

EARTH SCIENCE CURRICULUM



NGS Magnified is a 6–8 grade curriculum based on the 5E Model. It focuses on hands-on investigations, phenomena-based learning, and interactive activities allowing students to use science inquiry skills.

Highlights Include:

- Aligned to Middle School NGSS
- Digital & Print Interactive Notebooks
- Teacher-led Demos
- Guided Inquiry Labs
- Instructional Videos & PowerPoints
- Science Stations
- Task Cards
- Study Guides
- Word Walls in English and Spanish
- Much more!



5E MODEL

Engage

- Demos
- Phenomena videos

Explain

- Notes
- PowerPoints
- Instructional Videos

Explore

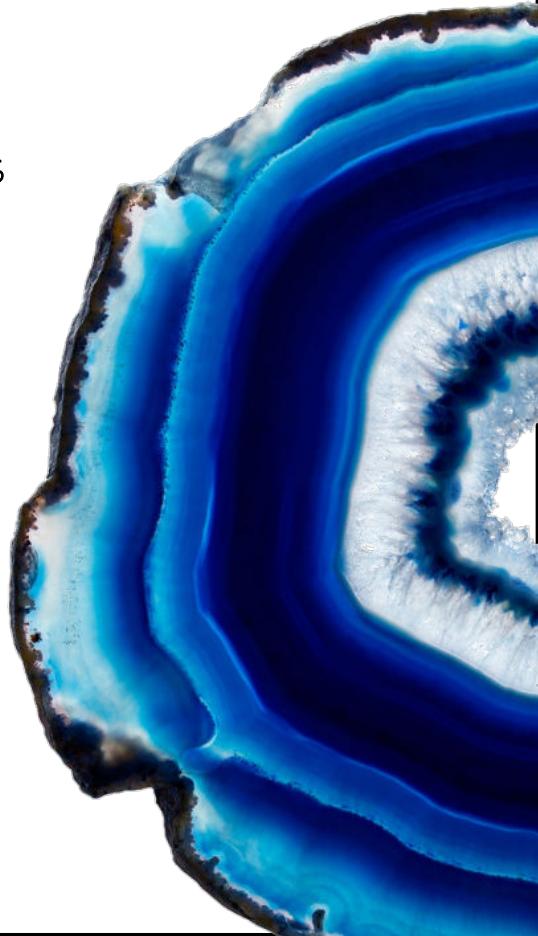
- Guided Inquiry Labs
- Science Interactive Notebooks

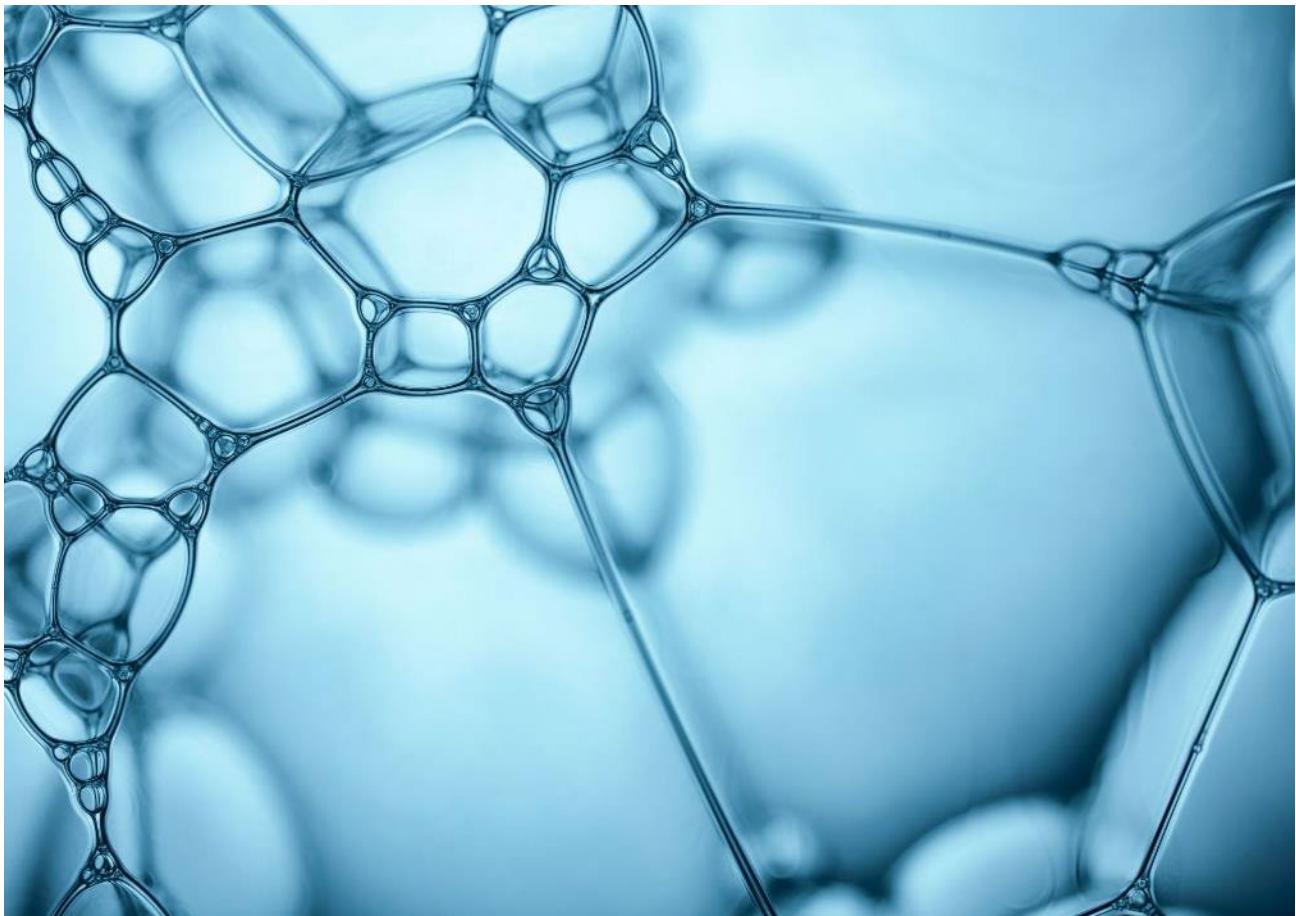
Elaboration

- Science Stations
- Study Guides
- Task Cards

Evaluation

- Mini-Quiz
- Chapter Tests





ENGAGE

Teacher-led demos foster wonder and classroom discussion and serve as the hook for the lesson. Videos and images of natural phenomena also foster questioning and communication.

DEMOS

The teacher-led demonstration allows teachers to invite scientific discussions and can help uncover misconceptions and, most importantly, lead to heightened curiosity and interest in the studied topic.

SCIENCE DEMO



Convection Currents

EARTH'S WATERS

Activity: Students will observe currents forming in the water and what causes them.

Materials:

- clear glass heat-proof dish or bowl
- hot plate
- water

Procedure:

1. Fill clear dish with water and allow students to view from above.
2. When water is still, add a drop of food coloring. Have students observe.
3. Dump out colored water.
4. Fill the clear dish with water again, and begin to heat on the hot plate. Observe what happens. Students may see white water is heating.
5. Add a couple of drops of food coloring to the water above. Observe.
6. You may want students to draw their observations.

What's Happening:

Ocean currents result from two processes - the action of wind and the variation in water temperature that causes movement- a process called convection. This occurs because the oceanic waters heat up becoming less dense, rise, and give off its heat to the surrounding environment. This causes the cold water to sink, and the process begins again. Convection results in the continual circulation of water.

Discussion:

Q: Compare the movement of food coloring between the two trials.

A: The food coloring just dropped in and was slowly moving. In the second trial, it formed a current which moved the water faster mixing the two colors.

Q: How did heat cause a current to form?

A: Warmer water is less dense than cooler water, so when it is heated, it rises, causing the cooler water to move lower. When that happens, the cycle continues.



Air Masses

WEATHER & CLIMATE

Activity: Students will observe what occurs when a warm air mass meets a cold air mass.

- stirring rod
- food coloring – red and blue
- water
- hot plate

Activity: Place a 400-mL beaker on a hot plate. Place a snug inside the middle of the 400-mL beaker, making two equal



Smog

EARTH'S ATMOSPHERE

Activity: Students will see an example of how smog is formed.

Materials:

• 2 – small, clear glass bottles	• 2 – aluminum pie tins	• ice
		• matches
	• hot water	

Procedure:

1. Pour hot water in one pie tin and ice water in the other pie tin.
2. Place a glass bottle in each pie tin – make sure students can see the bottles.
3. Light a match and drop it in the bottle standing in hot water. Have students make observations.
4. Light a match and drop it in the bottle standing in ice water. Have students make observations.

What's Happening?

The smoke stayed in the bottle full of cold air since it is denser than warm air. The dense air does not rise out of the bottle like the one with hot air. This relates to cities where smog is formed – in the morning when air is cooler, cars and trucks are traveling to work. The vehicles give off hydrocarbons after the fossil fuels are burned. The hydrocarbons along with other air pollutants react with each other in the presence of sunlight for from photochemical smog. Photochemical smog irritates respiratory systems, harms plants and damages some man-made material.

Discussion:

Q: How does the smoke relate to air pollution?

A: Polluted air, like smog will stay close to the ground when it's cooler temps, causing health concerns and destruction of some man-made materials.

Q: How is most air pollution produced?

A: By the burning of fossil fuels from vehicles, factories and plants.

NGSS PHENOMENA

Aligned to Middle School NGSS Standards. Each video or image also has teacher notes which offer discussion questions and answers. (see next slide)

MS-ESS2 Earth's Systems

Phenomena	MS-ESS2-1	MS-ESS2-2	MS-ESS2-3	MS-ESS2-4	MS-ESS2-5
Grand Canyon		X			
Landslide		X			
Silfra Fissure			X		
Towing a glacier				X	X
Coriolis Effect					
Why does the wind blow					X
Bottom of the clouds					X
Cappadocia	X				

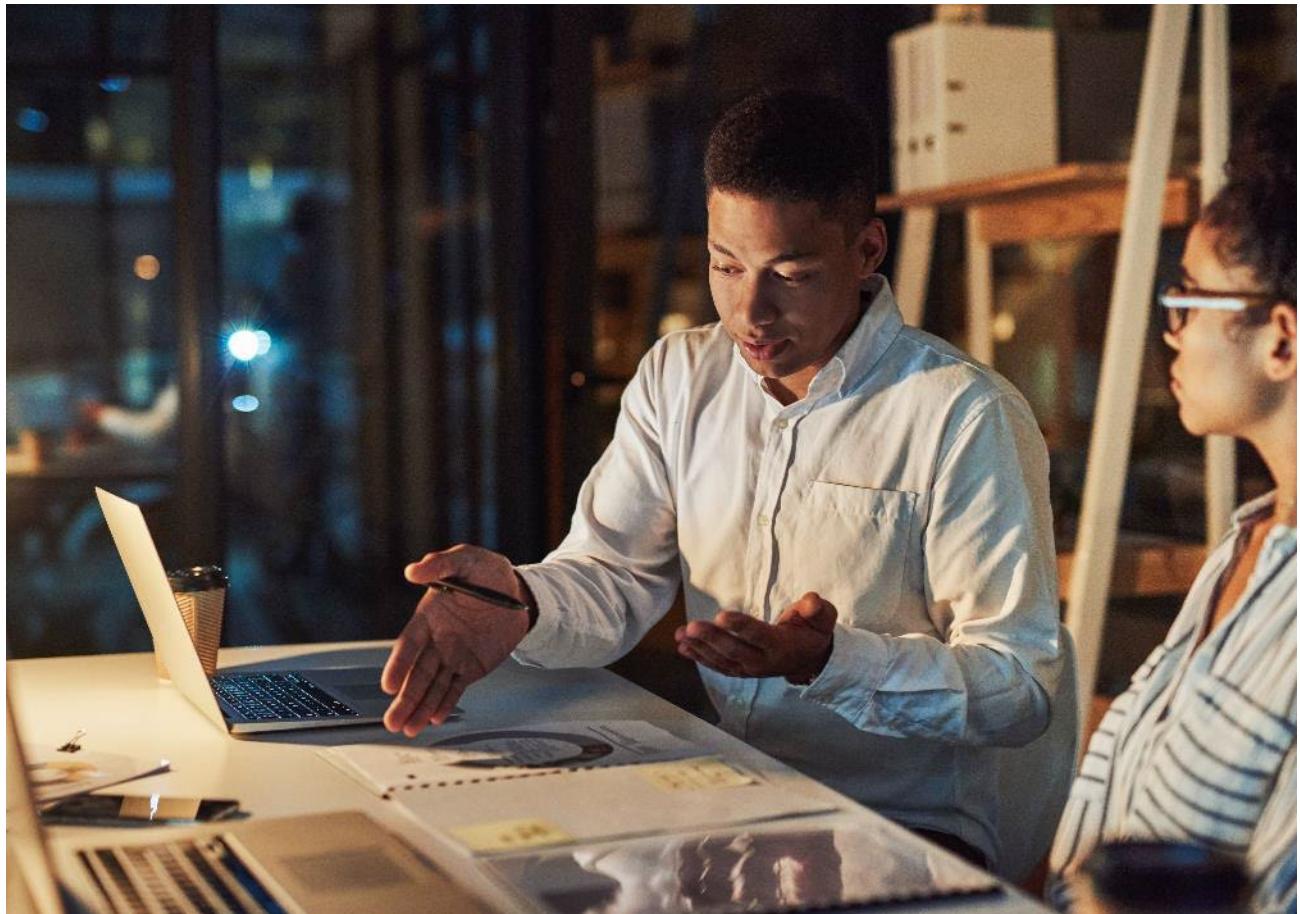


Option 1: Can you explain why the stars appear to move in the night sky?

The stars appear to move in the night sky because of Earth's rotation.

Option 2: Why do the stars appear to move in a circular motion?

Because of the Earth's rotation on its axis they appear to move in a circular motion.



EXPLAIN

PowerPoints, instructional videos, and guided notes (input side of interactive notebooks) provide definitions, explanations, and information through mini-lecture, text, internet, and other resources and encourages students to explain concepts and definitions in their own words

TABLE OF CONTENTS

Table of contents included for both NGSS and TEKS and aligned with updated standards

EARTH SCIENCE	
TEKS	TABLE OF CONTENTS
NGS Magnified Interactive Notebook Chapters:	TEKS Standards Addressed
Chapter 1: Nature of Science	
• Section 1: The Method of Science	6.1, 7.1, 8.1 H
• Section 2: Standards of Measurement	6.1, 7.1, 8.1 E
• Section 3: Graphing	6.1, 7.1, 8.1 F
Chapter 2: Intro to Earth Science	
• Section 1: The Study of Earth Science	6.10A
• Section 2: Lab Safety	6.1, 7.1, 8.1 C – 6.1, 7.1, 8.1 D
• Section 3: Methods of Science	6.1, 7.1, 8.1 E, 6.1, 7.1, 8.1 H
Chapter 3: Mapping Earth's Surface	
• Section 1: Mapping Earth's Surface	
• Section 2: Models of Earth	
• Section 3: Maps & Computers	
Chapter 4: Rocks & Minerals	
• Section 1: Properties of Minerals	
• Section 2: Mineral Formation & Resources	
• Section 3: Classifying Rocks	
• Section 4: Rock Groups	
Chapter 5: Plate Tectonics	
• Section 1: Earth's Interior	
• Section 2: Convection & The Mantle	
• Section 3: Continental Drift & Seafloor Spreading	
• Section 4: Theory of Plate Tectonics	

EARTH SCIENCE	
NGSS	TABLE OF CONTENTS – Earth Science
NGS Magnified Interactive Notebook Chapters:	NGSS Standards Addressed
Chapter 6: Forces that Shape Earth	
• Section 1: Forces that Shape Earth	ESS2-2, ESS3-3
• Section 2: Earthquakes	ESS2-2, ESS3-3
• Section 3: Volcanoes	ESS2-2, ESS3-3
• Section 4: Volcanic landforms	ESS2-2
Chapter 7: Earth's Changing Surface	
• Section 1: Weathering	ESS2-1
• Section 2: Soil Formation	ESS2-1
• Section 3: Erosion & Deposition: Wind & Water	ESS2-2
• Section 4: Erosion & Deposition: Glaciers	ESS2-2
Chapter 8: Earth's History	
• Section 1: Fossils	ESS1-4, ESS2-3
• Section 2: Determining Ages of Rocks	ESS1-4, ESS2-3
• Section 3: Geological Time Scale	ESS1-4
• Section 4: Earth's Eras	ESS1-4
Chapter 9: Earth's Waters	
• Section 1: Earth – The Water Planet	ESS2-4
• Section 2: Fresh Water	ESS2-2
• Section 3: Characteristics & Compositions of Oceans	ESS2-6
• Section 4: Ocean Waves & Tides	ESS2-4
• Section 5: Ocean Currents & Climates	ESS2-6

Print the student pages you need, and then the activities are completed in their notebook.

Section 1: Earth's Interior

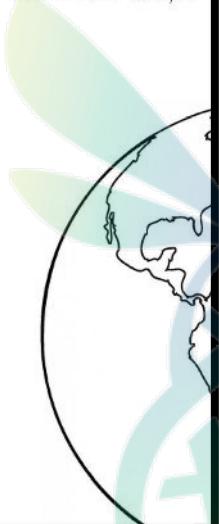


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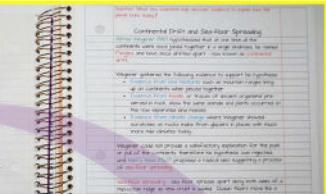
Students will create a flap and describe each of Earth's layers. Allow students to label continents and a mini-quiz are included.

Earth's Layers

Directions: Color the Earth diagram below then cut out, including making a cut on the inner solid line. Fold along dotted line to reveal the "window" to showcase the Earth's layers.

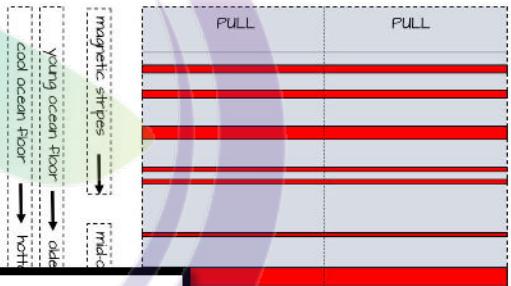


Section 3: Continental Drift and Sea-floor Spreading

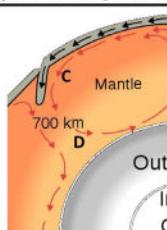


Teacher Guide (color)

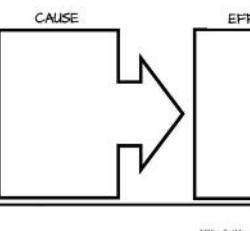
SEA-FLOOR SPREADING



GRAPHIC ORGANIZER: CONVECTION CURRENTS



- (A)
- (B)
- (C)
- (D)



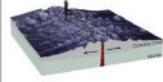
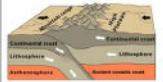
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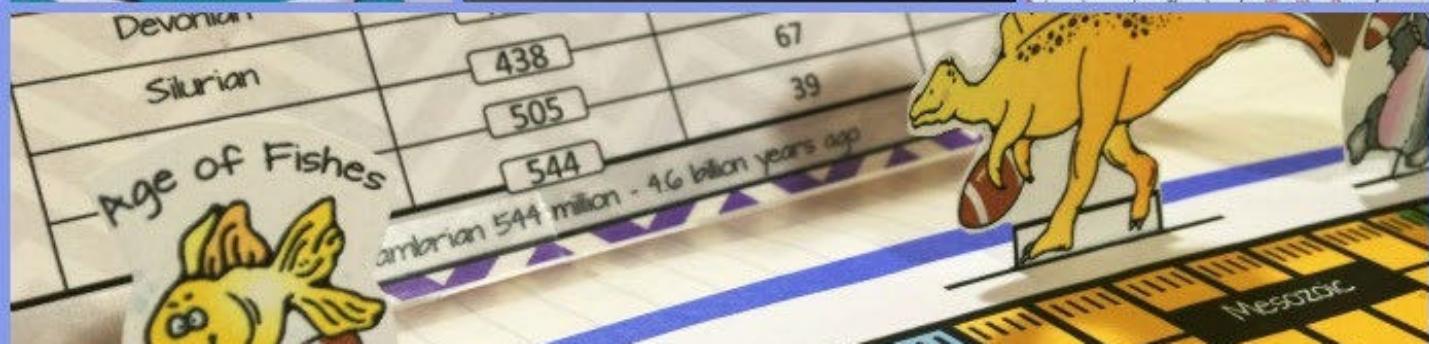
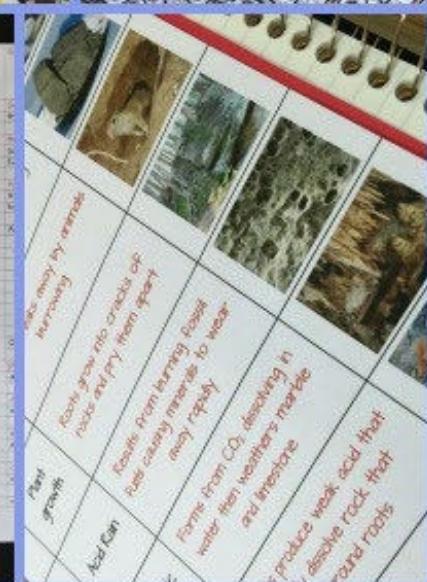
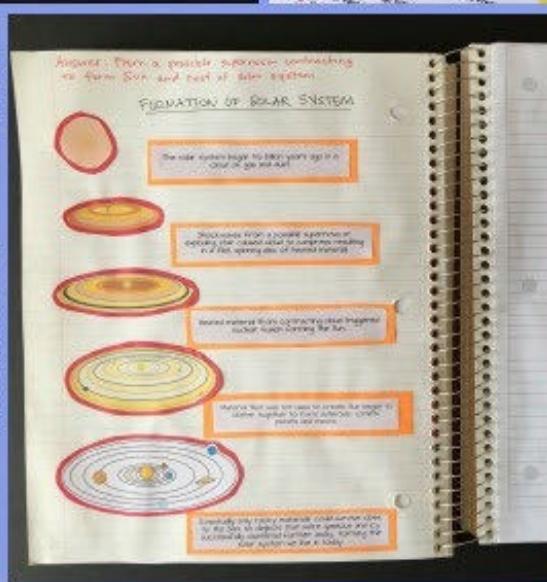
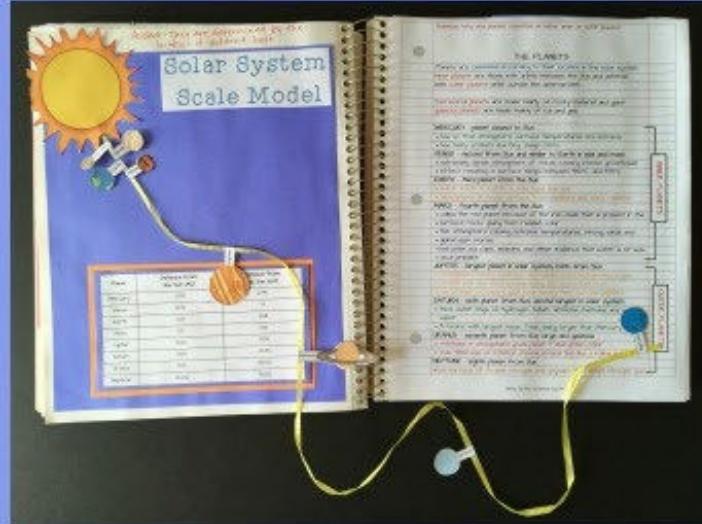
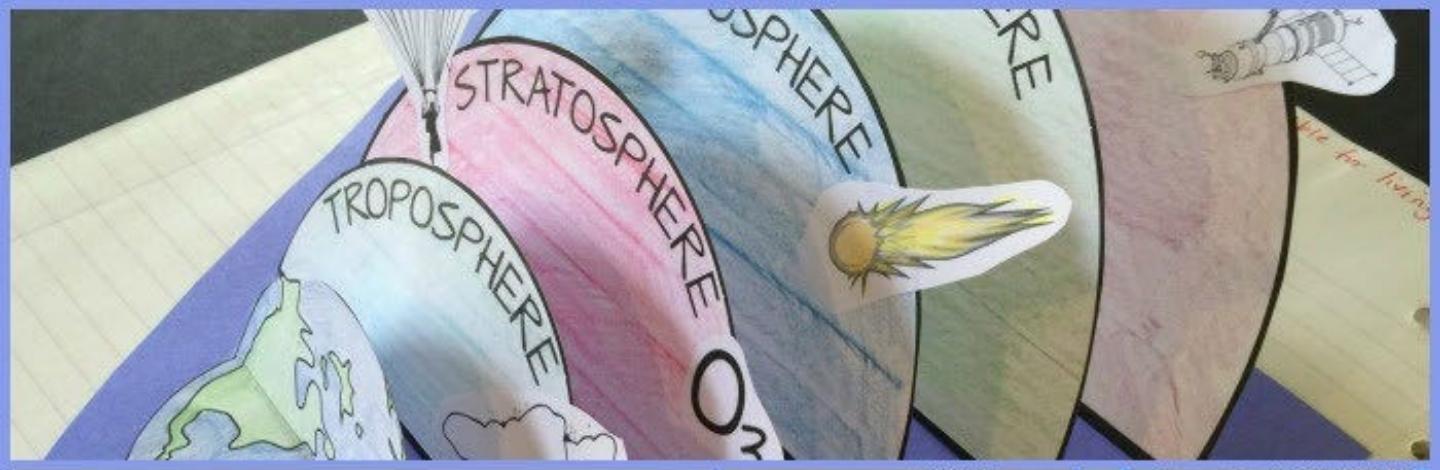
Students will understand the different plate boundaries. Complete this informational chart. Students will describe each boundary in their own words, cut out diagrams of different boundaries, examples, and paste them in the appropriate boxes. For this concept, I've included the diagram color and gray-scale for your convenience. A mini-quiz has also been provided along with a mini-quiz.

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Answer Key

Interactions of Earth's Plates

PLATE BOUNDARY	MOVEMENT OF PLATES	EXAMPLES
Transform Boundary	Place where two plates slip past each other moving in opposite directions.	 
Divergent Boundary	Two plates move apart, or diverge, usually occur at a mid-ocean ridge.	 
Convergent Boundary (ocean-to-continent)	Place where a continental plate collides with an oceanic plate; the denser plate will subduct.	 
Convergent Boundary (continent-to-continent)	Two continental plates collide creating mountain ranges since plates have same density.	 



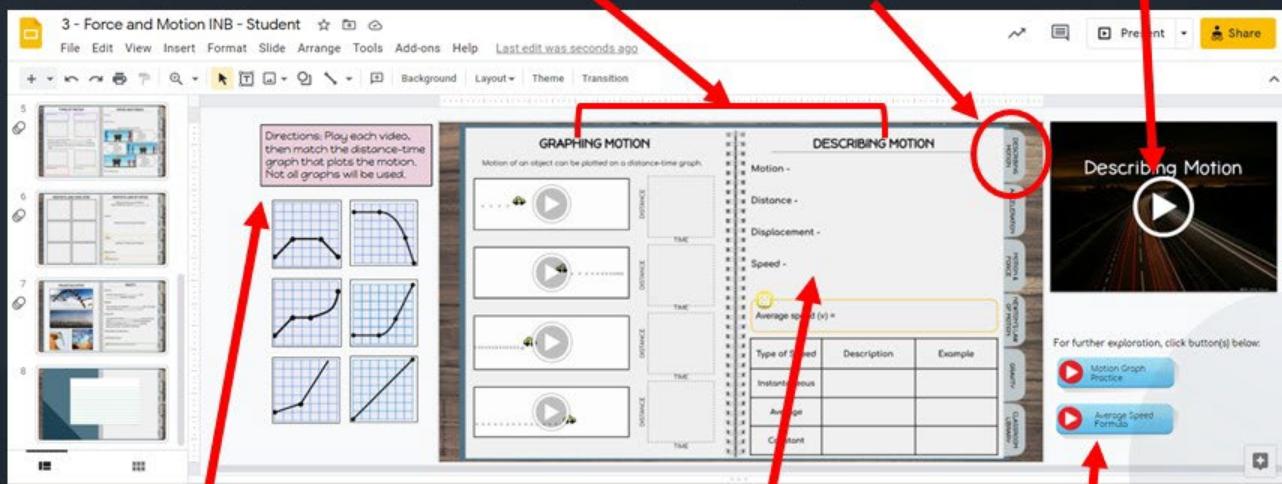
Student Digital Notebook

The student notebook is on Google Drive and ready for you to share with your students. Here's a quick overview of the features:

Set up like a traditional interactive notebook with input and output sides.

Hyperlinked tabs so student can easily move through chapter for review

Students watch video < 6 min to complete notes.



Encouraging independent learners. Directions for output side are here along with what they need to complete the activity.

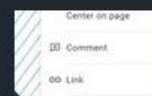
Notes are chunked into manageable sections with large spaces for textboxes

Some pages have links so students can go deeper into the topic if they need.



Go to the last slide of presentation and add due dates, important reminders, or even a fun cartoon or picture! If you don't want to use this feature, then just delete/hide this slide.

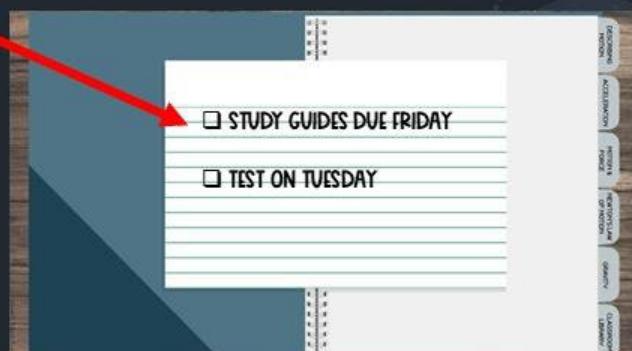
1. Add text or picture
2. Right click and choose "link"



3. Choose "slides in this presentation"



4. Choose last slide, and now when student click, they will get your message.





EXPLORE

Students investigate problems, events, or situations. As a result of their mental and physical involvement in these activities, students question events, observe patterns, identify and test variables, and communicate results.

LAB

A Guided Inquiry Lab is a traditional lab that allows students to perform an investigation to solve a problem. Students will hypothesize, collect, and analyze data and communicate their results.

Name _____ Date _____



Particulate Sampling

EARTH'S ATMOSPHERE

Air is mostly composed of gas, but also contains solid air pollution. Some particles come from man-made sources like chemical fumes. Others come from natural sources such as wildfires. Particle pollution causes problems with human health and contributes to smog and acid rain. The concentration of particles in the air is affected by many factors including the season, weather conditions and the location.

Materials:

- stereo
- permanent marker

Option 1: Air

- cards
- 1-inch hole punch
- packing tape
- string

Option 2: Filter

- coffee filter
- rubber band
- vacuum cleaner

Procedure:

1. As a group, decide which method you will use to collect particulates.
2. Option A. A. Cut a 1-inch square from a piece of cardstock. Use a 1-inch hole punch to make a hole in the center of the square. Place the square over the end of a pencil. Tape the square to the pencil. Place the pencil in the hole of a piece of packing tape. Place the pencil on a string. Tie the string to a permanent marker. Option B. Place the coffee filter over the nozzle of the vacuum cleaner hose. Fasten securely with a heavy-duty rubber band. Hole the vacuum nozzle at least one meter above the ground (or out window) when collecting samples. Turn on the vacuum cleaner and collect samples for 30 minutes.
3. Each day you will need to observe the weather conditions if any since collection, amount of wind, etc. Record these in the data table provided.
4. When all samples have been collected, place them on a stage. Choose one area viewed through your lens and record the number of particles you see. Record these in the data table.
5. Repeat with the other two samples.

Data Table:

Date and Location	Weather Conditions		
	Temp (°C)	Wind Conditions	Precipitation

Option B. Filter Paper Collector

- Determine the date and location that you will collect your particulates. Write this information on the outside edge of the coffee filter.
- Place the coffee filter over the nozzle of the vacuum cleaner hose. Fasten securely with a heavy-duty rubber band.
- Hole the vacuum nozzle at least one meter above the ground (or out window) when collecting samples. Turn on the vacuum cleaner and collect samples for 30 minutes.

Turn the filter to show the area that covered your location, do NOT collect samples.

Analyze and Conclude:

1. Did you find variations in your particle count from each day? What may or may not have contributed to this?

2. Which elements of weather most clearly affected the number of particles collected?

3. Were you able to identify particles that came from plants or animals (particularly insects)? Make a list of possible sources.

4. If you were to repeat this experiment in a month, do you think you would get the same results? Explain.

5. How could you improve the particle collection method to get more particles out of the air?

6. If you were to repeat this experiment, can you identify other locations that may have a high particulate level that you could test?

EARTH SCIENCE SUPPLY LIST

Nature of Science

Lab Supplies	Consumables
Ice cube String Water Eye dropper Masking tape Metric ruler 4-250mL graduated cylinder 4-Test tubes 25mL graduated cylinder 10mL graduated cylinder Colored pencils Metric stick	Salt Baking soda Vinegar Paper Index cards Cabbage juice Food coloring Colored syrup Miscellaneous objects

Intro to Lab Skills

Lab Supplies	Consumables
Test tubes Eye dropper 250 mL beakers 23 mL graduated cylinders 10 mL graduated cylinders Metric ruler Meter stick	Ice cubes Salt Cabbage juice Vinegar Baking soda Tape Colored pencils String Food coloring Karo syrup Index cards Markers

EARTH SCIENCE SUPPLY LIST

Rocks & Minerals

Lab Supplies	Consumables
Rock characteristics chart 7 samples of rocks Permanent marker Dissecting microscope 100 mL graduated cylinder Mineral samples Hand lens Hot water Hot plate Balance Calculator	Starburst candy Wax paper 3 toothpaste samples Hard-boiled egg Plastic spoons Small seashells Cement Plaster Soil Sand Iron Knife Leaves Toothbrush Plastic cups Small gravel

Astronomy and Space Science

Lab Supplies	Consumables
Meter stick Rubber bands Thermometers Safety goggles Paper towels Weights/rocks Ruler Tape Marker Scissors Stopwatch Ice	Sidewalk chalk Bubble wrap Poster paper Cotton balls Aluminum cake pan Plastic baggies Soda cans Straws String Quarter Newspaper Styrofoam peanuts Raw egg Popsicle sticks Cardboard Dixie cups Toothpicks Ball and string model with handle

EARTH SCIENCE SUPPLY LIST

Plate Tectonics

Lab Supplies	Consumables
Hot pad Hot plate Marker Scissors Stopwatch 10 mL beaker 1000 mL beaker Rubber bands Colored pencils Paper discs from paper punch	Playdough Paper plate Plastic wrap Food coloring Cookie cutters Tools to shape playdough Pins Candle Stamps Spatula Rolling pin

Forces that Shape Earth

Lab Supplies	Consumables
Large beakers Trap Colored pencils Glue	Modeling clay/playdough Facial tissue Craft plaster cloth Plastic water/soda bottles Red food coloring Large boulder or bowling ball Decorative figures/twigs/rocks String/yarn Dish soap Vinegar Baking soda Paint Newspaper Cardboard Zip top baggie Toothpicks Construction paper Popsicle sticks Small toys/figurines Plastic knife

EARTH SCIENCE SUPPLY LIST

Earth's Changing Surface

Lab Supplies	Consumables
Ruler/metric Measuring cup Eye dropper Stereomicroscope (hand lens) Forceps Stopwatch Petri dishes	Local soil Plastic spoon Bagged topsoil 3 different samples of sand Liquid detergent Plastic jar with lid

Earth's History

Lab Supplies	Consumables
Actual fossils or photos Non-fossils (rocks, shells, bones) Magnifying glass Colored pencils Eye dropper Plastic bowl Ruler Paper Beaker Water	Index cards Small milk cartons Sediment variety Bird seed mix Wooden skewer Footprint stamps Straws Playdough Spoons Sugar cubes Ink pad

Mapping Earth's Surface

Lab Supplies	Consumables
Plastic meter ruler Different maps (conic, Mercator, etc.) Permanent marker Dry-erase markers Water Beaker Tape Globe Ruler Paper Picture Colored pencils	Foil pan with clear lid Food coloring Modeling clay

EARTH SCIENCE SUPPLY LIST

Earth's Atmosphere

Lab Supplies	Consumables
Ice Matches Rubber bands Clamp light Ring stand Stopwatch Thermometers Colored pencils Glue Tape 2 small, clear bottles Hot water Stereomicroscope Permanent marker 1-inch hole punch Triple beam balance Wide mouth jar 2 large cups Stapler	Cardboard Cardstock Packing tape String Sand Plastic cups Push pins Straws Clay Water bottles Coffee filters Vacuum cleaner Balloon Plastic baggie Small paper cups Car 2 aluminum pie tins Dowels rods Disposable chopsticks

Weather and Climate

Lab Supplies	Consumables
400 mL beaker Stirring rod Hot plate Thermometer Graduated cylinder Scissors Ice Water Tape Ruler String Variable speed fan Matches Globe Glue Flashlight	Toilet paper tubes Food coloring Plastic bottles with caps (2L & smaller) Plastic toy figurine Construction paper Popsicles sticks Paper cup Foil Straws Clay Toothpicks Cardboard

EARTH SCIENCE SUPPLY LIST

Natural Resources

Lab Supplies	Consumables
25 mL test tubes	Liquid dish soap
Test tube holder	4 water sources (tap, local, stream, bottled spring, mineral)
Test tube rack	4 water pond samples
Graduated cylinder	Black & white container with lid
Microscope slides	Disposable pie tin
Thermometer	Pieces of scrap material
Colored pencils	Sponge pieces
250 mL beaker	Clay
Eye dropper	Oil
pH paper	Toothpicks
Ring stand	Cotton balls
Hot plate	Cardboard
Coverslips	Newspaper
Stopwatch	Pipe cleaner
Clamp light	Gravel
Microscope	
Ruler	
Tape	
Marker	
Fan	
Stoppers	
Pipette	
Water	
String	



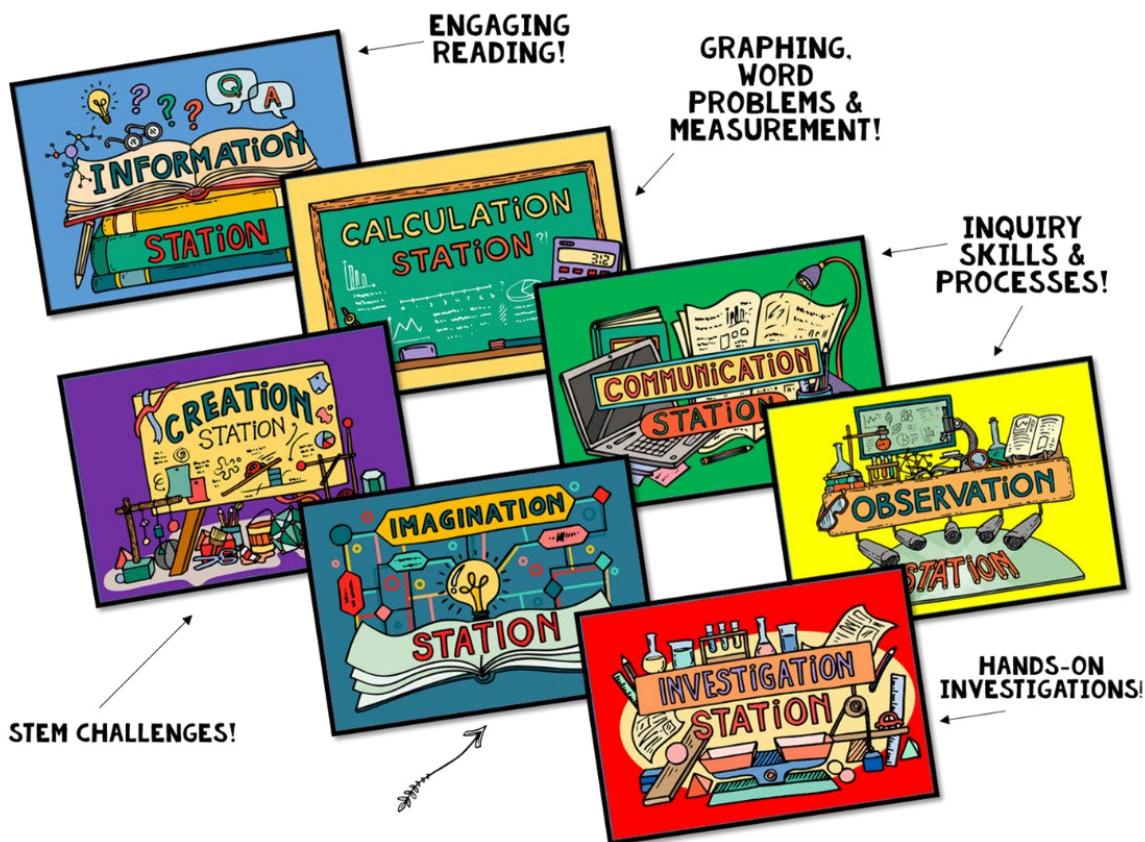
ELABORATE

It is important to involve students in further experiences that apply, extend, or elaborate the concepts, processes, or skills they are learning. Elaborate activities provide time for students to apply their understanding of concepts and skills. They might apply their understanding to similar phenomena or problems.

SCIENCE STATIONS

SCIENCE STATIONS are designated classroom locations with activities that challenge students to extend their knowledge and elaborate on their science skills by working independently of the teacher in small groups or pairs. The stations included are:

- INFORMATION STATION
- OBSERVATION STATION
- CALCULATION STATION
- INVESTIGATION STATION
- COMMUNICATION STATION
- CREATION STATION
- IMAGINATION STATION



INFORMATION STATION



OBSERVATION STATION



A

Group members
this station that
Using what the
skills to complete
provided picture



1. Use the diagram to help put the layers crust, lower mantle, inner core, upper

B

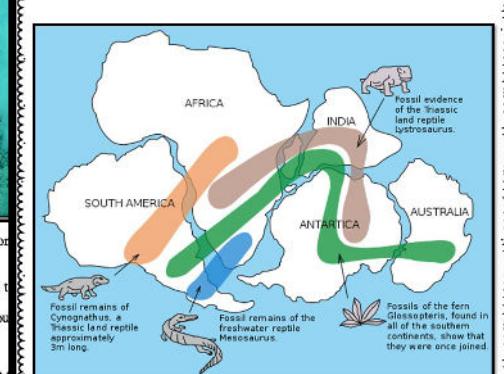


The picture shows a hydrothermal vent on the ocean floor.

1. How is the water that is coming from the sky different from the water that is coming from rivers and streams?
2. What are features on land that you can see? Explain.



6



1. What evidence in the illustration above helps explain the theory of continental drift?
2. Since the breakup of Pangea, it took the continents about 225 million years to drift to their present locations. What information would you need to know in order to predict where the continents will be in 25 million years?

INVESTIGATION STATION



CALCULATION STATION



Group members use their math skills to complete a challenge. Skills may include graphing linear models, measurement, and calculating area.



Motion in the Mantle

Problem: How do convection currents in Earth's mantle affect tectonic plates?

Materials:

- 1000 mL beaker (substitute large glass jar)
- 100 mL beaker (substitute small glass jar)
- plastic wrap
- rubber band
- tap water
- paper discs from paper punch
- food coloring
- stop watch
- colored pencils
- hot pad

Procedure:

1. Fill the 1000 mL beaker 2/3 of the way with cold tap water.
2. Fill the 100 mL beaker completely with hot water. Add a drop of food coloring.
3. Wrap the 1000 mL beaker with plastic wrap and secure with a rubber band.
4. Place the smaller beaker into the larger one.
5. Place the paper discs around the center of the surface of the water.
6. Use a pencil to poke two holes in the saran wrap.
7. Turn the beaker to stir the water.
8. Turn the beaker back over and add the hot water and the paper pieces. Record your observations on your answer sheet at 5, 60 and 120 seconds.

Is Hawaii Moving Away?

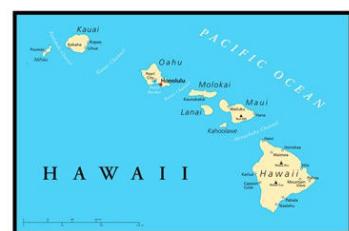


The Hawaiian Islands formed over millions of years as a result of the Pacific plate moving over a hot spot, or an area where magma erupts through the crust and reaches the surface.

1. Calculate the rate of movement for each island in the chart below using the following formula:

$$\text{Rate (r)} = \frac{\text{Distance (d)}}{\text{Time (t)}}$$

2. Fill in your answers on the table on your answer sheet.



3. Since scientists measure plate movement in centimeters, you will then need to multiply your answer by .1 to convert from kilometers per million years to centimeters per year.

Island	Distance - Kilometers (km)	Age - Million years (Ma)	Rate (r)	Convert to cm/year (multiply x .1)
Molokai	290	1.8	?	?
Oahu	300	3.3	?	?
Kauai	519	5.6	?	?
Average				?

4. Use the average rate of movement to calculate how the distance the Pacific plate has traveled since you were born.

$$\text{Distance} = \text{Average Rate (r)} \times \text{Time (Your age)}$$

COMMUNICATION STATION



A

CREATION STATION



IMAGINATION STATION



Group
Technique
design
being
located

Testing
and
on a
also in
section

This station is to act as a closure activity station at the same time, for example, a screen. This station makes science fun by asking them to complete tasks that require critical thinking. To complete station, complete task individually, then ask

This station is not intended to be graded for answers, but instead be used as an awareness of the science topic in the

and
ergent,
t and
plate
ies.

What observations
led Albert Wegener
to develop the
hypothesis of
continental drift.



Materials:

Reconstruct the Continents

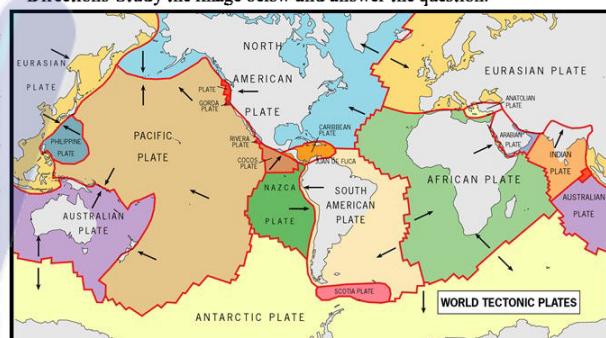
Challenge: Use evidence of shapes and features to reconstruct a land mass.

play dough

ts:

Weekend Getaway in Moscow?

Directions: Study the image below and answer the question.



IMAGINE it's 100 million years from now. How would travel times be different between the following:

Brazil to Egypt?

Australia to Japan?

New York to London?

San Diego to Moscow?

STUDY GUIDES

NGS Magnified Study Guides are directly aligned to the notes and assessments offered by NGS Magnified and include a variety of review strategies that meet the needs of your learners for independent study and indirect instruction.

STUDY GUIDE

Name: _____ Date: _____

SECTION 1
Directions: Draw a picture of each type of bacteria in the circles, and then describe the characteristics of prokaryotes in the boxes below.

SECTION 2
Directions: Explain reproduction as it occurs in bacteria.
Binary Fission: _____

SECTION 3
Directions: Explain what happens during each type of viral infection.
Lytic Cycle: _____
Lysogenic Cycle: _____

SECTION 4
Directions: Fill in each blank with the correct word from the word bank.
pseudopods protist algae protozoans ciliates
zooflagellates euglenoids seaweed spores diatoms
dinoflagellates

1. Eukaryotes that can't be classified as animals, plants or fungi.
2. Animal-like protist
3. Plant-like protist
4. Move by means of flagella
5. Group of amoebas that move about by forming these.
6. Use hair-like projections to move and feed
7. Single celled protists that lack a wall and have one or two flagella
8. Unicellular and photosynthetic with a cell wall made of cellulose
9. Unicellular with a glass-like cell containing silica
10. Large, multicellular marine algae
11. Tiny cells able to grow into a new organism

SECTION 5
Directions: List three characteristics of fungi and then answer the questions below.

SECTION 6
Directions: Draw a picture of your own mushroom and label it using the terms below.

cap
gills
mycelium
hyphae
stalk

SECTION 7
Directions: Scan the QR code to watch the video about mushrooms. Then research a mushroom mentioned in the video. Draw a picture of it, explain how it gets and processes its food, and whether it is edible.

QR code: _____

Mushrooms are awesome!

Did you know that you eat bacteria? Yogurt and cheese are just a couple of the snacks made with bacteria.

TASK CARDS

Task cards are a great tool for concept review. They can be used in a variety of ways—in pairs, small groups, team games, or individually. The reason they are so effective is that there is only ONE task per card, allowing students to focus on that single task until they have successfully completed it. An answer sheet and answer key for teachers are included. Digital Task Cards also included.

DECIDE

The grinding away of rock by other rock particles carried by wind and water is ____.

a. drought c. oxidation
b. abrasion d. acidification

LIST

List three types of mechanical weathering.

DECIDE

In soil formation, fungi, bacteria and worms are soil ____.

a. aerators c. decomposers
b. mixers d. oxidizers

IDENTIFY

The most important agent of chemical weathering is ____.

COMPLETE

One soil is different from the others because it has ____.

DECIDE

____ is a type of soil that is best for growing plants.

a. Loam c. Humus
b. Clay d. Sand

IDENTIFY

Identify the cause of weathering in the picture above.

LIST

List three types of chemical weathering.

COMPLETE

Decayed organic material is called ____.

DECIDE

Soil that is made up of about equal parts of clay, sand and silt is ____.

a. humus c. gravel
b. sand d. loam

IDENTIFY

Identify the cause of weathering in the picture above.

DESCRIBE

Describe how contour plowing is a method of soil conservation.

COMPLETE

The measure of how well soil supports plant growth is called ____.



EVALUATE

Use a variety of assessments to gather evidence of student's understanding and provide opportunities for them to assess their own progress.

The curriculum provides mini-quizzes for each INB chapter, BLOOKET links are available for online game-style review, and chapter tests are included with each text having multiple-choice, interpreting diagrams, short answers, and essays.

Answer keys provided.

Name _____ Date _____

CHAPTER TEST CELL PROCESSES & ENERGY

Multiple Choice

Choose the answer that best completes each statement.

1. What are the products of photosynthesis?
a. carbon dioxide and water
b. oxygen and water
c. carbon dioxide and sugars
d. oxygen and sugars

2. What happens during photosynthesis?
a. The cell uses oxygen to make food
b. The cell uses the energy in sunlight to make food
c. The cell uses glucose to make oxygen
d. The cell uses the energy in sunlight to make carbon dioxide

3. How does photosynthesis benefit heterotrophs?
a. It adds carbon dioxide to the air

16. By the end of prophase, each of the following has occurred except _____
a. tighter coiling of the chromosomes
b. breaking down of the nuclear envelope
c. disappearing of the nucleolus
d. lining up of chromosomes in the cell

17. The longest phase of the cell cycle is _____
a. prophase
b. interphase
c. metaphase
d. mitosis

18. Which of the following equations best represents photosynthesis?
a. $C + O_2 + H_2O \rightarrow CO_2 + H_2O$
b. $CO_2 + H_2O \rightarrow C_6H_12O_6 + GO_2$

Interpreting Diagrams

Use the diagrams to answer each question.

34. Identify the stages of the cell cycle represented in the diagrams. Label A, B, and C.

35. Which drawings represent parts of mitosis?

36. List drawings 1-5 in their correct order, beginning interphase.

37. Identify the structures labeled A. What do they do?

38. Explain what is happening in drawing 2.

Essay

Choose **Two** essays and answer using the space provided.

39. Explain the following statement: Photosynthesis
40. Animals do not make their own food. From where do they get energy?
41. Define DNA replication and explain its function.

Name _____ Date _____

Quiz: Fungus

Correctly identify the structures of the fungus.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Page | 22

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Name _____ Date _____

Quiz: Fungus

Correctly identify the structures of the fungus.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

<http://www.NittieGrittyScience.blogspot.com>



Suggested Pacing Guide

The following is a **suggested pacing guide** for my COMPLETE COURSES (Earth, Life or Physical Science) which are based on 50-minute class periods. There are three variations below. **Each variation is based on the number of sections in your SCIENCE INTERACTIVE NOTEBOOK chapter.**

Based on a **4-Section Chapter**

Day	Lesson/Activity	Engage	Explain	Explore	Elaborate	Evaluate
1	<ul style="list-style-type: none">• Teacher Demo• Section 1 Notes – INB input• INB Activity – INB output (homework if not completed in class)	x				
			x			
				x		
2	<ul style="list-style-type: none">• Mini-quiz• Section 2 Notes – use PowerPoint• INB Activity					x
			x			
				x		
3	<ul style="list-style-type: none">• Mini-quiz• Guided Inquiry Lab – Student Led					x
				x		
4	<ul style="list-style-type: none">• Section 3 Notes – use PowerPoint• INB Activity		x			
				x		
5	<ul style="list-style-type: none">• Mini-quiz• Section 4 Notes – use PowerPoint• INB Activity					x
			x			
				x		
6	<ul style="list-style-type: none">• Mini quiz• Science Stations					x
					x	
7	<ul style="list-style-type: none">• Science Stations				x	
8	<ul style="list-style-type: none">• Final draft and testing for Creation Station (STEM)				x	x
9	<ul style="list-style-type: none">• Task Card Review (game-style, full class, partner)				x	
10	<ul style="list-style-type: none">• Chapter Test• Have students complete notes for next chapter*	x				x

* **Note-taking option:** Once students are done with chapter test, they get the next set of notes and work quietly on completing them while other students finish up. All notes are to be completed when they return to class. Have students glue each page of notes into the next few pages of their INB (right side only). This way, when you go over the PowerPoint each day, they have already reviewed topic and are ready for class.



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