

CLIMATE CHANGE

Grade 4 | Climate Change Toolkit

Introduction to Social Studies 5621

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TEACHING CLIMATE CHANGE

Grade Level: Grade 4 Toolkit

Objective: 4.3.3 Examine the Relationship between humans and the physical environment.

By the end of this outcome, students should understand that:

- the physical environment affects the way we live and provides the means to live
- people need to be sensitive to the impacts they have on their physical environment.

By the end of the unit students will also understand the difference between weather and climate.

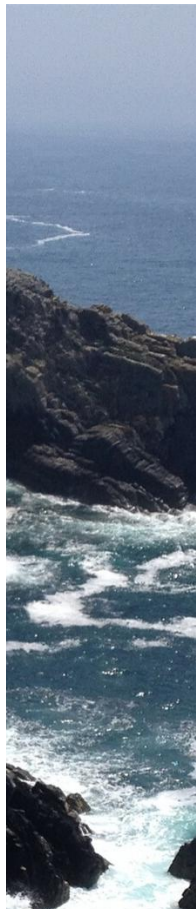
Weather describes the conditions outside right now in a specific place. For example, if you see that it's raining outside right now, that's a way to describe today's weather. Rain, snow, wind, hurricanes, tornadoes — these are all weather events.

Climate, is more than just one or two rainy days. Climate describes the weather conditions that are expected in a region at a particular time of year.

Climate change describes a change in the average conditions — such as temperature and rainfall — in a region over a long period of time.

Global climate change refers to the average long-term changes over the entire Earth. These include warming temperatures and changes in precipitation, as well as the effects of Earth's warming. These include things such as: Rising sea levels Shrinking mountain glaciers
Ice melting at a faster rate than usual, Changes in flower and plant blooming times.

The earth's climate has constantly been changing — however, scientists have observed unusual changes recently.





CLIMATE CHANGE ART LESSON

Grade: 4

Lesson: Climate Change Poster Project

Total Time: 45-60 minutes

Curriculum Outcome:

Objective: 4.3.3 Examine the Relationship between humans and the physical environment.

Intro: Model an example of a poster raising awareness of climate change. Review with students what climate change is and discuss how they feel about it. Brainstorm ideas for their posters.

Time: 15min

Middle: Have students begin to work on their posters, have students think, pair, share to come up with different concepts. Allow students to work in groups or individually for the lesson. Students will be provided with water paint, pencil crayons, crayons, and markers. They will be instructed to create a poster that represents how they feel about climate change.

Time: 30 minutes

Closure: Students will have the opportunity to share their learnings and posters with the class. Students will be encouraged to ask questions about what their peers posters represent to them.

Time: 5-7 minutes

Differentiation: To differentiate this activity, students will have the option of using different tools (i.e. markers, crayons, etc.) to create their posters. Students may also choose to represent how they feel about climate change in another form as well.

Materials:

Blank paper, Paint, cups of water, paint brushes, pencil crayons, markers, crayons, pencils.





CAN YOU
HEAR
US?

“I don’t want your hope. I don’t want you to be hopeful. I want you to panic ... and act as if the house was on fire.”



STORYBOOK

OUR HOUSE IS ON FIRE

Our House Is On Fire by Jeanette Winter tells the story of Greta Thunberg who went on strike, skipping school every Friday to sit outside of the Swedish Parliament building with a sign that read “School Strike for Climate.” At first, Greta was the only one on strike. But gradually, more and more people began to notice her and decided to join her. Greta started a protest that has started a worldwide student movement for action on climate change.

This book is a great example for students as Greta is showing everyone that even the smallest person can make a big difference. This picture book informs and inspires students who are beginning to learn about the world around them. It introduces climate change in a way that is age appropriate for elementary students.



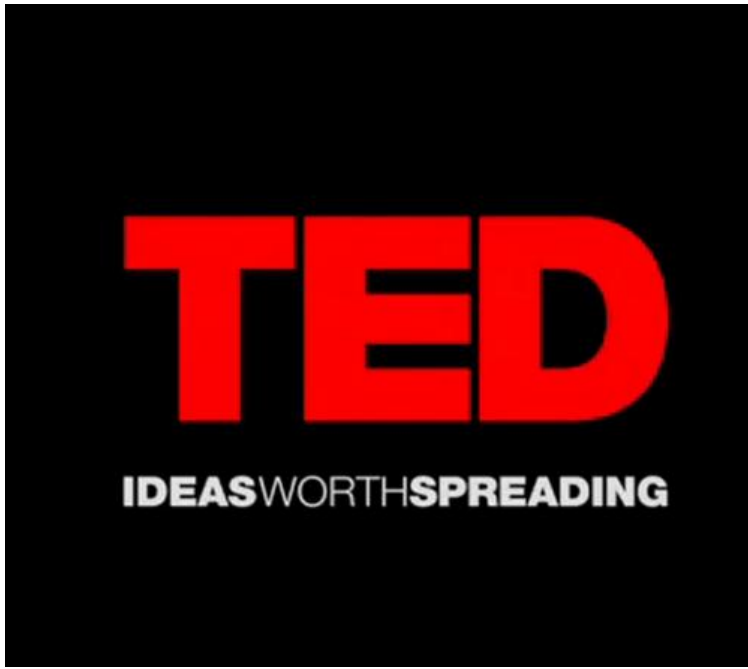
STORYBOOK

THE EARTH GIVES MORE

The Earth Gives More by Sue Fliess and illustrated by Christiane Engel shows the changing of the seasons and shows children and their families enjoying, respecting, and taking care of nature.

This book explores many outdoor activities students can do throughout the seasons and ways they can care for the earth.

This book makes for a perfect elementary read aloud to inspire children to take care of the earth. It talks about celebrating the earth and all the great things it provides for us and allows us to do. This is a positive and uplifting book showing how beautiful nature can be.



ONLINE RESOURCES

1. TedX Talk

Kids Against Plastic | Amy & Ella Meek
<https://www.youtube.com/watch?v=XWxtlqHjxvo>

This TED Talk provides insight to the waste produced by single use plastic. Amy and Ella, young founders of Kids Against Plastic, are working hard to inspire individuals, to do something about the problems caused by single-use plastics and become plastic clever.

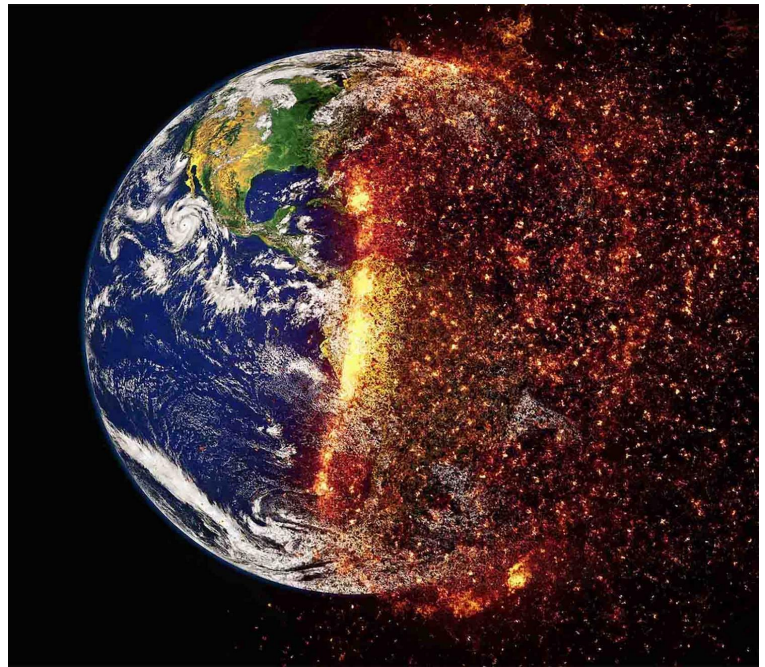
This talk can be used to teach students about how much waste they produce day to day with single use plastics. It can allow for discussion surrounding alternative products we could use and create within the classroom.

2. NASA Climate Kids

Teach Kids About Climate Change
<https://climatekids.nasa.gov/menu/teach/>

This website provides a number of great resources for teachers and students. This website has different tabs kids can find information regarding climate change, atmosphere, energy, plants, and animals.

In the classroom this website could be used for students to do their own research to explore topics related to climate change that interest them.



ONLINE RESOURCES

3. Greta Thunberg

Speech at UN Climate Action Summit

https://www.youtube.com/watch?v=KAJsdgTPJpU&fbclid=IwAR2PKaoW6_JWetgC4MN4m75xf_Ffk1WpkVE7k0t4rAb0ozMwAF9EHhThsc k

Greta Thunberg is an environmental activist on climate change whose campaigning has gained international recognition. In August 2018, at age 15, she started spending her school days outside the Swedish parliament to call for stronger action on climate change.

Greta's speech at the Climate Action Summit talks about how adults are failing younger generations by not taking sufficient steps to stop climate change.

4. Climate Change According to a Kid

Youtube | Video

<https://www.youtube.com/watch?v=Sv7OHfpIRfU&t=12s>

This video explains what climate change is from a kids perspective. This animated video gives a very basic explanation of greenhouse gases and how this affects the earth.

This video would be a great resource for classrooms when introducing the topic of greenhouse gases as it gives an easy to follow explanation on the topic.



ONLINE RESOURCES

5. The Effects of Climate Change

Website

<https://www.wwf.org.uk/learn/effects-of/climate-change>

The World Wide Fund for Nature is an international non-governmental organization that was founded in 1961, working in the field of wilderness preservation, and the reduction of human impact on the environment. This website provides information regarding the effects of climate change.

6. Crash Course - Climate Change

Youtube | Video

<https://www.youtube.com/watch?v=SzcGTd8qWTg>

In this episode of Crash Course Kids, Sabrina shows us the effects that climate change can have and how one small change in an ecosystem can throw everything off. This science video is geared towards elementary kids. Crash Course videos cover many different topics and are great videos to show students.

This Crash Course video covers a lot of information in a short amount of time. It would be a great overview on what Climate Change is when first introducing the topic.



CLIMATE CHANGE CULMINATING PROJECT

Culminating Project Objective: In order to demonstrate what the students have learned about Climate Change they will complete a Trash Audit with the garbage collected throughout the school.

Curriculum Outcomes: Objective: 4.3.3

Examine the Relationship between humans and the physical environment.

What is a Trash Audit?

In order to reduce your waste, you have to know what you're throwing away. A trash audit is when you collect all of your trash, recyclable and compostable items for a certain time period to analyze what types of waste you're creating in this case at school. The purpose of this activity is to help you determine areas where students can improve on and reduce their trash.


Explaining to Students the Importance of Recycling

Recycling is very important as waste has a huge negative impact on the natural environment. Harmful chemicals and greenhouse gasses are released from rubbish in landfill sites. By recycling you can help reduce the pollution caused by waste.

Place Focus On Improvement

At the end of the culminating project students will share the data they collected. The focus of the culminating project will be how can the school improve their trash processes based off the data collected from the project.

Students will have the chance to discuss and share their ideas for ways that the school can improve based off what they discover from the Trash Audit.





Grade level: Grade 4

Objective: Identify the types and quantity of garbage produced in your school. Brainstorm with students ways to improve the waste footprint of the school based off of the data they collected.

Length: 1-2 days

Planning:

1. Choose an area of study (i.e. classroom, whole school or other section of the school).

2. You will need to develop a schedule during which the audit will be conducted (gathering of waste and audit day). The custodian will need notice in advance of the day that they have to collect and store the garbage. These will be used as the sample collection for the trash audit.

Note: Don't let students know which day garbage is being collected so there is no influence on the behaviour of students and teachers the day the waste sample will be collected for the audit.

3. The week of the audit, remind the custodian to gather the garbage from the day before the audit and keep it in a designated place for you to use the next day.



4. Separate the garbage into the following categories: recyclable plastic, paper/cardboard, compostable, refundables, milk cartons, garbage.

5. Choose a location to sort the garbage which can be used for the duration of the audit.

6. Assign roles to the students:

- Sorters who will separate the garbage into the predetermined categories.
- Weighers who will weigh each category after every sorted garbage bag.
- Data reporters who will write down the weight for each category

Pre-activity:

Have a discussion with students on what garbage is, on the 3 Rs+V (Reduce, Reuse, Recycle, Extract Value) and their importance.

Discuss with students - why do we throw things out?

Equipment:

- Gloves (latex-free)
- Scale
- Tarps (to lay on ground for garbage)
- Garbage bags for buckets
- Plastic buckets and bin (1 bucket for each category)
- Sorting data table worksheet



Procedure for day of audit:

- 1.** Prior to the beginning of the class, setup the sorting stations (one tarp per station with 1 bucket for each waste category and a bin in the middle to pour the garbage in).
- 2.** Students from the “Sorting” group can start sorting the waste into the predetermined categories.
- 3.** If possible, each bag will be labeled with their source location in the school (i.e. Classroom, Cafeteria, Library, etc.) This will need to be done by the custodian or any other person responsible for collecting the waste that will be used as sample for the audit. Keep track of that information to determine where the trash is coming from.
- 4.** Once the sorting of a bag is completed, the “weighers” and “data reporters” can start weighing and recording their results into their table.
- 5.** After weighing is completed, put all the garbage into large bags and dispose of as instructed by custodian.

Possible Improvements for School/Class:

- 1.** Acquire more recycling bins
- 2.** Start and maintain a composting program
- 3.** Create better signs for recycling bins and other waste bins
- 4.** Share your results from the Trash Audit with the rest of the school
- 5.** Encourage a school wide trash audit
- 6.** Encourage a “Litterless Lunch” for both students and hot lunch programs
- 7.** Ban single use plastics (i.e. ziploc type bags, plastic water bottles, straws, individual packaging)





1. How to Conduct a Trash Audit at Home: The Zero Waste Collective. (n.d.). Retrieved from <https://www.thezerowastecollective.com/how-to-conduct-a-trash-audit>
2. The Effects Of Climate Change. (n.d.). Retrieved from <https://www.wwf.org.uk/learn/effects-of/climate-change>
3. Teach About Climate Change. (n.d.). Retrieved from <https://climatekids.nasa.gov/menu/teach/>
4. Start Learning. (2019, July 15). Retrieved from <https://kidsagainstclimatechange.co/start-learning/>
5. What is Climate Change (n.d.) Retrived from <https://climatekids.nasa.gov/climate-change-meaning/>

