

Colouring the Earth

Goal	See the Earth as it is in reality: no borders between countries, a sphere sitting in space.
Age	4 upwards
Difficulty	Easy
Skills	Observation, colouring, creativity, internationalism, 3-dimensional visualisation
Materials	Images of the Earth: A political world map, the Earth in true colour, the Earth at Night, an Earthball, colouring sheets outlining the continents.
Pre-requisites	none

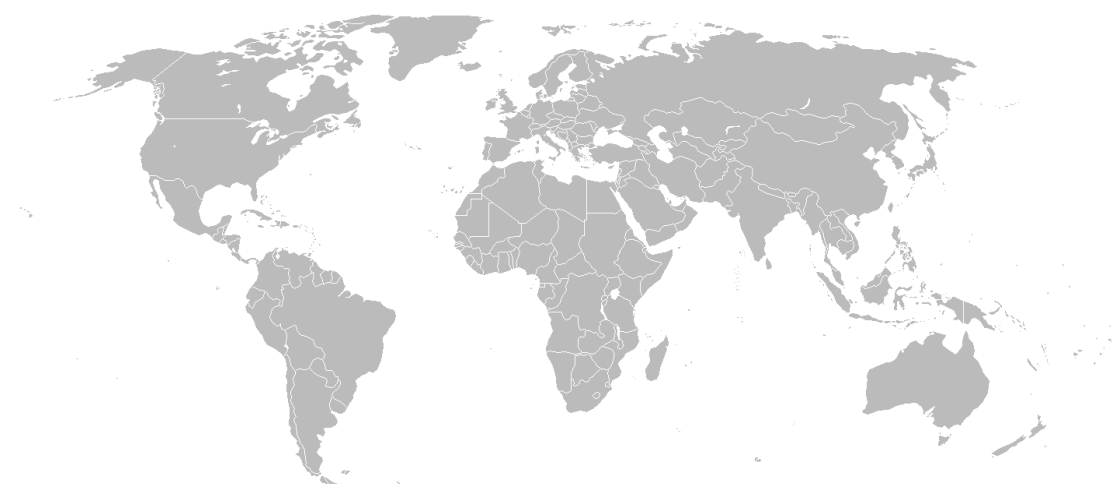
Introduction

In this dialogue and activity, children are invited to think about what the Earth really is like. They will learn about manmade features as opposed to natural features, and they consolidate those concepts with a drawing exercise.

Dialogue

Throughout the dialogue encourage children to ask questions. When you are about to give them some new information, ask them to guess why one thing or another occurs (e.g. day and night). The dialogue below is just a path to take to go from one idea to the next. Feel free to modify it and adapt it to your needs.

1. Country borders



Show the children the world map. A political world map is a map where features like mountains and forests or deserts do not appear but the countries are delimited with lines. This is the most common type of world map you will find.



Ask the children whether they have seen this map before. Ask them if they know where they are, if they can find their own country. If not, you can show them. The map shows borders between countries. You can ask the children who decides those borders (with young children, you can give them options – are the lines decided by nature, people, something else?). The answer is: country borders are defined by people. There is no natural reason for borders, even if they sometimes follow natural features like mountains or the sea. (This concept will be reinforced along the course of this dialogue)

Show them the images of the Earth during the day. Ask the children what are the differences between the world map and these images. The main difference to highlight is the absence of the country borders. The reason for this is that these images are a realistic.

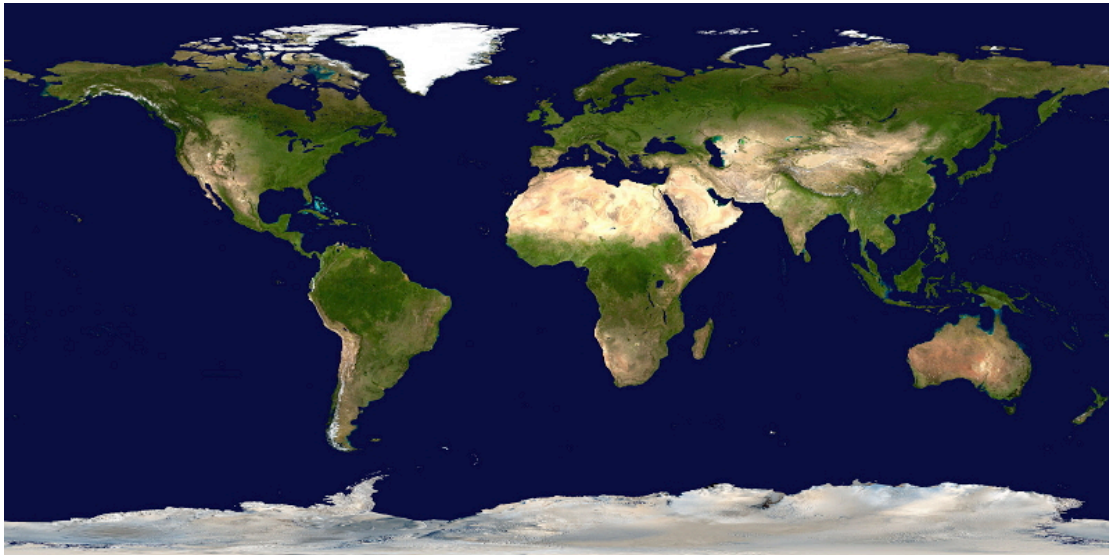


Image: Reto Stockli (IACETH), MODIS, GSFC, NASA

2. The Earth at Night

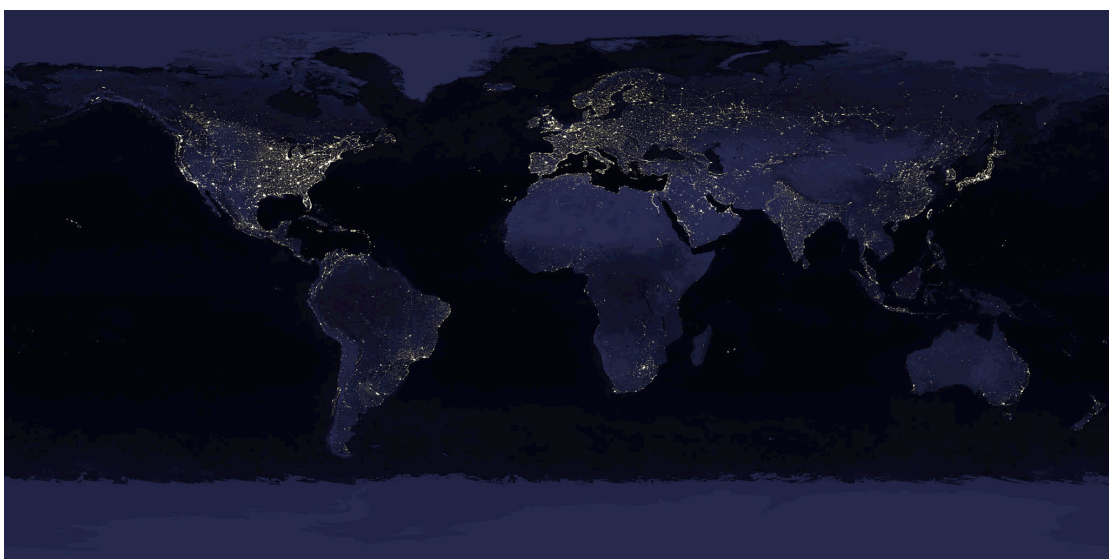


Image: C. Mayhew & R. Simmon (NASA/GSFC), NOAA/ NGDC, DMSP Digital Archive



Show the image of the Earth at Night. Ask the children what they think of it; look at the cities; try to identify or recognise a few. What is the brightest place and the darkest place? Can you find the capital of your country? Where do you think people see more stars? Ask the children if they see more stars in a bright place like a city or in a dark place like in the country.

The answer is: in the countryside. The reason is: because we have fewer artificial lights in the country. The lights that we turn on at night prevent us from seeing the stars.

The lights of our cities can be seen from space. There are so many of us on the planet that you can see the lights we use from space. No other species, plant or animal, can be seen from space.

Note that unlike what appears on these images, night and day don't occur at the same time all over the Earth. While one half is experiencing night, the other half is experiencing daytime. You will explain this in the next part of the dialogue.

3. What the Earth really looks like

Bring up the Earthball and ask the children if they know what this is. The Earthball is what the planet really looks like from space. Ask the children what differences there are between the Earthball and the previous two images.



The previous images were realistic, but not real. The Earthball represents the real planet Earth. It is an image of how the entire planet was some time in 2003. Many images were taken at the same time by satellites and combined to form the Earthball. (You can show them images of the Earth from Space to illustrate satellite photographs from the Earth.)

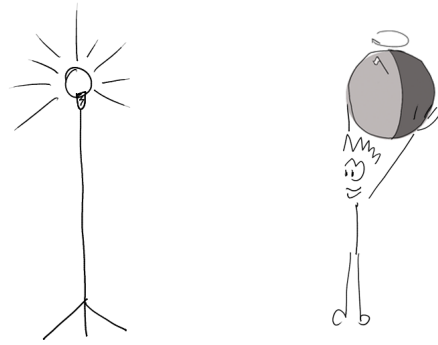
The most obvious difference is that the Earth is round. But also, that you can see clouds. Clouds belong to the Earth, so do airplanes that you can see in the sky.

Again, note that there are not borders between countries. Try to find where you are on the Earthball. Look at your neighbours on the planet, is it really very different from here? Why should we have country borders dividing us if we are not so different?



4. Demonstrate day and night

One last thing to show in this activity is day and night. Identify a bright light source where you are; the sun if you are outdoors or an open window if you are in a classroom. Hold the Earth ball so that you can see its shadow well.



Ask the children to notice the difference. Where the Earth is facing the light is daytime. Where the Earth is in the shadow, it is night. Demonstrate that the Earth turns on itself. Mark one point on the Earthball and follow it into the light, and back into the dark. You can carry out this demonstration yourself, or involve children in it.

5. Summary and consolidation

This is the end of the dialogue. A lot of new information was discovered. Summarise what you just talked about:

- Country borders are not real, they are a human invention
- Clouds airplanes and satellites belong to the Earth, the sun, moon and the stars are much further out in space
- The Earth is round
- You can see that humans live on the Earth from space because we use so much light at night
- Day and night is because the Earth turns on itself and only the part of the Earth that faces the sun is in daytime

Colouring session

Distribute the attached image of outlined continents to the children. You can distribute it oriented in any random way; you don't have to show them the usual way of seeing the Earth.

Ask the children to colour in the Earth. The level of detail can vary according to their ages. The aim of this exercise is to have the children think about what was just discussed and to consolidate it in a creative activity where they re-interpret it.



According to increasing level of difficulty this is what you can ask the children to colour in and draw. Encourage the children to use their imagination.

- Continents vs Oceans
- Colour in two of them: one representing daytime, one representing nighttime.
- More accurate: colour in one image only but part of the planet in daytime, part of it in night time
- Include clouds, perhaps airplanes or a satellites somewhere

Extension

Instead of a colouring session, a bigger, realistic world map can be created in papier-mâché or simply painted, to complement the political world map. This can involved many children at once and can be hung in a classroom or a meeting hall.

You can use this activity to complement a geography lesson. It turns out that without country borders, it is difficult to locate countries, but continents still make sense. You can ask children how they would travel from one place so another without airplanes and cars (like people did many centuries ago) and you can use that to contextualise big migrations through the ages. Note that people used the stars to find their way both at sea and on land.

Source: UNAWE International





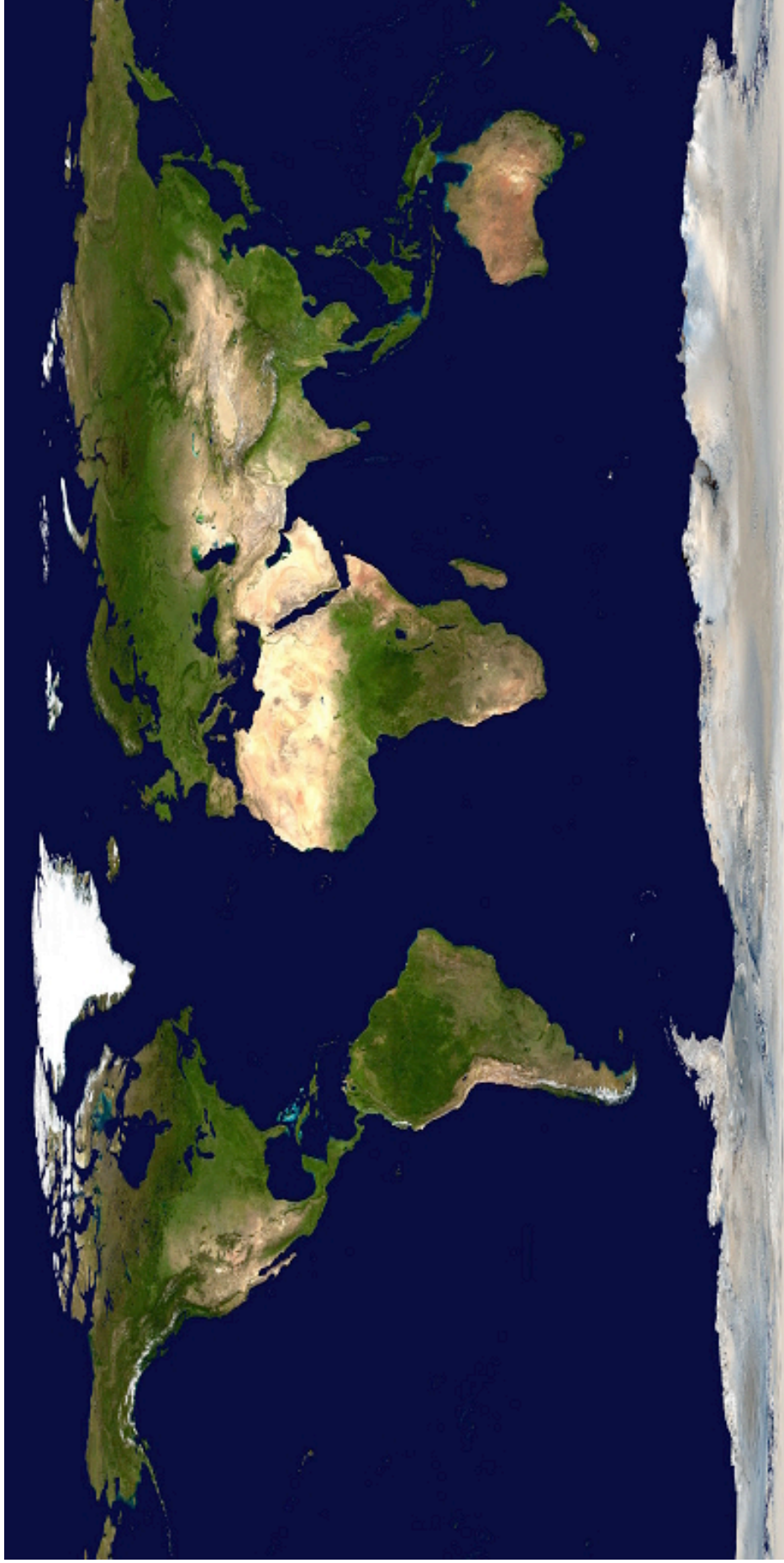


Image: Reto Stockli (IACETH), MODIS, GsFC, NASA



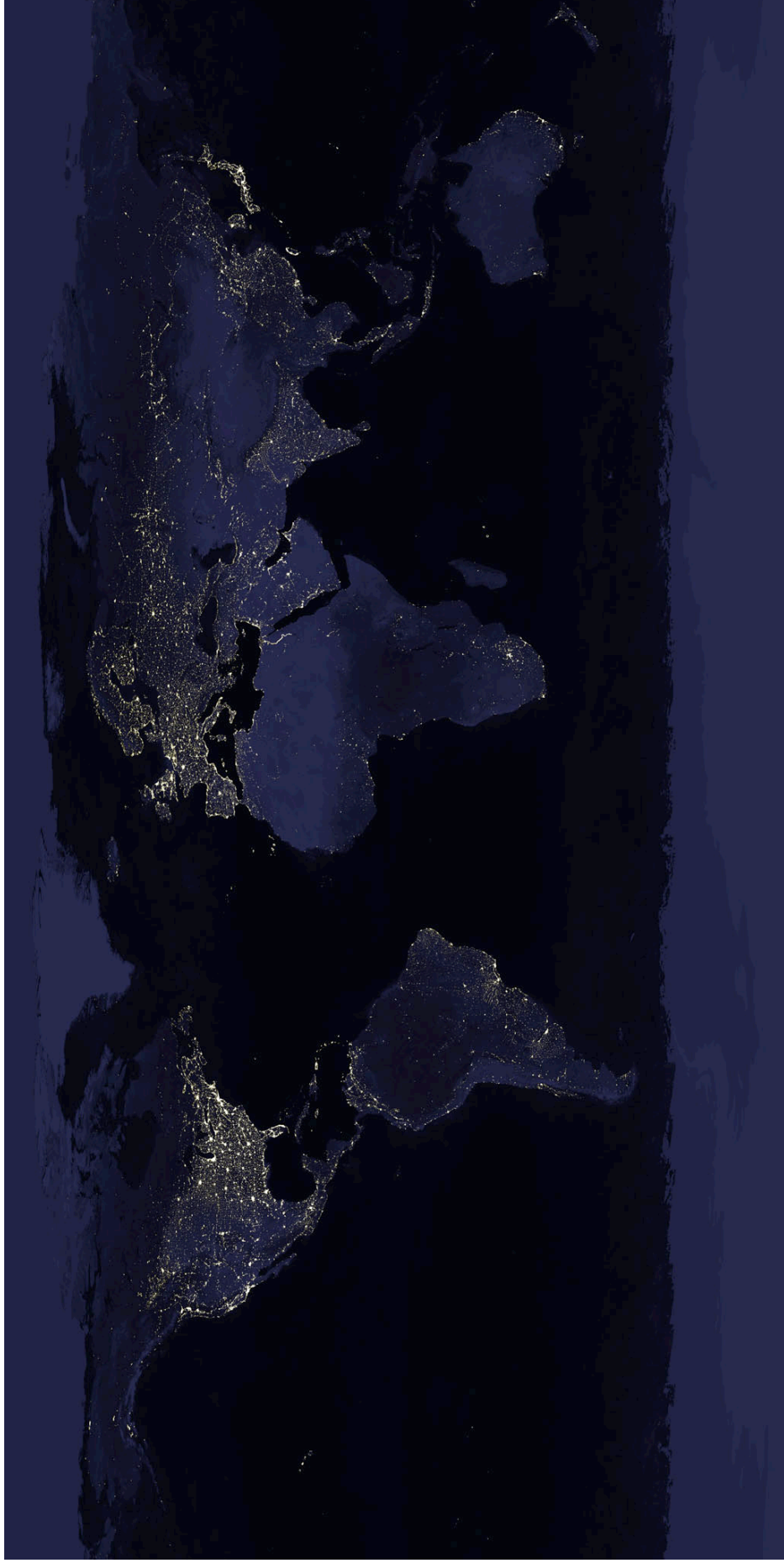
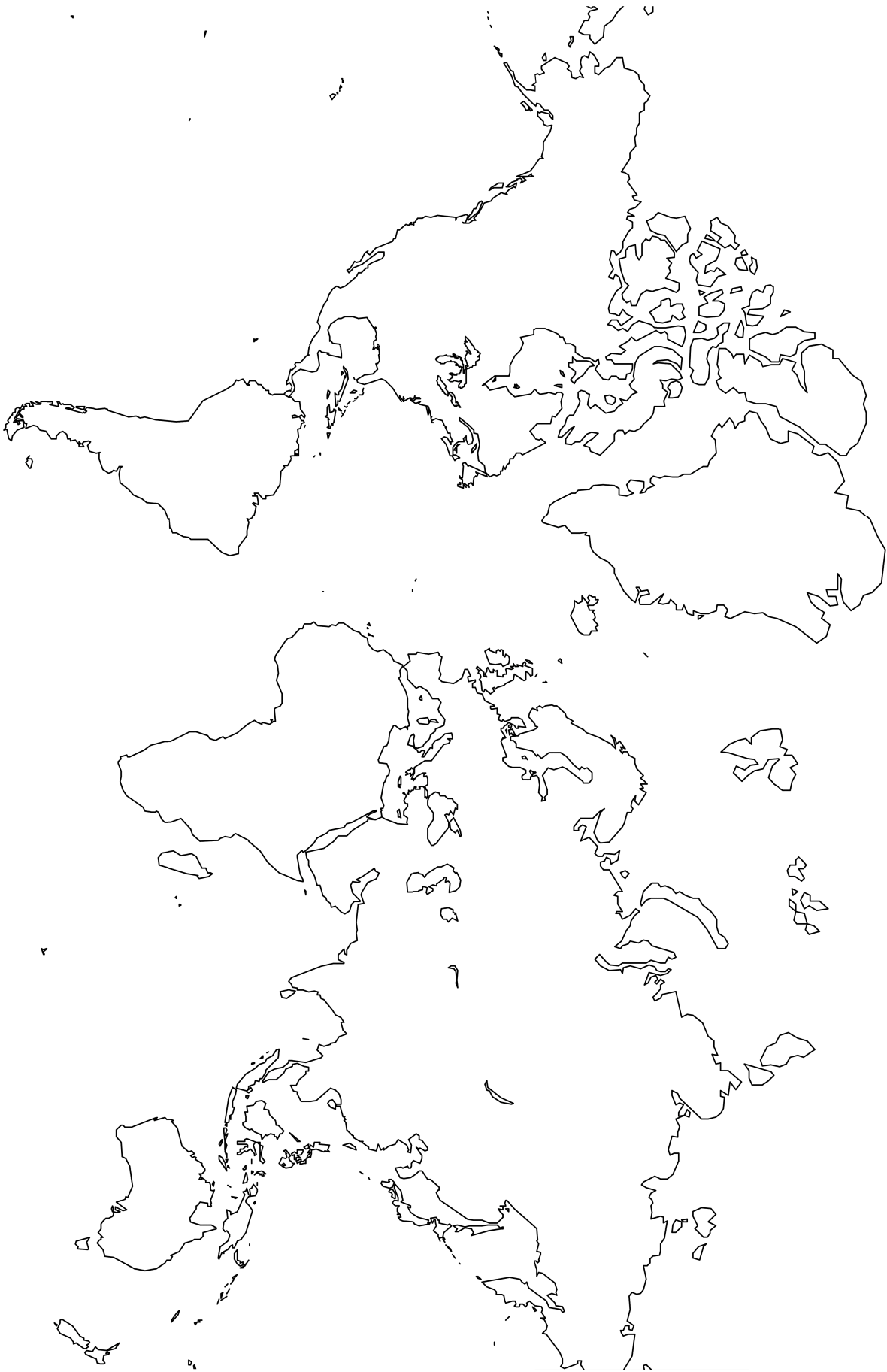


Image: C. Mayhew & R. Simmon (NASA/GSFC), NOAA/ NGDC, DMSP Digital Archive





Evaluation

In this activity we use representations of the Earth. Only the Earthball is a real image.

Always ask the children if they found this fun, and if they learnt something. If you ask them to recollect what they learnt, they will think about it one more time, which reinforces the learning. It is important however that the children don't just learn things by heart.

Here are a few questions that you can ask the children after the activity to evaluate their understanding of the concepts approached and their attitudes towards those concepts.

1. We influence the whole planet: we draw lines between countries and we make the planet bright at night

- What is the biggest difference between the maps we have in schools and in books, and the way the Earth looks from space?
- Have country borders always been there? Do they change? Why? Are we different from our neighbours?
- If we were on a mission in space looking to find life and we came across the Earth, would we see that there is life on the planet?
- What signs of life would we see?
- Where can we see the stars best? Do you prefer to see the stars at night or street lights? What can you see when you see the stars? How far away are they? Do they change like the clouds?

2. The Earth is a planet; it is a sphere. Day and night is caused by the Earth turning on itself.

- What shape is the Earth? Why do we believe that?
- What is the biggest difference between day and night?
- Is it day and night everywhere at the same time? If not, then what images and maps are wrong/manipulated?

As you record the children's comments, pay attention to their interpretation and their attitude towards the ideas being discussed. Try to proceed by asking them questions and give them as few ready answers as possible. The more you involve them in reasoning to reach the answer, the better.

Please send us feedback and comments on this activity to:
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