

Climate change and its causes

Learning Question:

- What is climate change?

Learning Objectives:

- I can explain the greenhouse effect.
- I can explain what activities create climate change.



WaterAid/Keoma Zec

What is Climate Change?



What is difference between Weather and Climate?

Weather:

Weather can be described as the condition of the atmosphere around us over a **short period of time**.

It is about being **hot or cold, wet or dry, stormy or calm, cloudy or sunny**.

Climate:

Climate is the **average** weather conditions over **longer** periods of time (years!) and over **large areas** (countries and continents).

Is it weather or is climate?

TASK: You will see some sentences about weather or climate on the screen. You need to decide whether that sentence is about weather or climate.

Using your paddle show which of the two choices you believe is weather and which is climate.

Is it weather or is climate?

Average
rainfall in
June is
62mm



Is it weather or is climate?

Today is a
sunny day



Is it weather or is climate?

Autumn in
Australia
usually looks
like this



Is it weather or is climate?

The hottest
summer
Australia
was in 2012



Is it weather or is climate?

There is a
severe storm
alert for
tonight



Is it weather or is climate?

It is going to
be 26°C
tomorrow
with no
clouds.



Is it weather or is climate?

It has rained
everyday
this week



Is it weather or is climate?

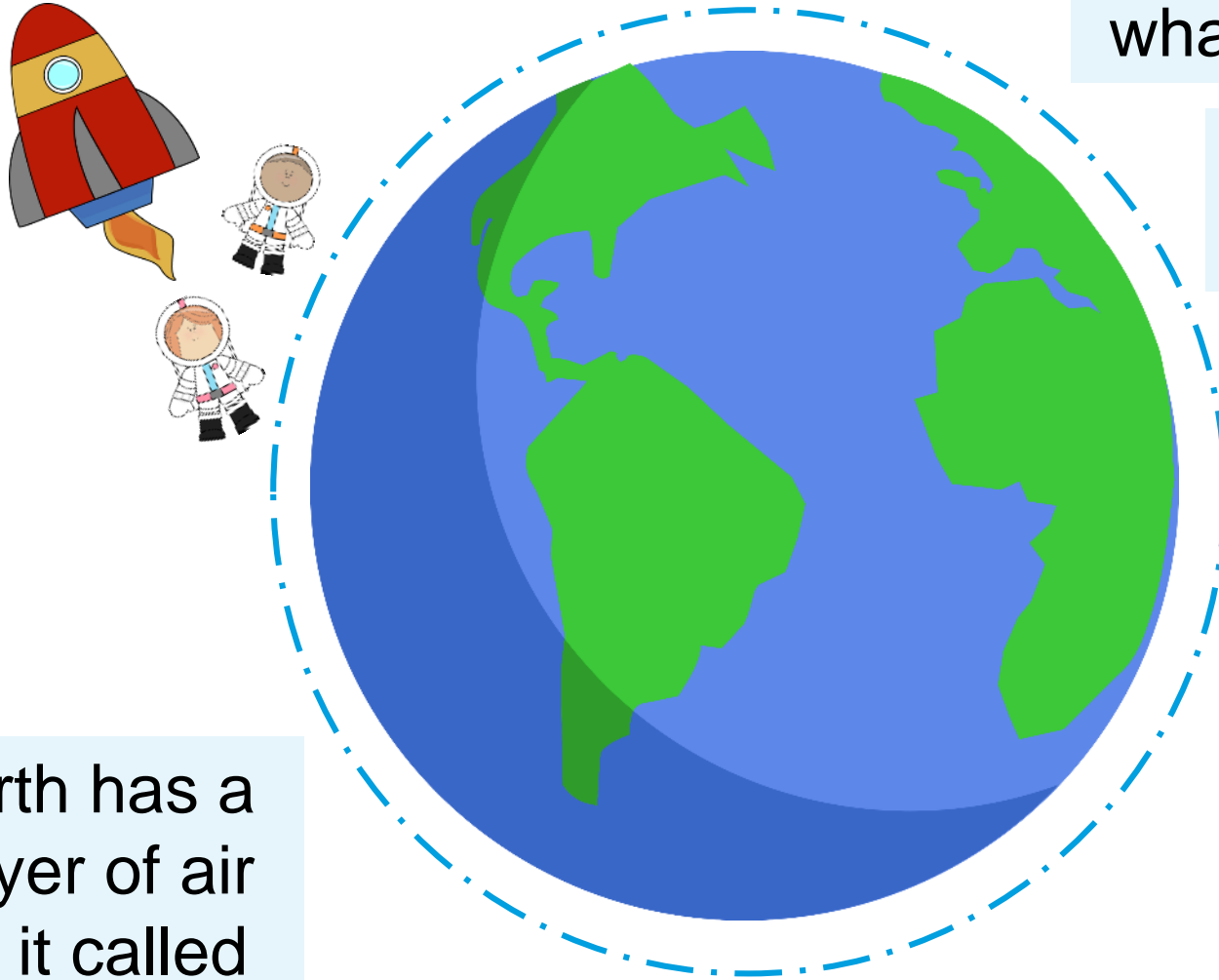
It is more likely to snow in June than in December



What is Climate Change?



The Atmosphere



The earth has a thick layer of air around it called the atmosphere.

The atmosphere is made up of what we call “greenhouse gases”.

Two of these gases are carbon dioxide and methane.

These gases act like a blanket keeping the earth and us warm and safe from space.

So that unlike astronauts we don't need special suits to protect us!

What is the greenhouse effect?

The sun shines on earth.

Some sunshine is reflected back into space.

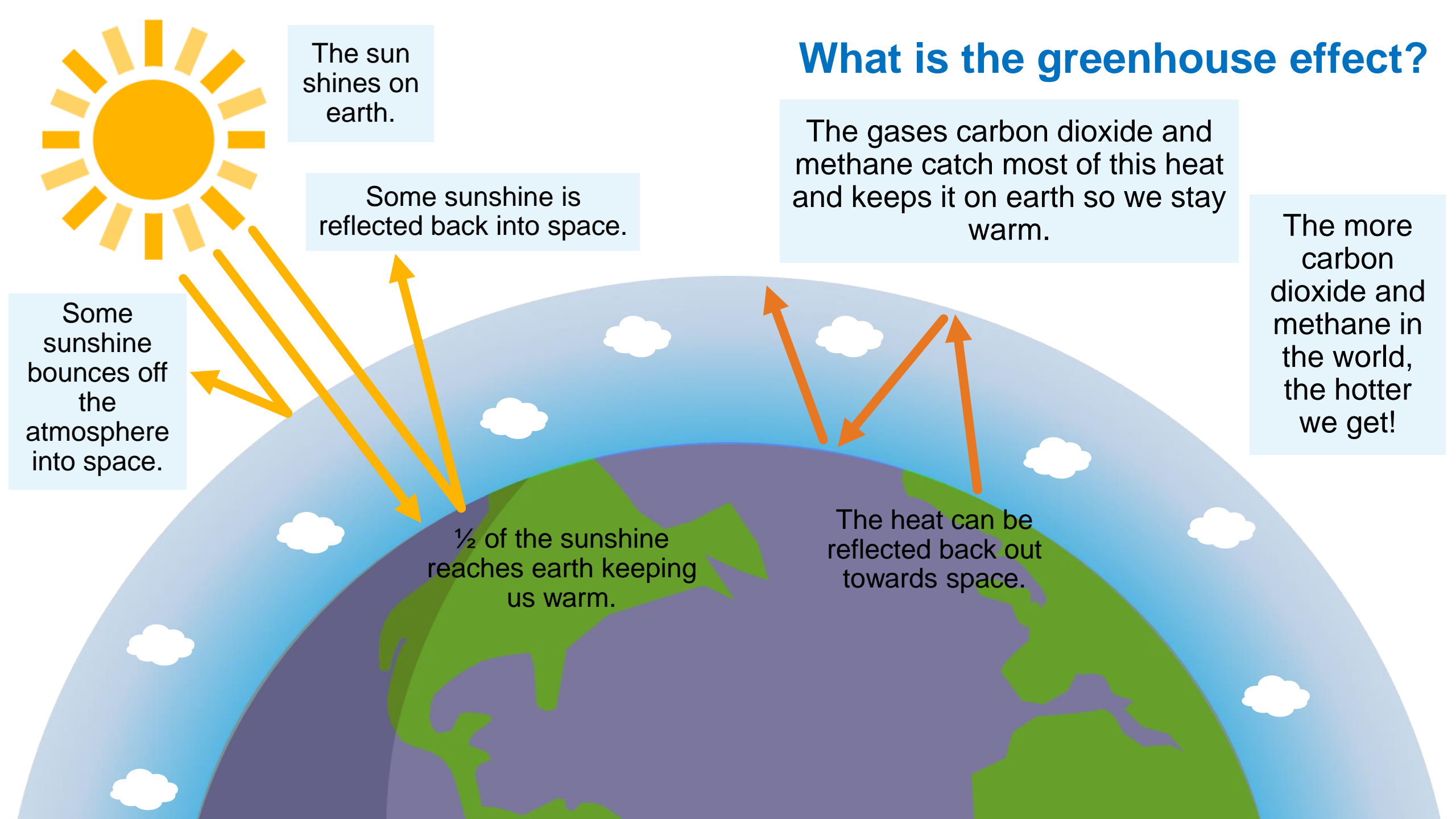
Some sunshine bounces off the atmosphere into space.

The gases carbon dioxide and methane catch most of this heat and keeps it on earth so we stay warm.

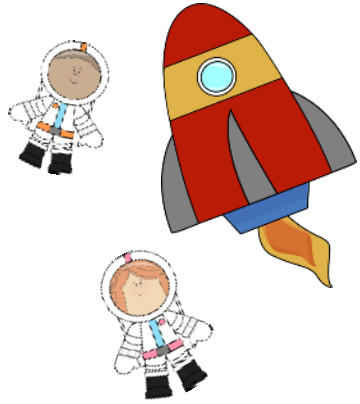
The more carbon dioxide and methane in the world, the hotter we get!

$\frac{1}{2}$ of the sunshine reaches earth keeping us warm.

The heat can be reflected back out towards space.



The enhanced greenhouse effect



The natural greenhouse effect is worsening because of the way that we live.

When there are too many greenhouse gases like carbon dioxide and methane released into the atmosphere the earth gets warmer.

It is like making the blanket keeping earth warm and safe thicker.

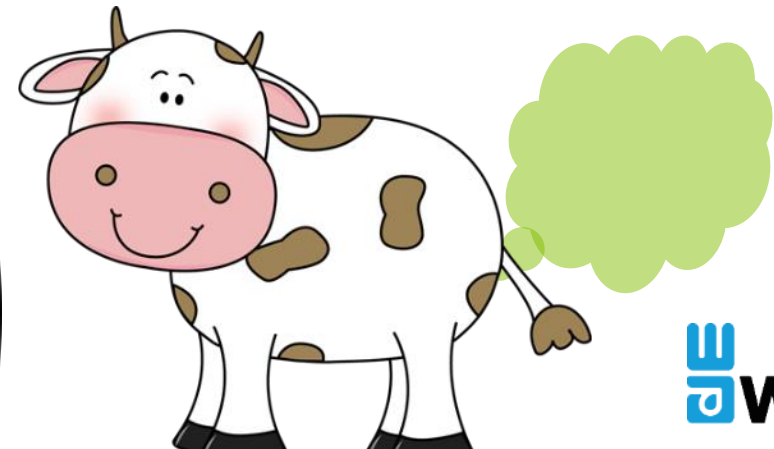
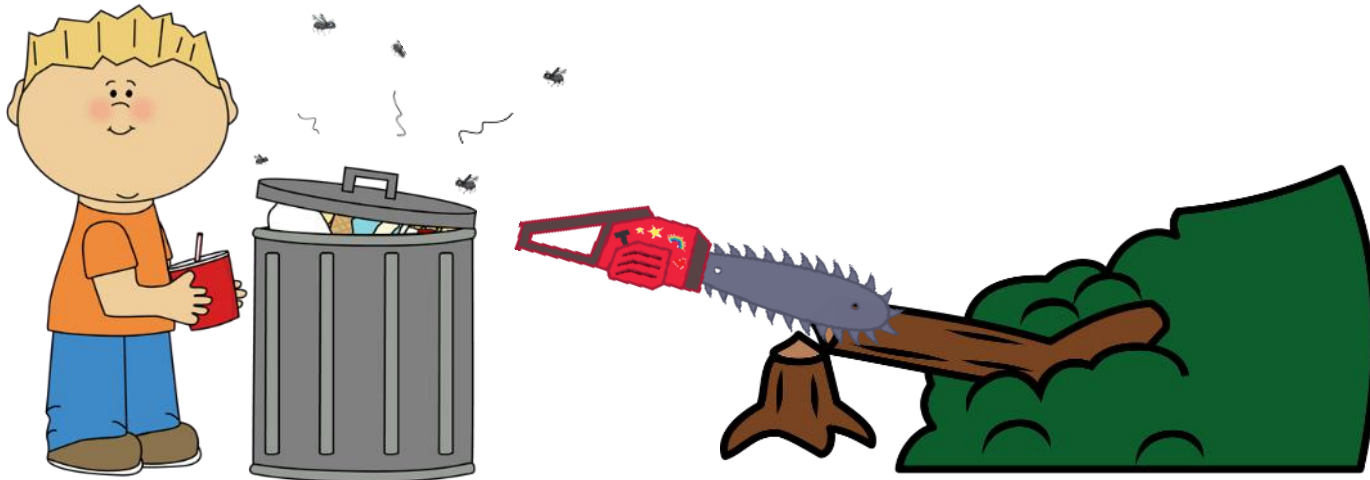
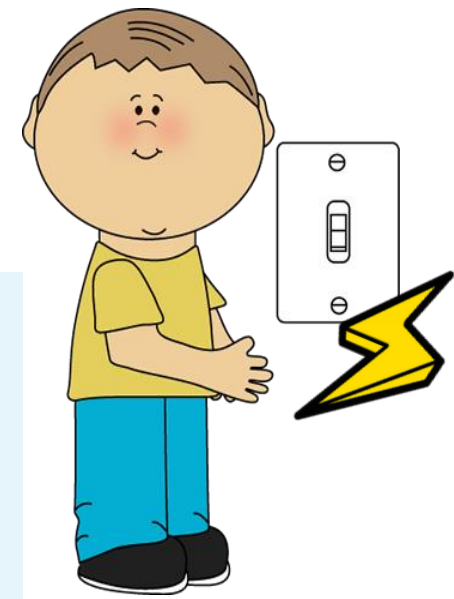
What is Climate Change?



Where do you find greenhouse gases?

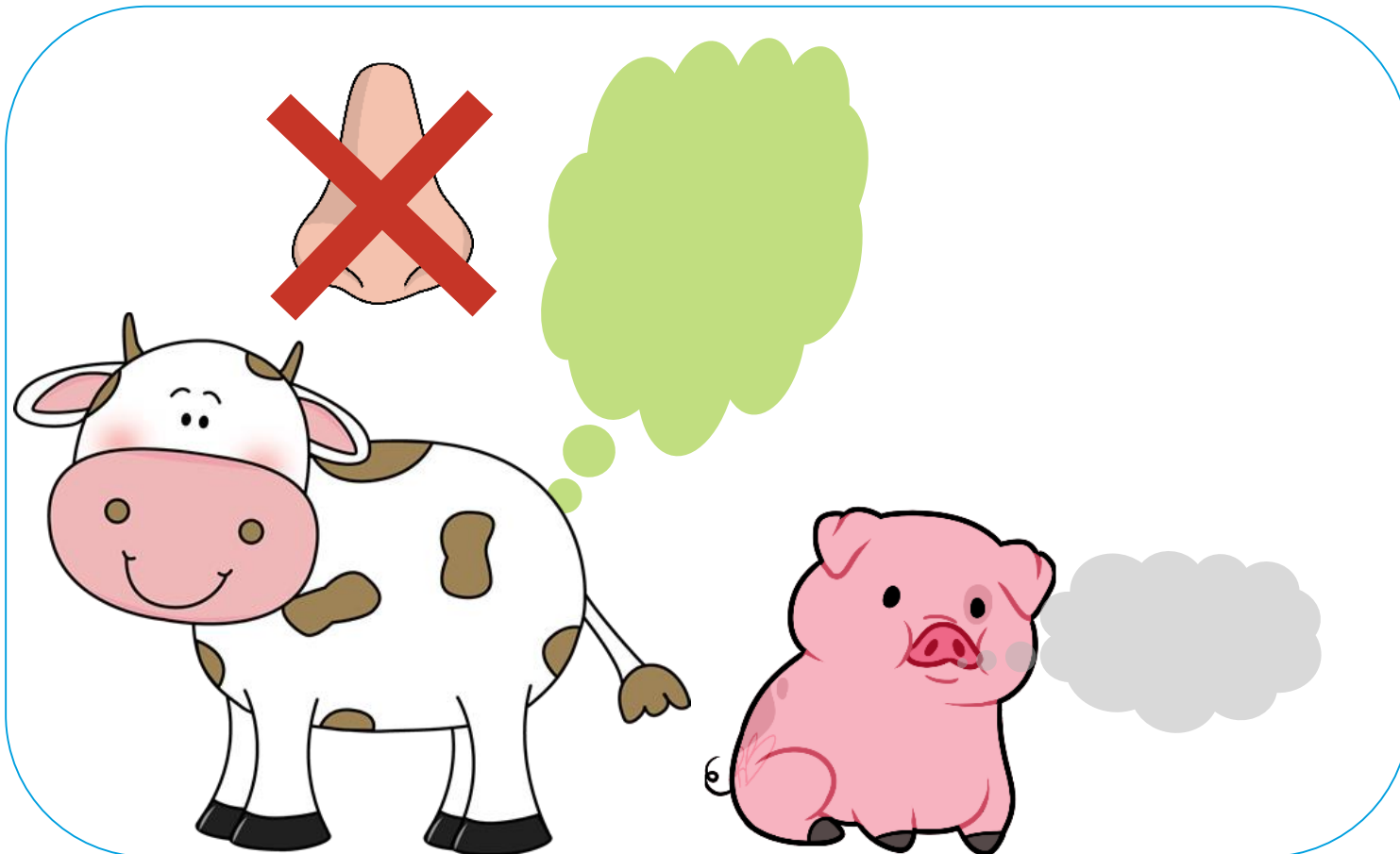
Task: Using the pictures on the next few slides, try to work out what is causing greenhouse gases.

Challenge: Can you think of other things that may produce these gases?



Can you guess the cause?

What is happening in this picture that might cause climate change?

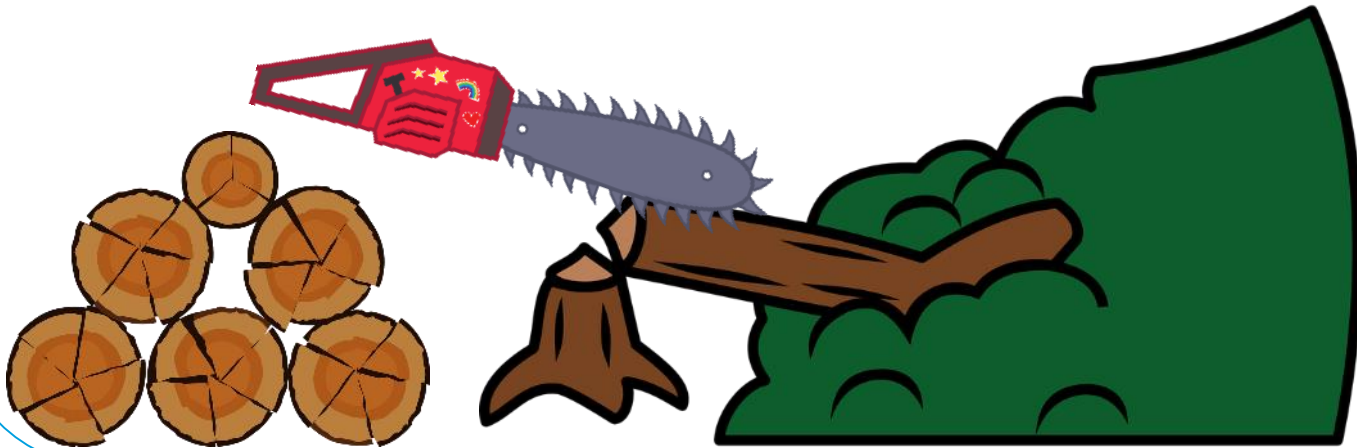


Farts and Breath!

When animals and people breath they produce carbon dioxide, when they fart they produce methane.

Can you guess the cause?

What is happening in this picture that might cause climate change?



When we chop down trees they release carbon dioxide. This is called deforestation.

It also stops trees from absorbing carbon dioxide as they grow.

Can you guess the cause?

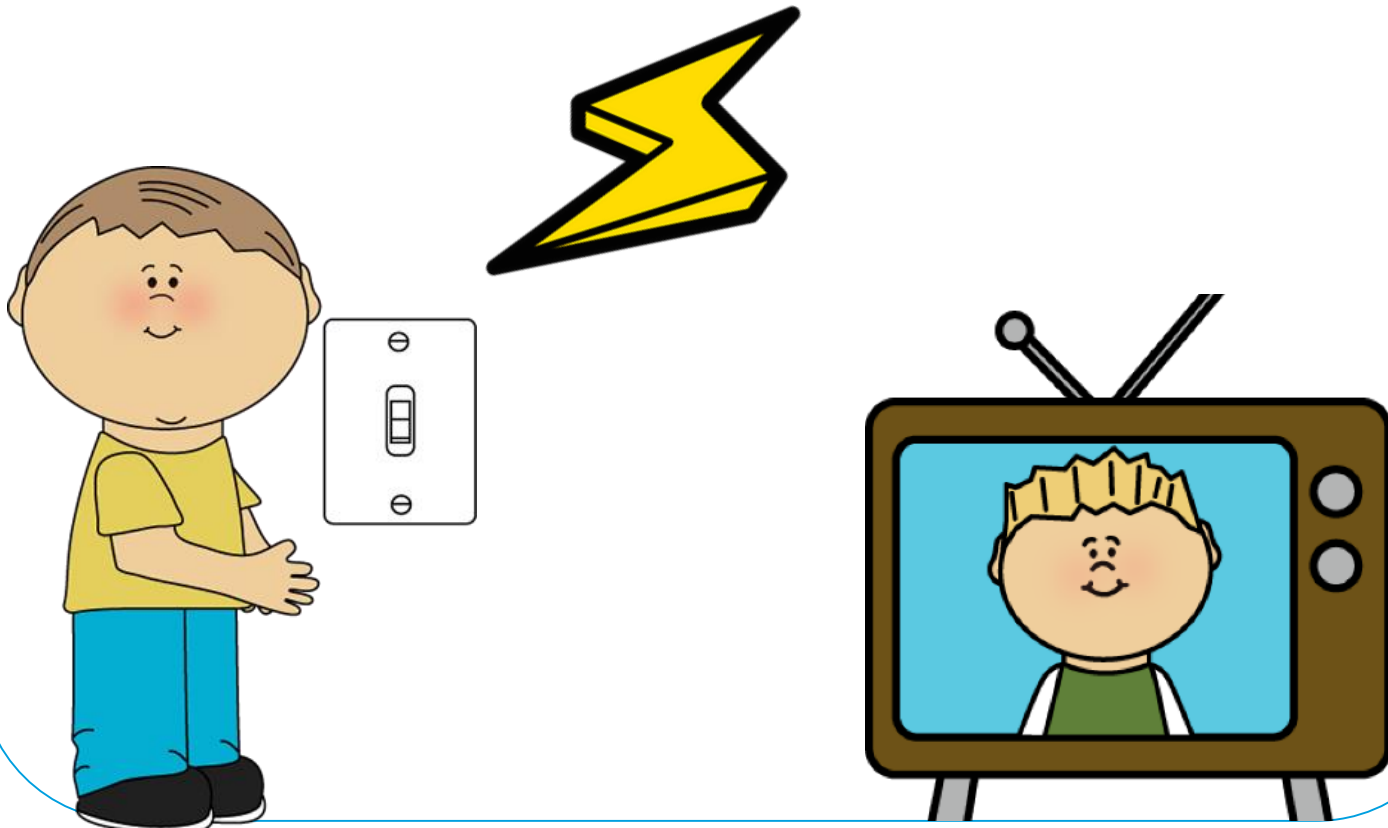
What is happening in this picture that might cause climate change?



When we use cars and planes and other transport we release carbon dioxide and methane as they burn petrol to move.

Can you guess the cause?

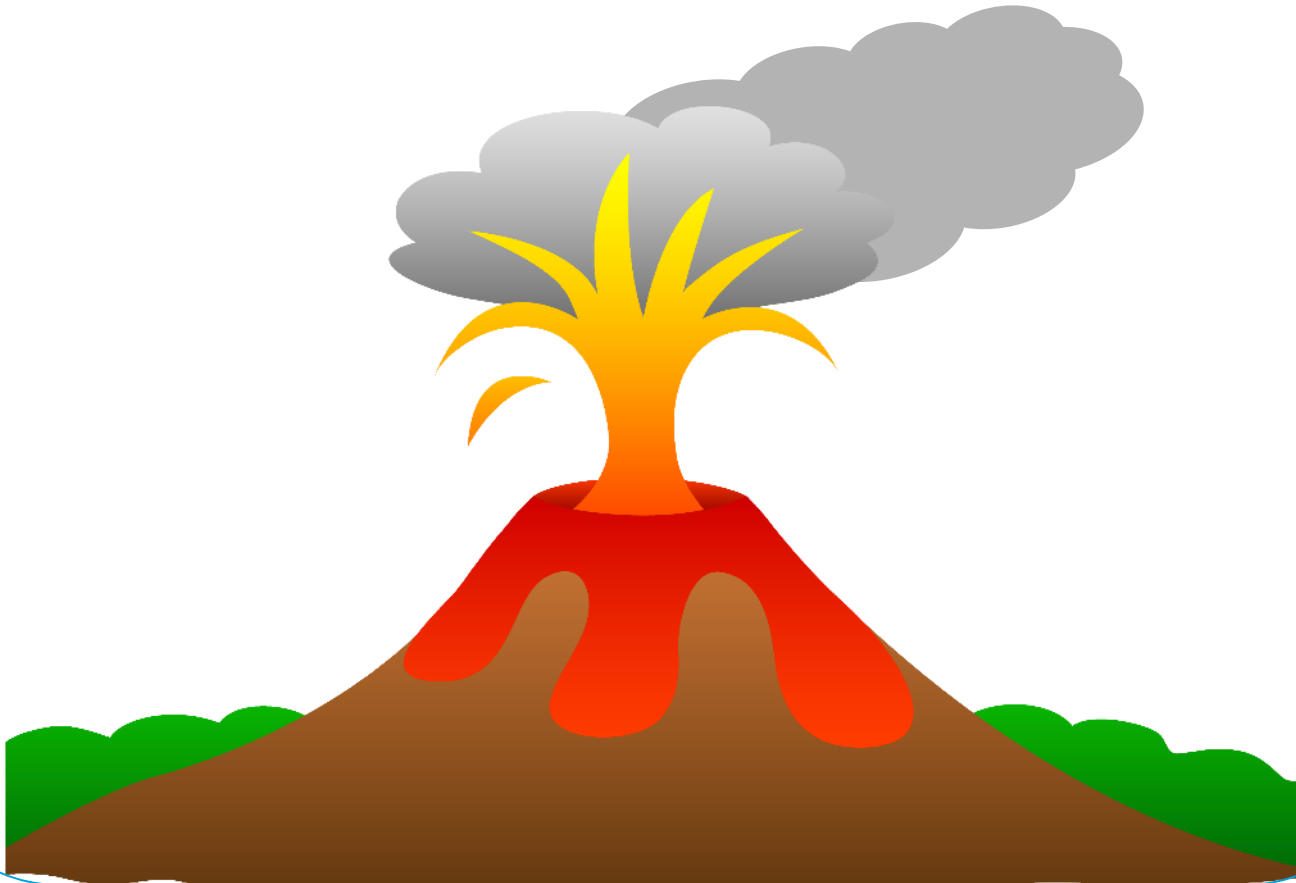
What is happening in this picture that might cause climate change?



When we burn oil, gas and coal for electricity we release carbon dioxide into the air.

Can you guess the cause?

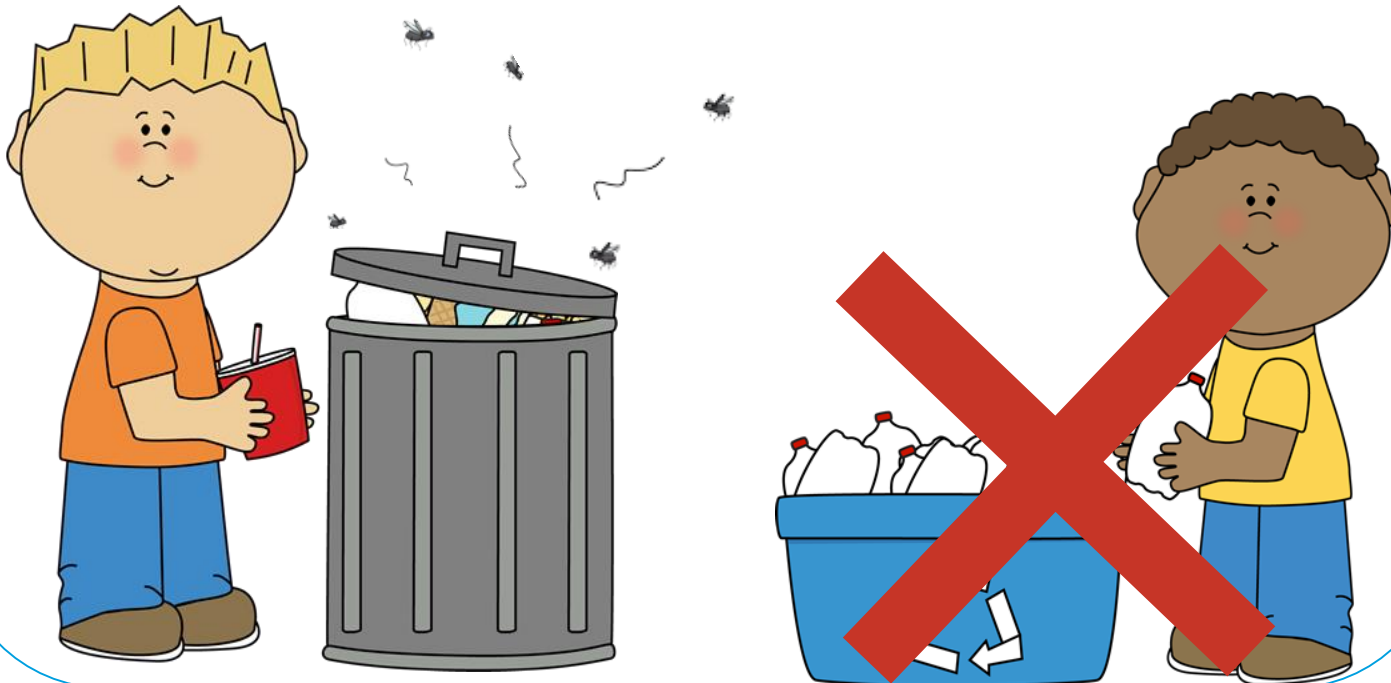
What is happening in this picture that might cause climate change?



When volcanoes erupt they release carbon dioxide and other greenhouse gases in their smoke.

Can you guess the cause?

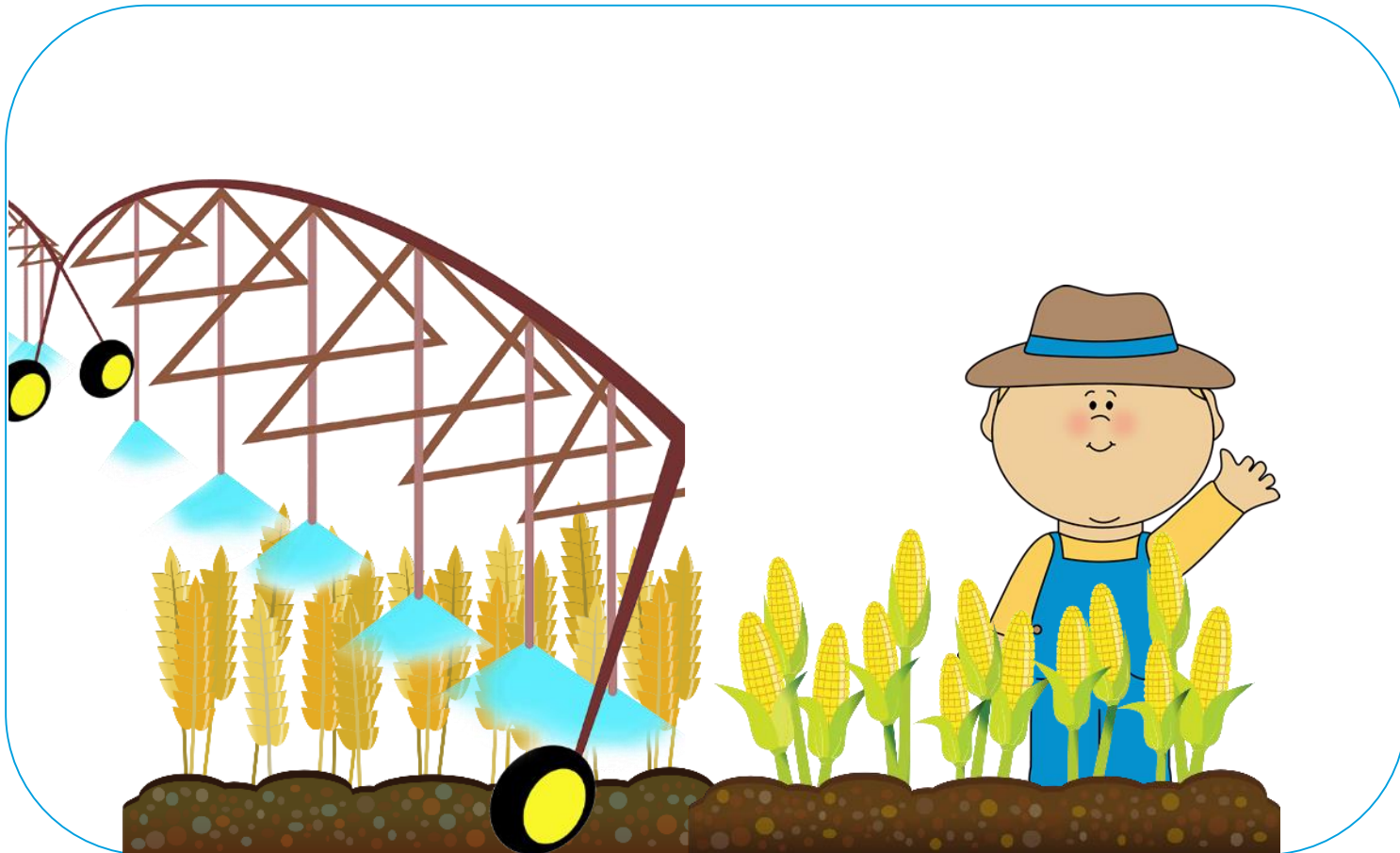
What is happening in this picture that might cause climate change?



When we throw food in the bin it goes to landfill where it releases methane as it rots because it doesn't get enough oxygen.

Can you guess the cause?

What is happening in this picture that might cause climate change?



When we grow food we use fertilisers to help crops grow.

These fertilisers have a greenhouse gas, nitrous oxide, in them.

Will it cause climate change?

Task: Sort the activities on the cards into those that can and can't cause climate change.

Challenge: Can you explain to your partner why it causes climate change? Can you think of any other examples?

Remember these examples may only create a small contribution to climate change.

Will it cause climate change?

Playing football

Flying to a holiday

Eating a picnic

Swimming

Going to the cinema

Eating in a restaurant

Driving a car

Turning the lights off

Planting trees

Having a hamburger

Having a nap

Cutting down a tree

Eating an ice cream

Having a shower

Playing video games

A grayscale image of a hand with fingers spread, holding a blue rectangular sign with white text. The sign is positioned in the lower half of the hand, partially overlapping the palm and fingers.

**Clean water.
Decent toilets.
Good hygiene.**