# Klima Challenges

Let's do it!

Workbook with inspirational materials for schools and educational institutions

Created within the framework of *ClimateChallenges* by BildungsCent e.V., Teach First Deutschland gGmbH, and Teach For All

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# **Get inspired!**

## 45 MiniChallenges with poster

We've got even more materials and key information for you, so you can get involved in climate action.



This includes our *MiniChallenges*: 45 little motivating ideas for looking after the environment. They're quick and easy to start, so students can get on with these *MiniChallenges* independently. This will help your class get involved in climate action in a fun, simple way. The *ClimateChallenges poster* is a way of showing you're getting stuck into climate action. Put the poster up in your classroom, and stick the completed *MiniChallenges* onto it.

The *ClimateChallenges poster* and *MiniChallenges* are available in English, German, Turkish and Arabic. You can order the free posters in all these languages from our *ClimateChallenges* website.

## Set your own challenges

Do you or your students have an idea for a *ClimateChallenge* of your own? Our simple **planning template** for *ClimateChallenges* will help you shape the idea and get it down on paper.

You can share your climate actions with your co-workers and other teachers, for example on social media or in groups like "Teachers for Future".

We'd love you to share your *ClimateChallenge* successes with us. Use **#KlimaChallenges** on social media or email us your ideas at: klimachallenges@bildungscent.de.



https://t1p.de/q54m

4

# Our ClimateChallenge

	From Year:	
(4)	Lessons:	-
	Subjects:	

## Workflow (bullet points)

1.	 	 	
2			
3.			
-			

Material	
 	•
 	•
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Support each other and write down your own *ClimateChallenges!* Inspire each other and share. Send your *ClimateChallenge* to klimachallenges@bildungscent.de.

Thank you so much for writing down your great ideas.

Read more details about the project at www.klimachallenges.bildungscent.de







Gefördert durch:



aufgrund eines Beschlusses des Deutschen Bundestages



We have found that climate action with students works best when it is easy and fun to do, and there are various materials and tools to help you with this. For example, spraying climate action slogans around school grounds using chalk spray. Or taking an energy monitor around school to find which of the devices there could use less electricity.

For inspiration, we have put together a list of different materials to help you get involved in climate action. The list is full of tools and ideas to discover, which will inspire you and your students to take action.

There is something for students of all ages, from primary right through to secondary. Students will be able to use some of the tools on their own straight away, such as the magnifying glass or the litter picker, while materials such as the hourglass or the blank cube are there to support other tasks.

Whichever materials you choose and however you use them, there is no limit to your creativity!

#### Description

#### Ideas for use

## Inflatable globe



- The inflatable globe will help your students learn about the world.
- Use the globe to look at the different climate zones or global links between, for example, consumption and climate action.

- ClimateChallenge ClimateBreakfast: Put your heads together to organise a sustainable and climate-friendly breakfast at your school. You and your students can investigate various aspects, such as the food mileage of produce, and use the globe to track them. Instructions (in German): https://t1p.de/42cr0
- Take a quiz: Gorillas in the rainforest, cacti in the desert and mountain goats in the Alps? Put together charts with the names of animals and plants. Ask your students to guess where they live on the planet.
- Use the globe for a climate journey through Earth's different climate zones. Ask your students to read up on what the climate is like in different parts of the world, and report back on how the climate affects the lives of those who live there.



- Set of three different types of chocolate.
- The three types of chocolate are vegan and fairly traded.

## 3 bars of fairly traded chocolate

- ClimateChallenge The chocolate business role play: In the chocolate business role play, your students take on different roles and look behind the scenes of the food industry. Traditional chocolate or Fairtrade chocolate: Where does someone earn more? What's a fair price for chocolate? Instructions (in German): <a href="https://tlp.de/42cr0">https://tlp.de/42cr0</a>
- The cocoa bean, which is what chocolate is made from, does not grow in Northern Europe. What are the foods we eat regularly that grow in other regions? What does that have to do with the climate? Talk about it with your students.
- You might want to use the chocolate as a small incentive or a prize for completed *ClimateChallenges* or *MiniChallenges*.

#### Description

#### Ideas for use

#### **Organic cress seeds**



- Cress is easy to grow (all year round on the windowsill and seasonally outdoors), making it ideal for your students to take their first steps into growing their own food.
- Cress is part of the family of spices and lettuce plants. It tastes a bit peppery and slightly spicy, for example in a salad or sandwich.

- ClimateChallenge ClimateBreakfast: Organise a sustainable and climate-friendly breakfast in school, making sure you include the cress you've grown yourselves. Make sure you remember to sow them a few days before the breakfast. Instructions (in German): <u>https://t1p.de/42cr0</u>
- Sow cress seeds with your students in different places around the classroom, and harvest them. How quickly does cress grow in sunny places? What about where it's dark? Together, learn the importance of seasonal and regional food, and get to know climate-friendly nutrition better.

### Wild herb seed mixture



- Wild carrot, fennel and cornflower seeds: The 50 different, insect-friendly wild herbs introduce the topics of biodiversity, wildlife conservation and the coexistence of humanity and nature into school life.
- The wild herbs are perennial and hardy. They can be sown from the end of March to the end of October.

- ClimateChallenge Garden in a carton: Get your students to turn empty drink cartons into miniature flower beds to be hung on fences or elsewhere. You can plant the wild herbs or colourful flowers in the beds. Instructions (in German): https://t1p.de/kl15u
- With your students, make your own seed bombs, helping your school grounds to become greener.
- Ask your students to read up on what wild herbs grow from the different seeds.
   Which seeds can you eat?
   Have a go at making herbal tea with some of them. What else can the herbs be used for?



#### Description

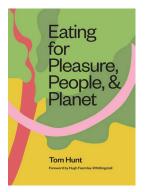
#### Ideas for use

#### Seasonal calendar



- The seasonal calendar shows which fruit and vegetables are in season for us, and when, which means these are the times that they don't need to be transported over from other countries.
- It can be hung up in the classroom.
- Buying seasonal and regional fruit and vegetables cuts down on transport costs and reduces CO<sub>2</sub> emissions, while supporting the cultivation of home-grown fruit and vegetables.

- ClimateChallenge ClimateBreakfast: Organise a sustainable and climate-friendly breakfast in school. What ingredients do you need? Use the seasonal calendar to look up what fruit and vegetables are in season. Instructions (in German): https://t1p.de/42cr0
- ClimateChallenge What vegetable am I?: Get your students into teams to assign different types of fruit and vegetables the right name. Use the seasonal calendar to find out when they grow, or whether they even grow in Northern Europe at all. Instructions (in German): <u>https://t1p.de/42cr0</u>
- Signage in the supermarket shows where fruit and vegetables come from. Give students the chance to find out how many different countries apples and cucumbers come from. How far does a mango have to travel to make it onto our table?



- Cookbook "Eating for Pleasure, People & Planet"
  - ClimateChallenge ClimateBreakfast: Organise a sustainable and climate-friendly breakfast in school. You'll find recipe ideas in the sustainable cookbook. Instructions (in German): <u>https://t1p.de/42cr0</u>
  - What are your students' favourite foods? Talk about how you can make your favourite dishes climate friendly, for example by using seasonal or regional foods.
- The climate-friendly cookbook explores plant-based, seasonal and local cooking with creativity. It explains how to promote more sustainable agriculture, support biodiversity and produce less waste.
- Over 80 recipes will show your students how colourful and climate-friendly cooking can be.

#### Description

#### Ideas for use

## Fruit bags from old fishing nets



- Fruit bags made out of old fishing nets and cotton are a climate-friendly alternative to plastic bags.
- The student-run company "Meehr" from Schleswig-Holstein in northern Germany produces these fruit bags, playing its part in protecting the oceans.
- Old fishing nets floating around in the sea so-called ghost fishing nets – are a risk to marine life as they can get tangled up in them.

- ClimateChallenge ClimateBreakfast: Take your fruit bag with you to go shopping for your climate breakfast. How many of the different types of vegetables in the supermarket come without packaging? Instructions (in German): https://t1p.de/42cr0
- Making new from old: Discuss the idea of "upcycling" with your students using the example of the fruit bag, and try to find examples of other upcycling products.
- Litter in the ocean: In the game "The Last Straw?", students will follow the journey of a plastic straw.



#### Ice cube mould



- Anyone can make boring old ice cubes, but penguin ice cubes make things more interesting! What funny things can your students do with the ice cubes? Experiments or social media content with melting penguins, maybe? Get creative!
- How about using them to highlight melting ice caps at the North and South Poles? The ice around these Poles is vital to Earth's climate. The ice reflects the sun's rays, helping to keep Earth cool. If the Arctic ice melts, the sun's rays hit the water instead, heating it up. This means the air temperature goes up too.

- ClimateChallenge The ice cube experiment: Help your students to see how ice cubes melt more quickly when in an enclosed container. Scale it up and think of how this affects the planet: it's called the greenhouse effect. Instructions (in German): https://t1p.de/c6x45
- Get students to keep a diary for three days logging their water use. Get them to swap them at the end and compare. Where can we save water?
- Take it easier on hot days: Climate change is leading to more and more hot days in Northern Europe. It's particularly important for your students to make sure they drink enough on those days. It's much more fun to do this with colourful penguin juice cubes in the water! Why not fill snackboxes with easy, watery treats.

#### Description **Ideas for use** Measuring jug • ClimateChallenge The CO2 rucksack: Your students will use filled water bottles to pack a CO2 rucksack for an imaginary Ltr ml 500 person. This will help them learn what behaviours lead to the most $CO_2$ emissions and allow them to compare the $CO_2$ 400 emissions of different people. Instructions (in German): https://t1p.de/c6x45 300 • How much water do we need for our food? One kilogram of 200 cocoa beans uses 17,300 litres of water. For a kilogram of tomatoes, 203 litres of water are needed.\* Plan a 100 *ClimateChallenge* in a public space where you can show people, creatively, how much water is needed to produce our foods. Check whether you need to ask the authorities for permission. • The measuring jug can be used for experimenting, for example for collecting water or making it possible to see volumes of water. • The measuring jug holds 500 ml and has many uses as it can withstand temperatures of -20 to +100 °C. • It has a gauge mark every 10 ml and a number marker every 100 ml, so your students can measure solid and liquid contents

\* watercalculator.org (2024): The Water Footprint of Food Guide. From: https://www.watercalculator.org/water-footprint-of-food-guide/, last access 16.01.2024.

accurately.

Description	Ideas for use					
Chalk spray						
<ul> <li>The colourful chalk spray can help your students raise awareness of climate action in different ways.</li> <li>It's particularly well suited to be used on the ground, such as on grass, sandy surfaces or forest tracks and dirt roads.</li> <li>Relax: The chalk spray is biodegradable, dermatologically tested and will wash away the next time it rains.</li> </ul>	<ul> <li>ClimateChallenge Your ClimateMessages: Get your students to use the chalk to write or spray their climate messages on the ground around the school, or do it as a public action in popular public places such as a train station or shopping district. Again, check whether you need to ask the authorities for permission. Instructions (in German): https://t1p.de/st8vb</li> <li>Plan a climate scavenger hunt: For every place where chalk has been sprayed, your students. have to solve a climate guestions with three possible answers. They can only move on to the next point of the climate scavenger hunt when they get the answer right.</li> </ul>					
Pavement chalk						
Tas guarts - Jumbo chait - Craise guarts Durando chait - Craise guarts Durando chait - Craise guarts	<ul> <li>ClimateChallenge Your ClimateMessages: Get your students to use the chalk to write or spray their climate messages on the ground around the school, or do it as a public action in busy public places such as a train station or shopping district. Again, check whether you need to ask the authorities for permission. Instructions (in German): <a href="https://t1p.de/st&amp;vb">https://t1p.de/st&amp;vb</a></li> <li>Get your students to mark chalk circles around every bit of chewing gum trodden into the ground on school premises. Have you ever noticed how most chewing gum ends up on the ground instead of in the bin? As chewing gum is partly made of plastic it takes centuries for it to break down completely.</li> </ul>					
<ul> <li>Get creative and take your thoughts and feelings about climate action onto the streets – literally! The six-colour chalk set is great for drawing and writing on asphalt, stone, boards and other surfaces.</li> </ul>	<ul> <li>Your students take over the teachers' car parking spaces. For one day they can turn the car park into a bike repair shop, or a playing area, or they can paint it with climate messages.</li> </ul>					

#### Description

#### Ideas for use

#### **Karaoke microphone**



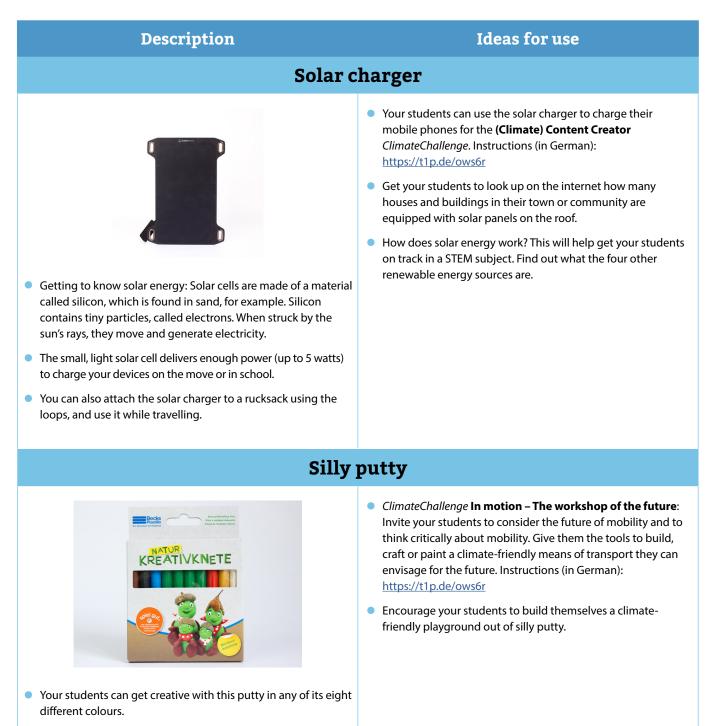
- Turn up the volume on your *ClimateChallenges* with the karaoke microphone.
- It has got built-in Bluetooth, its own MP3 player and speaker.
- It has a handy rechargeable battery so you won't need any disposables.
- Take climate action to social media platforms: These microphones are currently *the* thing for content production on social media platforms. What will your students come up with?

- ClimateChallenge The climate-friendly school: Your students can draw up their own petition for a more climate-friendly school and gather signatures from other students. They can use the microphone to raise awareness of the cause. Instructions (in German): <a href="https://t1p.de/st8vb">https://t1p.de/st8vb</a>
- Climate karaoke: In music lessons, sing songs about the climate and climate action.
- Give electronic devices new life: Old, broken devices can often be repaired. Is there a repair café near your school?
- Invite your students to ask people in their circle (family and friends) their opinions on the subject of climate action and record them using the microphone.

#### 30 design-your-own postcards



- Climate action by post: Ask your students to design the front side of the postcard themselves, and send it to friends and politicians.
- ClimateChallenge Going postal!: Challenge your students to think about how they could re-imagine the design of their town or community, and get them to draw up wishlists, critiques or specific requests to send on a postcard to the head of the local authority. Instructions (in German): <u>https:// t1p.de/st8vb</u>
- Encourage your students to design the front of the postcards out of waste paper, old wrapping paper, photos, newspapers or other things. These works of art will be ideal birthday or Christmas cards.
- Climate postcard from your holiday: Ask your students to write on the postcards what they did for the environment in the summer holidays. They'll read each other's postcards out after the holidays.



#### Description

#### Ideas for use

### Litter picker



- Look really closely all around you: There is rubbish everywhere! In the woods, on pavements, in parks. Litter gets dropped everywhere, all the time. This damages our environment. Wind can whip plastic waste from pavements into waterways, where it can end up in the seas.
- Keep clean: Step up for the environment, and go litter picking. You don't even need to touch the dirty rubbish if you use a litter picker. That way it won't even be yucky for your students!

- Start a litter pick campaign on your school premises. How many rubbish sacks can your students fill in 15 minutes? Perhaps they can encourage their fellow students to get involved? Tip: Use the hourglass for this challenge.
- Make posters on the subject of waste separation and put them up where they can be seen around school.
- Imagine that all plastic disappeared overnight. Write down all the things made out of plastic that would no longer be available for you. Which of these would you throw away over the course of a month?
- Collect rubbish in your area and make an artwork out of it.

#### Infrared thermometer



- Your students can use the infrared thermometer to measure the temperature of surfaces quickly and without having to touch them.
- Its measuring range is from –50 to +380 °C.
- Important: Don't point the thermometer's laser in people's eyes! Pay attention to the warning on the thermometer.

- Insulation experiment: A lot of energy in Northern Europe is used for heating rooms. But at the same time, a lot of heat is lost in this way due to poor insulation, or a complete lack of it, in walls. Carry out an experiment to understand how important it is to get the right sort of insulation. For this, cook some potatoes. Get students to think about what materials they can use to keep the hot potatoes warm for the longest. Paper, a thick scarf or aluminium? After 15, 30 and 45 minutes measure the temperature of the potatoes and make a note of it in a table. Work together to calculate how quickly temperatures drop.
- Give students the chance to check the electrical devices in school. For example, the temperature of the fridge door should give an indication about how well it's insulated, or how much heat it's losing. The hotter the door, the better insulated it is, and the less energy it is wasting. If a device that's switched off is warm, it's still using energy in standby mode.

#### Description

#### Ideas for use

#### **Energy monitor**



- Use the monitor to measure how much electricity a device is consuming. To do this, plug it in between the socket and the device you want to measure.
- A lot of electrical devices don't use the same amount of energy all of the time (for example, this is how fridges and PCs work). That's why it's important to take these measurements over a period of at least 24 hours, if possible while making sure you use all the functions of the device within this time.
- Why is that important? CO2 is produced when electricity is being used. Too much CO2 in the air is bad for our environment.

- Check how much electricity devices such as printers, laptops or projectors in your school use. CO2 is produced when electricity is being used – on average 468 grams CO2 per kilowatt-hour.\* You can use this information to calculate how much CO2 the device(s) you checked have produced in the time period you measured.
- How can your school save energy? Support your students in talking to school leadership about this.
- Appoint a Climate action team: Help students draw up a checklist of points they particularly want the Climate action team to address. For example, each week two to three students spend one week monitoring use of lights, heating, air conditioning and extension leads, making sure to switch them off when not in use.

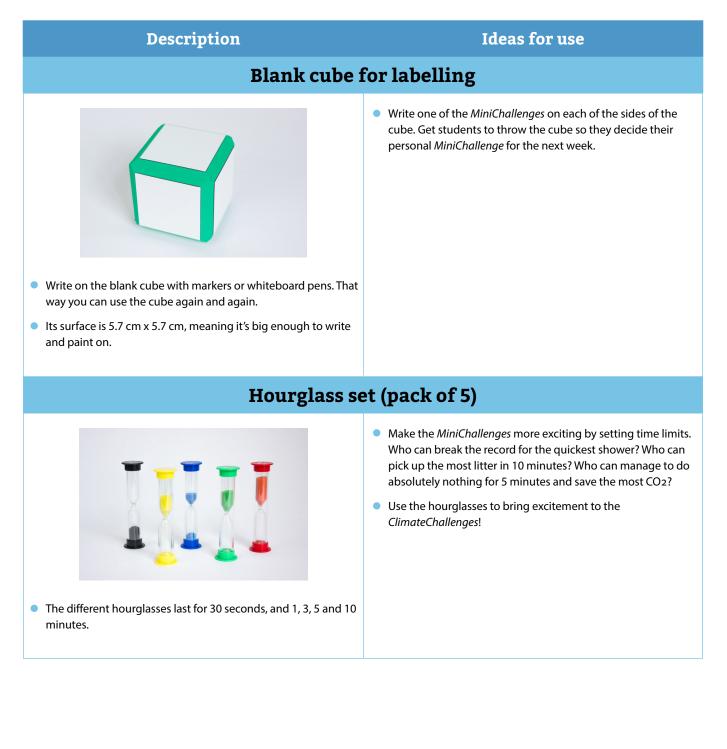
## The "Little Sun" solar lamp



- The "Little Sun" solar lamp, by artist Olafur Eliasson, will help your students understand solar energy, and raise the issue of alternative energy sources and (un)limited access to resources.
- The Little Sun nonprofit organisation helps bring solar lamps to countries of the global South to use as an alternative to harmful and costly fuel lamps, at subsidised cost. They're put to use in areas without access to electricity, to use after dark, sometimes as the only source of light.

- What types of power generation do your students know about? Which of those are renewable, and which aren't? Discuss advantages and disadvantages.
- In many places around the world there is no reliable electricity grid. How can solar energy help this? What would your students' day-to-day life look like without electricity? Together, try to find out what it's like doing simple things in the dark, like tying shoelaces or buttering a piece of bread.

\* Umweltbundesamt (German Federal Environment Agency) (2020): CO<sub>2</sub> emissions per kilowatt hour of electricity in further decline in 2019. From: https://www.umweltbundesamt.de/en/press/pressinformation/co2-emissions-per-kilowatt-hour-of-electricity-in, last access 10.01.2024.



#### Description **Ideas for use** The environment workshop Recycle rally: This game is a fun way to learn about Recycle rally the importance of recycling. Paw print pairs: With this printable memory game, students match animals with their tracks and learn https://t1p.de/tujc where to find them. • Use these two games to dive into the "Environment" topic. Memory game Both games are particularly suitable for primary schools. https://t1p.de/5fx3g **Magnifying glass** Flowers and herbs attract hundreds of small animals such as insects; you could look at them using the beaker with the 6 magnifying glass on top of it. Watch bees, ants and spiders. This can help students to learn about them in a fun way, even helping the students overcome fears about them. Make sure you release them afterwards! • You can also use the beaker to discover microorganisms living in the water. Take a trip to a stream and use a dip net or sieve to find minibeasts and work out what they are - such as

freshwater shrimp.

- Take a quick look and see: Looking through the red magnifying glass doubles the size of what you're looking at. Pull the green one down and it's then four times the size.
- Especially good for primary school so you can discover nature.

#### Description

#### Ideas for use

## Bee finger puppet



- A little mascot for your *ClimateChallenges*: Give the little honeybee a name and think about what it needs, and what you can do for the environment to help it.
- This realistic finger puppet can also help reduce fear of the insect.
- It's ideal for primary schools.

- Your students will find out what flowers make the best habitats and food sources for bees and other insects. Maybe you could plant some of these flowers on school premises?
- Arrange a visit to a local beekeepers' group and learn more about how important bees are, and why they need to be protected.
- Build a bug hotel with your students.

## "Forest Gum" chewing gum



- The plastic-free "Forest Gum" chewing gum is a climatefriendly alternative to well-known chewing gum as it's free from microplastics.
- Your students investigate the properties of plastics and then find solutions to problems caused by plastic waste globally.
- Students can work together to look for further climatefriendly product alternatives which don't use plastics or microplastics.



#### Description

#### Ideas for use

#### **UNESCO SDG teaching resources**

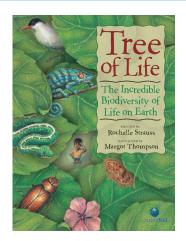


- The UNESCO resources database pulls together lesson content and learning activities for each of the 17 Sustainable Development Goals (SDGs) to support teachers to integrate them into their lessons.
- The specific ideas for action are suitable for students from primary all the way through to secondary level.

- SDG game "Go Goals": Play an SDG game with your students. This will start a conversation about the SDGs using quiz questions of varying difficulty.
- Give every student the chance to find out about one of the SDGs and make a presentation about it.



## Book "Tree of Life - The incredible Biodiversity of Life on Earth"



- We owe so much of what we use in our everyday lives to biodiversity, such as food, clothes, cures to diseases and even different energy sources.
- A vividly illustrated and child-friendly introduction to biodiversity, and how each has much to tell us about all aspects of life on our planet.

- Quiz on the diversity of nature: Primary school students can come up with their own quiz questions about biodiversity using the book. Then put them together to play a cool Climate Quiz.
- Use the WWF-Kahoot quiz to learn about biodiversity and why it's so important, not just for us, but for the whole planet.



#### Description

#### Ideas for use

## **50 Climate action stickers**



 Climate action doesn't have to be boring and grey. It can be colourful, creative, and even cool: The set contains 50 different stickers on the topics of ecology, planet and environment; they can be used in loads of different ways and brighten up everyday things, giving them an important climate message.

- Give your students environment stickers as rewards for completing *MiniChallenges*.
- They can stick them to school books, skateboards or folders. They might also choose to use them to brighten up the school and leave climate messages for fellow students. Check whether you need permission from the school leadership beforehand.

# Imprint

#### **Published by**

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#### www.klimachallenges.bildungscent.de

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