

Ecology, Relative Abundance, Biodiversity, Camouflage, Mimicry

Preview is a compressed file

- Hundred of species are lost everyday on this planet forever.
 - Estimates put it as high as 70,000 species per year.
 - Humanity is the 6th mass extinction event.

WEB

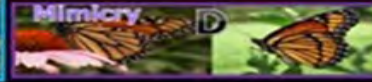


- Diversity: The variety, or number of kinds of species.
 - Counting the number of different species.



- Match the type of camouflage to the correct animal.

- Concealing Coloration
- Disruptive Coloration
- Disguise
- Mimicry



- There are four types of camouflage

- Concealing Coloration
- Disruptive Coloration
- Disguise
- Mimicry



- Diversity: The variety, or number of kinds of species.
 - Counting the number of different species.



- Activity! Relative Abundance

– Please record the following spreadsheet in your journal. 7 x 7

Species	# of that Species	Divided by	Total	Equals	X 100	= Relative Abundance %
	27	$\div$	80	.45	$\times$ 100	45%
	15	$\div$	80	.216	$\times$ 100	21.6%
	5	$\div$	80		$\times$ 100	
	8	$\div$	80		$\times$ 100	
	4	$\div$	80		$\times$ 100	
	3	$\div$	80		$\times$ 100	

7 Lessons

Interactive Slideshows

- **Mullerian mimicry:** Several **unrelated** species share a **warning color** that warn predators that these colors are dangerous or toxic.



- **Camouflage:** An adaptation that allows the animal to blend in with its environment to avoid being detected.



- **Hiding Camouflaged Animals**

– You will follow me around the school on a short tour looking for a cool school walls / boards to camouflage the animals below.



- **Importance of biodiversity**

- Generation of soils and maintenance of soil quality.
- Maintenance of air quality.

WEB



How many blue moons?



- Which species is the **venomous coral snake** and which species is the **nonvenomous king snake**?



- **Activity! Relative Abundance**

– Please record the following spreadsheet in your journal 7 x 7

Species	# of that Species	Divided by	Total	Equals	X 100	= Relative Abundance %
★		÷			X 100	
☾		÷			X 100	
✱		÷			X 100	
✖		÷			X 100	
⊙		÷			X 100	

Use this sheet to help break it down

- **Video Link! (Optional) Camouflage and Mimicry in the reef ecosystem**

– <https://www.youtube.com/watch?v=UB7taiL-Eqs>



Ball's Pyramid

This is a Lord Howe stick insect (*Dryococelus australis*)



The Lord Howe Stick Insect was thought to be extinct for 80 years, after the population living on Lord Howe Island in Australia was wiped out by rats in 1920.

However, on Ball's Pyramid, a narrow rock formation 13 miles from Lord Howe Island, scientists found surviving stick insects. They don't know how they got to Ball's Pyramid or how they managed to survive. To help maintain biodiversity, the scientists went through a lot of effort to keep the insects alive and to increase the population.

Activities, Assessments, Video Links, and more

• Which two insects are dangerous?



Dangerous

Not dangerous, but... they look dangerous

So species let them be...

Mimicry



Eye Spots

Leaf mimic

Scat mimic

Weedfish

• Review! Lord Howe Stick Insect

- <https://www.youtube.com/watch?v=zRx-UtW1FLk>
- Or
- https://www.youtube.com/watch?v=0XNyDfoFp-4&ab_channel=AtlasObscura



• Why should we maintain biodiversity?

Maintaining biodiversity is important to our very survival. It helps maintain the valuable and life sustaining systems on our planet. Clean air, clean water, food security, and pest control are all services provided by biodiversity. When species are removed from an ecosystem, the stability of the entire ecosystem can be threatened. It is important to remember that we are part of the ecosystem and our actions and how biodiversity matters.

• Activity! Young Bird (Learn through Experience)

- Today you will become a bird.
- You are testing the world for the first time.
- Go around your group in a circle. Share your experience.
- Become your first choice.
- What will you learn? Write it down.
- What will you learn? Write it down.



NOTE: You must trust the food you're offered. Please do not eat it and make a big scene. Discuss the value in your table group only. No talking or writing on this part of the bird box.

• Aggressive Mimicry:

- A form of mimicry in which a predator (the mimic) closely resembles another organism (the model) that is attractive to a third organism (the dupe) on which the mimic preys.



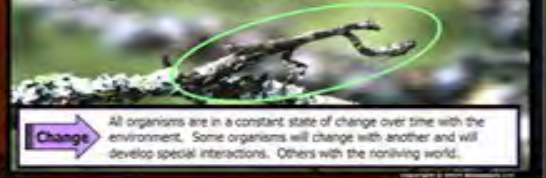
- Batesian mimicry: Looking like another species that is dangerous or may taste bad.

Aposematic Coloration: Coloration or markings of an animal serving to warn off predators.



- Mimicry: The resemblance of an animal species to another species or to natural objects.

Preying Mantis – Not a stick!



Flow Organisms need energy to survive. Energy from the sun flows into and out of systems. This energy drives our world and the organisms in it. Energy is lost "not destroyed" when it changes form. Flows **Not** to Cost.

Flow Ecological systems are organized within each other. The affects on one system will affect them all. All systems are interconnected.

Change All organisms are in a constant state of change over time with the environment. Some organisms will change with another and will develop special interactions. Others with the nonliving world.

Flow Matter and energy cycle through the living and nonliving world. Organisms rely on this matter and energy cycling to survive.

WEB Animals are interconnected in a complex web of life. Changes on one part of the web will affect other parts of the web and the stability of the entire ecosystem.

Balance Ecosystems have a way to balance changes so that up and down fluctuations are part of the natural balance of the whole.

Part 2: 7 Lessons of about 50 minutes and 15 Page Work Bundle, Abundance, Relative Abundance, Calculating Relative Abundance from a Population, Pie Graph of Results, Species Composition, Diversity, Biodiversity, Importance of Biodiversity, Case Study on the Lord Howe Stick Insect, Biodiversity Jenga Activity, How to Maintain Biodiversity, Case Study of Plantation Forestry vs. Native Growth in Tasmania, Find the Animal Fun Camouflage Quiz, Camouflage, Four Types of Camouflage, Camouflage a Gecko in the School Project, Mimicry, Tour of the Worlds fantastic Mimics, Batesian Mimicry, Being a young bird Nastieeos and Tastieeos / Bean Boozled and experiencing Batesian Mimicry Simulation, Aggressive Mimicry, Case Study on the Alligator Snapping Turtle, Beat the Butterfly Man Challenge, Aposematic Coloration, Mullerian Mimicry, Mullerian Coloring Activity, Other Interesting Ways Animal Avoid Predation, Box Games, Crossword Puzzle, Assessment

Ecology Interactions Unit Part 2



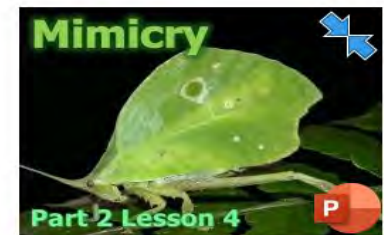
Part 2 Lesson 1 Relative Abundance



Part 2 Lesson 2 Biodiversity



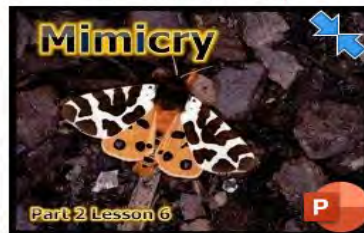
Part 2 Lesson 3 Camouflage



Part 2 Lesson 4 Mimicry



Part 2 Lesson 5 Batesian Mimicry



Part 2 Lesson 6 Mullerian Mimicry



Part 2 Lesson 7 Review Game



Part 2 Lesson 8 Review Game Answers



Part 2 Work Bundle Answers



Part 2 Work Bundle pdf Writable



Part 2 Work Bundle Print with Notes



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.

- **Camouflage:** An adaptation that allows the animal to blend in with its environment to avoid being detected.



- **Activity! Relative Abundance**
— Please record the following spreadsheet in your journal. 7 x 7

Species	# of that Species	Divided by	Total	Equals	X 100	= Relative Abundance %
★	27	÷			× 100	
☾	13	÷			× 100	
✧		÷			× 100	

- **Mimicry:** The resemblance of an animal species to another species or to natural objects.

Preying Mantis – Not a stick!



Change → All organisms are in a constant state of change over time with the environment. Some organisms will change with another and will develop special interactions. Others with the nonliving world.

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● Diversity: The variety, or number of kinds of species.

● Counting the number of different species.



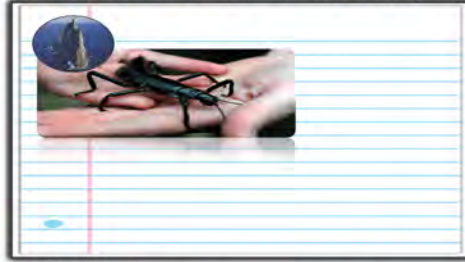
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Unit 2: Lesson 2: Biodiversity

Diversity: the _____ or number of kinds of _____.
Counting the number of different species.

Biodiversity is the biological _____ and variability of life on Earth. Biodiversity is a measure of variation of the genetic, species, and ecosystem level.

Record some important information about the species below? What's so amazing here?



Importance of biodiversity:
- Generation of _____ and maintenance of _____ quality.
- Maintenance of _____ quality.
- Maintenance of _____ quality.
- Control _____
- Detritification and decomposition of _____
- _____ and crop production.
- Provision of _____ security.
- Provision of health care (_____).
- _____ generation.

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 assess their understanding.

- Match the type of camouflage to the correct animal.

- Concealing Coloration
- Disruptive Coloration
- Disguise
- Mimicry



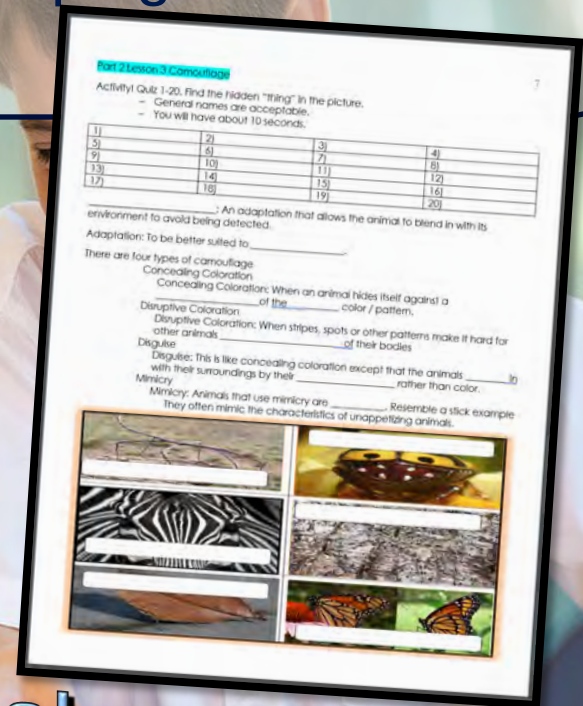
- Match the type of camouflage to the correct animal.

- Concealing Coloration
- Disruptive Coloration
- Disguise
- Mimicry



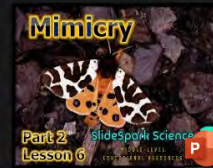
Next Slide

slideshow supports
Work Bundle

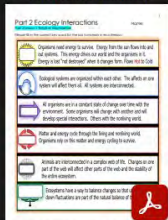


Lesson Planning

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.



Part 2 Work Bundle Answers



Part 2 Work Bundle pdf Writable



Part 2 Work Bundle Print with Notes



Part 2 Work Bundle Print

Lessons chronologically follow a single 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..

[illegible]

_____ The resemblance of an animal species to another species or to natural objects.

Make some notes and sketches about different examples of mimicry as shown in the slideshow.



Activity: Young Bee Lesson Through Simulation

- You are all becoming a young bee hanging for food.
- You are hunting for food for the first time after leaving the hive.
- Do ensure your group eating the promised food time at a time. Don't forget to eat your group.
- Record your food sources for each round (3-5). What did you eat? Don't forget to eat your group.

Rounds / Score selected / Experience / What did you eat?



Which species did you choose as a primary food source? Why?

Which species did you not choose? Why?

Which species is the mimic, and which is the model?

How does your taste influence who eats you?

Batesian mimicry: Looking like another species that is _____ or only taste bad. There is a mimic, and the model. Look like someone who has a stinger.

Which is the model, and which is the mimic below?



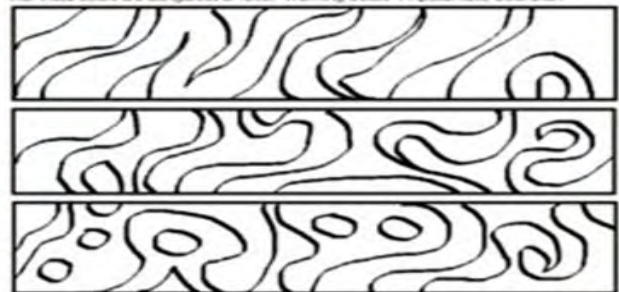
Aggressive Mimicry: A form of mimicry in which a predator (the _____) closely resembles another organism (the _____) that is attractive to a third organism (the _____) on which the mimic preys.

Who is the Mimic? _____ Who is the Model? _____ Who is the Prey? _____



_____ Camouflage: coloration or markings of an animal serving to warn off predators.

Müllerian mimicry: Several unrelated species share _____ that warn predators that these colors are dangerous or toxic. "Warning Colors" / Aposematic Coloration.



Please draw up the following organisms with different color schemes that represent Müllerian mimicry.



Some animals avoid predators with physical features that just make them a difficult meal.

- Poisonous
- Spikes
- Shells
- Confusing Color Patterns

Biodiversity

6. Sustainability of air quality
7. Sustainability of water quality
8. Food security
9. Deforestation and decomposition of waste
10. Pollution and waste production
11. Increase in food security
12. Increase of health care (Asthma)
13. Loss of income
14. Increase of cultural value



Figure 1

1000

Regeneration of Positives

- **Negatives**

Which one is better to increase biodiversity?

- General names are acceptable.
- You will have about 10 seconds.

[illegible]

Author's Note: To the readers is owed for

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there are four types of computing

Concealing Coloration: When an animal hides itself against a

_____ of the _____ color / pattern.

Disruptive Coloration

Disruptive Coloration: When stripes, spots or other parts of their bodies

Dispute _____, or other subject _____

Disguise: This is the concealing coloration except that the animals _____

with their surroundings by their _____, rather than color.

Staphylococcus Aureus that was previously seen ... Penicillin is a



Notice up a background and Chameleon camouflage pattern so I don't see it!



On the back page are three cut-outs to camouflage and hide around the school. Grab some colored pencils and follow me around the building. When you find an area, color to hide your animal. Then cut-out with scissors back in the classroom, tape (loop method!) from the back so the tape doesn't show and hide. Best behavior is expected! Put your names on, thank! Perhaps the younger kids might get to go for a hunt! We hope you survive the year!

13 Pages

Across

2. Measurement of the amount of a species. Can be % cover, density, biomass, frequency.
7. _____ Coloration: coloration or markings of an animal serving to warn off predators.

8. Species _____ A list of the species present in a community, along with a measure of their relative abundance.

10. _____ abundance: The amount of each species. Must sum to 1 or 100%.

13. This is like concealing coloration except that the animals blend in with their surroundings by their shape and/or texture rather than color.

14. _____ mimicry: Several unrelated species share warning colors that warn predators that these colors are dangerous or toxic. "Warning Colors" / Aposematic Coloration

15. The biological variety and variability of life on Earth. Biodiversity is a measure of variation at the genetic, species, and ecosystem level.

16. The number of times that an event occurs within a given period; rate of recurrence.

Down

1. To be better suited to survive.

3. _____ Mimicry: A form of mimicry in which a predator (the mimic) closely resembles another organism (the model) that is attractive to a third organism (the dupe) on which the mimic preys.

4. An adaptation that allows the animal to blend in with its environment to avoid being detected.

5. The variety, or number of kinds of species.
6. _____ Coloration: When an animal hides itself against a background of the same color / pattern.

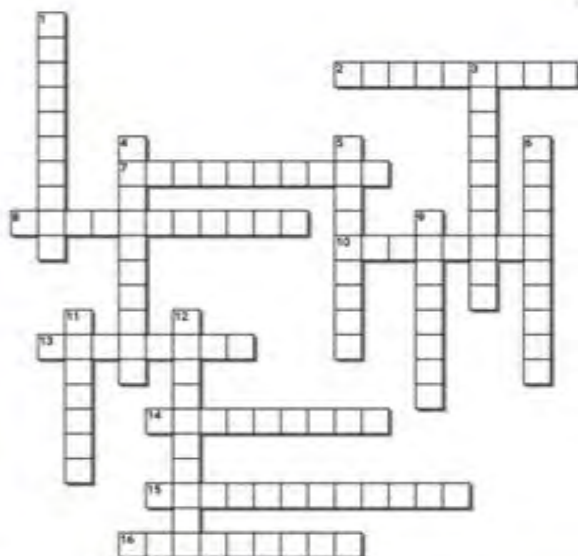
9. _____ mimicry: Looking like another species that is dangerous or may taste bad. There is a mimic, and the model.

11. Animals that use mimicry are imposters. Resemble a stick example. They often mimic the characteristics of unappetizing animals.

12. _____ Coloration: When stripes, spots or other patterns make it hard for other animals to see the outline of their bodies.

Techniques to remove this word bank to make puzzle more challenging:

Possible Answers: FREQUENCY, ABUNDANCE, ADAPTATION, AGGRESSIVE, APOSEMATIC, BATESIAN, BIODIVERSITY, CAMOUFLAGE, CONCEALING, DISGUISE, DISRUPTIVE, DIVERSITY, MIMICRY, MULLERIAN, RELATIVE, COMPOSITION.



Part 2 Review Game

LESSON 2

Name: _____
Date: Today
Score: _____ / 100

1-10 = 5 pts. * = Bonus = 1 pt.
(Secretly write out in correct space + 1 pt)
Final Question = 5 pt. wager

HOUSE OF CARDS	SNEAK PEAK	SIMON SAYS	HELPING HAND	ASK UP (Bonus round 1 pt each)
1)	6)	11)	16)	*23)
2)	7)	12)	17)	*22)
3)	8)	13)	18)	*23)
4)			19)	*24)
5)			20)	*25)



Review Games / Assessments

This unit concludes with a review quiz. 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 the answers.

Ecology Interactions Unit

Part 2 Review Game

SlideSpark

Ecology Interactions Unit

Answer Key

Part 2 Review Game

SlideSpark Science

Part 2 Review Game Lesson 2

Name: _____
Due: Today
Score ____ / 10

1-10 = 5 pts * = Bonus + 1 pt.
(Secretly write owl in correct space + 1 pt)
Final Question = 5 pt wager

HOUSE OF CARDS	SNEAK PEAK	SIMON SAYS	HELPING HAND	MIX UP (Shuffling 1st week)
1) _____	6) _____	11) _____	16) _____	
2) _____	7) _____	12) _____	17) _____	
3) _____	8) _____	13) _____	18) _____	
4) _____	9) _____	14) _____	19) _____	
5) _____	10) _____	15) _____	20) _____	

Final Question Wager 15 Answer: _____

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Part 2 Review Game Lesson 2

Name: _____
Due: Today
Score ____ / 100

1-10 = 5 pts * = Bonus + 1 pt.
(Secretly write owl in correct space + 1 pt)
Final Question = 5 pt wager

HOUSE OF CARDS	SNEAK PEAK	SIMON SAYS	HELPING HAND	MIX UP (Shuffling 1st week)
1) <u>50%</u>	6) <u>Camouflage</u>	11) <u>Model</u>	16) <u>C, also called Aposematic coloration</u>	*21) <u>tand's Canelegan</u>
2) <u>Diversity or biodiversity</u>	7) <u>Disguise</u>	12) <u>Look like poop/scat, bird droppings</u>	17) <u>Prey, balance Adaptations, survival strategies</u>	*22) <u>Weird AI Yankovic</u>
3) <u>Decrease in food security</u>	8) <u>Mimicry</u>	13) <u>Batesian Mimicry</u>	18) <u>A+ venomous Coral Snake</u> <u>B+nonvenomous King Snake</u>	*23) <u>Bill Tannert</u>
4) <u>look that way Generalization described how they can learn concepts through their own experiences</u>	9) <u>Disruptive coloration</u>	14) <u>Aggressive Mimicry</u>	19) <u>Change</u>	*24) <u>Professor Quims</u>
5) <u>10,000 species</u>	10) <u>Concealing coloration</u>	15) <u>Müllerian Mimicry</u>	20) <u>balance</u>	*25) <u>Brian</u>

Final Question Wager 15 Answer: Creation of waste

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Animals in the Environment Quiz Game

- Name the correct type of camouflage for the picture? (Can only use each once 7-10)
 - Concealing Coloration, Disruptive Coloration, Disguise, or Mimicry.



Camouflage

- Which species below has warning coloration?



Answer is...

16

Biodiversity

- Which species is the venomous coral snake and which species is the nonvenomous king snake?



- This is the type of mimicry where several unrelated species share warning colors that warn predators that these colors are dangerous or toxic.



- This is the type of mimicry where an organism resembles another species that is dangerous or may taste bad.



- Please fill in the missing words...
- The predator-prey relationship is important in maintaining balance among different animal species. A is that are beneficial to prey, such as camouflage, mimicry, and chemical and physical defenses, ensure that the species will .
 - At the same time, p must undergo certain adaptive changes to make finding and capturing prey less difficult.

17

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- This is the term for the variety, or number of kinds of species living in an area.



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- Name the Big Concept.
- All organisms are in a constant state of over time with the environment.
 - This can occur with another species and they will develop special interactions. Others with the nonliving world.

19



- Which is not an importance of biodiversity?
 - A.) Generation of soils and maintenance of soil quality.
 - B.) Maintenance of air quality.
 - C.) Maintenance of water quality.
 - D.) Pest Control
 - E.) Detoxification and decomposition of wastes.
 - F.) Pollination and crop production.
 - G.) Biodiversity increases food security.
 - H.) Provision of health care (Medicines).
 - I.) Income generation.
 - J.) Spiritual / cultural value.

3

Answer is...

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Find the relative abundance of stars 50%?

1



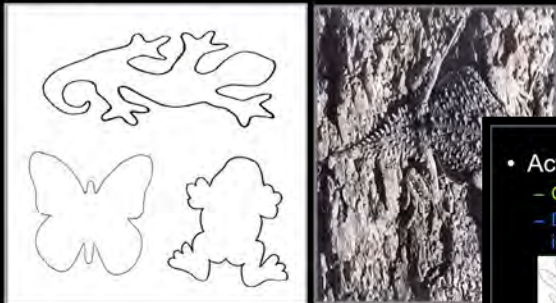
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Activities / Labs

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 activities.

• Hiding Camouflaged Animals

- You will follow me around the school on a short tour looking for a cool school walls / boards to camouflage the animals below.



• Activity! Young Bird (Learn through Experience)

- Today you will become a young bird foraging for food.
- You are tasting the world for the first time after leaving the nest.
- Go around your group eating the provided food one at a time. Share your experiences with your group.
- Record your food choice for each round (1-10+).
- What will you learn? Write **DONE!** When you don't want to feed anymore / you've learned your lesson.



• Activity! (Optional) – Relative Abund:

- Count the total number of leaves in the sample.
- Draw a sketch of each leaf in your journal and try to identify.

28



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.

- Activity! Quiz 1-20. Find the hidden "thing" in the picture.

- General names are acceptable.
- You will have about 10 seconds.

QUIZ
Just for Fun!
WIZ

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Unit 2 Lesson 2 Camouflage

Activity! Quiz 1-20. Find the hidden "thing" in the picture.
– General names are acceptable.
– You will have about 10 seconds.

11	12	13	14
15	16	17	18
19	20	21	22
23	24	25	26
27	28	29	30

– An adaptation that allows the animal to blend in with its environment to avoid being detected.

Adaptation: To be better suited to _____

There are four types of camouflage:

- Concealing Coloration
- Disruptive Coloration
- Disruptive Coloration: When an animal hides itself against a _____ color / pattern.
- Disruptive Coloration: When stripes, spots or other patterns make it hard for other animals _____ of their bodies.
- Mimicry: This is like concealing coloration except that the animals _____ with their surroundings by their _____ rather than color.
- Mimicry: Animals that use mimicry are _____ . Resemble a stick example: They often mimic the characteristics of unappetizing animals.

Questions in Work Bundle →

Built-in Questions and Assessments

Many slides will have relevant terms covered with a box. When advancing through the slideshow an outline around the box will glow with a bright color. The next slide will make the box disappear. These slides allow the teacher to call upon students or table groups / check for understanding before advancing. The team at SlideSpark has found that using this technique helps to keep the students focused. Constantly recalling and reviewing information learned is necessary when moving through a large unit. The slideshows don't just give everything away for free. Students should be able to demonstrate knowledge before moving on. Some slides have full questions instead of just covered terms. In these slides, the teacher should encourage small group work. The teacher can then call upon one or two groups to share before advancing the slide. The next slide will always reveal the correct answer.

• Which is not an importance of biodiversity

- A.) Generation of soils and maintenance of soil quality.
- B.) Maintenance of air quality.
- C.) Maintenance of water quality.
- D.) Pest Control
- E.) Detoxification and decomposition of wastes.
- F.) Pollination and crop production.
- G.) Decrease in food security.
- H.) Provision of health care (Medicines).
- I.) Income generation.
- J.) Spiritual / cultural value.

• Which is not an importance of biodiversity

- A.) Generation of soils and maintenance of soil quality.
- B.) Maintenance of air quality.
- C.) Maintenance of water quality.
- D.) Pest Control
- E.) Detoxification and decomposition of wastes.
- F.) Pollination and crop production.
- G.) Decrease in food security.
- H.) Provision of health care (Medicines).
- I.) Income generation.
- J.) Spiritual / cultural value.

• Which is not an importance of biodiversity

- A.) Generation of soils and maintenance of soil quality.
- B.) Maintenance of air quality.
- C.) Maintenance of water quality.
- D.) Pest Control
- E.) Detoxification and decomposition of wastes.
- F.) Pollination and crop production.
- G.) Increase in food security.
- H.) Provision of health care (Medicines).
- I.) Income generation.
- J.) Spiritual / cultural value.

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.

- Review! Lord Howe Stick Insect

- <https://www.youtube.com/watch?v=zRx-UtW1FLk>
- Or
- https://www.youtube.com/watch?v=0XNyDfoFp-4&ab_channel=AtlasObscura



- Video Link! Plantation Forestry & Regeneration Forestry (Tasmania)

- Pay attention to each side of the slide
- Which is better to maintain biodiversity?
- http://www.youtube.com/watch?v=vpiUH8A_wE



- Academic Link / Class Quiz: Types of Camouflage.

- <http://www.pbs.org/wqbh/nova/leopards/seeings/ans.html>



- Video Link: Camouflage and Camouflage
- <http://www.youtube.com/watch?v=sxnddX0h8E>



- The Iranian spider-tailed Viper

- <https://www.youtube.com/watch?v=sxnddX0h8E>



- Video Link! Alligator Snapper Tongue Lure

- https://www.youtube.com/watch?v=w-aIl_nSkMXU



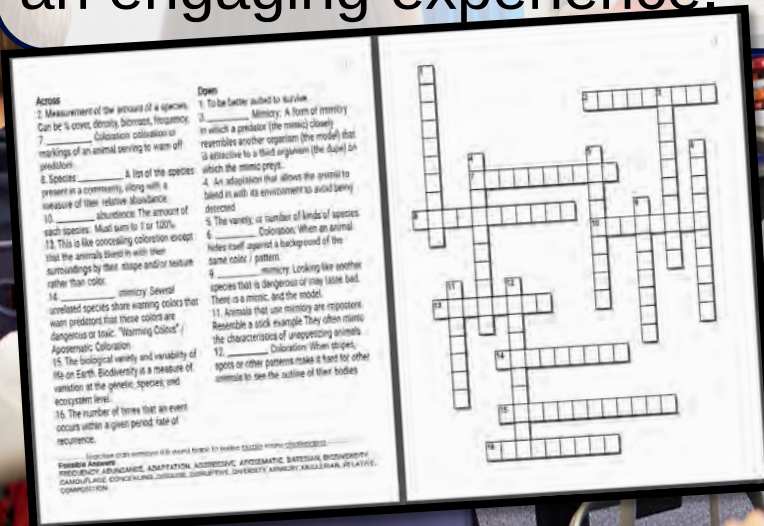
- How does this harmless black racer snake demonstrate Batesian mimicry?

- <http://www.youtube.com/watch?v=ogOTFIRx2Ds>



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 an engaging experience.



- Video! Biodiversity and the Extinction Crisis.

- Question: Why is maintaining a high level of biodiversity important?

- https://www.youtube.com/watch?v=GK_vRtHJZu4



- Video! Biodiversity and the Extinction Crisis.

- Question: Why is maintaining a high level of biodiversity important?

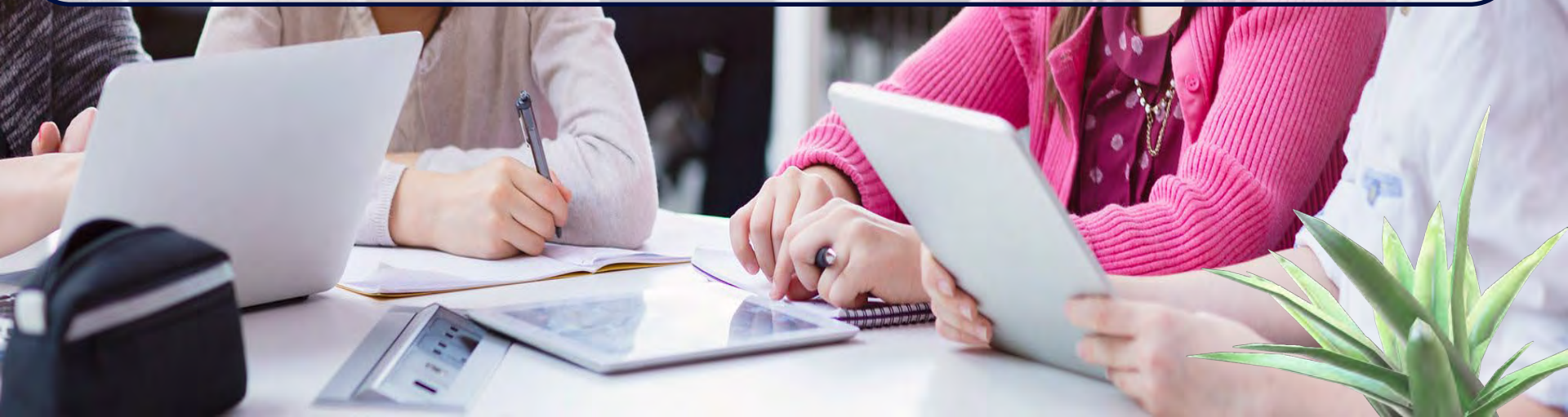
- https://www.youtube.com/watch?v=GK_vRtHJZu4



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.





[Part 2 Lesson 3 Camouflage...](#)

Google Slides



[Part 2 Lesson 1 Relative Abu...](#)

Google Slides



[Part 2 Lesson 5 Batesian Mi...](#)

Google Slides



[Part 2 Lesson 7 Review Game](#)

Google Slides



[Part 2 Lesson 3 Camouflage...](#)

Google Slides



[Part 2 Lesson 6 Mullerian Mi...](#)

Google Slides



[Part 2 Lesson 2 Biodiversity](#)

Google Slides



[Part 2 Lesson 4 Mimicry](#)

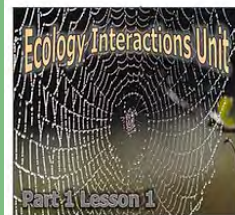
Google Slides



[Part 2 Lesson 6 Mullerian Mi...](#)

Google Slides

Part 1: 13 Lessons of 50 minutes, and 30 Page Work Bundle, Levels of Biological Organization (Ecology), Big Concepts in Eco-Literacy, Diagram of the Levels of Biological Organization, Individuals, Populations, Communities, Ecosystems Large and Small, Biomes, Biosphere, Making a Pyramid of the Levels of Organization Activity, Earth's Spheres, Atmosphere, Hydrosphere, Cryosphere, Lithosphere, Geosphere, Ecosphere, Sphere Interactions, Examples of Sphere Interactions, Hydrosphere Interaction Demo, How Matter and Energy move through the Spheres, Sphere Interaction Project, Habitat, Examples of Animals and their Habitat, Microhabitats, Habitat Lab Activity, Needs of Organisms, Ecological Niche, Case Study on the African Dung Beetle, Fundamental Niche vs Realized Niche, Human Population Growth, Carrying Capacity, R and K Species, Animal Competition, Types of Competition, Intraspecific Competition, Interspecific Competition, Interference, Exploitative Competition, Competition Quiz, Competitive Exclusion Theory, Animal Competition Simulation of Spoon Beaks vs. Grabber Beaks, MacArthur's Warblers Case Study, Animal Interactions, Food Webs, Food Web Collapse Class Activity with String, Predator Prey Relationships, Feeding Strategies, Generalists vs. Specialist, Foraging Simulation with Bean Seeds in the Grass, Herbivore Survival Strategies, Predator Prey Cycles, Predatory Prey Cycle Notecard Toss Activity, Density Dependent and Density Independent Limiting Factors, Box Games, Board Game Review, Crossword Puzzle, Assessment.



Part 1 Lesson 1 Levels of Organization



Part 1 Lesson 3 Sphere Interactions



Part 1 Lesson 4 Sphere Project



Part 1 Lesson 5 Habitat



Part 1 Lesson 6 Need Niches



Part 1 Lesson 7 Population Growth



Part 1 Lesson 8 Competition



Part 1 Lesson 9 Food Webs



Part 1 Lesson 10 Feeding Simulation



Part 1 Lesson 11 Predator Prey Cycles



Part 1 Lesson 12 Wrap Up



Part 1 Lesson 13 Review Game



Part 1 Lesson 14 Review Game Answers



Part 1 Work Bundle Print



Part 1 Work Bundle Write on pdf



Part 1 Work Bundle Answers



Part 1 Work Bundle Print with Notes

Ecology Interactions Unit Part 1

Ecology Interactions Unit

[Ecology Interactions Unit](#)

Ecology and the Environment: Interactions Unit

3 Parts, 30 Lessons (5th or 6th grade – Easier), Part 1 has 30 page bundle, Part 2 has a 15 page work bundle, Part 3 has a 24 page work bundle -Areas of Focus within The Ecology Interactions Unit: Levels of Biological Organization (Ecology), Parts of the Biosphere, Habitat, Ecological Niche, Types of Competition, Competitive Exclusion Theory, Animal Interactions, Food Webs, Predator Prey Relationships, Camouflage, Population Sampling, Abundance, Relative Abundance, Diversity, Mimicry, Batesian Mimicry, Mullerian Mimicry, Symbiosis, Parasitism, Mutualism, Commensalism, Plant and Animal Interactions, Coevolution, Animal Strategies to Eat Plants, Plant Defense Mechanisms, Exotic Species, Impacts of Invasive Exotic Species.



3 Parts, 30 Lessons (5th or 6th grade – Easier), Part 1 has 30-page bundle, Part 2 has a 15-page work bundle, Part 3 has a 24-page work bundle.

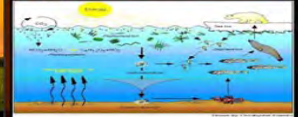
[Ecology Interactions Unit Part 1:](#) Levels of Biological Organization (Ecology), Big Concepts in Eco-Literacy, Diagram of the Levels of Biological Organization, Individuals, Populations, Communities, Ecosystems Large and Small, Biomes, Biosphere, Making a Pyramid of the Levels of Organization Activity, Earth's Spheres, Atmosphere, Hydrosphere, Cryosphere, Lithosphere, Geosphere, Ecosphere, Sphere Interactions, Examples of Sphere Interactions, Hydrosphere Interaction Demo, How Matter and Energy move through the Spheres, Sphere Interaction Project, Habitat, Examples of Animals and their Habitat, Microhabitats, Habitat Lab Activity, Needs of Organisms, Ecological Niche, Case Study on the African Dung Beetle, Fundamental Niche vs Realized Niche, Human Population Growth, Carrying Capacity, R and K Species, Animal Competition, Types of Competition, Intraspecific Competition, Interspecific Competition, Interference, Exploitative Competition, Competition Quiz, Competitive Exclusion Theory, Animal Competition Simulation of Spoon Beaks vs. Grabber Beaks, MacArthur's Warblers Case Study, Animal Interactions, Food Webs, Food Collapse Class Activity with String, Predator Prey Relationships, Feeding Strategies, Generalists vs. Specialist, Foraging Simulation with Bean Seeds in the Grass, Herbivore Survival Strategies, Predator Prey Cycles, Predatory Prey Cycle Notecard Toss Activity, Density Dependent and Density Independent Limiting Factors, Box Games, Board Game Review, Crossword Puzzle, Assessment.

[Ecology Interactions Unit Part 2](#) Part 2: Abundance, Relative Abundance, Calculating Relative Abundance from a Population, Pie Graph of Result, Species Composition, Diversity, Biodiversity, Importance of Biodiversity, Case Study on the Lord Howe Stick Insect, Biodiversity Jenga Activity, How to Maintain Biodiversity, Case Study of Plantation Forestry vs. Native Growth in Tasmania, Find the Animal Fun Camouflage Quiz, Camouflage, Four Types of Camouflage, Camouflage a Gecko in the School Project, Mimicry, Tour of the Worlds fantastic Mimics, Batesian Mimicry, Being a young bird Nastieeos and Tastieeos / Bean Boozled and experiencing Batesian Mimicry Simulation, Aggressive Mimicry, Case Study on the Alligator Snapping Turtle, Beat the Butterfly Man Challenge, Aposematic Coloration, Mullerian Mimicry, Mullerian Coloring Activity, Other Interesting Ways Animal Avoid Predation, Box Games, Crossword Puzzle, Assessment

[Ecology Interactions Unit Part](#) Part 3: Symbiosis, Types of Symbiosis, Parasitism, Major groups of Parasites, Complicated Life Cycle of Parasites, Case Study on the Zombie Snail, Endoparasites, Ectoparasites, Examples with Visuals of many Parasites across the globe, Case Study on the Sea Lamprey, Brood Parasitism and the Cowbird, Perfect Parasite Presentation Project, Coevolution, Ecological Relationships, Mutualism, Types of Mutualisms, Trophic Mutualisms, Case Study on Leaf Cutter Ants, Cleaning Symbiosis, Defensive Mutualism, Dispersive Mutualism, Commensalism, Moving Quiz, Herbivory, Animal Strategies to Eat Plants, Plant Defense Mechanisms, Types of Mechanical Defenses, Poisonous Plants, Case Study on Identifying Poison Ivy, Poison Ivy Quiz, Plants and Animals Defense and Offense Design Project, Exotic Species, How Humans Spread Exotic Species, Invasive Exotic Species, Impacts of Invasive Exotic Species, Group Research of an Invasive Exotic Species Project, Biological Controls, Invasive Exotic Species WANTED Poster Project, Box Games, Crossword, Board Game Review, Assessment

Ecology Interactions Unit

- Food Web: A complex network of many interconnected food chains and feeding interactions.

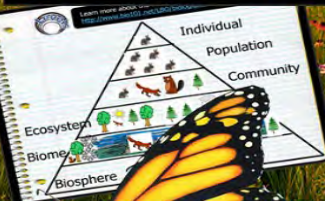


- Rain (the hydrosphere) drops land on atmosphere. These drop land on atmosphere (earth) and form streams and rivers that provide the drinking water for plants and animals in the (biosphere).



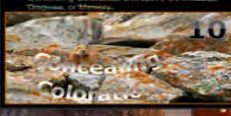
30 Lessons

- Name the spheres?
- Warm water currents move up the Gulf Stream toward Europe?



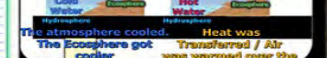
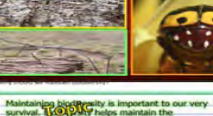
Interactive Slideshows

- Name the correct type of camouflage for the picture? (Can only use each once 7-10)



- There are four types of camouflage: Concealing Coloration, Disruptive Coloration, Mimicry, and Masquerade.

- Match the organism to its niche.
- Breaks down waste / returns nutrients to soil
- I make sugar through photosynthesis
- I am the start of the food chain
- I maintain balance in the ecosystem

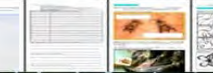
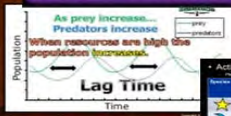
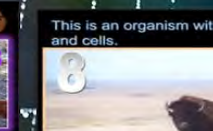


With Follow Along Work Bundles

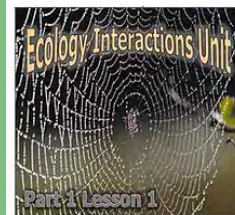


68 Pages

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



Part 1: 13 Lessons of 50 minutes, and 30 Page Work Bundle, Levels of Biological Organization (Ecology), Big Concepts in Eco-Literacy, Diagram of the Levels of Biological Organization, Individuals, Populations, Communities, Ecosystems Large and Small, Biomes, Biosphere, Making a Pyramid of the Levels of Organization Activity, Earth's Spheres, Atmosphere, Hydrosphere, Cryosphere, Lithosphere, Geosphere, Ecosphere, Sphere Interactions, Examples of Sphere Interactions, Hydrosphere Interaction Demo, How Matter and Energy move through the Spheres, Sphere Interaction Project, Habitat, Examples of Animals and their Habitat, Microhabitats, Habitat Lab Activity, Needs of Organisms, Ecological Niche, Case Study on the African Dung Beetle, Fundamental Niche vs Realized Niche, Human Population Growth, Carrying Capacity, R and K Species, Animal Competition, Types of Competition, Intraspecific Competition, Interspecific Competition, Interference, Exploitative Competition, Competition Quiz, Competitive Exclusion Theory, Animal Competition Simulation of Spoon Beaks vs. Grabber Beaks, MacArthur's Warblers Case Study, Animal Interactions, Food Webs, Food Web Collapse Class Activity with String, Predator Prey Relationships, Feeding Strategies, Generalists vs. Specialist, Foraging Simulation with Bean Seeds in the Grass, Herbivore Survival Strategies, Predator Prey Cycles, Predatory Prey Cycle Notecard Toss Activity, Density Dependent and Density Independent Limiting Factors, Box Games, Board Game Review, Crossword Puzzle, Assessment.



Part 1 Lesson 1 Levels of Organization



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Part 1 Lesson 12 Wrap Up



Part 1 Lesson 13 Review Game



Part 1 Lesson 14 Review Game Answers



Part 1 Work Bundle Print



Part 1 Work Bundle Write on pdf



Part 1 Work Bundle Answers



Part 1 Work Bundle Print with Notes

Ecology Interactions Unit Part 1

Part 2: 7 Lessons of about 50 minutes and 15 Page Work Bundle, Abundance, Relative Abundance, Calculating Relative Abundance from a Population, Pie Graph of Results, Species Composition, Diversity, Biodiversity, Importance of Biodiversity, Case Study on the Lord Howe Stick Insect, Biodiversity Jenga Activity, How to Maintain Biodiversity, Case Study of Plantation Forestry vs. Native Growth in Tasmania, Find the Animal Fun Camouflage Quiz, Camouflage, Four Types of Camouflage, Camouflage a Gecko in the School Project, Mimicry, Tour of the Worlds fantastic Mimics, Batesian Mimicry, Being a young bird Nastieeos and Tastieeos / Bean Boozled and experiencing Batesian Mimicry Simulation, Aggressive Mimicry, Case Study on the Alligator Snapping Turtle, Beat the Butterfly Man Challenge, Aposematic Coloration, Mullerian Mimicry, Mullerian Coloring Activity, Other Interesting Ways Animal Avoid Predation, Box Games, Crossword Puzzle, Assessment

Ecology Interactions Unit Part 2



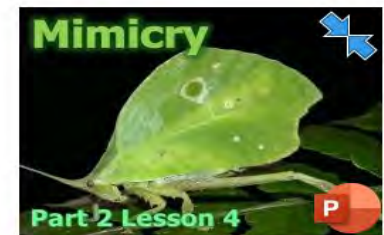
Part 2 Lesson 1 Relative Abundance



Part 2 Lesson 2 Biodiversity



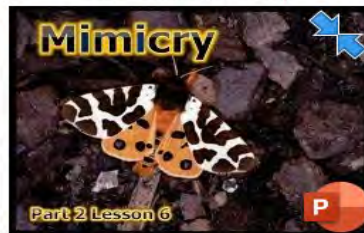
Part 2 Lesson 3 Camouflage



Part 2 Lesson 4 Mimicry



Part 2 Lesson 5 Batesian Mimicry



Part 2 Lesson 6 Mullerian Mimicry



Part 2 Lesson 7 Review Game



Part 2 Lesson 8 Review Game Answers



Part 2 Work Bundle Answers



Part 2 Work Bundle pdf Writable



Part 2 Work Bundle Print with Notes



Part 2 Work Bundle Print

Part 3: 11 Lessons of 50 minutes and 24 Page Work Bundle, Symbiosis, Types of Symbiosis, Parasitism, Major groups of Parasites, Complicated Life Cycle of Parasites, Case Study on the Zombie Snail, Endoparasites, Ectoparasites, Examples with Visuals of many Parasites across the globe, Case Study on the Sea Lamprey, Brood Parasitism and the Cowbird, Perfect Parasite Presentation Project, Coevolution, Ecological Relationships, Mutualism, Types of Mutualisms, Trophic Mutualisms, Case Study on Leaf Cutter Ants, Cleaning Symbiosis, Defensive Mutualism, Dispersive Mutualism, Commensalism, Moving Quiz, Herbivory, Animal Strategies to Eat Plants, Plant Defense Mechanisms, Types of Mechanical Defenses, Poisonous Plants, Case Study on Identifying Poison Ivy, Poison Ivy Quiz, Plants and Animals Defense and Offense Design Project, Exotic Species, How Humans Spread Exotic Species, Invasive Exotic Species, Impacts of Invasive Exotic Species, Group Research of an Invasive Exotic Species Project, Biological Controls, Invasive Exotic Species WANTED Poster Project, Box Games, Crossword, Board Game Review, Assessment

Ecology Interactions Unit Part 3



Part 3 Lesson 1 Symbiosis Parasites



Part 3 Lesson 2 Parasite Project



Part 3 Lesson 3 Mutualism



Part 3 Lesson 4 Animal Offenses



Part 3 Lesson 5 Plant Defenses



Part 3 Lesson 6 Presentation Wrap Up



Part 3 Lesson 7 Exotic Species



Part 3 Lesson 8 Negative Impacts



Part 3 Lesson 9 WANTED Poster



Part 3 Lesson 10 Board Game



Part 3 Lesson 11 Review Game



Part 3 Lesson 12 Review Game Answers



Part 3 Work Bundle Answers



Part 3 Work Bundle pdf Writable



Part 3 Work Bundle Print with Notes



Part 3 Work Bundle Print

Curriculum Guide

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

 =Easier,

 = More difficult,

 =Most difficult

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

Life Science Units

Life Science Units	Daily Lessons	Intended Grade	
Ecology Feeding Levels Unit	13 Lessons	5-6 easier	
Ecology Interactions Unit	30 Lessons	5-6 easier	
Ecology Abiotic Factors Unit	24 Lessons	5-6 easier	
Botany Unit	50 Lessons	5-7 easier	
Evolution and Natural Selection	40 Lessons	5-7 easier	
Taxonomy and Classification	50 Lessons	6-8 medium difficulty	
Infectious Diseases Unit	30 Lessons	7-9 more difficult	
DNA and Genetics Unit	42 Lessons	8-10 most difficult	
Human Body Systems Unit	85 Lessons	6-8 medium difficulty	
Cell Biology Unit	30 Lessons	8-10 most difficult	

Physical Science

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

[Physical Science Curriculum](#)

[Entire SlideSpark 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.

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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



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