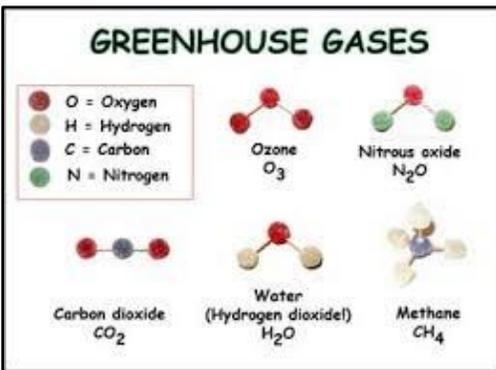
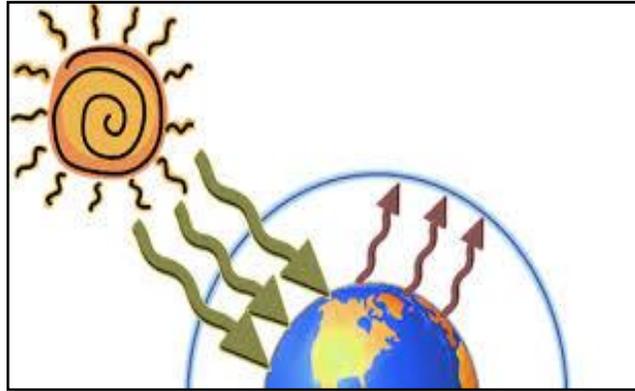




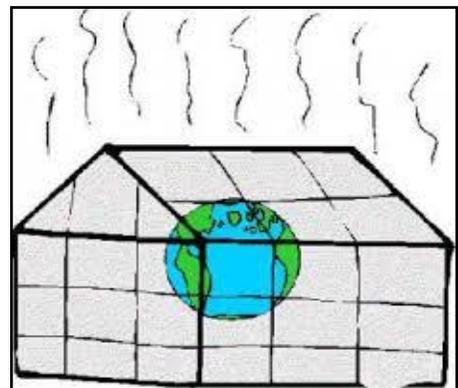
LAB ACTIVITY: LIFE IN A BAG

The Earth is wrapped in a blanket of air called the 'atmosphere', which is made up of several layers of gases. The Sun is much hotter than the Earth and it gives off rays of **light energy** that travel through the atmosphere and reach the Earth's surface. The rays of the sun warm the Earth's land and water, and **heat** then travels back into the atmosphere. Some gases in the atmosphere stop some of the heat from escaping into space and send it back to the surface.



The atmosphere is made up of several natural gases, some in tiny amounts, which trap the energy from the Sun and the heat given out by the Earth. To make sure that the Earth's temperature remains steady, the **balance** of these gases in the atmosphere must not be upset. These important gases are called **greenhouse gases**.

This natural process between the sun, the atmosphere and the Earth is called the **greenhouse effect**, because it works in much the same way as a greenhouse. The windows of a greenhouse play the same role as the gases in the atmosphere, keeping some of the heat inside the greenhouse. In the same way, some of the energy remains trapped in the atmosphere to keep it comfortable for life.



Student Sheet 2

The bad thing is that *human activities* also produce greenhouse gases. The amounts of these gases keep increasing and are affecting the whole



planet. Burning *fossil fuels* - coal, oil and natural gas and cutting down and burning trees puts more

greenhouse gases in the atmosphere trapping more heat is trapped and making the Earth warmer. This is known as *global warming*.



Most scientists agree that man's activities are making the natural greenhouse effect stronger. If we keep on polluting the atmosphere with greenhouse gases, it will have very serious effects on the Earth and all the creatures that inhabit it.





LAB ACTIVITY: LIFE IN A BAG

PART 1: HYPOTHESIS-What do you think will happen to the temperature both inside and outside of the plastic bag when it is exposed to sunlight?

PART 2: DATA TABLE: TIME/TEMPERATURE INSIDE AND OUTSIDE OF THE BAG

TIME (MINUTES)	TEMPERATURE (°C) INSIDE THE BAG	TEMPERATURE (°C) OUTSIDE THE BAG
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

Student Sheet 4

PART 3: ANALYSIS AND COMPREHENSION

1. Compare the temperatures inside and outside the bag.
2. Why do you think you got these results?
3. Do you think there are one or two energy forms involved? Why? What are they?
4. What changes (if any) could you make to the activity which might change the results?
5. How are the conditions on Earth and in this activity similar? How are they different?
6. Name at least 2 things that humans have done and are still doing which have changed the composition of the atmosphere.
7. Explain how the increased amount of greenhouse gases from human activity affect the temperature of the planet in the same way that the plastic bag affected the temperature around your body?
8. Name two greenhouse gases.
9. What form of energy reaches the Earth directly from the Sun?
10. What form of energy returns to the atmosphere after warming the surface of the Earth?
11. Is the greenhouse effect a natural or unnatural process?
12. How are the greenhouse gases and the glass walls of a greenhouse the same?
13. Why is the increase in greenhouse gases a problem?
14. What is the opinion of most scientists about the greenhouse effect?
15. Draw 2 pictures showing how the greenhouse effect and global warming work. Use arrows and colors and label the parts of your pictures.