

madison
AUDUBON



Climate Initiative

Lesson 4: The Greenhouse Effect

Lesson 1: The Scientific Method

The rules of good science:

Because science is **AWESOME!!**



The Scientific Method

The rules of good science:

Because science is **AWESOME!!**

1. Ask a question
2. Make a hypothesis
3. Collect data
4. Make conclusions
5. Share your results



Lesson 2: Phenology

What might cause a shift in phenology?



Lesson 2: Phenology

What might cause a shift in phenology?

Climate change



Climate Change: The Big Picture

The entire earth is warming

Everything on our earth is connected: a change in one place causes more changes in other places

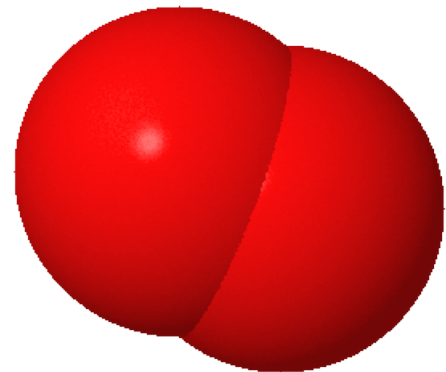
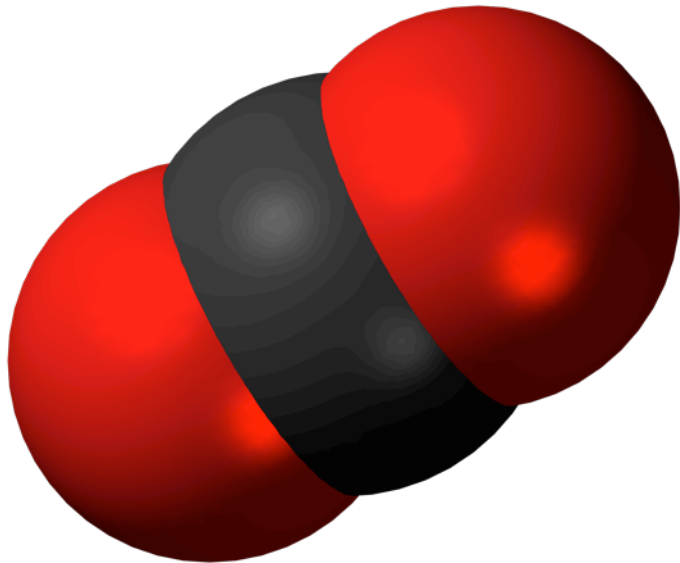


Molecules!

Carbon is the key to EVERYTHING!

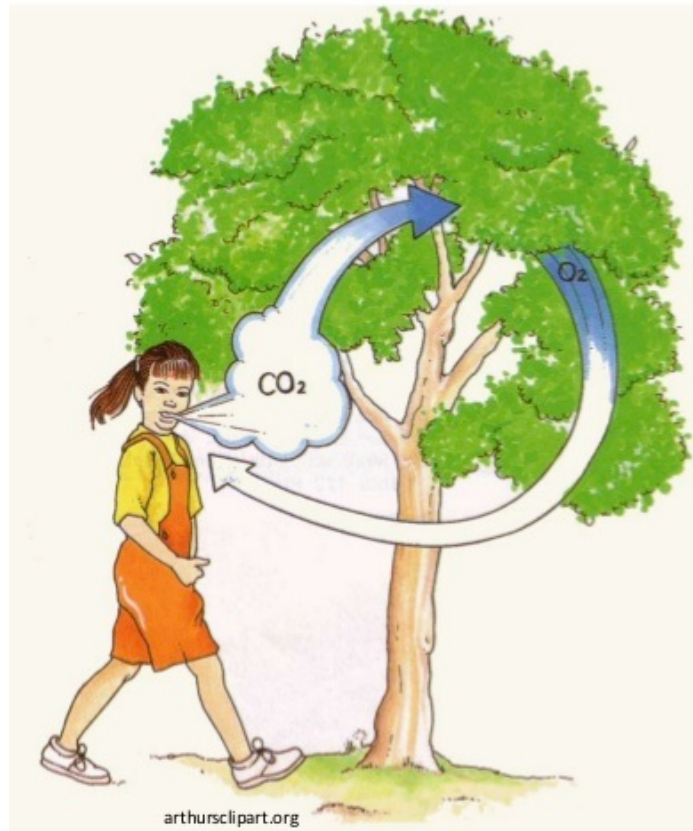
Carbon dioxide (CO₂)

Oxygen (O₂)



The Carbon Cycle

The air we breathe



The Carbon Cycle

All life is made of Carbon

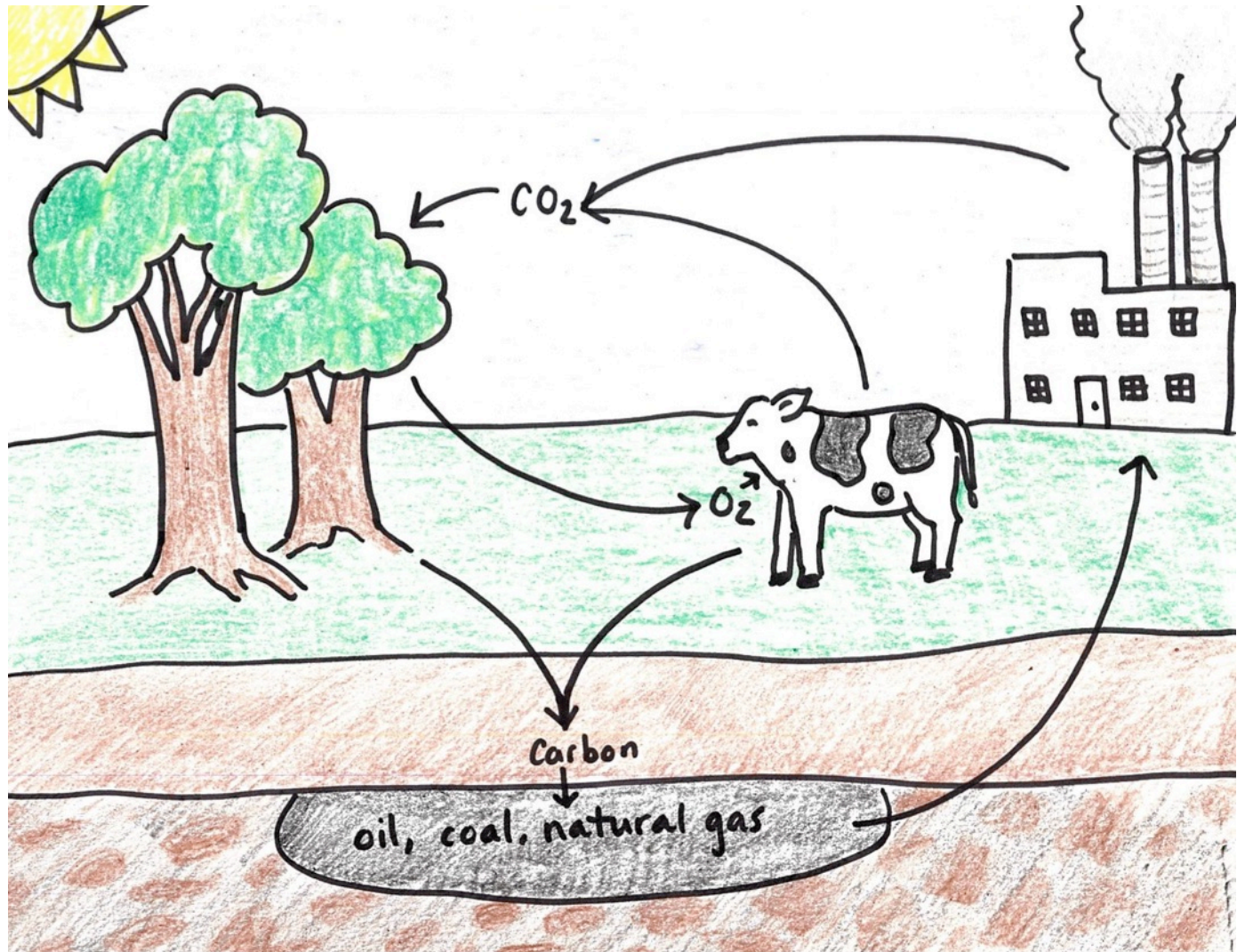


The Carbon Cycle

This life decomposes, and
the Carbon returns to the earth.



The Carbon Cycle



Lesson 4: The Greenhouse Effect

Weather or Climate?



Climate

The overall weather pattern
of an area over a long period
of time:



Climate

The overall weather pattern of an area over a long period of time:

- Average Temperature
- Average rainfall
- Average Wind
- Average Humidity



Weather



Weather

Local and temporary EVENT:

- Rain
- Snow
- Wind





Climate or Weather?

A tornado hits Verona, Wisconsin



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Chicago, Illinois is usually a windy city



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It rains more in Wisconsin than in Texas.



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Last week, 4 inches of snow fell in
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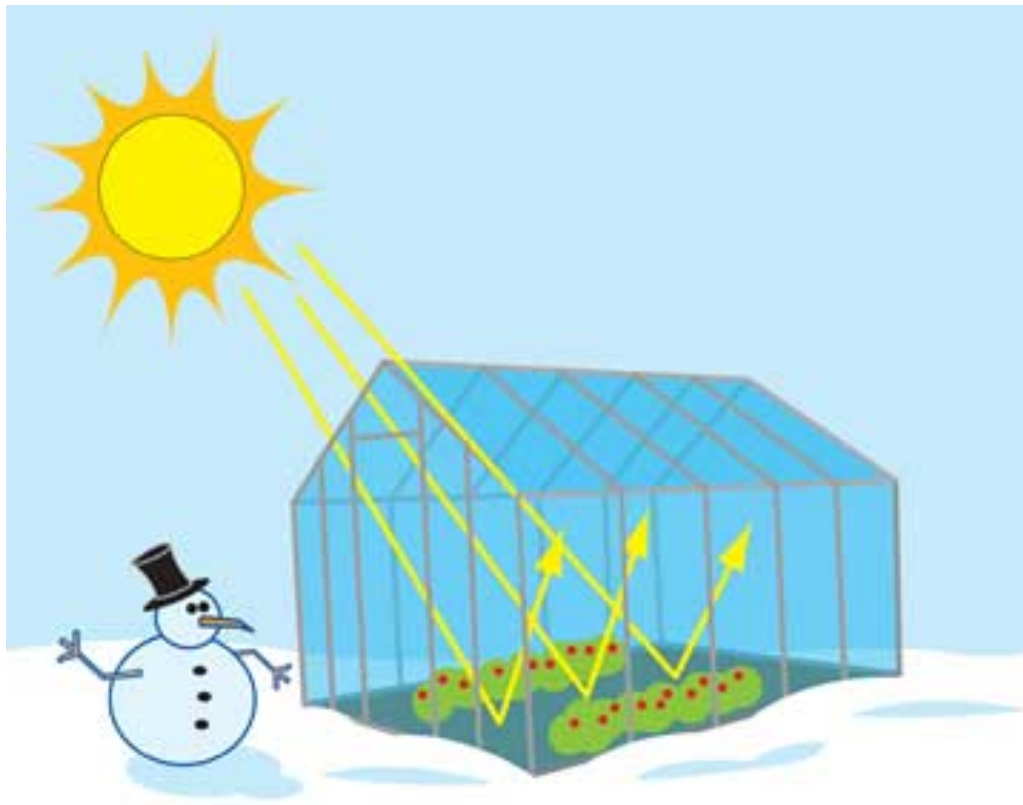
It rains more in Wisconsin than in Texas.

Climate

Last week, 4 inches of snow fell in Madison, Wisconsin.

Weather

What does a greenhouse do?

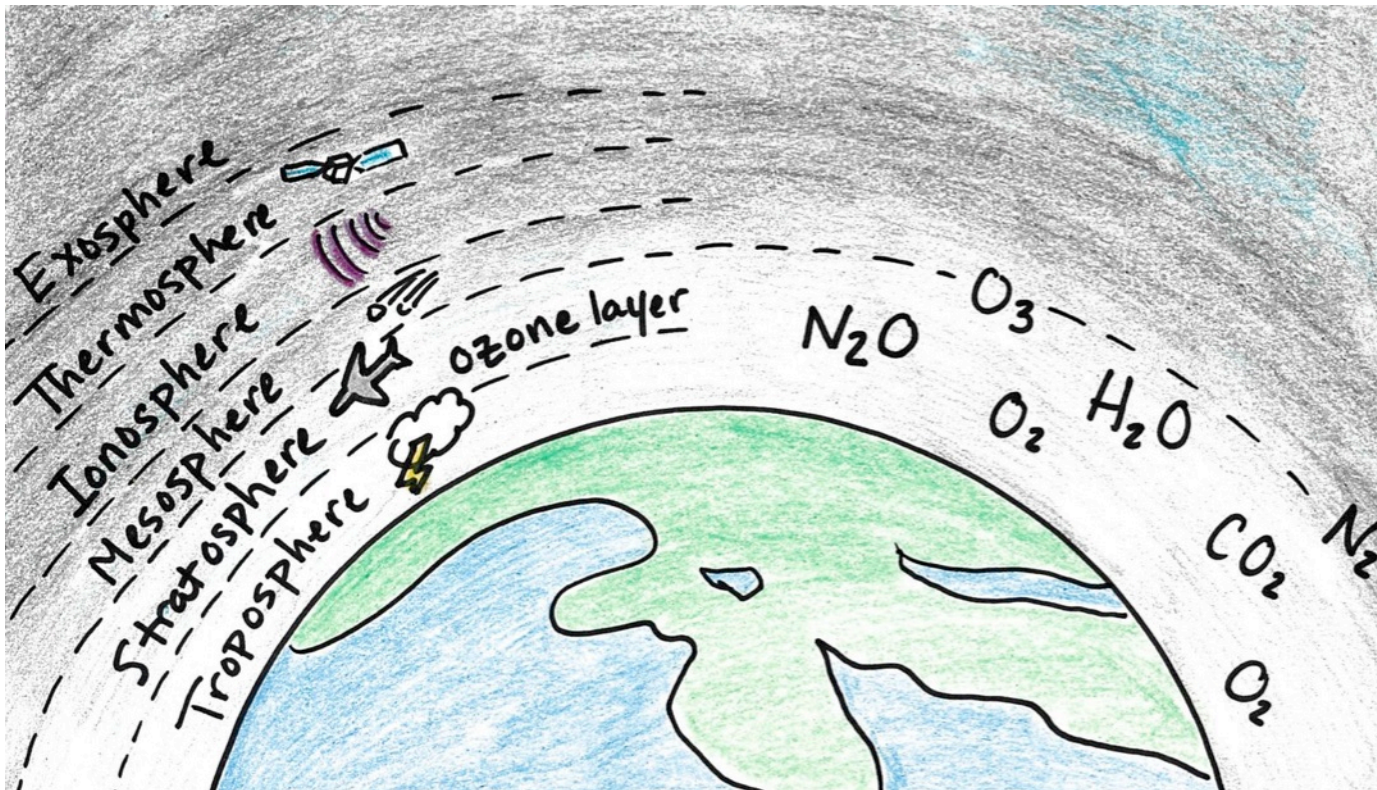


Now, the Earth



Atmosphere

Made up of **gasses** that act like a **greenhouse**,
keeping the earth warm



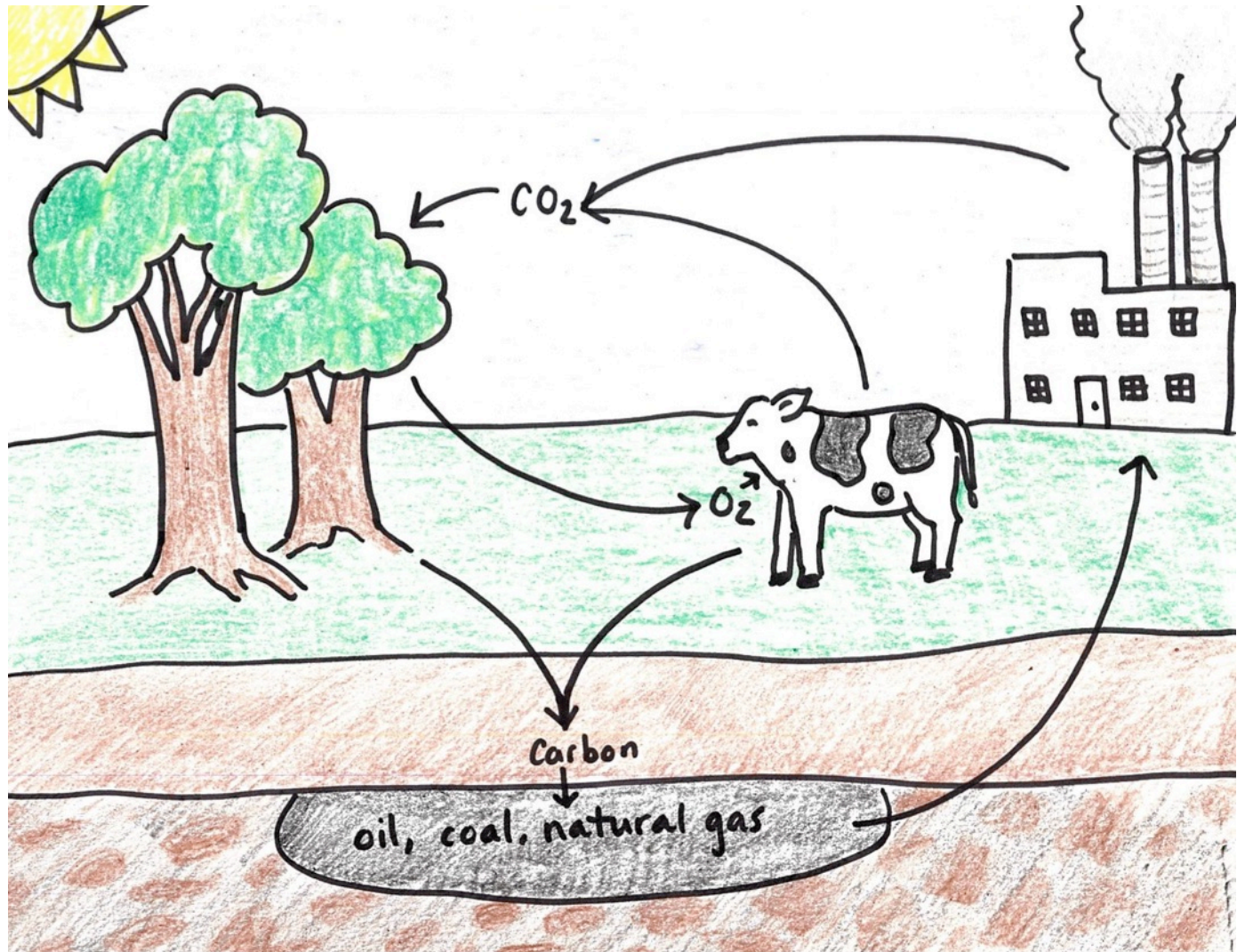
The Greenhouse Effect

Greenhouse effect is usually a good thing.

It keeps our earth warm



The Carbon Cycle





The Earth's Climate is Changing

Because of Human Activity

More **greenhouse gasses** into the **atmosphere**
Increasing the **greenhouse effect**.



The Earth's Climate is Changing

Because of Human Activity

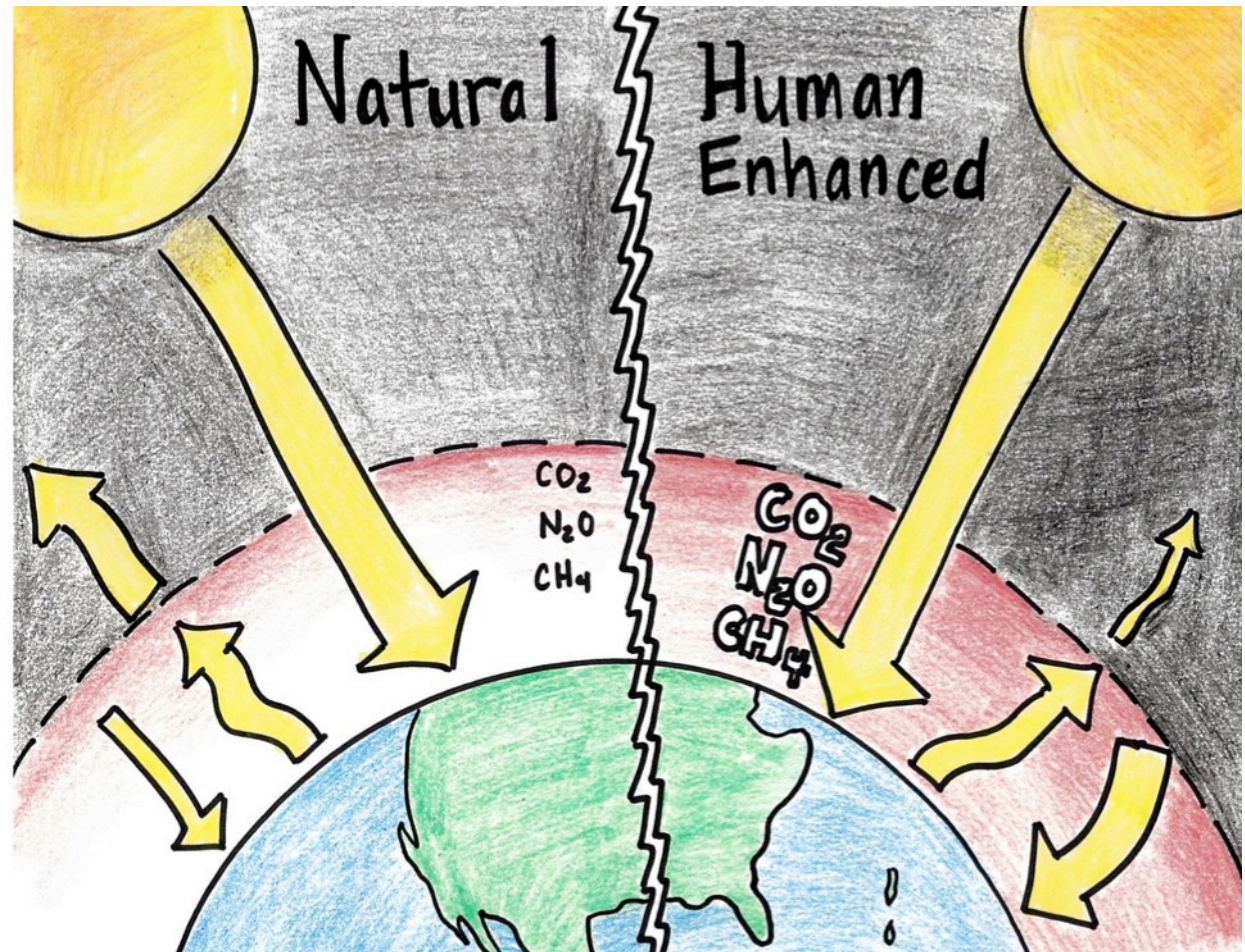
More greenhouse gasses into the atmosphere
Increasing the greenhouse effect.

Greenhouse gasses: trap heat in our
atmosphere and make the earth warmer

The Earth's Climate is Changing

Because of Human Activity

More
greenhouse
gasses
into the
atmosphere



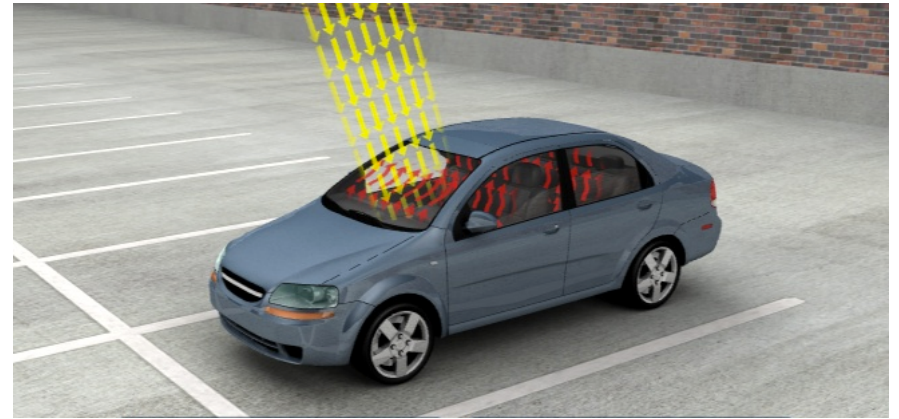
The Earth's Climate is Changing

Because of Human Activity

Another example: like a car in the sun.

Windows down =
heat escapes

Windows up =
heat trapped



The Earth's Climate is Changing



1.6 °F
Warmer
in
150 years

How can you help?

Reduce your fossil fuel use!

Bike or take the bus

Turn down the heat

Take short showers





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