

Lesson 1: Green Energy

- I can describe the greenhouse effect.



What is the Purpose of a Greenhouse?





The Natural Greenhouse Effect

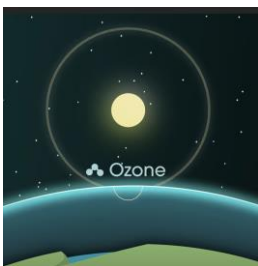
Watch the following video: <https://www.youtube.com/watch?v=KeI40nuyI5E>



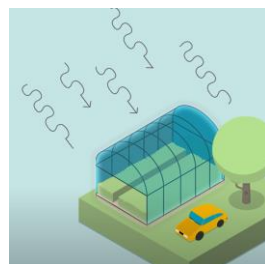
Matching Game!

Read the following facts about the greenhouse effects.

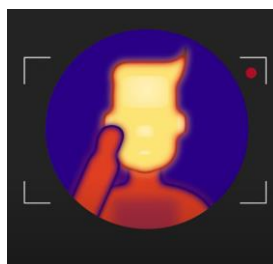
Can you match each paragraph to the correct picture?



A



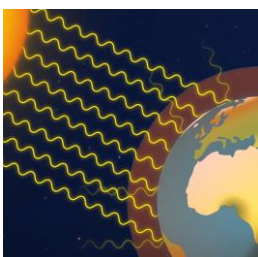
B



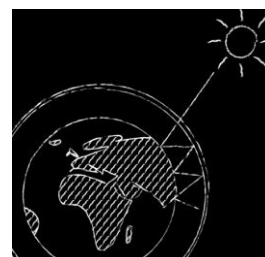
C



D



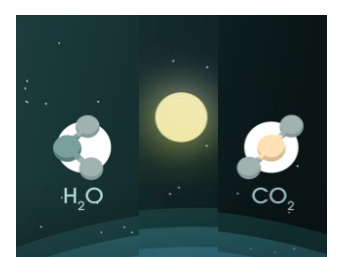
E



F



G



H

- 1 Our atmosphere helps to keep our planet warm by making it harder for the energy we get from the Sun to escape back to the Universe.
- 2 If you pump air into a football, it will make it a little heavier because gases are made of atoms which have mass and are attracted to the Earth by gravitational force. Gases are heavy, though not too heavy, and are made of real matter. Our atmosphere, which contains gases such as nitrogen and carbon dioxide, is held to the Earth by the force of gravity, just like the oceans.
- 3 Most of the energy we get from the Sun comes to us as visible light. Most of ultraviolet rays are trapped in the upper atmosphere by ozone, although enough gets through to damage our skin if we stay too long in the sun. The visible light gets straight through our transparent atmosphere and is partly absorbed by the Earth, which gets hot.
- 4 Hot things radiate infrared rays. You can try to hold your hand very close to, but not touching your cheek. Can you feel a glow? That is the infrared radiation, which infrared cameras can pick up.
- 5 Although visible light got through the atmosphere, the infrared radiation, coming from the Earth, finds it more difficult to get through.
- 6 A greenhouse or a car left in the sun works in a similar way. Visible light gets through the glass, heats the soil which glows, giving off infrared heat radiation. But this cannot get through the glass, so the heat builds up inside the greenhouse or the car.
- 7 The atmosphere acts a bit like glass, letting visible light through to warm the Earth, but some of the heat, or infrared radiation, now given off, gets absorbed by certain gases in the atmosphere. We call these **greenhouse gases**. Two of the natural gases that absorb infrared are water vapour and carbon dioxide.
- 8 In this way, the Earth is kept warm and we say there is a **natural greenhouse effect**. Without this natural blanket of insulating gas, the Earth would be too cold to support life as we know it.

Write your answers here:

- | | | |
|-----|-----|-----|
| 1 – | 2 – | 3 – |
| 4 – | 5 – | 6 – |
| 7 – | 8 – | |



Get Creative

Design a poster to describe how the greenhouse effect works and why it is important.