

OUR NATURAL SATELLITE

What is a satellite?

A satellite is an object in space that circles around another object. There are **natural** satellites and **artificial** satellites. The Earth is a natural satellite that **orbits** the Sun. The Moon is a natural satellite that orbits the Earth. The largest artificial satellite orbiting the Earth is the International Space Station.





The Earth and the Moon seen from space

Scan the code to link to a video that shows how the Moon came to look the way it does today.



Artificial satellites

There are thousands of artificial satellites orbiting the Earth. We put artificial satellites into space to give us information, take photos and help us **communicate** with each other. These satellites are extremely useful. But they are not nearly as useful as our natural satellite – the Moon.

Our Moon

The Moon is about one-quarter the size of the Earth. Many scientists think it was formed from pieces of the Earth. These pieces were knocked into space a very long time ago, when Earth **collided** with another planet. The pieces slowly came together and formed a huge, rocky ball.

Every year, the Moon moves about 3.78 centimetres further away from Earth. To begin with, it was about 22500 kilometres from Earth. It is now about 384000 kilometres away.

The Moon is **constantly** moving around the Earth. It takes the Moon about 27 days to go all the way around.

Where would we be without the Moon? Life on Earth would be quite different if the Moon suddenly went away. The pull of gravity from the Moon makes water on Earth move towards the Moon. This is what causes the tides in our oceans.



To our eyes, the Moon looks round, like a ball. Actually, it is slightly egg-shaped. When we look at the Moon from Earth, we are seeing its slightly pointy end!

QUESTIONS



- I. After reading this card, list three questions that you still have about the Moon.
- 2. What are the main effects the Moon has on Earth? Take one example from the card and provide one example of your own.
- **3.** Look up and write a definition for the word 'gravity'.

The Moon also stops the Earth from wobbling too much as it spins around. If the Earth wobbled more, temperatures around the world would **vary** greatly. We would not have seasons.



- 4. A number of different events or objects have helped to change our Moon. Use the QR code (or http://qrs.ly/dq4y4zn) to watch a video about how the Moon came to look like it does today. Pick one object or event from the video and explain how it changed the Moon's appearance.
- **5.** Visit the website http://qrs.ly/2h4y50m and read the short article about the men who first walked on the Moon.
- **6.** After reading the article in Question 5, pretend you are Neil Armstrong or Buzz Aldrin and write a diary entry about landing on the Moon.



PHYSICAL SCIENCES

MY HOT LUNCH

I love my hot lunches! Some kids in my class laugh that I bring hot food to school each day. But I wouldn't swap my hot soups or pastas for anything!

My friends ask how I keep my lunches warm. I tell them I don't have to do anything. Insulation does the job for me!

What is insulation?

Insulation means surrounding something with a **material** that keeps it warm. In the case of my lunch, my heat **flask** provides the insulation. It doesn't add any heat to my lunch. Instead, it stops the heat in my food from escaping.

My flask keeps my ► lunch hot even in the coldest weather. Scan the code to link to a video about how polar bears keep warm.



How does insulation keep my lunch warm?

Before I leave for school, Dad heats up my lunch. The soup or pasta is nice and hot when he puts it in the flask. It stays hot because my flask is made of materials that provide insulation. It has special **features** that help it keep the heat in.

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FACT!

We use insulation in

our homes, too. Special

materials in our walls and

in during winter and keep

ceilings help to keep the heat

the heat out during summer.

My flask has two main parts. There is an inside section and an outside section. My lunch sits in the inside section. There is a gap between the inside section and the outside section. There is a little bit of air in this gap. This is a **vacuum**, which stops the heat travelling across the gap between the two sections.

That's how my lunch stays nice and warm!

QUESTIONS



- I. Have you ever taken a hot lunch to school, or would you like to take a hot lunch to school? Why do you think the student on the topic card enjoys his hot lunch?
- 2. Insulating our homes well is one way of helping the environment. Explain how you think insulation helps the environment.
- **3.** 'Hot' and 'cold' are antonyms, meaning they are opposites. Write down five other pairs of antonyms.



- 4. Some animals have blubber, a form of insulation. Use the QR code (or http://qrs.ly/fg4y4zp) to watch a video on polar bears. List three other animals whose bodies naturally provide insulation.
- 5. Polar bears naturally have their own insulation, which has some good points and some bad points. Create a table with two columns to show what is positive about natural insulation and what is negative about it.
- 6. You have learned that insulating your house helps the environment. Write a persuasive text to convince people to insulate their home.

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LOUNGE LIZARD

The marine iguana

The marine iguana (a Galapagos lizard) lives in the Galapagos Islands. This is a group of islands north-west of South America. Marine iguanas live in colonies. They spend a lot of time lounging in the sun!

Cold-blooded creatures

Marine iguanas are ectothermic. This means that they are **cold-blooded**. **Basking** in the sun allows them to warm their blood and keep their bodies warm. They are not as lazy as they look!

Marine iguanas can grow to a length of 1.5 metres and have long tails. Their dark colour helps them **absorb** heat from the sun. Although marine iguanas may look frightening, they only eat plants. They mostly eat seaweed, but they also eat tiny plants called algae. They scrape the algae off rocks with their teeth.

Bartolomé Island is part of the Galapagos Islands group. It is home to many marine animals, including marine iguanas.



to link to a video about



Only the bigger male marine iguanas swim to find food. They don't swim until they have first spent **several** hours in the sun, warming their bodies. The water is so cold that the iguanas lose heat very quickly. They usually stay underwater for 5 to 10 minutes at a time. After they finish feeding, they swim back to shore to warm their bodies in the sun.

Female and smaller male iguanas lose heat too quickly and **rarely** dive in the water to look for food. Instead, they stay on land and eat algae from rocks.



While marine iguanas only dive for a few minutes at a time, some iguanas have been known to stay underwater for up to half an hour!

Staying warm

At night, the temperature drops. Marine iguanas **huddle** together to stay warm. They have to wait until the sun rises the next day to warm themselves up again.







- I. What would be the main effect on marine iguanas if they did not have the sun to warm themselves?
- **2.** Why do you think it is only the bigger marine iguanas that swim for food?
- **3.** 'Ectothermic' means cold-blooded. 'Therm' relates to temperature. Find another word with 'therm' in it that has something to do with temperature.
- Use the QR code (or http://qrs.ly/ mh4y4zq) to watch a video about marine iguanas. Why do you think marine iguanas lie so close to each other?
- There are many cold-blooded animals.
 Discuss this with a partner and make a list of five other cold-blooded animals.
- 6. Choose one of the animals you listed in Question 5. Complete some research to find out how basking in the sun affects the animal's muscles. Write a short information report about this.