

“うちエコ”とは、チャレンジ25キャンペーンが提唱する、衣食住を通じて「家(うち)」の中からできる温暖化対策のことです。“うちエコキッズ”は“うちエコ”を応援します。

# うちエコキッズ

UCHI ECO KIDS



We are supporting your eco-friendly activities.

Nice to meet you. Our names are Daich and Leaf. We'd like to help your study of "Global Warming" and introduce the "Uchi Eco Check" to you. Please use this program with your parents or guardian, so we can study together!



Daichi



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1941

What an awesome scene! This photo of the Muir Glacier (Alaska, USA) was taken in 1941. Compare this photo with the next one.

The Muir Glacier (Alaska, USA) in 1941

[Refer to the Glossary]



# Eco Word Book

## 1. What's Global Warming

Alaska (名詞) アラスカ州 (アメリカの州のひとつ)

America (名詞) (南北) アメリカ大陸、アメリカ (合衆国)、米国

Australia (名詞) オーストラリア

Bangladesh (名詞) バングラデシュ

Brazil (名詞) ブラジル

CO<sub>2</sub> (名詞) 二酸化炭素 (carbon dioxide) の化学式

China (名詞) 中国

Ethiopia (名詞) エチオピア

France (名詞) フランス

India (名詞) インド

Japan (名詞) 日本

Louisiana (名詞) ルイジアナ州 (アメリカの州のひとつ)

Maldives (名詞) モルディブ (南西インド洋上の共和国)

Myanmar (名詞) ミャンマー

North America (名詞) 北アメリカ、北米

Russia (名詞) ロシア

USA (名詞) アメリカ合衆国

artificial satellite (名詞) 人工衛星

atmosphere (名詞) 大気、(地球の) 大気 (圏)

bleaching (名詞) 色あせて白くなること

building (名詞) 建物

caterpillar (名詞) 毛虫、イモムシ、チョウ・ガの幼虫

climate change (名詞) 気候変動、気象変化

coral reef (名詞) サンゴ礁

coral (名詞) サンゴ

cyclone (名詞) サイクロン (特にインド洋に発生する猛烈な威力を持つ熱帯性低気

～用語説明～

■スライド(1)(2) アラスカ・ミュア氷河の1941年と2004年

「温暖化によって、北極や南極の氷床、海氷などの減少が広範囲で進んでいます。1978年からの衛星データによると、北極の海氷範囲の年平均値は10年ごとに約2.7% (2.1～3.3%) 減少しています」 (資料1)。

写真はアメリカ合衆国のアラスカ州南東部にあるミュア氷河で、左は1941年8月、右は2004年8月に同じ場所で撮影されたものです。約60年の間に氷河が溶けて、氷河の端が12kmほど後退しています (資料2より)。

「南極やグリーンランドの氷床の減少は、海面水位の上昇の一因にもなっています」 (資料2)。

■スライド(3)1850年からの気温と海水面の上がり方

「1906年から2005年までの100年間で、世界平均気温は0.74℃上昇しました。(中略) また、最近50年の気温上昇は、過去100年の上昇速度のほぼ2倍に相当し、近年になるほど温暖化が加速していることがわかります」 (資料1)。

「20世紀の100年間で、世界平均海面水位は17cm上昇したと推計されています」 (資料1)。

グラフはIPCCの第四次報告書に掲載されているものを元に作成しました。

■スライド(4) 温暖化に季節を合わせられないわたり鳥

「マダラヒタキは、オランダで春の繁殖期を過ごす渡り鳥です。しかし、温暖化の影響でヒナのえさとなるチョウヤガの幼虫の発生ピーク時期が早まることで、子育ての期間が餌のすくない時期にあたってしまう、地域によって最大で90%個体数が減少したと報告されています」 (資料1)。

■スライド(5) サンゴの白化 (はっか)

What's this?





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2004



The ice is all gone! What happened? For the last 63 years, global warming has melted the ice into water. You can see ice melting like this in various parts of the world.

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The Muir Glacier (Alaska, USA) in 2004

[Refer to the Glossary]



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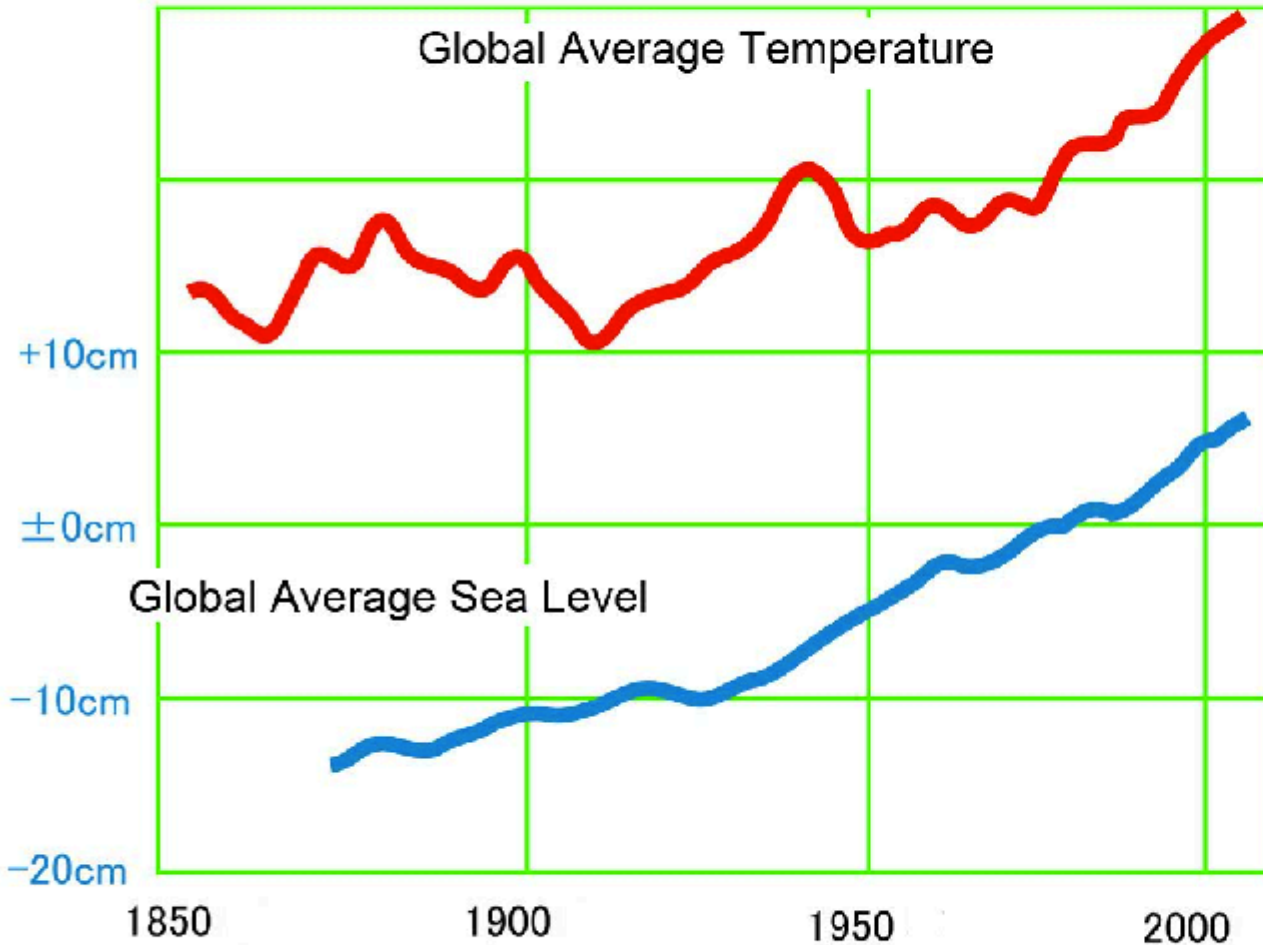
Temperature

14.5°C

14.0°C

13.5°C

Global Average Temperature



Global Average Sea Level

+10cm

±0cm

-10cm

-20cm

1850

1900

1950

2000

Sea Level

It is a fact that Earth is getting warmer. You can see the progress of global warming from 1850 to 2000. The average temperature rose by 0.74 °C and the average sea level rose by 17 cm!



Changes in Global Average Temperature and Sea Level since 1850

[Refer to the Glossary]



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April

May

June

Migratory Birds	Arrival Period	
Food (e.g. Caterpillars and fruits)		

If global warming continues ...



Adult birds CAN feed their babies.

April

May

June

Migratory Birds	Arrival Period	
Food (e.g. Caterpillars and fruits)		

Adult birds CAN'T feed their babies.

We worry that global warming is stopping migratory birds from feeding their babies! Migratory birds fly a long way so adult birds can breed and locate food for their babies. If the temperature is higher than usual, insects and fruits will grow faster, and the birds will miss the chance to eat their food.



Migratory Birds Miss Their Chance!

[Refer to the Glossary]



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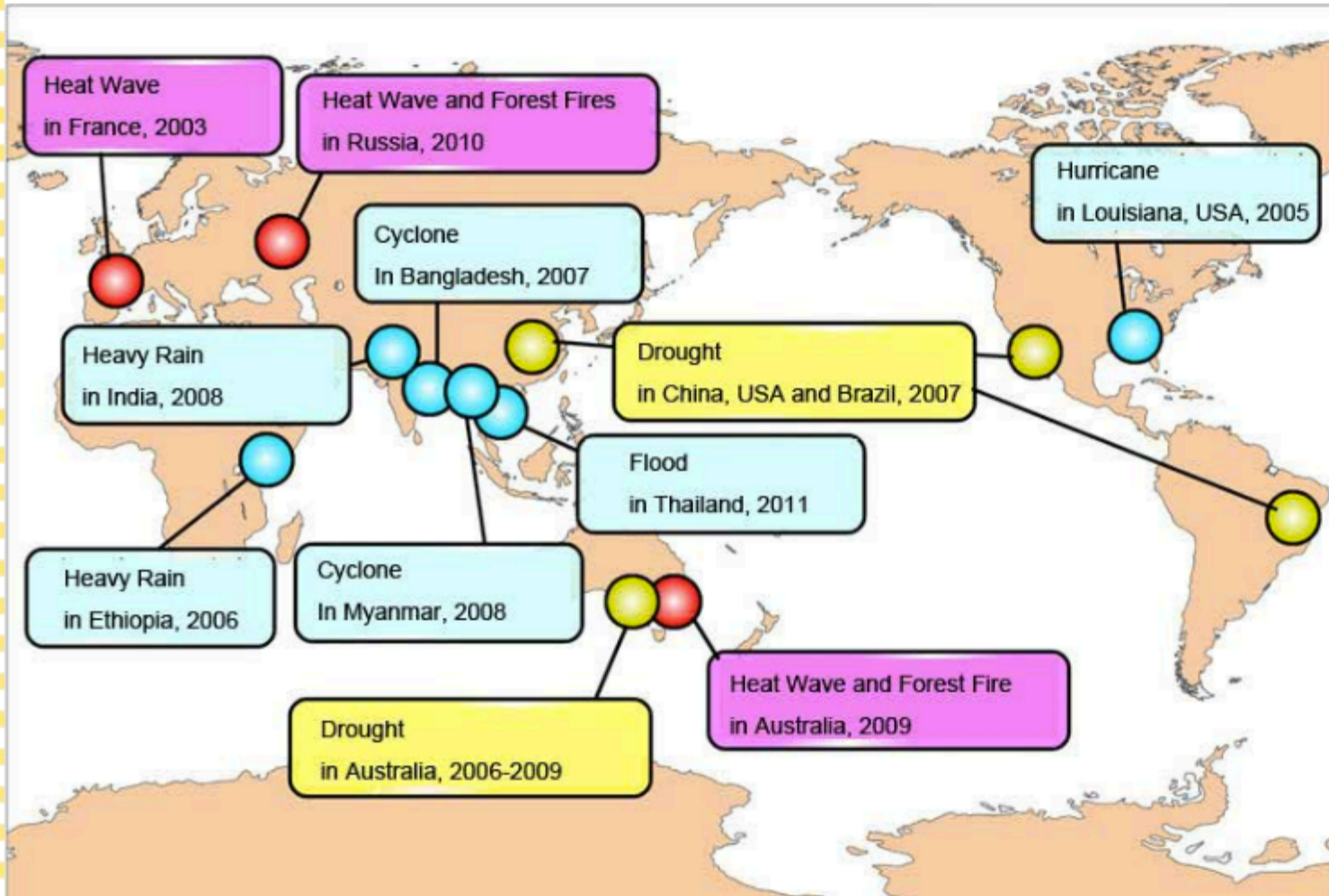
The sea temperature is getting higher! Some kinds of living things can't survive with higher temperatures. The coral in the center of this picture is changing color and dying...



Bleaching Coral

[Refer to the Glossary]





Earth is crying out! What makes her cry?! Some researchers say that extreme weather events, such as droughts, heat waves, and floods, are caused by global warming.



Extreme Weather in Various Parts of the World

[Refer to the Glossary]



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The Izushi River

Oh no! What a horrible disaster! In 2004, northern Hyogo was hit by a typhoon and the river flooded. In this photo, you can see how this elementary school was flooded and the area was seriously damaged.



The Damage of Typhoon No.23 in 2004

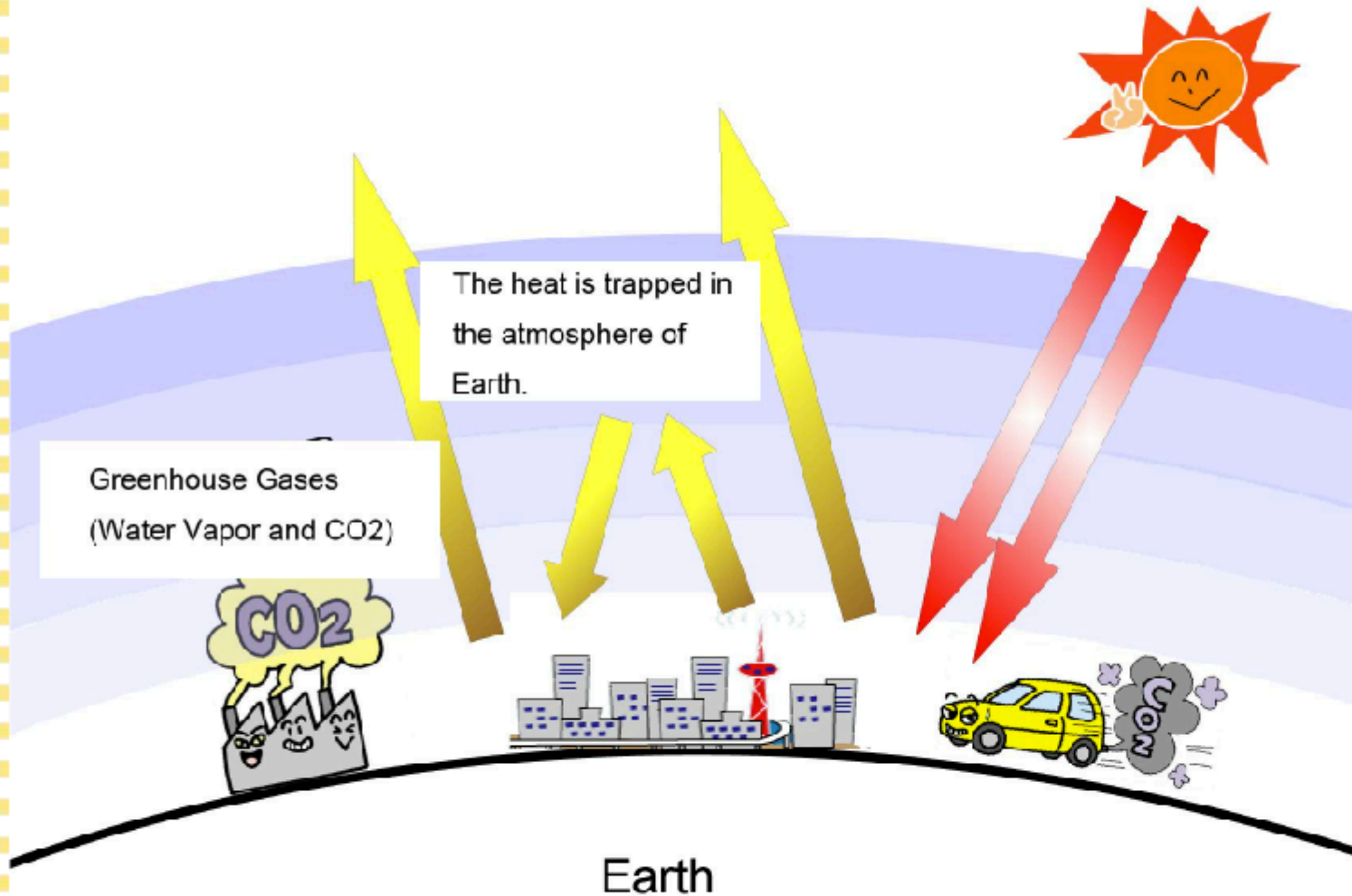
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What is the root of all evil?! Human beings use energy to operate plants, factories and cars. As a result, carbon dioxide (CO<sub>2</sub>) is discharged into the air. CO<sub>2</sub> is also known as "Greenhouse Gas". Greenhouse Gases don't allow heat to escape back to outer space quickly.



A Schema of Greenhouse Effect

[Refer to the Glossary]

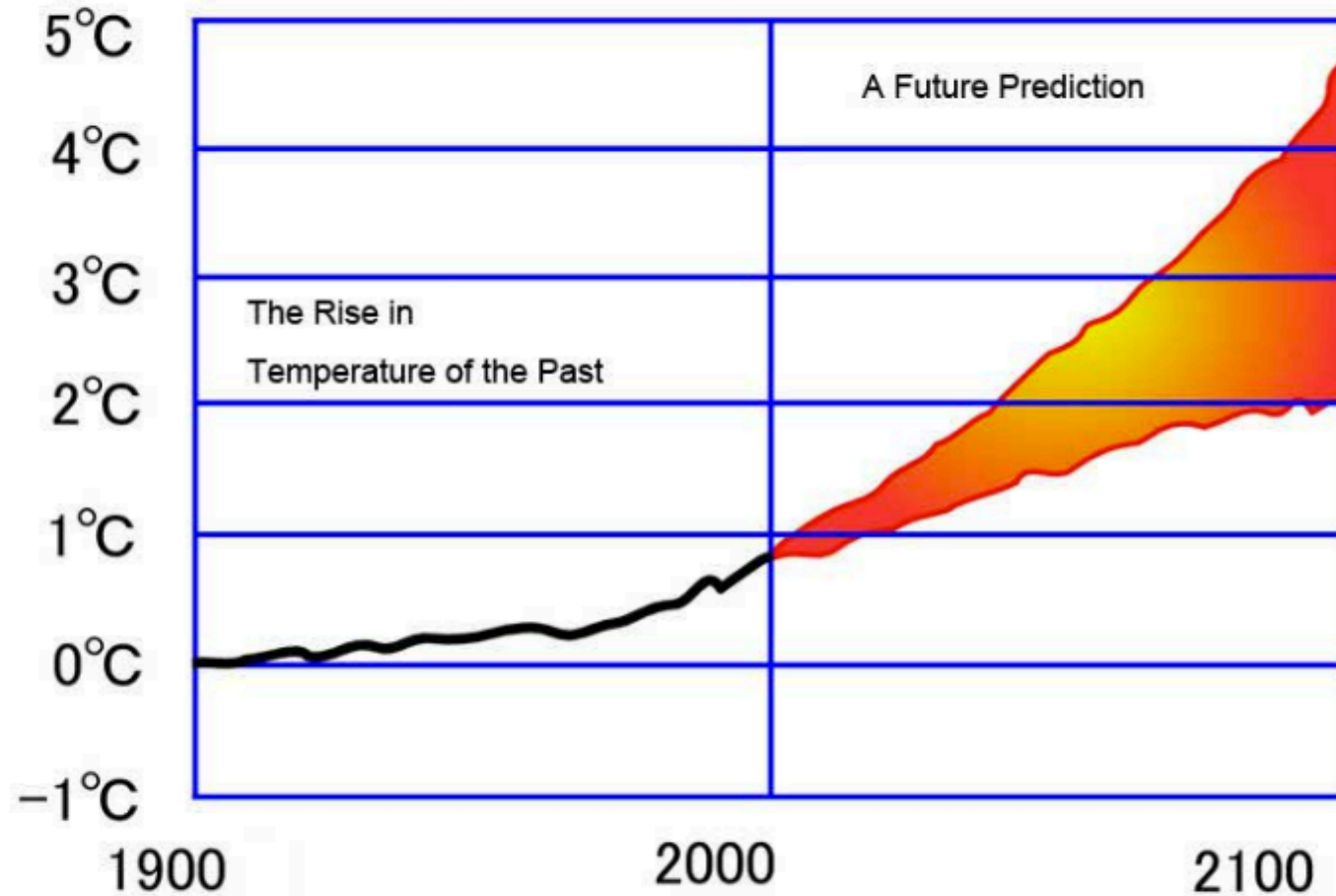


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Change in Temperature



If global warming continues, the average temperature is likely to rise by 2 or 4°C. This will make a more extreme environment for both human beings and other living things.



A Predicted Climate Changes Up to Year 2100

[Refer to the Glossary]

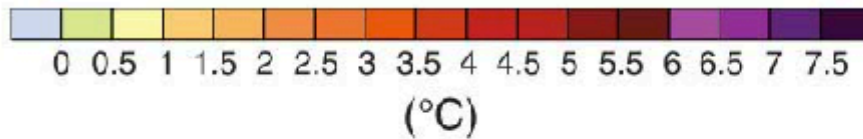
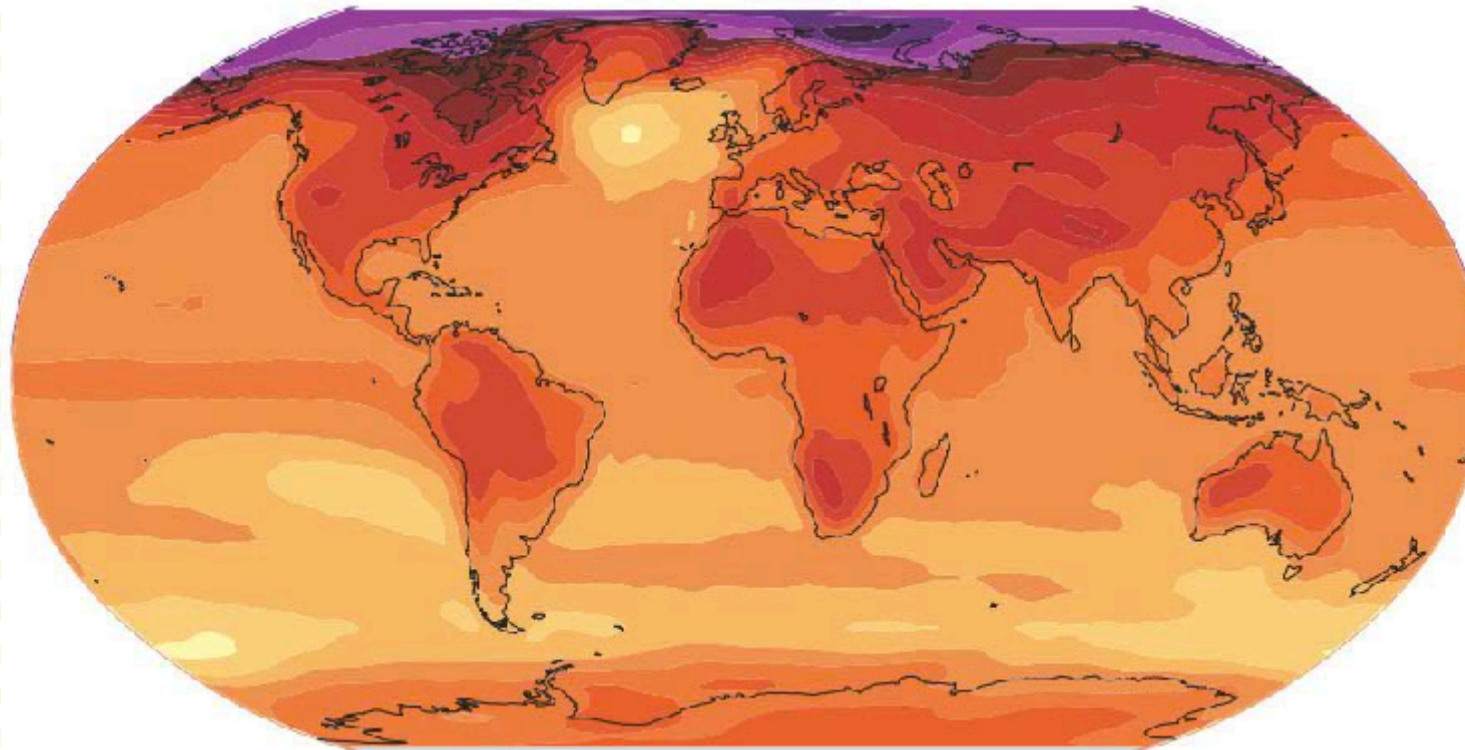


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## From 2090 to 2099



Is Earth burning?! You can see how Earth has turned bright red in this figure around 2090–2099. This is because Earth's surface temperature has risen, especially in and around the Arctic.



Predicted Rise in Earth's Surface Temperature 2090–2099

[Refer to the Glossary]



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If global warming continues, more regions may suffer from droughts. As a result of the 2006 drought in Australia, this dam dried up and there was a poor wheat harvest.

2006 Drought in Australia

[Refer to the Glossary]





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Look out! He has a problem! It's a big problem! In the Arctic, a polar bear is waiting for a chance to catch his prey from the edge of a floating piece of ice. But they have difficulty of surviving because the ice is melting and disappearing!



A Polar Bear in the Arctic

[Refer to the Glossary]



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What a beautiful island this is! Fantastic! The Maldives is an island nation in the Indian Ocean surrounded by coral reefs. Its inhabitants are worrying that the islands will be flooded by rising sea levels.

Southern Islands(Maldives)

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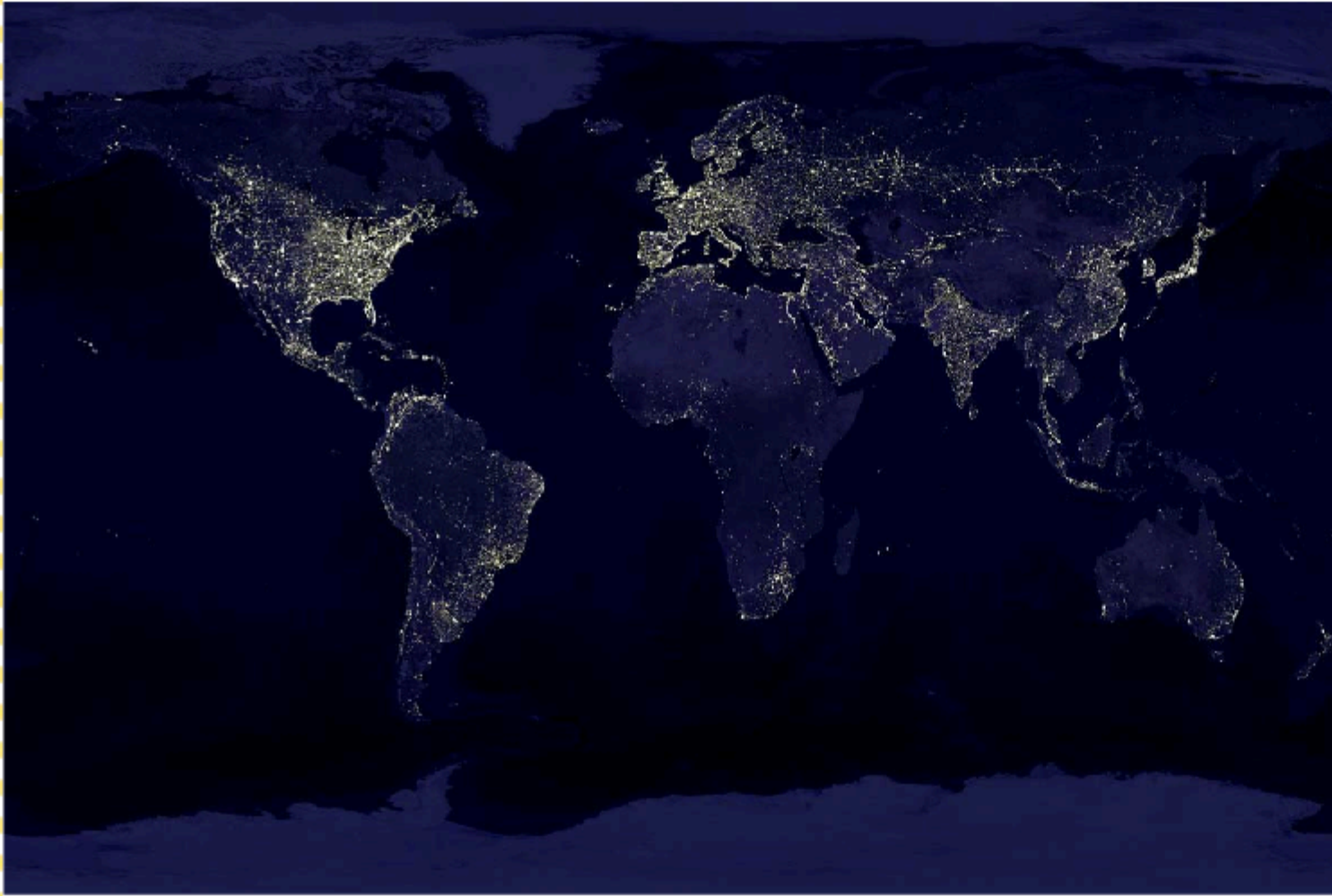




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This is the night view of Earth. Can you find your country? Yes, it must be easy for you because Japan is brightly illuminated, right?! It means that Japanese people are using a lot of energy.



Night View of Earth Seen from an Artificial Satellite

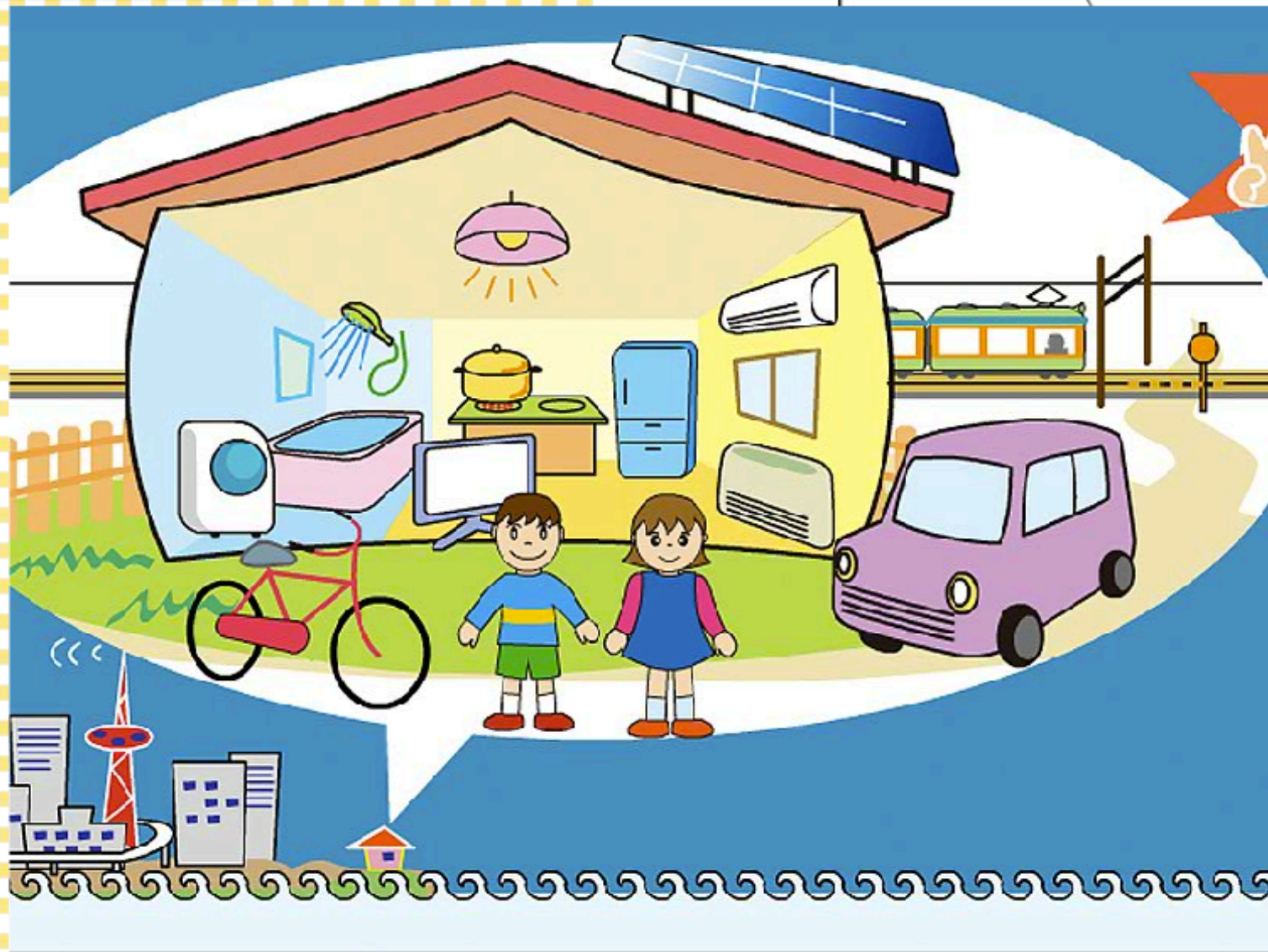
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How much energy do you use in your home? Please remember that your actions, such as using electricity, gas, kerosene, or gasoline, may cause global warming.



Energy Consuming Products

[Refer to the Glossary]



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Solar panels can make your house a power station. Solar panel systems can play an important role in generating electricity and renewable energy without producing CO<sub>2</sub> emissions.



A Solar Panel System

[Refer to the Glossary]



-  TV or Video Game
-  Electric Light
-  Refrigerator-freezer
-  Washing Machine
-  Heater
-  A/C
-  Bathtub
-  Shower
-  Range
-  Car

TV or Video Game

5 hours

Electric Light

Refrigerator-freezer

1

Washing Machine

Heater

A/C

8 hours

Bathtub

Shower

Range

Car



Heater

A/C

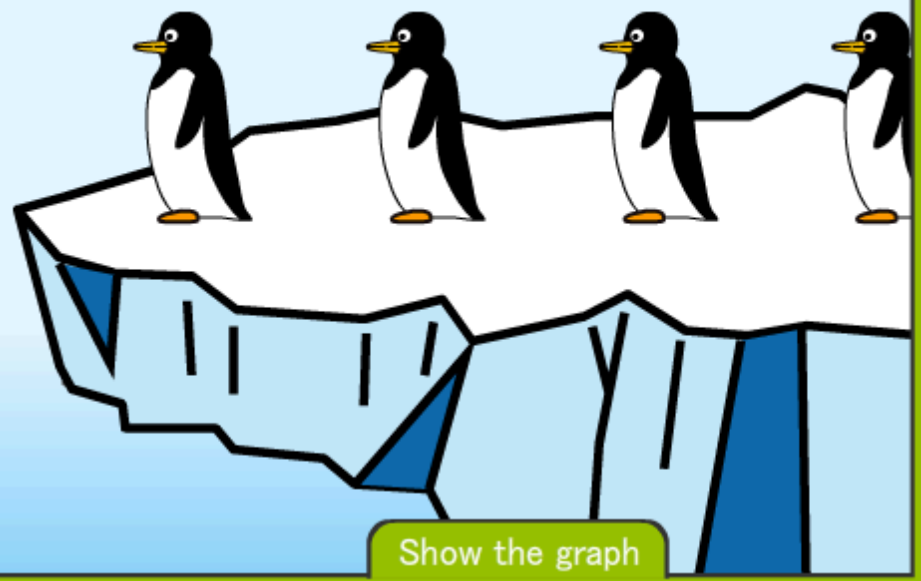
8 hours

Bathtub

Shower

Range

Car



Show the graph



How long does it extend?  
Click the arrows!

Show the penguins



★ Compare with the Average

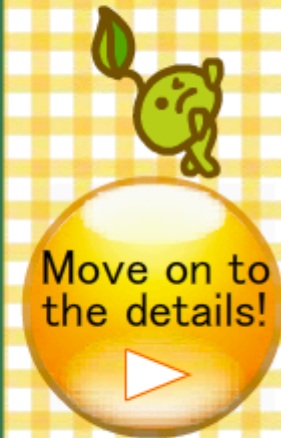
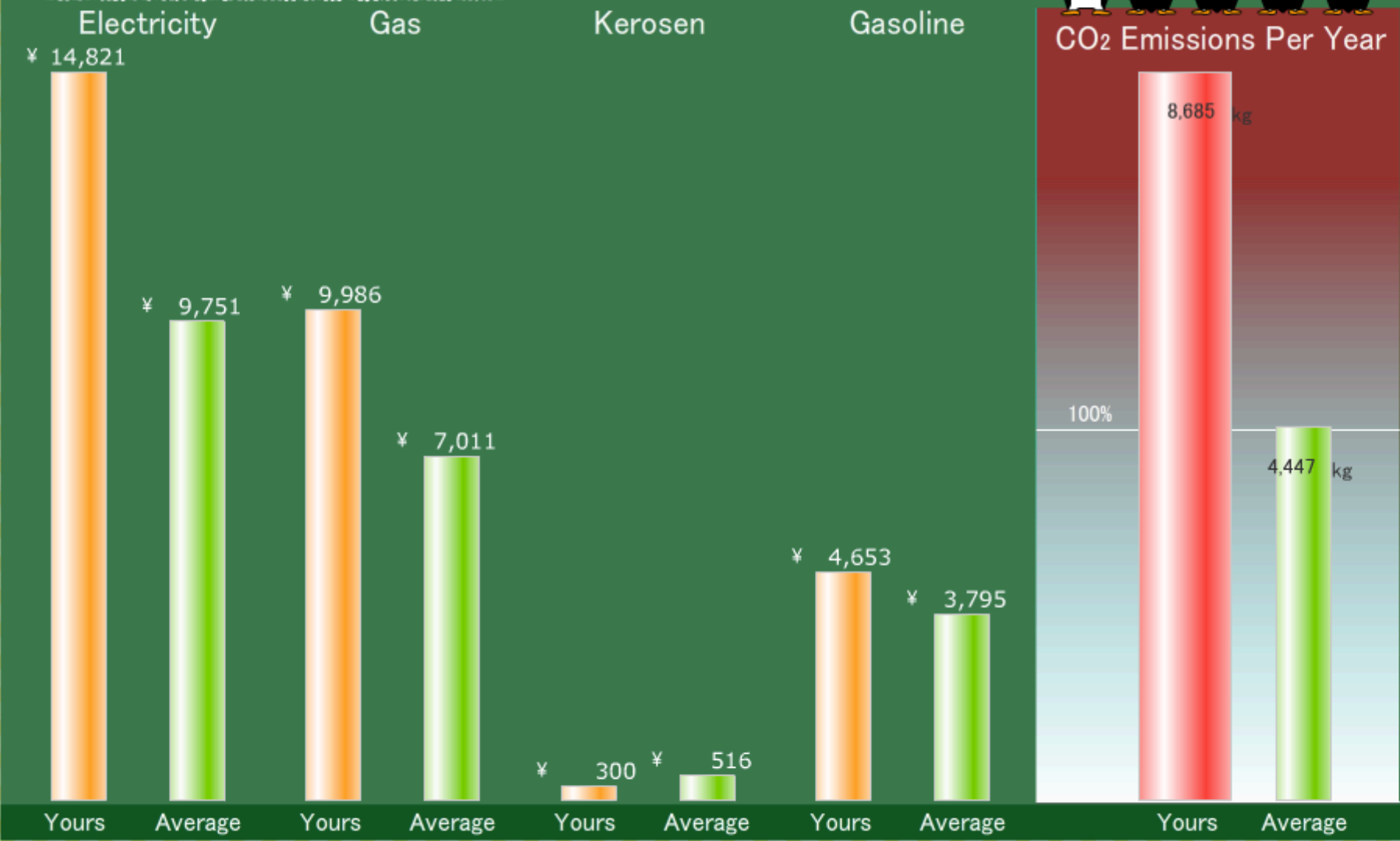
Your Data List

Details

Poor!!



CO<sub>2</sub> Emissions Per Year





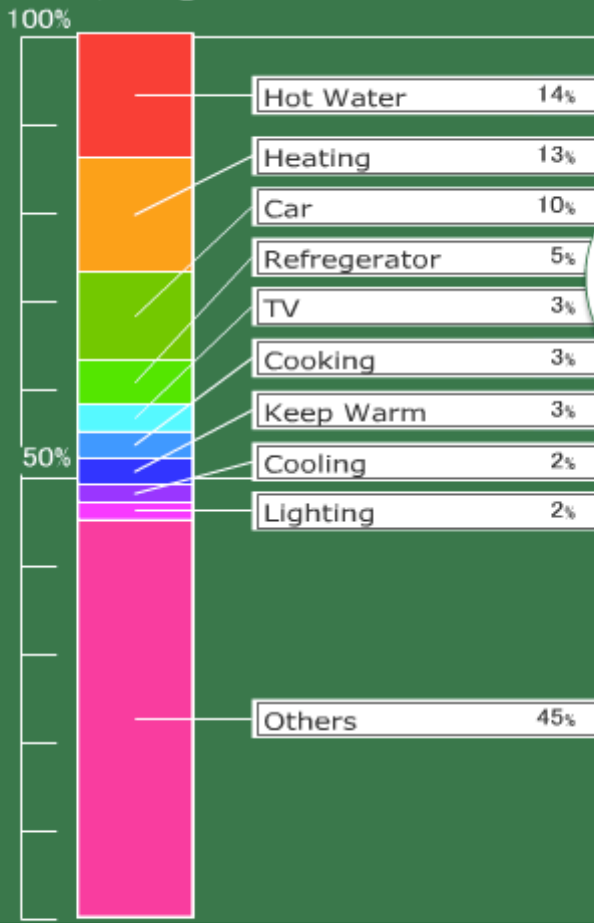
Compare with the Average



### The Details

What uses the most energy?

CO2 Emissions  
8,685kg



Present

Each step helps to reduce CO2 emissions.



### Steps towards Eco Life

- Do not use the car. -832 kg
- Set the heater on low. -282 kg
- Take a shower instead of taking a bath during summer. -236 kg
- Enjoy a family gathering together. -183 kg
- Try to do eco-driving. Turn off engine while stationary. -83 kg
- Unplug the wires and reduce standby power -49 kg
- Reduce your TV watching time by an hour a day. -26 kg

Expected reduction of CO2 with your Eco steps 3761kg 43%

### Steps towards Eco Replacement Purchase

- Install solar panels(3kW) -1,852 kg
- Install a firewood or pellet stove (per room). -1,100 kg
- Replace your water heater with ENE-FARM (Fuel Cell) -1,078 kg
- Install an energy-saving A/C and heat room with it. -941 kg
- Replace your water heater with Eco Cute. -904 kg
- Replace your water heater with Eco Jozu (Latent Heat) -795 kg
- Replace your car with a gas-efficient one. -485 kg

Each value shows how much you can reduce your CO2 emissions!



With Your Eco Steps

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