Questions and tasks on stations of the climate voyage

The real-life and personal examples of the Climate World Journey offer a good opportunity to introduce individual aspects of the complex topics of climate change, causes and effects.
In addition, we have compiled work tasks for some of the journey stops.

Our main concern, as always, is to support you in the best possible way in your so important work with the children. Therefore, we are happy to add more ideas and tasks to the collection that you have successfully tested or adapt existing ones according to your recommendations.
Send us your comments at
zoom@climatealliance.org.
(please include the details under which we may publish them)

Tip: Read out individual stations of the climate journey as part of a read-aloud breakfast break.
This way, questions that arise can be discussed directly and tasks can be worked on in the following lesson.

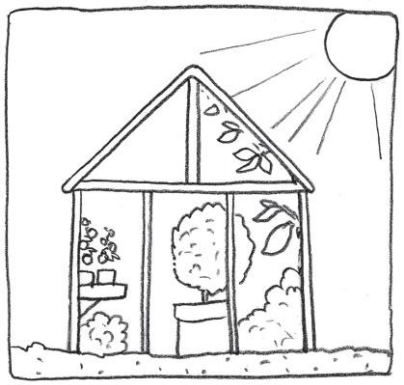
Questions and tasks: Antarctic

For the younger ones

- Have you already discovered Antarctica on the world map? It is located so far south that it can often only be discovered on a globe. Antarctica is a large island where the southernmost point of the Earth is located, the so-called South Pole.

- Why are there no cities in Antarctica? What do the people who live in the settlements do?

- What is the favourite food of penguins and why is it less?



For the older ones

- *When was Antarctica discovered? Who was the first person to reach the South Pole in 1911?*
  In 1820, Antarctica was sighted from a ship for the first time. On 14 December 1911, Roald Amundsen and a Norwegian expedition were the first to reach the South Pole. He and all his companions died due to the severe cold.

- *What is pack ice and how does it form? Why does the sea freeze over when there is no wind?*
  Pack ice consists of densely arranged ice floes. These floes push over and under each other with the ocean current. The ice then becomes very dense.

- Why do the penguin parents no longer find their way back to the breeding grounds of their young?

  Task: Why is it so cold in Antarctica, even though this large island lies in the south? You can find the answer by pointing a beam of light at the equator on a globe. How much light reaches the top or the bottom?

Tip: The consequences of the greenhouse effect can be seen clearly in Antarctica. In the accompanying booklet you can read how to investigate the greenhouse effect in an experiment (accompanying booklet module 32 and worksheet page 55).

Questions and tasks: Africa (Kenya)

For the younger ones

- Why is there no water in the village where Esiankiki lives?
- Where does the water for people and animals come from? Who fetches the water and how is it transported? Try to carry a container of water on your head.
- Why don't all the children in Esiankiki's village go to school?
- Why do the Maasai use thorn bushes instead of barbed wire to protect their village against wild animals? Do you know any thorn hedges in your neighbourhood and have you ever tried to slip through them?

For the older ones

- Why can't the Maasai grow vegetables and fruit?
- *With whom was there a dispute over the scarce water? What were the consequences? How could the situation be improved and water brought to the village?*
  A well would provide the village of Esiankiki with drinking water. It would save the inhabitants a lot of effort and time. When building a well, one has to be careful not to drill too deep. Otherwise, it can happen that too much groundwater is extracted from the soil and soon there is no more water in the well.
- Why do people in Africa build their houses out of clay?
  What happens when it rains?
  Clay is a cheap raw material, of which there is a lot in Africa. Clay regulates the temperature in the house. It is cooler during the day and warmer at night than outside. Every time after the rainy season, the big repair begins, because the rain masses wear away some of the clay.

  Task: Fill water and some soil into a shallow bowl and put it in the sun for two days. What happens? Think about how you could build a small house out of clay

Tip: In Kenya, many houses are built of clay. Earth paints can also be made from clay. You can read about how to do this in the teaching guide (page 39, module 58).

Questions and tasks: South East Asia

For the younger ones

- What do people in Southeast Asia do with wood from the rainforests and why?

- What is recycled paper made of? What can be made from it?
  Recycled paper is made from paper, cardboard or carton that has already been used. No new wood has to be cleared for this. It takes less energy and water to make recycled paper than it does to make new paper. Recycled paper can be used for writing and painting. But it can also be used to make hygiene paper, for example kitchen paper, toilet paper or handkerchiefs.

- What can you use instead of tissues to blow your nose?

Task: Can you make your own paper and what do you need? How long did it take you to make one sheet of paper? (We explain how you can make your own paper in the information sheet 'Eco-Fair Procurement').

For the older ones

- What is cellulose and what is it made from?

- *Why are rainforests called the 'green lungs of earth'? Why is it so important to preserve the rainforests?*
  The plants of the rainforest produce oxygen. In addition, the wood stores CO2. The rainforests help to cool the earth's atmosphere. This is because there is a huge cloud cover above the warm, humid jungle that blocks the sun's rays.

- What is the reason why large pieces of forest are not only cut off, but also burned down??

Task: Read the ingredients of margarine, chocolate bars or ice cream and find out if they contain palm oil. Also check your bathroom to see if shampoo, shower gel and other cosmetics contain palm oil.

Tip: In Southeast Asia, a lot of rainforest is cleared to grow oil palms. Oil palms are used to produce palm oil. Further explanations about products containing palm oil see teaching guide page 31, module 51.

Questions and tasks: Australia

For the younger ones

- What are the school doing to prevent heat in Australia?
- What happens to the forest when it doesn't rain for a long time?
  Why is open fire banned in many parts of Australia?
- Why were cars not allowed to be washed at Kyle's in Australia?

Task: How long does it take you to fill a bucket with 10 litres of water? How many buckets do you need to fill a whole bathtub?

For the older ones

- How is climate change affecting Australia? Is there a connection between high heat and drought?
  Climate change is causing the temperature in Australia to rise, and at the same time there is less rainfall.
- How much water was allowed to be used per person per day in Australia and what is the water consumption per person in Germany?

Task: Find out how many litres of water you use for showering? How could you reduce your water consumption? Where can you save the most water?

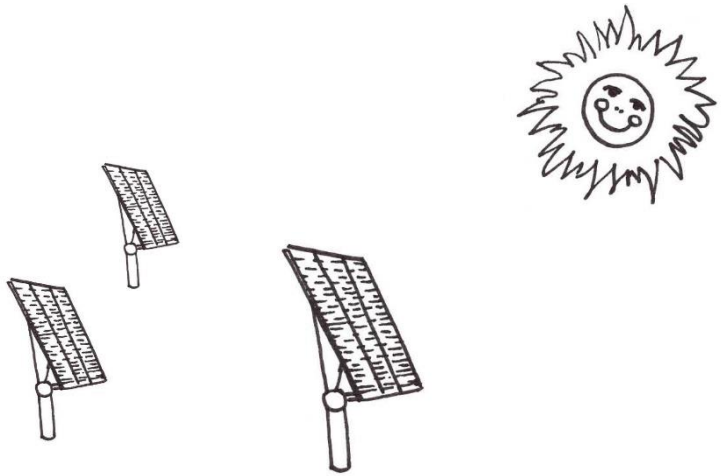
Tip: Every day we consume a lot of energy. With an energy diary you can find out what for. Further explanations in the teaching guide (page 34).
Also use the energy checklist (worksheet module 34, page 57).

Questions and tasks: Oceania

For the younger ones

- How many oceans are there in the world? Which is the largest?
- What will happen to the many (smaller) islands if the sea level rises due to climate change?
- Why is it so easy to generate energy with solar cells in the South Pacific?

Task: Look at Oceania on the globe. Can you discover Tahiti? Can you count all the islands?



For the older ones

- Why is it such a big problem when the soil of oceanic islands becomes saline?
  The islands of Oceania are very far away from all the major land masses on earth. If they can no longer grow their own food because of the salinized soil, they have to import it. This is not only expensive, but also harmful to the environment, as transport by ship or plane produces greenhouse gases.
- Apart from solar energy, there are other forms of so-called "renewable energy". What are they and why are they called that?
  Electricity can also be generated from wind or water power. These are called renewable energies because, unlike oil or coal, the sun, wind or water always produces new energy.

  Task: Oceania is a continent that consists only of islands. How many are there? How many people live there? Use a (children's) atlas or the internet.

Tip: Where does our energy come from and how can it be made more climate-friendly? Teaching guide p. 53, worksheet "Yesterday, today, tomorrow", module 30 and p. 56, worksheet "Introducing renewables", module 33

Questions and tasks: Europe (The Netherlands)

For the younger ones

- Do you know where the Netherlands got its name?
- Have you seen reports about floods on TV? What happens to houses during floods?
- A dike is a wall of earth built up to protect against floods and storm surges. Have you ever stood on a dike and if so, where? On a river or by the sea?

Task: Build a dike in the sandbox around a lower lying area and flood the higher lying area around the dike. Can your dike withstand the water pressure?
What does a dike like this have to look like to withstand the pressure of the water?

For the older ones

- *Why are people from other cities and countries also interested in the floating settlements?*
  The rise in sea level due to climate change threatens many cities in coastal regions (search on a world map). There may also be floating settlements there in the future
- Do you know what a dike is and what it is used for? What does the term polder mean?
  A dike is a wall of earth that is built up to protect against flooding and storm surges. On the North Sea coast in particular, dikes can also be used to reclaim new land and are then referred to as diking the tidal flats. Depending on the region, the areas created by dyke construction in the past are called koog, polder or groden. Today, new land reclamation has taken a back seat because it causes many environmental problems. In the future, the Dutch want to work more with the water and less against it.

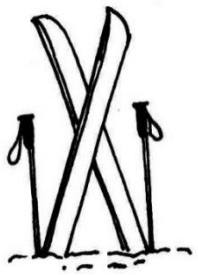
Tip: In the Netherlands, many people ride bicycles. How do the children in your group like to travel? Activity blocks 2 and 3 in the teaching guide helps to think about advantages and disadvantages of different means of transport (pages 44 and 45).

Questions and tasks (Europe): The Alps

For the younger ones

- What are the names of the highest mountains in the world? How high do you think they are?
- When was the last time you have you been in the snow?
- Why is there less snow due to climate change?

  Task: Have you ever taken a closer look at a snowflake? What happens to snow when you squeeze it tightly? Use the "snow" from your freezer



For the older ones

- Imagine you meet someone who has never seen snow. How would you explain it to him or her?
- When it stops snowing in winter, this also has an impact on our lakes and rivers. Why?
  A large part of the water in our lakes and rivers comes from the mountains. This is so-called melt water, i.e. snow that melts in spring and then flows down into the valley via streams. Without the meltwater, the waters may shrink considerably, or one day even dry up completely!
- What are glaciers? Where can you find the largest glaciers in the world?
  Glaciers are huge masses of ice that form in areas where it is so cold all year round that the snow that has fallen in winter does not completely thaw. This causes more and more snow to pile up, which is then pressed into ice by the growing pressure from above. The three largest glaciers in the world are located in Antarctica, Norway and Chile.

  Task: Go to your freezer at home and look at the ice crystals under the magnifying glass. Can you draw them?

Tip: Illustrating melting ice in a playful way with the break game "River crossing", teaching guide p. 42, variant melting ice floes

Questions and tasks: Europe (Italy)

For the younger ones

- What kinds of rice do you know? What's your favourite meal with rice?
- Have you ever experienced any water limitations at home? If yes, how did it feel? If not, ask your (grand) parents about their experience.
- Ask your grandparents or older neighbours what the climate was like in their childhood. And what is different today?

Task: Show some photos of your favourite rice-recipes to your classmates.

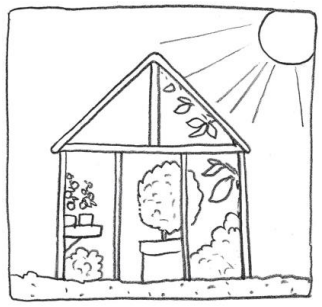
For the older ones

- *What's the link between snowfall and drought in the Po Valley?*
  Part of the Po's water comes from melted snow on the Alps that flow into its tributary rivers. When it doesn't snow enough during the winter, then the Po Valley will be more exposed to droughts in the summer.
- *What happens when it starts raining after a long drought?*
  When it has not rained for a long time, the soil is very dry and compacted. That is why it can absorb the water very poorly, it just runs off. When it rains too much at once (heavy rain), flooding occurs, which can be very dangerous.
  Due to climate change, this is happening more and more often. Example: Northern Italy in May 2023.

Task: *Look at the rice you have at home: Where does it come from? How is it grown? Is it climate-friendly? Do a quick research on the internet.*

Tip: The travel station Australia "Where the Firebugs Dance" shows similar problems.

Questions and tasks: Europe (Luxembourg)



For the younger ones

- How does the Äerdschëff, as this special building is called in lëtzebuergesch, use the energy of the sun?
- Why were car tires used for the walls of the building? What would have happened to the old tires otherwise?
- How is rainwater used? Can you imagine collecting rainwater and what could you use it for?

Exercise: Try to make a small model of your own Earthship. Only use materials that you no longer need, such as old cardboards or empty packaging.

For the older ones

- The Äerdschëff uses solar energy for heating. Challenges does this pose and how can they be tackled?
- Why can't we build every house like the Äerdschëff? What would happen if you stacked car tires higher than one floor?
- Rainwater is collected in the Äerdschëff cistern. How many litres would have to be stored here to supply your whole class with water for a day?
  The average water consumption per person per day in Germany is 126 litres.

Exercise: Use your creativity and draw your own Earthship made from a variety of recycled materials. You can then hang your pictures in the classroom.

Tip: We can try to live according to the circular economy concept not only when building houses, but also in everyday life. Take a look at the swap shelf idea in the teacher manual (page 39, module 37).
You can learn even more about renewable energy in the worksheets for module 33 (pages 55, 56).
Here you can take a look on the Äerdschëff website: https://aerdscheff.lu/

Questions and tasks: Europe (Germany)

For the younger ones

- Which animals do you know that live in the forest?
- **What things in your group room/classroom are made of wood?**
- **What differences between coniferous and deciduous trees do you know?**

Exercise: Take a trip to the forest. Spread out at a short distance from each other, and if it's dry, you can even lie down. Close your eyes and listen to the sounds of the forest. Afterward, write or draw all the sounds you heard on a piece of paper and share them with each other.

For the Older ones

- Is there a lot of forest in Germany? Look up together on the internet how large the forested area in Germany is. What about other European countries?
  In Germany, there are approximately 11 million hectares of forest, which is about one-third of the country's total land area. Countries like Sweden and Finland have much more forested land, but they also have significantly smaller populations. For example, you can check on https://earth.google.com/ to see which parts of the world are covered by forests – they appear as dark green areas.
- Forests and wood are crucial in the fight against the climate crisis - can you explain why?
  CO2 is one of the greenhouse gases that warms the Earth's atmosphere. When a tree grows, it removes CO2 from the atmosphere and stores it in its wood. The CO2 remains stored in the wood, even after the tree is no longer alive, such as when it's used in furniture or construction.

Exercise: What emotions do you associate with forests? Do you feel as comfortable there as you do at home? Or perhaps you feel a bit spooked, and if so, why? Gather in groups and compare your experiences.

Tip: The forest treasure trove, teaching guide page 29, activity 22.

Questions and tasks: Europe (Spain)

For the younger ones

- Find Sevilla on a map (it's in the south of Spain). How far is it from the Doñana national park?
- Find a seasonal calendar. What are your favourite fruits and vegetables? Are there any you haven't tried yet?
- Have you noticed a difference in the taste of strawberries (or other fruit) in summer and in winter?
- How can you conserve seasonal strawberries if you want to eat them in winter?
  There are several ways to conserve seasonal fruits: you can make jam, jelly or marmalade, ferment them or you can simply put them into the freezer.

Task: What's your favourite way to eat strawberries?
Send us your favoured recipe for fresh strawberries and for processed/preserved strawberries.

For the older ones

- Why do you think it is environmentally better to buy seasonal and local fruit and vegetables?
  Fruit and vegetables create CO_2 emissions, especially for transport. If they're not seasonal, they need more energy to be produced (e.g. heating of greenhouses) and the CO_2 emissions rise.
- Do you know national parks in your region or your country? Why do we need to protect them?
  The national parks are important for tourism in the region, for biodiversity and sometimes (like for the Doñana park) for water resources.
- What is groundwater and why is it important?
  Groundwater is a source of water that lies under the ground. It is important for all vegetation but also for agriculture and as a source of drinkable water. In fact, groundwater is cleaner than surface water e.g. from rivers and lakes, because it is filtered by several layers of soil and rock.

Tip: Check the teaching guide (pp. 25-32) for further ideas, and inspiration on climate-friendly food. Moreover, take a look at https://ourworldindata.org/environmental-impacts-of-food to find out how much CO_2 certain food causes.

Questions and tasks: South America (San Martín)

For the younger ones

- How do you get from Pepe's Village to  the city
- Why are the new lamps so much better than the old ones?
- What did the children have to do to get a lamp?
- Why is it so bad that there is so much rubbish in the river?

Task: Try to use no electricity for a whole day - can you do it? What is particularly difficult?

For the older ones

- How many countries are there in South America? What languages are spoken there?
- 13 countries. Spanish, Portuguese, French, Guaraní, as well as various indigenous languages such as the Chibcha languages.
- Why does the sun always rise at 6 a.m. and set at 6 p.m. for Pepe? How is it with us, and why?
  It's because Peru, where Pepe lives, is so close to the equator. This means that there are practically no seasons, because the sunlight is the same all year round. Here in the northern hemisphere, we get much less sunshine in winter than in summer because the globe is tilted and turns away from the sun in winter. In Australia, it's the other way round, which is why the seasons are reversed there.
- Have you ever experienced a power cut? What would it be like if you had no electricity at home?

***Task**: Accompany your parents shopping and try not to buy any packaging. Do you succeed? Or why is it so difficult?*

Tip: Do you have an exchange shelf in your school? For more information, see teaching guide page 39, module 58.
Plastic hidden in school and kindergarten bags? Ideas on this can be found in the teaching guide on page 40, module 38.
Recipes for homemade modelling clay, glue and paint can be found in our handout on climate-friendly procurement.