Biogeochemical Cycles Preview is a compressed

 What do we already kno yourselves with this temp

B_Consta

 Nitrogen fixin the root node

rogen.

Nitrogen fixing bacteri Fixes nitrogen into NH:

N₂ gas

Gets further by By other bacteria

Precipitation

Solid I Ulanda

Transpirati

Lessons...

These reservoirs of carpon that use to locked away are being introduced rap

d Phosphorus

Phosphorus moves through.

A) Lithosphere

B) Hydrosphere C) Ecosphere

D) Augustahere

E) A.B.C only

F) All of the above.

ah the atmos Marketey of red

Uses water. one, anne light

too moveless

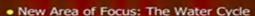
HER RIDG COOK

The hydrologic ycle (Water Cycle): The continuous movement of water on, above, whe surface of the earth.

· Name some solid forms of precipitation?

19 Most common... Snow, Hail, Ice Pellets

Interactive Slideshows



- AKA The Hydrologic Cycle
 - Driven by the sun and gravity.



 Below is the correct set-up to use water cycle to turn salt water into freshwater.

Need Very Sunny



Driven by the S



Activity! Water Cycle on the window?



Activity! Water Cycle in a Bottle.

teacher, then flipped, and ed with ice cubes by

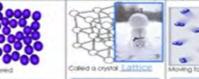
Soda bottle cut by

Next fill bottle with very warm water and food coloring.

COMMENS watter dydla ביונטפין ביונב nitrate varietiene

Strange kind of creepy video of water molecules in the hydrologic cycle as we wait (Optional 2 min) https://www.youtube.com/watch?v=StPobH5ODTw

omplete now...



three states of

round the planet

Nitrogen Cycle: The circulation of nitrogen: nitrates from the soil, absorbed by plants, eaten by animals that die and decay returning the nitrogen back to the soil.



When plants and animals die.

 Nitrifying bacteria break down the nitrogen in their tissues. (Nitrites NO2)



Some distins missegen can go back to the uttroger dixingwacterias

. The wind is driven by the uneven heating and cooling on planet earth (from the sun) and moves moisture around the planet.



Follow Along Bundle



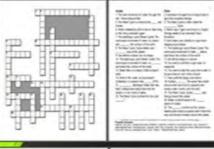








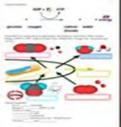












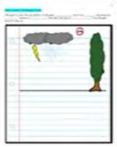
























28 Pages









Activities, Assessments, Keys, and more all built-in

- All life requires nitrogen-compounds, e.g., proteins and nucleic acids.
- Experiment from two weeks ago.
- · What does fertilizer do to an aquatic system?
- Answer: The nitrogen and phosphorus caused an increase in plant growth in the containers over time.

Control

LOW





carbon cycle. The dirculation of carbon into

- The biogeochemical co - Water cycle.
- Carbon cycle



organisms (biotic) and back again (abiotic).

Atmosphere, Land, Water, Oceans.



 Evaporation: Substance changes from: liquid state to gas state (requires ene

Driven by the Sun

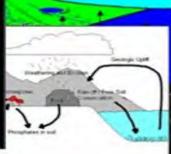


- Bio Life
- · Geo Earth
- Cycles Repeated event, full turn.



Organisms rely on this matter and energy cycling to su





Biogeochemical Cycles: 16 Lesson of 50 Minutes and 24 Page work Bundle, Biogeochemical Cycles, Earth's Spheres, Water's States of Matter on Earth, Hydrologic Cycle, Kinetic Molecule Theory, Movement of Atoms in various States of Matter, Solids, Liquids, Gases, State of Matter Diagram, Diagram of the Water Cycle, Evaporation, Condensation Precipitation, Water Cycle in a Bottle Activity, Building a Solar Still Activity, Sublimation, Transpiration, Transpiration Activity, Surface Run-off, Percolation, Percolation in a Bottle Activity, Groundwater Discharge and Storage, Water Cycle Quiz, Box Games, Crossword, Assessment, Carbon Cycle, Carbon Reservoirs, Energy Flow of Life, Photosynthesis, Photosynthetic Equation, Understanding the Equation with M&M's, Photosynthesis Overview, Cellular Respiration, Overview of Molecules and Foods Macronutrients, Understanding Respiration Equation, Blow up a balloon with yeast demo, Basics of Citric Acid Cycle, Aerobic vs. Anaerobic Respiration, Oxygen Carbon Dioxide Balance with plants/protists/bacteria and animals, Box Game Review, Nitrogen Cycle, Nitrogen Cycle Diagram, Nitrogen Fixation, Denitrification, Nutrient Pollution, Acids and Bases, pH Scale, Penny Perfect Activity, Using pH indicators to test common household solutions, Acid Rain, Acid Rain Diagram, Acid Rain and Chemical Weathering Activity with Vinegar and Chalk, Phosphorus Cycle, Phosphorus Cycle Diagram, Importance of Phosphorus, Nutrients and Aquatic Systems, Nutrient Pollution, Eutrophication, Visual Quiz, Box Game, Crossword Puzzle, End Assessment



Part 2 Lesson 1 Biogeochemical Cycles



Part 2 Lesson 6 Carbon Cycle Photosyn



art 2 Lesson 11 Nitrogen Revie





Part 2 Lesson 2 Intro to the Water Cycle









Part 2 Lesson 3 Water Cycle Continued



Ecology Abiotic Factors Unit





Part 2 Work Bundle Answers



Part 2 Lesson 4 Water Cycle Review Game



Part 2 Lesson 9 Cell Respiration Wrap Up







Part 2 Work Bundle Print with Notes



Part 2 Lesson 5 Review Game Answer







Part 2 Work Bundle Print

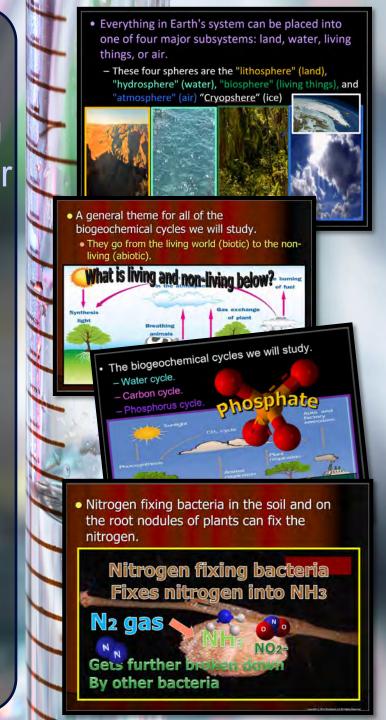
SlideSpark Science

MIDDLE-LEVEL EDUCATIONAL RESOURCES



Interactive slideshows provide the roadmap for an amazing learning experience for students in grades 5-9. A Detailed set of work bundles chronologically follow the digital learning, providing a clear and intuitive roadmap to understanding. As the teacher or student advances through a slideshow, exciting hands-on activities, fantastic visuals, fill-in notes, review opportunities, video links, assessments, and much more are strategically placed throughout. Interactive learning unfolds step by step and supported by the work bundle to reach all types of learners. Everything you need to run to an amazing learning experience is provided in this one-of-a-kind science curriculum.

Each unit in the curriculum is designed to help teachers deliver the best possible learning experience for their students. Our interactive science slideshows are filled with questions and answers, important fill-in notes, hands-on activities, projects, games, built-in quizzes, and end of the unit assessment pieces. Students follow along with a work bundle that documents the entire learning experience for a fantastic review and assessment piece.





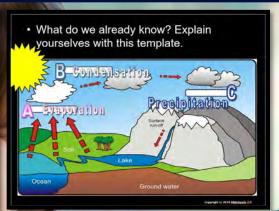
Red Slide Notes: Help students record important information in a fun and easy-to-understand way. Designed red-colored slides contain a few pieces of crucial information that students must record into their work bundle to complete the notes. Students will use these important notes throughout the work bundle.

The set-up of the slideshows are designed to make learning fun and interactive for students. With a mix of questions and answers, teachers can use these slides to get their students thinking and actively participating in their education. Plus, the answers are always revealed on the next slide, providing students with immediate feedback and helping teachers

What do we already know? Explain yourselves with this template.

 Driven by the B
 Suriace
 Ground water

Cocan Ground water



Next Slide

assess their understanding.

Slideshow supports
Work Bundle

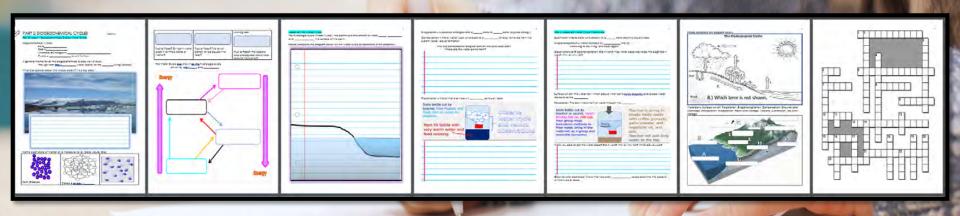
Lesson Planning

Daily lessons space exciting hands-on activities, red slide notes, video and academic links, projects, simulations, readings, built-in quizzes, and review opportunities throughout the slideshows. A typical day may have many different learning styles being targeted. Daily lesson planning becomes advancing through the slideshow roadmap the night before. Each lesson is roughly 50 minutes, but sometimes things can speed up or slow down. The best strategy is just to go at your classes own pace. The work bundle chronologically follows the interactive slideshow and you can always spend extra time assessing the quality of the writing within. If you don't quite finish a lesson, you can always pick it up the next day where you left off. The only real trick in timing is not starting a larger activity if you don't have the available time to complete. The slideshows have been designed to be a low stress, go at your classes own pace experience. Most activities are designed to be cost effective, using general materials that can be gathered from your local stores.

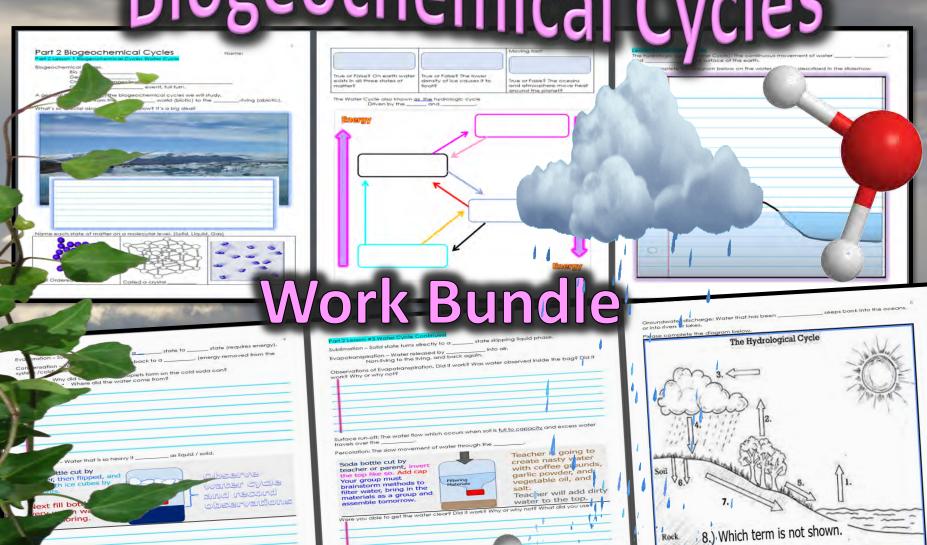


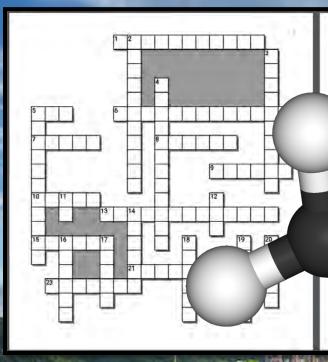
Follow Along Work Bundle

Each science unit includes a single printable work bundle that stays with students from start to finish. Just print and distribute on day one—no daily handouts needed. The bundle follows the unit chronologically and includes everything: fill-in notes, diagrams, quizzes, lab activities, with follow up questions and much more. It's used daily, supports the end-of-unit quiz game, and is handed in for an additional assessment. Answer keys, some writable .pdf versions, and digital versions are also included for flexible classroom use..



Biogeochemical Cycles





soil. Cleans and purifies.

Across

5. The Water Cycle is driven by the ____ and 3. The Water Cycle is often called the Gravity

6. Water released by plants into air. Non-living 4. Water vapor (gas) turns back to a liquid. to the living, and back again 7. The hydrologic cycle (Water Cycle): The

ptinuous movement of water on, above, the surface of the earth e Water Cycle, Cycles Matter and _ around the planet

as definite volume but not shape. The hydrologic cycle (Water Cycle): The ontinuous movement of water on, ___

and below the surface of the earth. 13. Water that is so heavy it falls as liquid /

planet earth (97%) Water that has k into the the Sun and

and brank to m

LENERGY ENER

LIQUID, MATTER

SUN, THREE, TR

1. The slow movement of water through the 2, Substance changes from a liquid state to gas state (requires energy).

__ Cycle

(Energy needs to be removed) Cloud formation.

5. Solid state turns directly to a gas state skipping liquid phase

11. The hydrologic cycle (Water Cycle): The continuous movement of water __ above, and below the surface of the earth.

12. No definite shape or volume.

14 You need to add this to get water to evaporate

16. You need to take this away from water in

its gas phase to turn it into a liquid 17. Has a definite shape and volume

18 Surface ____ The water flow which occurs when soil is full to capacity and excess water travels over the land.

19 The Water Cycle, Cycles __ Energy around the planet

20. Water on Earth exists in all states of matter

22 The

heat

GRAVITY. REGIPITATION. Water Cycle Quiz Game

Due: Today

1-20 = 5 pts Lesson 4 and Answers Eusson 3 *20 *25 * = Banus * 1 pt.

(Secretly write owl in correct space +1 pl) 5ccre ___ / 100 Final Queillon - 5 pt wager



Copyright # 2022 Ryon F Marphy

Cycle: The circulation of carbon into organisms (biotic) and back again (abiotic). Atmosphere, Land, Water, Oceans.

The energy flow of . occurs because of plants. Plants harness the energy from the and pass it on to all other ife forms.

Which of the following equations is true of

photosynthesist

609 + CH120L Energy - 3-6C01 + 6H20
CH180L + 601 - 5 Energy + 10-locopiosis.
601 + 6C01 - 6C01 + 6Energy + CH180L + 601
6C01 + 6C01 - 6C01 + 6Energy + CH180L + 602
6C01 + 6C02 - 4 Energy + 6CH180L + 602
6C01 + 6C01 - 4 Energy + 603 + 6C01
C01 - 3H60 - 4 Energy + 603 + 6C01
6C01 - 3H60 - 4 Energy + 6C01 + 602
Energy + 607 + 6C01 + 602
Energy + 607 + 6C01 + 603
Energy + 607 + 6C01 + 6C01

Photosynthesis - Plants make sugar from _ . Light energy is turned into energy (sugars - carbon based).

Which of the following statements is faise of photosynthesis? and the answer is...

A.) Photosynthesis requires sunlight, carbon dioxide, and walks. side, and water.

B.) Oxygen and glucose are produced in photosynthesis.
 C.) Carbon Dioxide and water are

energy from the sun to create chemical energy in the form of sugars.

E.) None of the above.

D.) In photosynthesis, plants use radiant

SCO2 + SH2O + light energy = C+H12O4 + SO2

Photosynthesis is the process by which light energy is utilized to convert _ new toda to be used by plants.

If released into the oir during the process. (Os) Waste
Light or solar energy is captured by
It is then converted into
energy which is stored as stack or sugar.

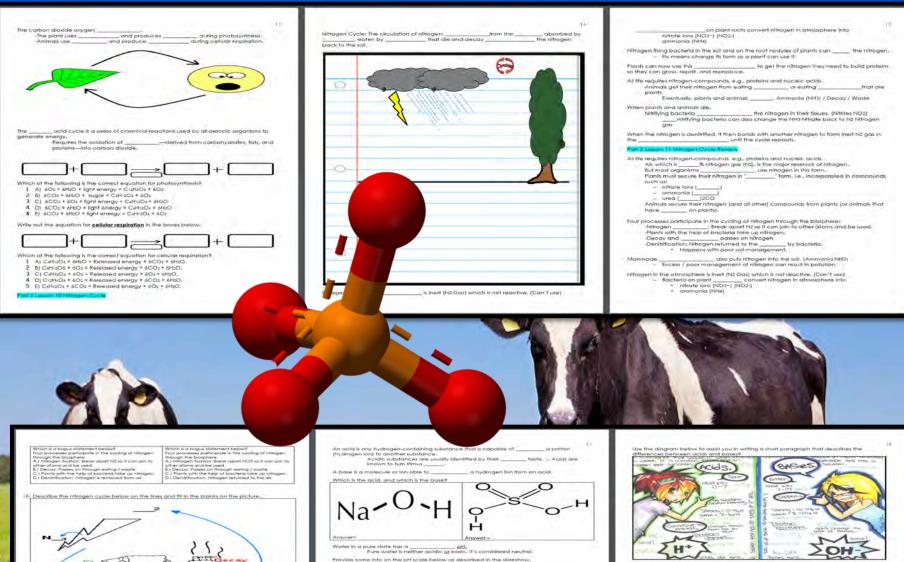
These storches and sugars are stored in roots, stems and fruits. They are available
to the plant os food or fuel. into food to be used by plants. Photolyphoth Carbon Is used. is used. Occurs in Cellular Respiration: Processes whereby certain organisms obtain ______ from organic lide Note About Food's macronutrients undergo chemical breakdown as they move Protease Protein Which of the following is correct for the Which of the following is correct for the Which of the following is correct for the respiration equation. 6 ECO 3 6 MED 6 ECO 4 MED 6 ECO 4 MED 6 ECO 4 MED 7 ECO 4 MED 8 ECO 4 MED 8 ECO 4 MED 8 ECO 4 MED 8 ECO 4 MED 8 MED 8 ECO Which of the following is cornect for the respiration sequention. A 0.3 ± 0.400 + aneigy ± 0.02 ± 0.020 +

+ energy glucose oxygen carbon water dioxide Flease III. In the missing terms as described in the sideshow. Word Bank: Mitochondria, Energy (ADP+R to ATP), Carbon Diaside (CO2), Water (H2O), Oxygen (O2), Olycose/Sugar CaH12O4 Cellular Respiration for energy. dioms __ -Energy Is -Decum in most Is used.
It produced.
dioxide produced. "Waste Product"
Occurs in ______and _____.

ATP

ADP + P

Cellular Respiration



Water in a pure state has a

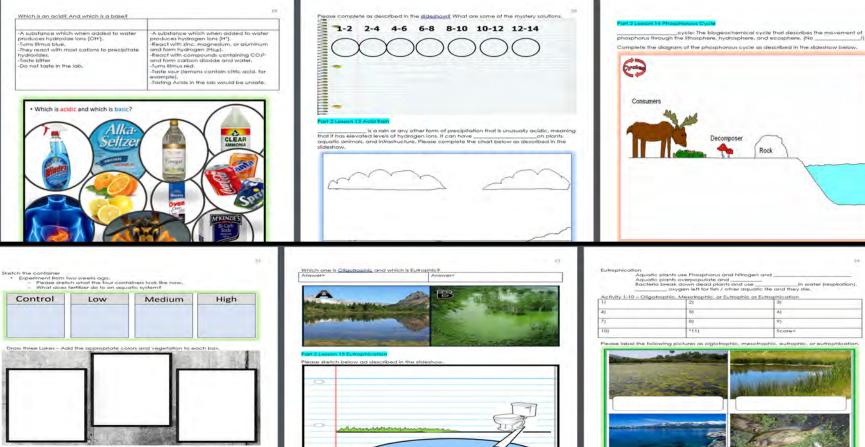
Pure water in either acidic or basic. It's considered neutral.

Provide some into on the pH scale below as described in the sideshow.

HAMMAN BEAR OFF SON OF BELLEVILLE

Bacteria

Nitrogen-fixing



Oligotrophic
Describes a lake or river with ______ productivity. Mesotrophic

Please describe Eufraphication below. Use the pictures with text as a resource in your Juggs populations of aligner no light gets through the water and bacteria grow on no water plants grow.

Water with high concentrations of netrients is low in exygen few animals can live in it. no light gets through the water, so no water plants grow

MARKET POR TRANSPORTER

ACROSS

1. In chemistry, any substance this in water bolumon is alignery to the boath, tastes british classified the colone of substituting is, sure form salts, and promputes certain chemistry, and promputes certain chemistry, and promputes certain chemistry, and promputes certain chemistry.

3. The Water Opple also known as the cycle.

The Wester Cycle also stroom as the stroom of the str

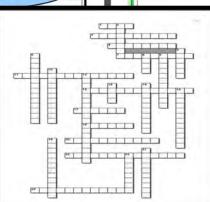
to Cycle. The circulation of bon into organisms (biotic) and back are (abiotic). Atmosphere, Land, Water

carbon two organisms (thinks) and tack again (ablastic), Antroughnes, Lant, Warns, again (ablastic), Antroughnes, Lant, Warns, 18. The energy flow of life todars because of the carbon of the carbon and pass it not to all other life forms the carbon and pass it not to all other life forms the carbon and pass it not all other life forms to grant pass to get safety from energy from the pass of the carbon and the carbon and

Comment of the Commen

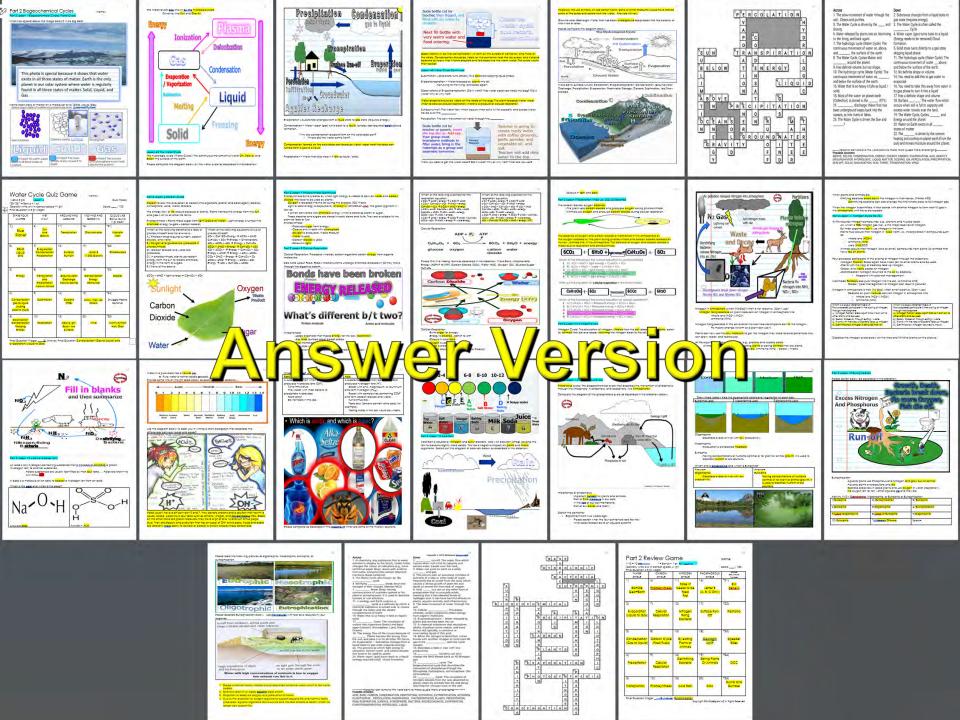
pollutions to be a second of the pollutions of the pollutions of the pollution of pluggious discussions the recomment of pluggious discussions the recomment of pluggious discussions di price of control of the control of t

POLIDIE AND THE COST PRODUCT THE WARD MAND THE THE POLIDIE AND THE POLIDIE AND THE POLIDIE AND THE POLIDIES AND THE POLITICAL POLICIES AND THE POLITICAL POLICIES AND THE POLICI



THE RESIDENCE AND THE PERSON OF THE PERSON O

Part 2 Review Game Name: Constructs 20de Singstown U.C. all more passenge.





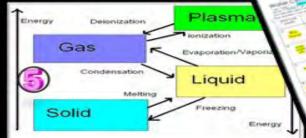
This unit includes two review quizzes. Answers are provided in slideshow form so students can self assess. A blank template sheet is provided in the work bundle. Students can benefit from working together in small table groups with quiet communication. You can decide if you want to allow the use of work bundles or not. These are a nice review opportunity and get the students looking through their work bundles for



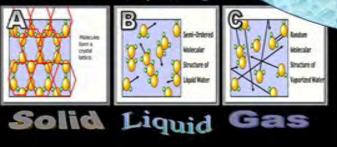
Water Cycle Quiz Game



· What are the names of the terms below?



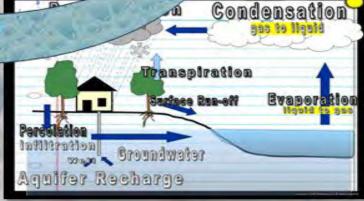
· Which is a solid, liquid, and gas.



 Earth is known as the blue planet as it has a this color glow from space.

- This blue is from all of the water on our planet.









.....

Water released into air from plants is called.



· This is an example of...





 This is the slow movement of water through the soil. Cleans and purifies.



 Many people rely on this depleting resource for their homes and crops?



Name some solid forms of precipitation?



· Which is a place where energy is removed?



 This is driven by the uneven heating and cooling on planet earth (from the sun) and moves moisture around the planet?



 The hydrologic cycle (Water Cycle): Can occur <u>Above</u>, <u>On</u>, and <u>Below</u>the surface of the earth.



Biogeochemical cycles What does bio and geo mean in biogeochemical cycles? Bio = Life Geo = Eurith Diogeochemical cycles? Quiz Game

Chemical = To arrange atoms

What part of best by the p

What part of the water cycle is represented best by the picture below?



Clouds form from this part of the water eyele?



The following are all forms of what?



This is the name for when plants reic. water vapor into the air in the water cycle?

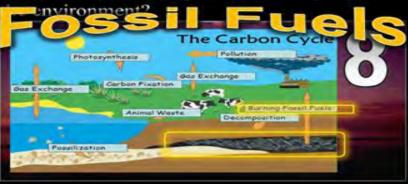
5 Transpiration Evapotranspiration

All water from transpiration and evaporation

This is the name for when plants make sugar from sunlight.



These reservoirs of carbon that use to be locked away are being introduced rapidly into



Compright in 2024 Shrindpurk LLC

These take N2 gas from the atmosphere and fix it into a form that plants can use?



This is the processes whereby certain organisms obtain energy from organic molecules.



Copyright © 2024 Shrinfpark SLC

Is this photosynthesis or cellular respiration?

-Burns sugars for energy.

Burns sugars for energy

Energy is released.
 Occurs in most cells.

-Occurs in most c

Oxygen is used.

Water is produced.
 Carbon dioxide produced.

-Occurs in dark and light.

Is this photosynthesis or cellular respiration?

Produces sugars from energy.

Occurs only in cells with Chloroplasts.

Oxygen is produced.

-Water is used.

-Carbon dioxide is used.

-Occurs in light.

10







waste or dead cells back into the air? Denitrifying Bacteria

Questions

Through what processes does phosphorus enter the oceans from soil and rocks?



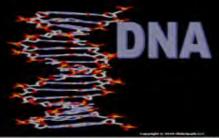
How do animals get phosphorus?

19 Eating Plants or Animals

Company to 2024 Shift Spark LLC

Phosphorus is an important part of this molecule of life?

20



How does phosphorus from the bottom of the ocean make it back to the land?



Comments of Street Street Street

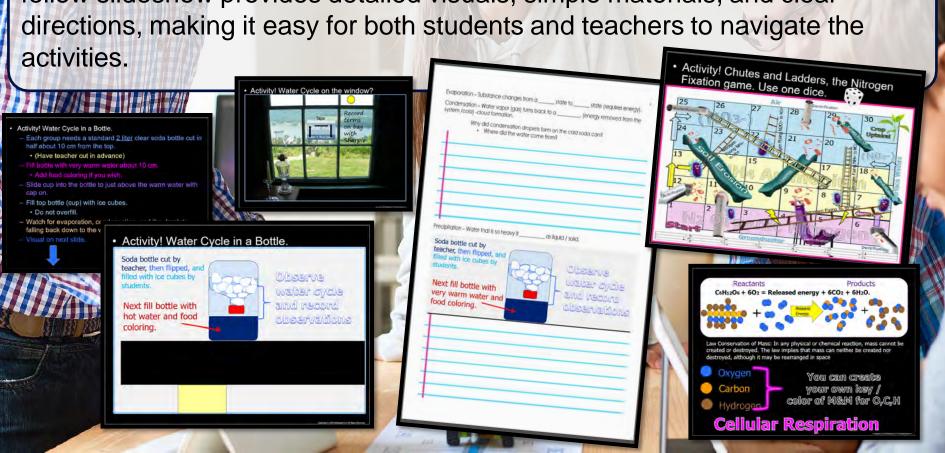
- Final Question? What is the name of a process that effects water bodies and exhibits the following.
 - Aquatic plants use Phosphorus and Nitrogen and grow out of control.
 - · Aquatic plants overpopulate and die.
 - Bacteria break down dead plants and use oxygen in water (respiration).
 - · No oxygen left for fish / other aquatic life and they die.



Seprendia di 2024 Shiniferani LLC

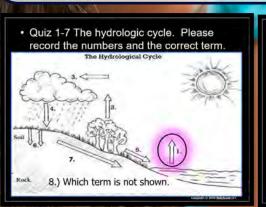
Activities / Labs

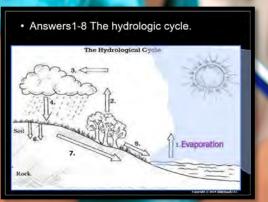
Our science activities are designed to help students explore and understand complex scientific concepts in an engaging and interactive way. Each science unit includes several hands-on activities that encourage students to collect data and think critically about the world around them. Our easy-to-follow slideshow provides detailed visuals, simple materials, and clear directions, making it easy for both students and teachers to navigate the

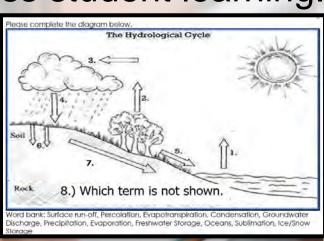


Built-in Assessment

Each unit contains several built-in assessment questions that students answer in their work bundle. With the question revealed before the answer, the teacher can easily call on individual students or table groups to respond. These provide an effective and efficient way for teachers to assess student learning.







Questions in Work Bundle

Built-in Video Links

Our science education program is designed with the modern, multimedia learner in mind, and our video links are a perfect complement to our educational materials. These short clips are embedded into the slideshow at just the right places for a fantastic review. Whether you're studying biology, chemistry or physics, our video links are an excellent way to reinforce your learning.



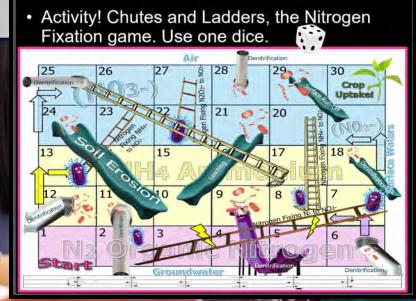




Games and Review

Games are a fantastic way for students to learn scientific concepts while having fun. We incorporate a variety of games into our curriculum, including interactive quizzes and puzzles that challenge students to think critically about the material. Our Hidden Box Games are a particularly popular feature, which conclude each unit by revealing a picture related to the topic. Students try to guess what the picture might be, making learning

April due incomerci el unió d'oração de la comerción de la com





The Owl - Each Part of the slideshow has a small clipart Owl hiding somewhere in a slide. The owl is incredibly small and blended into just the right slide. If a student spots the "Owl" they can raise their hand high into the air. When you call upon the student they can say "Owl" and be the student who spotted the Owl. Each PowerPoint Review game also has an owl hiding in it worth one point. Remind the students that they secretly write the word "owl" rather than yell it out during the review games. The Owl search is not included in every lesson. A slide at the beginning of the lesson will alert the students that today is an "Owl' day. Everything arrives editable so delete if you wish. You will find that some students will become the expert owl hunters in the group.

Google Classroom Compatible

Our digital learning programs are designed for students to learn science in a flexible and engaging environment. Our Google Classroom-compatible units provide a seamless learning experience whether your students are in the classroom or learning from home. Our step-by-step slideshows and student work bundles ensure that students can complete their work independently. The PowerPoint Slideshows and step-by-step work bundles can easily be loaded to your Google Drive and posted in your Google Classroom. These are great for daily lessons, students who need additional time, and for a student who was absent and looking to catch up in their work bundle.





Google Slides

Part 2 Lesson 5 Review Gam...

Part 2 Lesson 6 Carbon Cycl...

Part 2 Lesson 9 Cell Respira...



Part 2 Lesson 7 Photosynth...



Google Slides

Google Slides







Google Slides Part 2 Lesson 3 Water Cycle... Google Slides



he Water Cycle

Google Slides

Google Slides

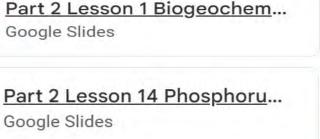






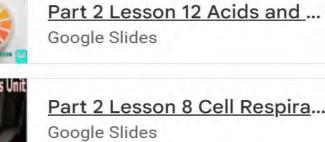
chemical Cycles



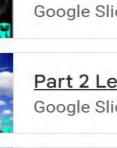




Acids and Bases Factors Unit













Google Slides

Google Slides



Google Slides

Curriculum Guide

Number of Lessons in each unit (50 min, daily lessons) and difficult rating scale / intended grade level.





=Easier, | More difficult,



=Most difficult

4.0			
Earth Science Units	Daily	Intended	
	Lessons	Grade	
Geology Topics Unit	60 Lessons	6-8 medium	MORE DIFFICULT
		difficulty	
Weather and Climate Unit	40 Lessons	6-8 medium	MORE
		difficulty	
Astronomy Unit	60 Lessons	6-8 medium	MORE
		difficulty	
Weathering, Soil Sciences	28 Lessons	5-7 easier	EASIEST
Rivers and Water Quality	25 Lessons	5-7 easier	EASIEST
Water Molecule Unit	20 Lessons	5-7 easier	EASIEST
Biogeochemical Cycles Unit	16 Lessons	5-7 easier	EASIEST

Earth Science Curriculum

Life Science Units	Daily Lessons	Intended Grade	
Ecology Feeding Levels Unit	13 Lessons	5-6 easier	EASIEST
Ecology Interactions Unit	30 Lessons	5-6 easier	EASIEST
Ecology Abiotic Factors Unit	13 Lessons	5-6 easier	EASIEST
Botany Unit	50 Lessons	5-7 easier	EASIEST
Evolution and Natural Selection	40 Lessons	5-7 easier	EASIEST
Taxonomy and Classification	50 Lessons	6-8 medium difficulty	MORE
Infectious Diseases Unit	30 Lessons	7-9 more difficult	MORE
DNA and Genetics Unit	42 Lessons	8-10 most difficult	Most Difficult
Human Body Systems Unit	85 Lessons	6-8 medium difficulty	MORE
Cell Biology Unit	30 Lessons	8-10 most difficult	Mest Difficult

Life Science Curriculum

Dhysical Caraca	Daily	Intended	
Physical Science	Daily Lessons	Grade	
Laws of Motion and Machines Unit	33 Lessons	8-10 most	
		difficult	Most Difficult
Matter Energy and the Environment	58 Lessons	7-10 medium	MORE
		difficulty	
Atoms and Periodic Table Unit	44 Lessons	8-10 most	
		difficult	Most Difficult
Science Skills Unit	30 Lessons	5-7 medium	MORE
		difficulty	

Physical Science Curriculum

Dear Valued Educator,

Our fully editable .pptx and .doc resources are perfect for educators looking to bring enthusiasm and creativity to their lessons. We encourage you to make changes to fit your needs and style. As science educators, we're committed to providing students with the tools they need to succeed in the classroom and beyond. Each unit in the curriculum includes a range of resources that have been developed through extensive research and use in a busy classroom. Our teaching approach is designed to make science education engaging and exciting for learners of all ages. We offer a one-of-a-kind science curriculum that will challenge, inspire, and educate students to become tomorrow's scientists and leaders. Join us today and learn more about how our program can help you achieve your classroom goals.

With appreciation,
Support@SlideSpark.net

Thank you for your time and interest in our Science curriculum. We strive to provide students with engaging and informative lessons that will spark their curiosity and encourage scientific exploration. Should you have any questions or concerns, please do not hesitate to contact us. Thank you again for considering our curriculum, and we wish you all the best in your educational journey.

Sincerely,

Support@slidespark.net



SlideSpark Science

MIDDLE-LEVEL EDUCATIONAL RESOURCES



SlideSpark Science

Entire Curriculum