

Grade 8				
Ch. 9 Lesson 1				
Earth and Space Science				
Page #	Question	Answer(s)	Links/Sources	Student Resources
322	Which of your daily actions might affect Earth's water resources?	Sample answer: I use water daily to shower, brush my teeth, and clean dishes.		
323	How do you use natural resources everyday?	Sample answer: I use water to wash in, air to breathe, soil to grow food and other things in, many things that I use at home are made from metals, and I take walks in parks.		
323	Are these objects made from one resource or multiple resources?	Sample answer: Many objects I use are single resources, but many more are made from multiple resources.		
323	Are these resources renewable?	Sample answer: Water and wood products are renewable.		
324	What other natural resources do you see in this photo?	*Sample answer: Water, trees, soil, and rocks.		
324	What resources were used to make this device?	*Sample answer: Plastic and silicon. Help students understand that plastic comes from crude oil. Metals and silicon are used to create the microchip in the device. Screens are the most complex and are usually comprised of liquid crystal, plastic, and other chemicals. To create all the components of the device requires energy.	https://www.nms.ac.uk/explore-our-collections/resources/from-minerals-to-your-mobile/	
324	How much do you think people in the past processed these natural resources before using them?	Sample answer: People long ago did not process natural materials very much, because they didn't know how to do this.		
324	What led to the increased use of natural resources.	Sample answer: An increase in human population, inventions that required more natural resources in order to build them, the discover of new uses for natural resources, and the industrial revolution.		
324	Do you think an increased use of natural resources is a good thing?	Sample answer: Yes, natural resources and needed in order for modern society to continue to exist and advance. But more efficient use of natural resources and better conservation is needed to better protect the environment.		
324	Did you include petroleum products?	Sample answer: Yes.		
324	How much of your life would change if petroleum products were no longer available?	Sample answer: My life would change dramatically for the worse. Things that I regularly use and depend on would no longer be available.		
324	What would your life be without any manufactured products at all?	Sample answer: My life and the life of everyone else would be completely different. Survival would be much more difficult.		

324	Was there ever a time when there weren't any manufactured products?	Sample answer: I don't think so. Archeologists have found manufactured implements as far back as human history goes. While the stone points and other artifacts were simple, they still needed a human to make them.		
325	What on this chart surprised you?	*Sample answer: I did not realize that petroleum was found in cosmetics.		
325	What material in your home is made from material resources?	*Sample answer: Clay in the floor tiles of our kitchen, copper in the electrical wire in our house, petroleum in my mom's make up.		
325	What energy resources does your family use every day?	*Sample answer: Gasoline to drive our cars, water to wash ourselves, dishes, and laundry; oil, coal, natural gas to heat homes and businesses; fossil fuels, wind, solar energy, water, geothermal, and nuclear to generate electricity.		
325	Which of the resources in the table do you think you could do without for long periods?	*Sample answer: I could do without silver for a period of time because I could eliminate purchasing silver products.		
325	What materials in your home are made from these material resources?	Sample answer: Electrical devices, clothing, furniture, tools, appliances, etc.		
325	What energy resources does your family use everyday?	Sample answer: Gasoline, natural gas, water, solar panels on the roof.		
326	How can you make sure renewable resources remain renewable?	Sample answer: I can make sure that I take shorter showers to help conserve water.		
326	Which type of alternative energy resource is best suited to your area? Explain	Sample answer: We live near a large river, so hydroelectric power is best suited to our area. Note: most alternative energy power is plugged into the nationwide grid, so households that may be located a great distance from an alternative energy source still receive some of their electrical power from the source.	https://www.rff.org/publications/explainers/renewables-101-integrating-renewables/	
326	Do you think solar power energy is a viable energy resource for this area? Explain.	Sample answer: Yes, it is a viable energy resource because we have a lot of sunny days in our region.		
326	How are renewable resources, such as land, water, and air threatened?	Sample answer: All of these resources are at risk of pollution, over use, and the lack of conservation practiced by the general public.		
326	Where else do you see solar panels being used?	Sample answer: Solar panels are used to power highway emergency phones and signs, driveway gates, electrical devices when people are camping, public charging stations for mobile devices.	https://www.thespruce.com/top-solar-energy-uses-1152263	

326	Why might solar energy be less costly than the energy produced by fossil fuels?	Sample answer: Solar energy is renewable, once the equipment is installed there is not additional cost to gather the sunlight. More fuel is continually needed for electricity produced by fossil fuels. Continual production needs for fossil fuels continues as a major expense.		
326	What states and provinces do you think would have the best locations for this kind of renewable energy?	Sample answer: States and provinces located on the western and eastern coasts of the U.S. and Canada. The central regions (the plains) of the U.S. and Canada?		
326	Is this kind of management feasible?	Sample answer: Yes, but proper management is expensive and results in high consumer costs. But I think the increased cost is worth making sure that lumber resources continue to be renewable.		
327	Which of these types of energy seem to be the most readily available?	Sample answer: Most of the areas of the country have plant life, so it seems that much of the country could work at using biomass energy?		
327	What might be some negative effects of using farmland to produce fuel?	Sample answer: If too much farmland is used to produce fuel, there will be less food for humans and animals to consume and prices for food will go up.		
327	How can you use renewable energy?	Sample answer: I can use the Sun to heat food.		
327	Where else would you expect hydroelectric power to be a significant part of the energy supply?	Sample answer: In the California and the Pacific Northwest, and in Quebec and Ontario.		
327	What geologic features would be characteristic of regions that produce this kind of energy?	Sample answer: Areas where there is a history of volcanic activity and active volcanoes.		
327	What states and provinces would do you think would have geothermal plants?	Sample answer: In the western states and in Hawaii. British Columbia and the Yukon. Note: There is currently no electricity being generated from geothermal sources in Canada.	https://en.wikipedia.org/wiki/Geothermal_power_in_Canada#:~:text=There%20is%20currently%20no%20electricity,exists%20in%20the%20Canadian%20Cordillera.	
328	Which biofuel will produce the most CO ² ?	Sample answer: I think that molasses will produce the most CO ² .		
328	Why are some biofuels better than others?	Sample answer: Because some biofuels are more efficient and produce more energy per unit of biofuel mass.		
329	How are renewable resources different from nonerasable resources?	*Renewable resources can be replenished as we use them. Nonrenewable resources cannot be renewed. Once these resources are used, they're gone.		
329	What information goes into the overlapping part of the Venn diagram?	*Sample answer: Shared properties or details about these two resources.		

329	Give an example of information to include in the overlapping part of the Venn diagram?	*Sample answer: Both produce energy.		
329	What kinds of resources are pictures the most often?	*Students should see that a lot of the "products" they found are made from both renewable and nonrenewable resources.		
329	What are these resources?	Sample answer: fossil fuels, minerals, ground water, soil, nuclear energy.		
329	Why does it take so long to replenish them.	Sample answer: Because these resources no longer being produced, or are being produced at such a slow rate they will not be produced within a reasonable amount of time.		
329	Are there some that will never be replaced?	Sample answer: Yes, most of these resources will never be replaced.		
329	What are three kinds of fossil fuels?	Sample answer: Coal, oil, and natural gas.		
329	How do they form?	Sample answer: They formed from the decomposition bacteria, algae, and plants. Note: It is important for students to understand that fossil fuels do not contain much if any animal material and certainly do not come from the decomposition of animal remains.		
329	Why do we continue to rely on these fuels if they are not renewable?	Sample answer: Because in the past electricity from fossil fuels was cheaper to produce than energy from other sources of energy. Also we have so many existing machines and industries that are designed and built to use fossil fuels as the source of energy.		
329	What do you think is the best thing to do regarding the use of these fuels?	Sample answer: I think they should be completely phased out from use and replaced with other renewable forms of energy.		
329	Besides fossil fuels, what are other nonrenewable resources do you depend on in your daily life?	Sample answer: I depend heavily on mined mineral resources. Note: It has been said that "if you can't grow it, you have to mine it," meaning that anything we can't grow we have to extract from Earth in one way or another.		
329	Are there non-renewable resources that you can see around you right now? What are they?	Sample answer: Yes, I see glass windows, carpeting, plumbing fixtures, several electronic devices.		
329	What are the advantages of nuclear energy over fossil fuels?	Sample answer: It is much more efficient, less fuel is required to produce the same amount of electricity, it produces less pollution.		
329	What are the disadvantages?	Sample answer: It is expensive to build nuclear energy power plants, there is the risk of accidents, it produces radioactive waste that is hard to dispose of, there is a limited fuel supply.		

329	What are examples of nonrenewable mineral resources?	Sample answer: Copper, aluminum, iron, lithium, silver, gold, iron, lead, nickel, beryllium, molybdenum, silica		
329	What kind of resource is used to make products?	*A material resource.		
329	What kind of resource is used to produce products?	*An energy resource.		
329	Would you classify trees as a material resource or as an energy resource or as both? Explain.	*Sample answer: I would classify trees as both a material resource and an energy resource, because they are used to make products and to generate energy.		
329	What do you think happens to the cost of nonrenewable resources when supplies begin to run out?	*Sample answer: The cost goes up as demand increases.		
330	What can you do to be an agent of resource conservation?	*Sample answer: I can recycle water bottles, or even better I can use a reusable bottle for my water.		
330	How could a worldwide flood contribute to the huge coal and oil deposits found in the world today?	*If the flood washed lots of organic matter off the land and buried it, it would produce coal and oil. Otherwise there is no good explanation for how so much organic material got buried so deeply and quickly enough to make coal and oil.		
330	What factors might contribute to reduced water supplies for those people?	Sample answer: Long-term drought conditions and increased population using the water source.		
330	What steps can individuals and communities make to help reduce the risk of this problem?	Sample answer: Work to reduce nonessential uses of water and practicing better conservation of water that is used.		
331	What can you do to protect Earth's natural resources?	*Sample answer: I can conserve energy resources by remembering to turn off lights when I leave the room.		
331	How do these two types of lighting differ?	*Fluorescent bulbs generate light by sending an electrical discharge through an ionized gas; incandescent bulbs emit light by heating the filament present in the bulb.		

331	Why is fluorescent lighting more energy efficient?	<p>*Sample answer: The fluorescent bulb can last for up to 35,000 hours and used less electricity. An incandescent bulb only lasts up to 2000 hours.</p> <p>Note: Canada and many states have banned certain kinds of fluorescent lights - California, Massachusetts, Nevada, Washington. Other states are expected to pass similar legislation - Colorado, Hawaii, Vermont, Washington DC, Maine, Connecticut, New Jersey, New York, North Carolina, Pennsylvania, Oregon, Rhode Island. The European Commission will phase-out general purpose lighting across Europe in 2023.</p>	https://edisonreport.com/2021/08/11/global-phase-out-of-fluorescents-presents-opportunity-to-rapidly-accelerate-the-adoption-of-led-lighting/	
	* Means the answer is found in the TE.			