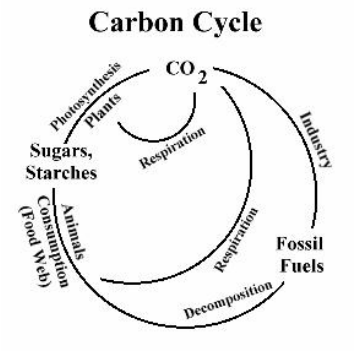
Name: _____ Date: _____ Hour: _____

The Carbon Cycle

Go to: http://www.windows.ucar.edu/tour/link=/earth/Water/co2_cycle.html

1. Name 3 non-living things where the element carbon can be found.

2. Carbon is moved from the atmosphere to plants in the form of what gas?



3. By what process are plants able to use carbon in the atmosphere?

4. How does carbon get into the ground?

5. What does carbon become after millions of years?

6. By what process do plants & animals release gas to the atmosphere?

7. How does carbon return to the atmosphere in industry?

8. How much carbon enters the atmosphere each year?

9. Where else in the environment might carbon be absorbed?

10. What would Earth be like without carbon dioxide?

11. How much more carbon is in the air today than 150 years ago?

12. What is happening to the Earth as more greenhouse gases are being produced?

Fill in the Blank:

13. Carbon moves through our planet over longer time scales as well. For example, over millions of years _____of _____on land can add carbon to _____which eventually runs off to the ocean. Over long time scales, carbon is removed from seawater when the _____and _____ of marine animals and plankton collect on the sea floor. These shells and bones are made of _____, which contains_____. When they are deposited on the sea floor, carbon is stored from the rest of the carbon cycle for some amount of time. The amount of limestone deposited in the ocean depends somewhat on the amount of _____, _____, _____oceans on the planet because this is where prolific limestone-producing organisms such as _____ live. The carbon can be released back to the atmosphere if the limestone _____ or is metamorphosed in a _____zone.

The Nitrogen Cycle

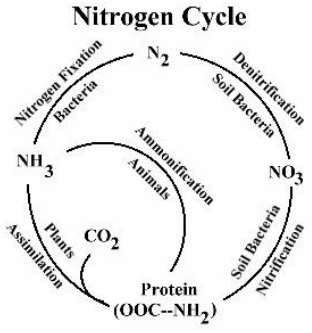
Go to: http://www.windows.ucar.edu/tour/link=/earth/Life/nitrogen_cycle.html

Fill in the Blank

1. Nitrogen is an_____. It is found in living things like _____and_____. It is also an important part of _____things like the _____above and the _____below. Atoms of nitrogen don't just stay in one place. They move slowly between _____things, _____things, the _____, _____and_____. These movements are called the nitrogen cycle**.**

Answer the Questions:

2. Where is most of the Nitrogen on Earth? Approximately how much Nitrogen is here?



3. What do plants & animals use Nitrogen to make?

4. How is Nitrogen converted to a form that plants & animals can use?

5. How do plants take in Nitrogen?

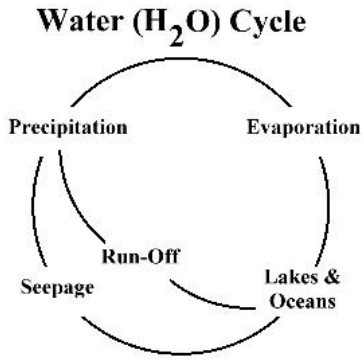
6. How do animals take in Nitrogen?

7. Name and explain two human actions that have caused changes to the Nitrogen cycle.

8. What is the impact onto plants & animals when nitrate levels increase?

The Water Cycle

Go to: http://www.windows.ucar.edu/tour/link=/earth/Water/water_cycle.html



1. Name the 4 locations on Earth where water can be found.
2. What are the 3 states of water?
3. What is the process of evaporation?
4. What is the process of sublimation?
5. What is the process of transpiration?
6. What is the process of condensation?
7. How do clouds become precipitation?
8. What does precipitation become a part of after it falls?
9. In what form might water remain on the Earth's surface?

10. Water stays in certain places _____than others. A drop of water may spend over _____years in the _____before moving on to another part of the water cycle while a drop of water spends an average of just _____ in the atmosphere before falling back to Earth.

Tackling the Global Warming Challenge

Go to: http://www.windows.ucar.edu/tour/link=/earth/climate/mitigation_intro.html

1. Who is mostly to blame for the climate warming?

2. What do we need to do in order to slow global warming?

3. What technologies are currently available to help decrease greenhouse gas emissions?

4. What actions can you take to help decrease greenhouse gas emissions?

5. What does it mean to be “carbon neutral”?

6. What inventions are in development which could help decrease greenhouse gas emissions?

7. According to the pie chart, in 2004, what was the greatest source of greenhouse emissions?

8. According to the pie chart, in 2004, what was the smallest source of greenhouse emissions?