BrishLab

ES06A Renewable Resources

Name: _____

Date: __ / __ / ____ Period __ Room ___

Did you know?

1 A resource is classified as renewable if it replaces itself in a person's lifetime – somewhere around 75 years.

2 Water, soil, animal life, biomass (plant life), sunlight, waves, and wind, are all renewable resources.

3 We can help the renewable resources stay available by knowing about them and keeping them clean and healthy (See Fig. 1).

4 Conservation is using only what you need. We can conserve resources by the three "R"s – Reduce, Reuse and Recycle.

Figure 1 – Polluted water

So, why is it important to me?

5 By knowing how renewable resources can be used, we can save some other nonrenewable resources like coal, gas, oil, and nuclear power (See Fig. 2).

6 Governments regulate the use of many renewable resources to keep them from being used faster than they can renew.

7 Water and air pollution affects everyone. We can do small things to greatly reduce polluting our planet.

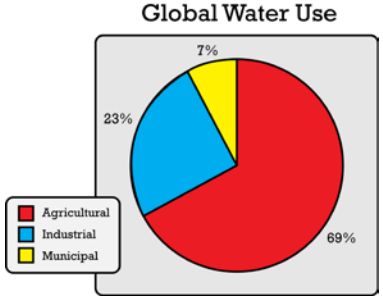

Figure 2 – On Earth, most of the water is used for growing crops.

What are the big ideas I need to know?

8 Renewable energy resources include solar, water, wind, biomass, and geothermal power. We use many of these resources to provide energy for our use. These resources are usually replaced at the same rate that we use them (See Fig. 3).

9 Scientists know that the Sun will continue to shine for billions of years. So we can use the solar energy without it ever running out. Water flows from high places to lower ones. Wind blows from areas of high pressure to areas of low pressure. We can use the flow of wind and water to generate power. We can count on wind and water to continue to flow!

Figure 3 – Water in a reservoir makes electricity when it turns generators in a dam.

ES06A Renewable Resources

Name:
Date: / / Period Room

10 Burning wood is an example of biomass energy. Changing food grains into biofuels is biomass (bio meaning living and mass meaning materials) energy. Biomass is renewable because we can plant new trees or crops to replace the ones we use. Geothermal energy uses water that was heated by hot rocks. There are always more hot rocks available to heat more water.

11 Even renewable resources can be used unsustainably. We can cut down too many trees without replanting. We might need grains for food rather than biofuels. Some renewable resources are too expensive to be widely used.

Figure 4 – This boy is getting drinking water from a hole that has been dug. It may be the only source of water where he lives.

12 Water shortages are common in much of the world. People are most likely to run short of water during droughts, a period of unusually low rainfall (See Fig. 4).

13 The main sources of water pollution can be grouped into two categories, point and nonpoint source pollution.

14 Point source pollution results from the contaminants that enter a waterway or water body through a single site like untreated sewage, wastewater from a sewage treatment plant, and leaking underground storage tanks.

15 Nonpoint source pollution is contamination that does not come from a single point source. Instead, it happens when there is a buildup of small amounts of contaminants that collect from a large area. Examples of this include tossing trash into waterways or by fertilizer runoff from farms into groundwater or streams.

What about?

16 Factories and power plants may pollute water with harmful substances. Many industries produce toxic chemicals. Some of the worst are arsenic, lead, and mercury. Nuclear power plants produce radioactive waste products. Oil tanks and pipelines can leak. Leaks may not be noticed until a lot of oil has soaked into the ground polluting the water so it is no longer fit to drink.

17 Households and businesses in a community are also responsible for polluting the water supply. People apply chemicals to their lawns. The chemicals may be picked up by rainwater. The contaminated runoff enters storm sewers and ends up in nearby rivers or lakes. Underground septic tanks can develop leaks and let household sewage seep into groundwater (See Fig. 5).

Figure 5 – We can clean this river of pollution, waste and materials.