thing next morning we reflected  
If one by one we counted people out  
For the least sin, it wouldn't take us long  
To get so we had no one left to live with.  
For to be social is to be forgiving.