Integrated Science Name _____

Cycles worksheet

Please answer the following ***using the words in the text box.***

Carbon Cycle

Coal	Oil	Natural Gas	burning of fossil fuels		volcanoes
Photosynthesis	Respiration	ocean	sugar	Greenhouse	decayed

1. Plants use CO_2 in the process of _____ to make _____ and oxygen.
2. Animals use oxygen in the process of _____ and make more CO_2.
3. The _____ is the main regulator of CO_2 in the atmosphere because CO_2 dissolves easily in it.
4. In the past, huge deposits of carbon were stored as dead plants and animals _____.
5. Today these deposits are burned as fossil fuels, which include _____, _____, and _____.
6. More CO_2 is released in the atmosphere today than in the past because of _____ _____ .
7. Another natural source for CO_2 is _____.
8. Too much CO_2 in the atmosphere may be responsible for the _____ effect.
9. Write the equation for **photosynthesis.**

10. Draw a **simple diagram** of the Carbon Cycle using the words in the text box above.

Oxygen Cycle

Photosynthesis	Ozone	Waste	Crust	Oceans	Respiration

1. Plants release 430-470 billion tons of oxygen during process of _____.
2. Atmospheric oxygen in the form of _____ provides protection from harmful ultraviolet rays.
3. Oxygen is found everywhere on Earth, from Earth's _____ (rocks) to the _____ where it is dissolved.
4. Oxygen is vital for _____ by animals, a process which produces CO_2.and water.
5. Oxygen is also necessary for the decomposition of _____ into other elements necessary for life.
6. Write the equation for **respiration**.

7. Draw a **diagram** of the Oxygen Cycle using the words in the text box.

Sulfur Cycle

Water	Minerals	Volcanoes	minerals	Industry	Ground or rocks
Rain	pollution	matches	H_2S	insecticide	sulfuric acid

1. Sulfur in a pure elemental state is most often found near active _____.
2. Sulfur is found in all of Earth's environments, including the air, the hydrosphere (_____), the biosphere (living part), and the lithosphere (_____or _____).

3. Many sulfates, a solid form of sulfur, come from chemical weathering of _____ that contain sulfur.
4. Another major source of sulfur is from _____ caused by man-made activities. These are mixed with water in the air falling in _____ into water basins.
5. The gas _____ smells like rotten eggs.
6. One of the most important sulfur compounds is _____ _____, which is used to make fertilizers, automobile batteries, iron and steel, and plastics.
7. Other uses for sulfur include _____ (kills insects) and _____ (used to start fires).
8. Make a **diagram** of where sulfur in found. *Hint: See question #2 above.*

Phosphorus Cycle

Pollution	basins	rocks and minerals	waste	DNA	overgrowth	plants

1. Phosphorus in NOT found in the free state in Nature, but is contained mostly in _____ and _____.
2. It is an essential nutrient for life, as it makes up important chemicals such as _____.
3. In the Phosphorus Cycle, phosphorus moves between the soil and _____, which are eaten by animals. The animals use phosphorus, and then their _____ products help return the Sulfur for the next generation of phosphorus in the soil.
4. Some of the phosphorus in soils can be washed away into water _____.
5. Another source of phosphorus in water comes from man-made _____.
6. Too much phosphorus in water leads to plant _____, strangling all other life forms in the water.
7. Why is the use of too much phosphorus-rich fertilizers bad for the environment?

Nitrogen Cycle

Atmosphere	78%	ammonia	proteins	denitrificating	
Nitrate	nitrogen-fixing	plants	animals	waste	plants

1. Our atmosphere is _____ nitrogen gas.
2. Animals and plants cannot directly use all the nitrogen found in our _____.
3. Only special bacteria can directly use nitrogen in our atmosphere and "fix" it so other organisms can benefit. These bacteria are called _____-_____ bacteria.
4. Higher organisms use nitrogen to make their _____.
5. Animal waste decay by the action of bacteria which create _____and _____ products rich in nitrogen, and useful for plants to use again.
6. _____ bacteria in the soil can break down the ammonia into the gaseous form of nitrogen, which is not available for use by plants or animals.
7. In another part of the cycle, animals eat _____ containing nitrogen, which is again returned to the soil by animal _____ or decaying _____ and _____.
8. Draw a **diagram** of the Nitrogen cycle using the words in the text box.