Grade 8

Life Science
Ch. 4 Lesson1

Page	Question	Answer(s)	Links/Sources
120	How would you describe an ecosystem?	Answers may vary according to prior knowledge. An ecosystem is a geographic area where plants, animals, and other organisms, as well as weather and landscape, work together to form a bubble of life.	https://www.nationalgeographic.org/encyclopedia/ecosystem/print/
120	What living thing and non-living things are a part of that ecosystem?	Trees, plants, animals are living. Air, rocks, dirt and water are non-living.	
120	How do the living things and the nonliving things in the ecosystem interact with one another?	Living things may live under rocks or in the ground. Living things need air and water to survive.	
120	How does it change?	The ecosystem changes with the seasons.	
120	Which of these changes are natural?	The leaves falling and the lakes freezing is a natural change.	
120	Which are caused by humans?	Humans may cut down trees to build more homes.	
120	Which positive and which are negative?	The cutting down of trees to make more homes would be a negative change. A positive change could be the leaves falling, they compost and help the ground.	
120	What other animal and plant populations might you expect to find here?	Pine trees and birds.	https://www.fs.fed.us/psw/publications/documents/psw_gtr198/psw_gtr198_a.pdf
120	How might the population of animals and plants interact with one another?	The pine trees provide a home for the birds.	
121	Which tree do you think is more likely to win this competition?	Probably the giant redwood tree.	
121	What factors might affect the level of competition in an area?	The environmental factors, the water, climate, amount of oxygen.	
121	In what other ways can organisms avoid competition?	Nesting on different trees or feeding on different types of seeds.	

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121	If you were asked to identify factors that characterize an ecosystem, what would you say?	The type of climate, trees, water amount and temperature.	
121	How do these factors interact?	The temperature, climate and amount of water all affect how the trees grow	
121	How do ecosystems differ?	In their temperatures, amount of precipitation, and type and amount of nutrients they have.	
121	Do the factors that affect ecosystems change or are they static?	They may change slightly but not too much, otherwise it may become a different ecosystem.	
121	What are some of the abiotic factors in a temperate forest ecosystem?	Rain, mountains, rich soil.	https://www.britannica.com/science/temperate-rainforest
121	How do those factors vary from abiotic factors in a tundra ecosystem?	Low rainfall, fewer mountains, dry soil/frozen.	
121	How do the abiotic factors at the base of a tree differ from those at its top?	At the base, there is water and soil. At the top of the tree there is air.	
122	How will the abiotic factors of the pond change?	There would be less sunlight, it may affect the temperature of the water.	
122	How will this change affect the biotic factors?	The living organisms like plants and animals may not adapt well to this change.	
122	Could this change in biotic factors then have an effect on the new abiotic factors?	If the animals and plants start to die, it could affect the water quality. The water may have lower levels of gases since the plants and animals may not be there in the same amounts.	
122	Why do you think God created a world with so many types of interactions?	God likes diversity and interdependence.	
122	What are some food chains that might appear on a stream?	See bottom of page 122, diagram for examples.	
122	Would all the organisms in a stream food chain live in the water?	No, some live on land.	

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122	What interconnecting food chains can you find in the stream food web?	About 4, see bottom of page 122, different colored arrows.	
123	What is the path of energy from the Sun to the bass in the stream food web?	Sun to the algae, to the stream invertebrate to the bass.	
125	What effect will this have on the amount of energy than an organism receives from the trophic level beneath it?	It would be less energy.	
125	If you wanted to get the most energy from the food you eat, from which level of the pyramid should you choose your food?	As close to the base as possible.	
126	What foods did you eat from each level today?	Answers will vary.	
126	What materials do organisms need to stay alive and healthy?	Sample answers: Proteins, vitamins, minerals and water.	Teacher edition, margin.
126	Where do these materials come from?	Sample answer: Their food, their surrounding environment.	Teacher edition, margin.
126	Are these materials available in unlimited supply?	No.	
126	How do ecosystems maintain a balance of the nutrients that living organisms need?	By the flow of materials and energy. Waste materials can be used by living organisms, plants and other organisms.	https://sciencing.com/describe-balanced-ecosystem-5761235.html
126	Where do organisms get this carbon?	Carbon comes from cells breaking down, in plant tissues in the form of sugars.	Diagram at the bottom of page 126.
126	What happens to the carbon when organisms die?	Decomposers use it.	Diagram at the bottom of page 126.
127	Why would this cycling of carbon be important to all living things?	Carbon is necessary for all parts of the cycle to continue. It affects plants, animals and non-living things.	
127	What would happen if carbon would not cycle in this way?	Living things in the ecosystem may die.	
128	Have you ever seen pictures of the area where you lived from 50 years ago?	Answers may vary.	

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128	What changes did you notice?	Answers may include: More homes, more roads, less trees.	
128	What caused these changes?	Answers may include: urbanization, expanding the city.	
128	Were the changes positive or negative?	Answers may include: Positive because there are more places for people to live or roads are not made from dirt now they have pavement. Pavement decreases mud and runoff. Negative because vegetation has been replaced by pavement and buildings, this affect the environment in a negative way.	
128	How did these events affect the ecosystem you are part of?	Answers may vary depending on student's experiences.	
128	What are some examples of each of these factors?	Pollution- smog from cars. Introduced species-Humans releasing animals into the wild that don't belong to that habitat. Habitat alteration-Removing or adding features to a habitat perhaps for constructing new homes. Overhunting-Killing too many animals of the same species for sport, economical purposes or food. Overfishing-capturing too much of a certain type of fish for sport, food or monetary reasons.	
128	What can humans do to help restore an out-of-balance ecosystem?	Put guidelines and laws in place to protect the environment.	
128	How can humans prevent ecosystem damage before it happens?	Intentional stewardship practices.	
128	What would happen if the species that died out were a consumer population?	(Answer is right after the question in text)	Page 128 paragraph 3.

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128	Which do you think would have a greater impact on the ecosystem-the loss of a producer species or the loss of a secondary consumer?	Loss of the producer species. It would affect all levels of the food chain or food web. Producers are the only organisms that can trap energy from the sun.	Side margin, Teacher's edition.
128	How would the changes differ with the loss of each type of species?	The changes would be less dramatic as they happen higher up in the food chain.	
129	How would the amount of zooplankton available to the other consumers change?	It would increase.	
129	How would the elimination of the darters affect the competition for zooplankton and aquatic insect larvae?	There would less competition.	
129	Which consumer populations might grow large?	The other species that feed on zooplankton and aquatic insect larvae	
129	Which might grow smaller? Why?	The zooplankton and aquatic insect larvae because they would be a source of food to other species.	