Brandon Valley School District

District Learning Plan

May 4-8, 2020

Grade 5 Science

Brandon Valley School District Distance Learning Plan

LESSON/UNIT: **Natural Disasters/Spheres of Earth** **SUBJECT/GRADE: Science/5th** **DATES: May 4-8, 2020**

What do students need to do? **Link to BV instructional video for week of May 4-8, 2020**	**Monday:** Food chain Review **Quizizz** over food chains and food webs. Students will go to quizizz.com/join and type in the **game code: 229076** to play. Make sure to put your full name and team color (example: Mrs. Sershen/5th red). If you don't have the internet, the quiz will also be available to complete. **Tuesday:** Let's review a few natural disasters. Read the article **Earthquakes** and complete the **Earthquakes worksheet** over the articles. **Wednesday:** Read the article **Volcanoes** and complete the **Volcano Worksheet** over the articles. **Thursday:** Read the handout **Read about Earth's Spheres** and on a piece of paper, write down 2 facts about each of Earth's spheres: Geosphere, Atmosphere, Hydrosphere, and Biosphere. **Friday:** Now let's put it all together! Use the handout **Spectacular Spheres Activity**. For this activity, you will be researching a natural disaster or using the information on earthquakes and volcanoes from this week. This activity will show how a natural disaster impacts the Earth's spheres in different ways.
What do students need to bring back to school?	1. **Spectacular Spheres Activity** 2. **Earthquake Worksheet**
What standards do the lessons cover?	5-ESS2-1: Develop a model to describe the interaction of geosphere, biosphere, hydrosphere, and atmosphere.
What materials do students need? What extra resources can students use?	Need: ● the food chain review Quizizz, Earthquake article and worksheet, Volcano article and worksheet, Read about Earth's Spheres handout, and Spectacular Sphere Activity
What can students do if they finish early?	*Mysteryscience.com *Studyjams videos *Earthquakes: http://studyjams.scholastic.com/studyjams/jams/science/rocks-minerals-landforms/earthquakes.htm -Volcanoes: http://studyjams.scholastic.com/studyjams/jams/science/rocks-minerals-landforms/volcanoes.htm *Earth's Spheres: https://www.youtube.com/watch?v=b-4chsOyTLw
Who can we contact if we have questions?	**Brandon Valley Intermediate School** **Principal-** Mr. Skibsted- Nick.Skibsted@k12.sd.us **Assistant Principal-** Mr. Pearson- Rick.Pearson@k12.sd.us **Science Teachers:** Mrs. Sershen- gina.sershen@k12.sd.us (red team) Mr. Stroh- nick.stroh@k12.sd.us (white team) Mr. Metzger- tyson.metzger@k12.sd.us (blue team) Mr. Wiese- alex.wiese@k12.sd.us (silver team)
Notes: Have a great week!	

Instructional materials are posted below (if applicable)

Brandon Valley School District

QUIZIZZ

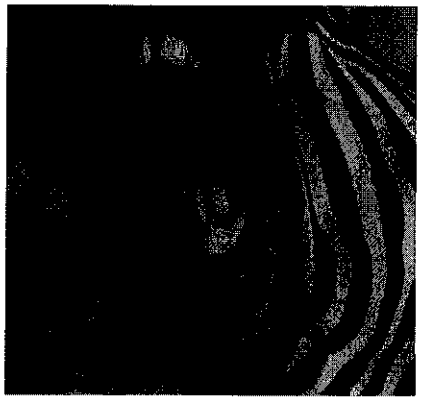
NAME : _____

CLASS : _____

DATE : _____

Food Chain/Food Web Review

15 Questions

1.  _____ are consumers that eat ONLY PLANTS.

☐ a) Herbivores

☐ b) Carnivores

☐ c) Omnivores

☐ d) Producers

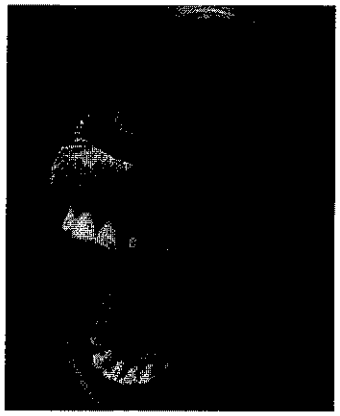
2.  _____ are consumers that eat ONLY MEAT (other animals)?

☐ a) Omnivores

☐ b) Carnivores

☐ c) Producers

☐ d) Herbivores

3. 

_____ are consumers that eat BOTH Plants and Animals for food.

☐ a) Omnivores

☐ b) Producers

☐ c) Herbivores

☐ d) Carnivores

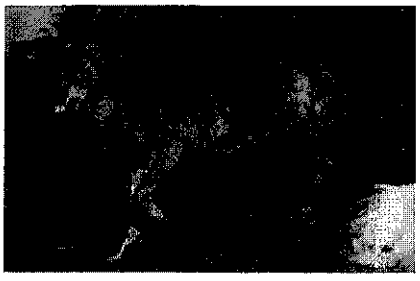
4. 

Deer are _____.

☐ a) herbivores

☐ b) carnivores

☐ c) omnivores

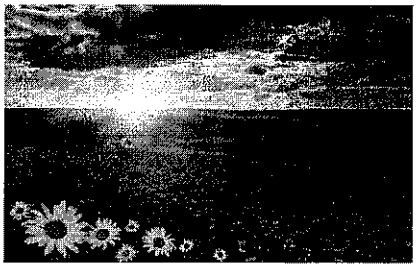
5. 

Coyotes are _____.

☐ a) herbivores

☐ b) omnivores

☐ c) carnivores

6. 

What are plants called in a food chain?

☐ a) Producers

☐ b) Consumers

☐ c) Decomposers

☐ d) Scavengers

7. 

What are animals called in a food chain?

☐ a) Producers

☐ b) Consumers

☐ c) Decomposers

☐ d) Plants

8. 

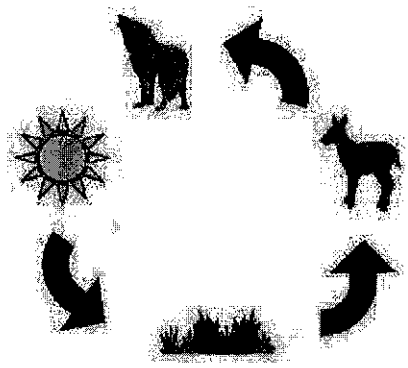
What are the organisms that break down dead stuff?

☐ a) Producers

☐ b) Consumers

☐ c) Decomposers

☐ d) Organisms

9.  Where does the energy start in this food chain?

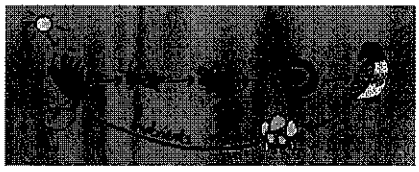
☐ a) Plant ☐ b) Sun

☐ c) Deer ☐ d) Wolf

10.  What is the role of a producer?

☐ a) Use sunlight to make food ☐ b) Gain energy from eating other organisms

☐ c) Keep other species from overpopulating ☐ d) Breaking down dead stuff

11.  Which of these organisms would receive energy from the snake?

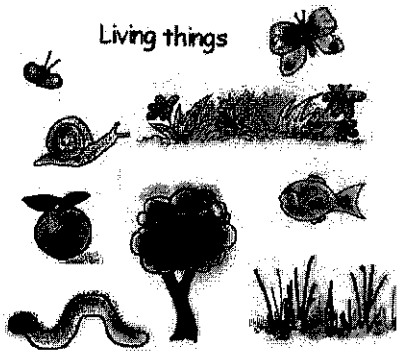
☐ a) Plant ☐ b) Rabbit

☐ c) Mouse ☐ d) Hawk

12.  Which is the correct food chain order?

☐ a) Plant-->1st Consumer--> 2nd Consumer ☐ b) Plant <-- 1st Consumer <-- 2nd Consumer

☐ c) 2nd consumer --> 1st consumer --> Plant ☐ d) 1st Consumer --> 2nd consumer --> Plant

13. 

Which of the following is a producer?

☐ a) Maple tree

☐ b) Sunfish

☐ c) Bunny

☐ d) Bear

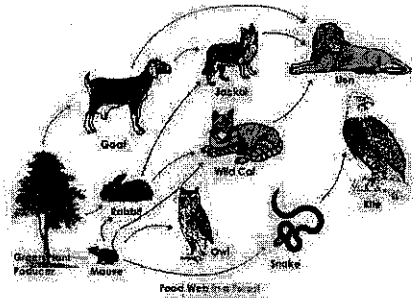
14. 

True/False

Food webs show you everything an animal eats. Food chains show you one thing.

☐ a) True

☐ b) False

15. 

Which of these is true about this food web?

☐ a) The Owl gets its energy from the producer.

☐ b) The Lion gets its energy only from a wild cat.

☐ c) The Kite gets its energy from the goat.

☐ d) The Mouse is most likely to die, several ways.

Earthquakes

An earthquake is a shock wave that moves through the earth, usually causing violent shaking of the Earth's surface. There are two main causes of earthquakes: the collision of tectonic plates and volcanic eruption.

The places where the edges of the tectonic plates that form the Earth's crust meet each other are called fault lines. Sometimes these edges will get stuck together. As they continue to try to move, they push against each other. When there is enough pressure built up, the plates will suddenly come unstuck with so much force that it sends shock waves up through the surface of the Earth. The shaking caused by these shock waves is what we call an earthquake.

The strength of an earthquake is categorized using the Moment Magnitude Scale (MMS), formerly known as the Richter scale. The larger the MMS number, the stronger the earthquake. The MMS goes from 1 to 10. An earthquake usually needs to measure at least a 3 on the MMS in order to be noticed. At a magnitude of 6, earthquakes will cause items to fall off of shelves. House wall may crack, and windows may break. A magnitude 7 earthquake will destroy weaker structures. At magnitude 8, many building and bridges will be destroyed. At magnitudes 9 and 10, you will see wide-scale devastation.

The largest earthquake ever recorded happened in Chile in 1960. It struck at 3:11 p.m. approximately 100 miles off the coast of Chile. It is generally agreed to have measured approximately 9.5 on the Richter Scale, and was preceded by a series of foreshocks, one as strong as 7.9. Fifteen minutes after the earthquake, 80-foot-high tsunamis engulfed the Chilean coastline. The combined disasters killed over 1,600 people and left two million homeless.

Name _____

QUESTIONS: Earthquakes

Circle the correct answer.

1. An earthquake is:
   A. the places where the edges of the tectonic plates meet
   B. another name for the plates that form the Earth's crust
   C. a shock wave that moves through the earth
   D. none of the above

2. Today, the strength of an earthquake is categorized using:
   A. the Richter scale
   B. the Moment Magnitude Scale (MMS)
   C. how wide an area the earthquake affects
   D. the collision of tectonic plates

3. How strong (on the measurement scale) does an earthquake have to be in order to be felt?
   A. 3
   B. 6
   C. 7
   D. 9

4. At what magnitude of earthquake will buildings and bridges be destroyed?
   A. 3
   B. 6
   C. 8
   D. 9

5. What other natural disaster can be triggered by an earthquake?
   A. shock waves
   B. foreshocks
   C. tsunami
   D. none of the above

Name _____

Volcanoes

A volcano is an opening in the Earth's surface through which extremely hot molten rock erupts. Though some of these eruptions are very slow, with lava barely oozing from the volcano, and others are sudden, fast, and catastrophic. There are usually about twenty volcanoes erupting around the Earth at any given time.

Depending on the severity of the event, a volcanic eruption can cause injury to people and/or damage to human property. One hazard is the introduction of the volcanic gases sulfur dioxide, carbon dioxide, and hydrogen fluoride into the air. In the immediate area where it appears, sulfur dioxide can result in acid rain and air pollution downwind from the eruption. These gases are released into the air from both the eruption itself and from lava flows.

Another hazard of a volcanic eruption is volcanic ash. Though not highly toxic, volcanic ash is abrasive and sometimes corrosive, and can cause health issues in infants, the elderly, and anyone suffering from a respiratory ailment. Ash can cause health issues for grazing livestock. It can also clog or damage the equipment of water treatment facilities.

The most active volcano in the U.S. is Mount St. Helens, in the Cascade Mountain Range in Washington state. It erupted continuously for approximately three and a half years between 2004 and 2008, steadily emitting small amounts of lava that formed a new lava dome. It's last eruption with a human impact occurred in May of 1980. This eruption was triggered by an earthquake below the mountain. The event caused the largest landslide in recorded history, and ash spread across twelve states.

One of the most famous volcanic natural disasters in human history occurred at Pompeii in 79 AD. An estimated 1.5 million tons of ash was expelled out of the Mount Vesuvius volcano every second. Though a few people escaped, most didn't, and the death toll reached 16,000 people.

QUESTIONS: Volcanoes

1. What is a volcano?

2. How many volcanoes are usually erupting around the Earth at any one time?

3. What are some hazards of a volcanic eruption?

4. What kind of effect can volcanic ash have on the area surrounding an eruption?

5. What is the most active volcano in the U.S. and what triggered its last eruption?

6. What additional natural disaster did the volcano named in your answer to question number 5 trigger?

7. What is one of the most famous volcanic eruptions in human history?

READING MATERIAL

Read About Earth's Spheres

DEFINITION OF EARTH'S SPHERES

The spheres are the four subsystems that make up the planet Earth. They are called *spheres* because they are round, just like the Earth. The four spheres are the geosphere (all the rock on Earth), hydrosphere (all the water on Earth), atmosphere (all the gases surrounding Earth), and biosphere (all the living things on Earth).

To better understand how the 4 spheres of the Earth work....

LET'S BREAK IT DOWN!

Earth's land makes up the geosphere.

Geo means "earth." The Earth's geosphere (sometimes called the lithosphere) is the portion of the earth that includes rocks and minerals. It starts at the ground and extends all the way down to Earth's core.

We rely on the geosphere to provide natural resources and a place to grow food. Volcanos, mountain ranges, and deserts are all part of the geosphere. Put simply, without the geosphere, there would be no Earth!

Earth's water makes up the hydrosphere.

Hydro means "water." The hydrosphere includes the oceans, rivers, lakes, groundwater, and water frozen in glaciers. 97% of water on Earth is found in the oceans. Water is one of the most important substances needed for life and makes up about 90% of living things. Without water, life would not be possible.

Earth's air makes up the atmosphere.

Atmos means "air." The atmosphere includes all the gases surrounding the Earth. We often call the atmosphere "air." All planets have an atmosphere, but Earth is the only planet with the correct combination of gases to support life.

The atmosphere consists of five layers and is responsible for Earth's weather. Even though it seems like air is made of nothing, it consists of particles too small to be seen. All these particles have weight that push down on Earth. The weight of air above us is called *air pressure*.

Earth's living things make up the biosphere.

Bio means "life." The biosphere is made up of all the living things on Earth and it includes fish, birds, plants, and even people.

The living portion of the Earth interacts with all the other spheres. Living things need water (hydrosphere), chemicals from the atmosphere, and nutrients gained by eating things in the biosphere.

EXAMPLES OF EARTH'S 4 SPHERES

Even though the island of Kauai in Hawaii gets more rain than almost any area on Earth, one side looks like a desert. The shape of the land (geosphere) effect where it rains (hydrosphere).

Every time you recycle, you are impacting all four spheres. Efforts such as recycling are important to keep all four of our spheres healthy.

Erosion creates mushroom rocks when wind carries sand close to the ground. This is another example of how the atmosphere affects the geosphere. Sand carried by wind carves the bottom of the rock more than the top.

VOCABULARY ON EARTH'S SPHERES

Geosphere	All the rock, soil and sediments that makeup Earth's land. It comes from the word "Geo" which means "Earth."
Earth's Sphere	Everything on Earth can be placed into one of four major subsystems: land, water, living things, and air. These four subsystems are called "spheres." Specifically, they are the "geosphere" (land), "hydrosphere" (water), "biosphere" (living things), and "atmosphere" (air).
Hydrosphere	All the oceans, rivers, lakes and water on Earth. It comes from the word "Hydro" which means "water."
Atmosphere	All the gases surrounding the earth. It comes from the word "Atmos" which means "air."

Biosphere	All the living things on Earth. It comes from the word “Bio” which means “life.”
Recycling	To reuse something that would have otherwise been thrown out or to turn it into something usable again instead of sending it to a landfill.

DISCUSSION QUESTIONS ON EARTH'S SPHERES

In the investigation with aquariums, which of Earth’s spheres are represented?

The team uses sand to represent land, which is part of the geosphere. They use water to represent the hydrosphere and the air in the tank represents Earth’s atmosphere.

What happened to the temperature of the atmosphere when hot water was added?

When hot water was added to the aquarium tank the temperature of the atmosphere above the land went up.

Does water temperature have an effect on air temperature?

Yes, water temperature does affect atmospheric temperature. When hot water was added to the aquarium tank, the temperature above the land when up. When cold water was added, the air temperature went down.

Which two of Earth’s spheres are represented in the example of erosion?

Dr. Jeff uses a sand blaster (moving air containing sand particles) to erode rock. The air from the sand blaster represents wind in the atmosphere and it breaks down rock (that’s geosphere).

How did the example with dry ice show that land affects water and air?

The team uses dry ice (frozen carbon dioxide) to create fog. The sand mountain (geosphere) blocked the fog from moving to the other side of the aquarium. This shows that the shape of the land affects the weather.

Which of Earth's spheres are humans part of? Why?

Humans are part of the biosphere because we are living things. The biosphere includes ALL living things.

Spectacular Spheres Activity

Scientists have divided the Earth into four different systems, or spheres. Earth's spheres include the **geosphere, atmosphere, biosphere, and hydrosphere**.

The spheres have many parts and they work together. The spheres interact and change the Earth in many ways. An example of how they interact is when water (hydrosphere) shapes the land (geosphere) and creates landforms such as the Grand Canyon.

Over the past week we have reviewed a few natural disasters that impact the Earth. You will be creating a picture showing how these natural disasters impact and change the Earth's spheres.

You will choose **one** of the natural disasters we reviewed this week, or one of your choice. You will be doing some **research on the natural event** and then **show how the Earth's spheres were impacted by the event.**

Natural Events		
Earthquakes	Volcanoes	
Other Examples: Wild fires	Tornadoes	Landslides
Flooding	Tsunami	

Directions:

1. Choose one of the natural events above to research. You may use one of the natural events we learned about this week or research one of the other examples above.

2. Fold a piece of paper into four equal sections.

3. The following information should be in each section:

Box 1	Write the name of your natural disaster in big, interesting letters!
Box 2	What causes your event to occur? Tell information and facts about your natural disaster!
Box 3	Explain how your natural disaster impacts/effects the hydrosphere, atmosphere, biosphere, and geosphere. (It may not impact all of the spheres)
Box 4	**Draw an amazing picture** that shows how the spheres are impacted by your natural event. Label the pictures with examples of how it is impacted.