**Global Warming Notes**

**What changes climate:**

Changes in:

* 1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ output (nature)
	2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ orbit (nature)
	3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ continents (nature)
	4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ eruptions (nature)
	5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (nature and mankind)
* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**: A gradual increase in the average temperature of the Earth
* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_:** process by which certain gases in Earth’s atmosphere trap energy from the sun and warm up Earth
* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_:** Types of gas, like CO2, that cause the greenhouse effect (and thus warm the earth)

**Greenhouse Effect**

* When incoming solar radiation (heat) is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ by greenhouse gases in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

(Just like the windows in a car trap heat, the gasses in the atmosphere trap heat.)

**An atmosphere makes everything \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**

**Why do we care?**

* Sea/ Ocean Levels are rising **\_\_\_\_\_\_\_**Floods or droughts (depending on location) become more severe, **\_\_\_\_\_**
* Farming has to change because of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ rise, changing \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, and changing \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**How does global warming happen**

* 1. To produce many of your common goods—computers, sneakers, water bottles, food—we burn \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* 2. Fossil fuels are energy sources made from \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. The most commonly used fossil fuels are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

* 3. Burning these fossil fuels to make household products produces \_\_\_\_\_\_\_\_\_\_ and this CO2 is released into the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* 4. In the atmosphere this CO2 joins the other \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. These greenhouse gases include things like \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* 5. These gases are necessary because they act as a\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and keep our planet warm.
* 6. However, when large amounts of CO2 enter the atmosphere it causes this layer \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* 7. As CO2 is added to the greenhouse gas layer, it becomes \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. As it becomes thicker, it \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ more of the Sun’s rays. And, just like your car, causes the earth to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_!
* 8. CONCLUSION: As CO2 levels \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, temperature levels \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**In the summer, why does the inside of a car get very hot when it is sitting in the sun?**

* The \_\_\_\_\_\_\_\_\_\_\_\_\_\_ from the sun goes into the car. The windows on the car \_\_\_\_\_\_\_\_\_\_\_\_\_ the heat inside. This makes the inside of the car heat up
* Many scientists think that as a result of increasing greenhouse gases, the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the Earth will \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* Scientists first warning – \_\_\_\_\_\_\_\_\_\_\_\_\_\_
* First measurements confirming global warming – \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ at Mauna Loa volcano in Hawaii
* Global air temperature – increased 0.6oC between \_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Predicted average global air temperature will rise 1.4-5.8oC by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |  |
| --- | --- | --- |
| **Greenhouse gas** | **Where does it come from?** | **How good is it at trapping heat?** (global warming potential= \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Carbon dioxide (CO2) |  |  |
| Methane (CH4) |  |  |
| Nitrous oxide (N2O) |  |  |

Effects of global warming

1.

2.

3.

4.

Other Greenhouse gases

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (water in the atmosphere)
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (CFCs) – human produced chemical
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_- good thing higher in atmosphere but it is trapped lower in atmosphere (not a good thing)

**Things we can do to limit our impact:**

Turn off your computer or the TV when you’re not using it.

Take shorter showers. Heating water uses energy.

Keep rooms cool by closing the blinds, shades, or curtains.

Turn off the lights when you leave a room.

Use CFL or LED bulbs.

**Summary of video clip:**

**Review Questions**

1. What is responsible for trapping some radiation (heat) and keeping it on the Earth, much like the windows on a car trap in heat?

* 1. Gravity c. Global Warming
	2. Nitrogen and Oxygen d. Greenhouse gases

2. Which of the following are examples of greenhouse gases?

a. Hydrogen c. Carbon Dioxide

 b. Oxygen d. nitrogen

2. Which of the following has caused the ***greatest*** increase in global warming?

 a. Burning of fossil fuels such as coal, gas, and oil c. People breathing out

 b. Increases in nitrogen and oxygen in the atmosphere d. Turning lights off

3. Which of the following is a likely effect of global warming?

 a. Glaciers will increase in size c. Ocean levels will rise

 b. More trees will grow d. Ocean levels will decrease

4. The burning of fossil fuels is causing an increase in the following:

 a. Atmospheric nitrogen c. Atmospheric oxygen

 b. Atmospheric carbon dioxide d. Atmospheric phosphate

5 The graph above shows the change in carbon dioxide concentration in Earth’s atmosphere from 1960 to 1990. The most likely cause of the overall change in the level of carbon dioxide from 1960 to 1990 is an increase in the:

a. number of violent storms c. number of volcanic eruptions

b. use of nuclear power d. use of fossil fuels