

Ecology and Ecosystems

Digital Interactive Notebook PLUS 9 LESSONS

Chapter 1 – The Spheres of Earth

Chapter 2 – Introducing Ecosystems

Chapter 3 – Energy Flow in Ecosystems

Chapter 4 – Cycling of Matter in
Ecosystems

Chapter 5 – Population Influences

**100% Digital and
Interactive**

Parts of a System
Directions: Drag and drop the images into the correct boxes.

Organism	Population
	
	

Community Ecosystem



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Directions: Drag and drop the images into the correct boxes.

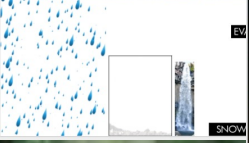
Organism	Population
	
	

Community Ecosystem

Directions: Drag and drop the parts of the water cycle into the image. Drag and drop the labels to show what takes place at each step. Use the arrow tool to draw the movement of water through the cycle.

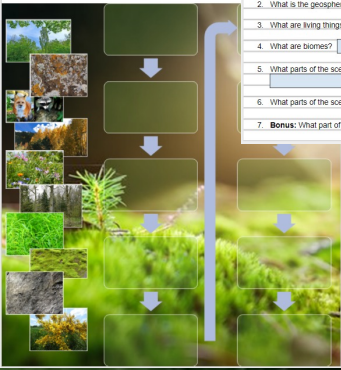


Directions: Drag and drop the stages of primary succession into the boxes on the timeline.



Successional Timeline

Directions: Drag and drop the stages of primary succession into the boxes on the timeline.



Video
Click the video in Present Mode to play, then answer the following questions.

EPISODE 4.1
FOUR SPHERES
PART 1



1. How does the geosphere act as the skeleton of our planet?
2. What is the geosphere made up of?
3. What are living things part of?
4. What are biomes?
5. What parts of the scene are part of the geosphere?
6. What parts of the scene are part of the biosphere?
7. Bonus: What part of the biosphere wasn't mentioned?

Chapter 6 – Ecological Succession

Chapter 7 – Biomass and Fossil
Fuels

Chapter 8 – The Importance of
Biodiversity

Chapter 9 – Invasive Species

Ecology Digital Interactive Notebook PLUS 9 LESSONS

Thank you so much for taking the time to sample my ecology digital bundle.

This bundle contains **32** activities and **45** total pages within the Digital Interactive Notebook AND 9 Complete Lessons on Ecology. These lessons follow the same curriculum as the notebook chapters.

Everything is fully editable for your convenience.

Ecology and Ecosystems

Digital Interactive Notebook

- So easy to understand and post. Have your students working in under 10 minutes.
- The majority of the items in this resource are fully editable.
- Slides can be added or removed easily to suit your classroom needs.

Click here to immediately download a sample Digital INB →

<http://bit.ly/TWF-DINB>

What's Included?

This Digital Interactive Notebook is broken down into 9 chapters. Chapters can easily be removed if they don't correspond to your curriculum needs.

Chapter 1 – The Spheres of Earth

Chapter 2 – Introducing Ecosystems

Chapter 3 – Energy Flow in Ecosystems

Chapter 4 – Cycling of Matter in Ecosystems

Chapter 5 – Biotic and Abiotic Population Influences

Chapter 6 – Ecological Succession

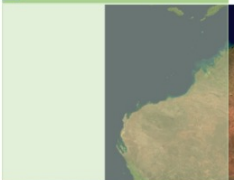
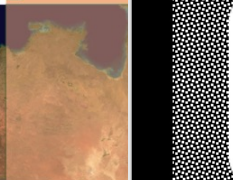
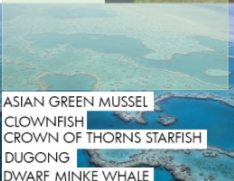
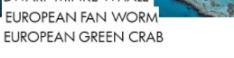
Chapter 7 – Biomass and Fossil Fuels

Chapter 8 – The Importance of Biodiversity

Chapter 9 – Invasive Species

Native or Invasive?

Directions: The Great Barrier Reef is located in northeastern Australia. It is a very biodiverse and important ecosystem and it is threatened by invasive species, among other problems. Which of the following species are native and which are invasive? Drag and drop the species into the correct column.

NATIVE	INVASIVE
	
	
	
ASIAN GREEN MUSSEL CLOWNFISH CROWN OF THORNS STARFISH DUGONG DWARF MINKE WHALE EUROPEAN FAN WORM EUROPEAN GREEN CRAB	GREEN SEA TURTLE HUMPBACK WHALE INDO-PACIFIC HUM JAPANESE KELP NORTHERN PACIFIC PACIFIC OYSTER RED BASS

Science Notebook

Your Name Here:

Research

1. What is one way that humans disrupt natural ecosystem stability? Describe the activity and impacts.

Type your answer here:

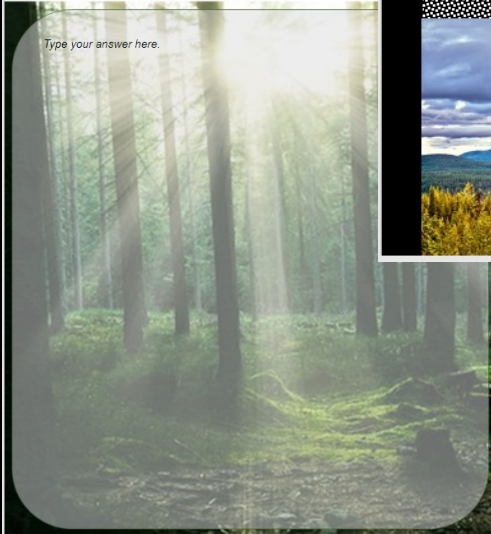
to this disruption.

ere:

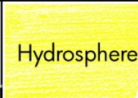
3-2-1 Review

Directions: In the box below, list three things you have learned about secondary succession, and draw a picture that represents secondary succession to you.

Type your answer here.



and drop the descriptors into the column for each of the following spheres.

Lithosphere	Hydrosphere
	



Interactive Drag and Drop Activities

Parts of a System

Directions: Drag and drop the images into the correct boxes.

Organism	Population

Community Ecosystem



Students are able to move objects around the screen to complete the activity

Parts of a System

Directions: Drag and drop the images into the correct boxes.

Organism	Population
	
	
	
	

Community Ecosystem



Fully Embedded Videos

Video

Click the video in Present Mode to play, then answer the following questions.



1. How does the geosphere act as the skeleton of our planet?

2. What is the geosphere made up of?

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5. What parts of the scene are part of the geosphere?

6. What parts of the scene are part of the biosphere?

7. **Bonus:** What part of the biosphere wasn't mentioned?

Students are able to watch videos that are fully embedded into the digital notebook. Just click the video and it plays on their screen within the slide. Each video contains questions with answers found in the teacher version.

Vocabulary and Extension Activities

As additional activities for early finishers or part of the main notebook assessment, your digital interactive notebook comes with three extension activities/projects plus a vocabulary section where students match terms with their definitions.

Extension Activity #1

Overfishing is a big problem in today's world. Fish are being quickly depleted which negatively impacts the area. Example - If fish 1 eats fish 2 and fish 3, removing fish 2 from the ecosystem will impact fish 1 and 3 species. Unfortunately, the fish that work in it don't always follow suit.

Create an infographic using Canva
Create an informative visual that outlines the problem of overfishing.

1. Go to www.canva.com.
2. Click More ... in the top right corner
3. Scroll down to Blogging & eBooks and select Infographic

- Inside your infographic make appealing images and use them
- Your information needs to outline the problem, its consequences, and solutions

Submission: Submit your infographic on a new slide below

Extension Activity #2

You are in charge of populating a newly discovered island. This island does not currently contain any animals but has an abundance of plant species already living on it and as streams of fresh water. The island is the size of a city ~ 500 km² (200 mi²).

Your Task:

1. Create a list of the different animal species introduced (at least 10) and why. Keep biodiversity in mind.
2. You must create a food web for all the animals introduced as well as a general plant species.
3. You must include and clearly state at least three levels.
4. State which species' are the keystone species' (choose two).
5. In your scenario, make one of your introduced species invasive. State what makes it so and the consequences of its introduction to the island.

Submission

Your submission should be created using new slides below. Create a separate new slide for each requirement above.

Extension Activity #3

Create an extensive and detailed accordion that summarizes what you learned in this unit. You should include:

1. The big picture - what are the one concept that really summarize this unit for you?
2. What were the new things you discovered?
3. What surprised you?
4. What was most interesting?
5. What questions do you now have about the unit?
6. A summary of each lesson's key concepts including pictures and information

Submission

- You will fulfill the requirements above and filling out, subsequent slides
- Numbers 1-5 above can be done on separate slides
- Number 6 will utilize at least a single slide for each lesson to properly summarize

Vocabulary

Drag and drop the definition into the space next to the correct term.

TERM	DEFINITION
LITHOSPHERE	
ABIOTIC FACTOR	
POPULATION	
PHOTOSYNTHESIS	
ECOLOGICAL NICHES	
LIMITING FACTOR	
PARASITISM	
BIOMASS	
BIODIVERSITY	
ENDANGERED	
ROCKY OUTER SHELL OF EARTH	ANY FACTOR THAT PLACES AN UPPER LIMIT ON THE SIZE OF A POPULATION
PROCESS WHEREBY THE SUN'S ENERGY IS CONVERTED INTO SUGAR	ONE SPECIES BENEFITS AT THE EXPENSE OF ANOTHER SPECIES
ALL OF THE INDIVIDUALS OF A SINGLE SPECIES IN AN AREA	BIOLOGICAL MATERIAL FROM LIVING OR PREVIOUSLY LIVING ORGANISMS
THE VARIETY OF LIFE IN A PARTICULAR ECOSYSTEM	THE INORGANIC COMPONENTS OF AN ECOSYSTEM
A SPECIES THAT IS CLOSE TO EXTINCTION IN ALL PARTS OF A COUNTRY OR IN A SIGNIFICANTLY LARGE AREA	THE FUNCTION A SPECIES SERVES IN ITS ECOSYSTEM

Ecology and Ecosystems

Digital Interactive Notebook

- Works with Google and OneDrive cloud services
- If you don't currently have a Google account, you can sign up for one completely free and get started in 5 minutes. If you're a OneDrive user, no problem. Simply download the notebook as a PowerPoint file to your computer then upload it to your OneDrive account.
- The majority of the items in this resource are fully editable. In addition, slides can be added or removed easily to suit your classroom needs.

Interactive Notebooks

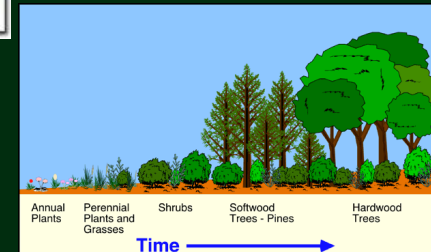
THEN: Before computers, we used interactive notebooks to engage our students and keep their notebooks organized and accessible. This, however, required a lot of material and the unwelcomed task of lugging them all home with you to mark. But we used them because they were effective and allowed us to effectively assess our students' understanding.

NOW: Why use digital interactive notebooks? As prices decrease, many schools are moving towards a 1:1, computer-student ratio and are becoming digital. The way we teach needs to keep up. You don't even need a class set of computers; a personal device (cell phone, laptop, tablet, etc.) will work just as well.

Ecology and Ecosystems

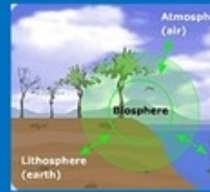
- 5 weeks of teaching material
- 9 Power Points totalling 188 slides.

1. The Spheres of the Earth
2. Ecosystems
3. Energy Flow In Ecosystems
4. Cycling of Matter In Ecosystems
5. Population Influences within Ecosystems
6. Ecological Succession
7. Biomass and Fossil Fuels
8. The Importance of Biodiversity
9. Invasive Species



The Spheres of Earth

- The Atmosphere
- The Lithosphere
- The Hydrosphere
- The Biosphere



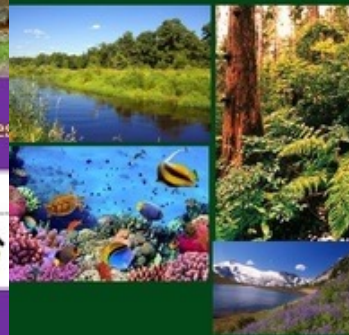
Energy Flow In Ecosystems

- Photosynthesis
- Cellular Respiration
- Ecological Niche
- Producers & Consumers
- Herbivores, Omnivores & Carnivores
- Scavenger
- Food Chain
- Trophic Levels
- Food Webs
- Ecological Pyramids



Ecosystems

1. Ecosystems
2. Abiotic/Biotic
3. Population
4. Community
5. Describing Ecosystems
6. Sustainability



Cycling of Matter in Ecosystems

- The Water Cycle
- The Carbon Cycle
- The Nitrogen Cycle
- The Phosphorus Cycle



Biotic and Abiotic Influences within Ecosystems

- Limiting factors
- Tolerance
- Biotic & Abiotic population influences
- Symbiosis
- Predator-Prey relationships
- Population equation
- Exponential growth

ECOLOGICAL SUCCESSION

- Primary Succession
- Secondary Succession
- Primary vs. Secondary Succession



Biomass and Fossil Fuels

- What is Biomass?
- Biomass → Fossil Fuels
- Burning Fossil Fuels and the Greenhouse effect
- Fuel from Biomass
- Acid Precipitation and pH



The Importance of Biodiversity

- Biodiversity
- The need for biodiversity
- Vulnerable, Threatened, Extirpated, Endangered, and Extinct species
- Keystone species
- Species extinction and biodiversity
- Natural and human causes of extinction



Invasive Species

- Invasive vs. Native Species
- The Effect of an Invasive Species on an Ecosystem
- The Small Asian Mongoose
- Controlling Invasive Species
- 5 Extreme Invasive Species



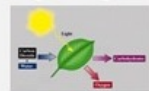
Thank you for your interest

Inside the Unit

- 5 weeks of teaching material
- 9 Power Points totalling 188 slides
- Teacher and student versions for each lesson
- Many videos embedded into the slides
- Student notes in word
- Bill Nye The Science Guy worksheets with direct video links

Photosynthesis

- The process where the Sun's energy is converted into chemical energy (Glucose/Sugar).
- Occurs in PLANTS!!
- Producer – an organism that makes its own energy-rich food compounds using the Sun's energy
- On land, major producers are green plants – contain chlorophyll, which captures light energy



carbon dioxide + water $\xrightarrow{\text{light energy}}$ sugar + oxygen

Photosynthesis Intro

The Water Cycle

- Fallen water moves around Earth's surface as lakes, rivers and oceans
- _____



The Water Cycle Rap

Thank you for your interest

- The following lessons are included. Please click on any to preview.

[Lesson 1 - The Spheres of the Earth](#)

[Lesson 2 - Ecosystems](#)

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[Lesson 6 - Ecological Succession](#)

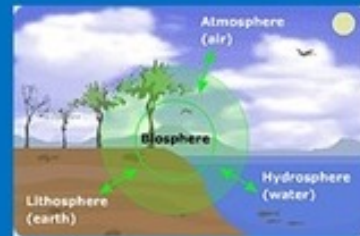
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[Lesson 8 - The Importance of Biodiversity](#)

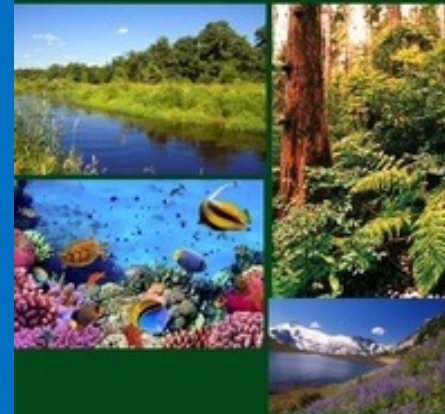
[Lesson 9 – Invasive Species](#)

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Ecosystems



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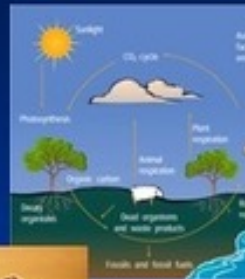
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