Lesson Fifteen:
Climate Witness Oral History Project

Subjects

Science, Social Studies, Geography, Technology, Environmental Education, Language Arts

Estimated Time

Two to three 50-minute class periods

Time-Reduction Suggestions

Part 2 can be an out-of-class assignment, condensing the activity to two class periods; just ask students to bring three copies of their story to class.

- Classroom presentations of stories can be eliminated, moving the discussion to the end of Part 2, reducing the lesson to two class periods.
- Part 1 can be eliminated if similar lessons are conducted to replace it, such as *Climate Change in My City* or *The Forecaster*.

Teacher Note

This activity can be completed independent of other activities in this packet, or it can be done as a follow-up to an activity on regional effects of climate change. If desired, some of the tasks from other activities could be incorporated into this activity.

Grade Level

9-12

Overview

Students interview older residents in the community about climate changes during their lifetimes and compare the results to a climate change index that is based on historical temperature measurements.

Objectives

- Students explore the factors that determine human perceptions of weather and climate.
- Students use interviews to develop a nonfiction story on effects of climate change in their region.
- Students examine the historical record of climate change in their area.
- Students discuss the implications of human perceptions of local climate change on global climate change policy.
- Students use active listening and speaking strategies for classroom presentations.
- Students use creative writing skills to develop a story.
- Students work with a group or partner to critique, edit, and analyze each other's stories.
- Students will publish work on a website.

Materials

- Computers with Internet access
- WWF Guide to writing a Climate Witness Story and Interview Form (included)
- WWF Consent Form: Parent and Interviewee (included)
- Sample Interview Questions (included)

Background:

Changes in temperature, precipitation, and extreme weather all affect ecosystems, which affect the people dependent on those natural resources for food production and sustainable development. In recent decades, western science has documented many observed changes in climate and the associated impacts. Climate Witness seeks to extend such assessments of climate change to include observations from local people directly affected by global and local climate change.

Climate Witness is WWF's initiative to document the experiences from people who are witnessing the impacts of climate change on their local environment. By demonstrating that climate change is already affecting the lives of a growing number of people today, we will bring a real-life perspective to what many view as a somewhat ambiguous and distant threat, which will help us to promote effective solutions to climate change.

The problem of climate change is urgently upon us. Putting a human face on climate change and disseminating information about the impacts of climate change on people's lives is an important part of informing the public. Documenting local observations will help raise the level of personal and political concern about climate change in order for action to be taken to keep the planet below a 2°C increase in global mean temperature as compared to preindustrial times.

Climate Witness Oral History Project

Procedure

Part 1: Regional Effects

1. After your class completes lessons regarding the science of climate change (*Our Unique Atmosphere* and/or *Emissions of Heat-trapping Gases)*, lead a class discussion on the effects of climate change on their area. Ask the class to characterize the climate of their region. They should consider such factors as the average temperature and precipitation, the magnitude of the temperature change from one season to another, the seasonal distribution of precipitation, the nature of the air masses that affect the climate, proximity to the ocean, large mountain ranges, or large lakes, etc. Then ask the students if they have noticed any changes in their normal weather patterns and what this means for the future of agriculture, recreation, and habitation in the region.

2. Ask the students to interview an older relative or neighbor in the region about the changes in climate they have witnessed over the year. Hand out the WWF Guide to Writing a Climate Witness Story and Interview Form, the Consent Form, and the Sample Interview Questions handout. Ask the students to find a person who will consent to the assignment, and have him/her (the interviewee) fill out both the forms. You, as the teacher, will sign as the WWF liaison on the consent form. Ask him/her to use the Sample Interview Questions to develop a story. If you would like to add or change any questions, please feel free to adapt them. Then, he/she should go over the Interview Form with the volunteer, and ask him/her to explain his/her responses that are not apparent to the student based on the interview just conducted. Give the students a suitable amount of time to create a Climate Witness Story with a 1.5 page limit typed.

Part 2: Climate Witness Stories

1. When the class reconvenes with their stories, divide the class into groups of three. Ask the students to read each other's stories and offer

Piaroa indians in a dug out canoe descending a river. The Piaroa Tribe lives in the Amazon rain forest of Venezuela

© Liza Schillo, 2007
Wild Crocus next to a street in Washington, DC

comments based on the writing guidelines, grammar, focus, appropriateness to regional changes, and writing. After the students have offered their comments, ask them to edit their own stories as appropriate.

Part 3: Optional - Classroom Presentations

1. Ask the students to present their stories to the class, either by reading or offering a summary. Offer time for discussion after the information is presented.

- Did anyone say anything that surprised others? Were all the stories similar?
- What does the material presented demonstrate about the student's knowledge of his/her regional environment? Are there scientific predictions not discussed in the stories? Is there anything people do not understand or believe about the regional effects of climate change?
- Was there a clear opinion on change in climate or did answers differ from one resident to another? If they differed, were there any clear patterns relating the answers to the length of time the resident lived in the area, lifestyle, occupation, or other factors?
- Finally, how does perception of climate change affect a person's position on climate change policy? For example, people who believe there has been a noticeable change in local climate might be more interested in supporting efforts to curtail greenhouse gas emissions.

2. Ask the students to review the interview form, and have them decide if they consent to publish their stories on a WWF Web page for others to read and benefit from their observations. Explain that the stories will be listed with their names and region and the names of their interviewees, but without contact information. Their stories can be removed from the Web site any time at their discretion.

3. Ask the students to submit their stories electronically on the WWF Climate Portal Web site. Encourage your students to read the stories of others posted on the Web site from different regions. For extra credit, have students write a short summary of another student's story and analyze based on climate data in the region over the years, found by Internet research.

4. Please collect consent forms and send to:

Kate Graves, Climate Change Team
World Wildlife Fund
1250 24th St., NW
Washington, DC 20037

National Standards Alignment

National Science Education Standards

Unifying Concepts and Processes (K-12): Consistency, change, and measure

Science as Inquiry, Content Standard (9-12): Abilities necessary to do scientific inquiry; Understandings about scientific inquiry

Science in Personal and Social Perspectives, Content Standard (9-12): Environmental quality; Science and technology in local, national, and global changes

Curriculum Standards for Social Studies

Strand 2: Time, Continuity, and Change

Strand 3: People, Places, and Environments

Strand 8: Science, Technology, and Society

Strand 9: Global Connections

National Geography Standards

Standard 4: Places and Regions. The physical and human characteristics of places.

Standard 6: Places and Regions. How culture and experience influence people's perceptions of places and regions.

Standard 15: Environment and Society. How physical systems affect human systems.

Standard 18: Uses of Geography. How to apply geography to interpret the present and plan for the future.

Technology Foundation Standards

Standard 1: Basic Operations and Concepts. Students are proficient in the use of technology.

Standard 3: Technology Productivity Tools. Students use technology tools to enhance learning, increase productivity, and promote creativity.

Standard 4: Technology Communications Tools (for extension activities). Students use telecommunications to collaborate, publish, and interact with peers, experts, and other audiences.

Environmental Education Guidelines for Learning (K-12)

Strand 1: Questioning and Analysis Skills

Strand 2: Knowledge of Environmental Processes and Systems

Strand 2.1: The Earth as a Physical System

Strand 2.4: Environment and Society

Strand 3: Skills for Understanding and Addressing Environmental Issues

Strand 3.1: Skills for Analyzing and Investigating Environmental Issues

Standards for the English Language Arts

Standard 2: Students read a wide range of literature from many periods in many genres to build an understanding of the many dimensions (e.g., philosophical, ethical, aesthetic) of human experience.

Standard 4: Students adjust their use of spoken, written, and visual language (e.g., conventions, style, vocabulary) to communicate effectively with a variety of audiences and for different purposes.

Standard 5: Students employ a wide range of strategies as they write and use different writing process elements appropriately to communicate with different audiences for a variety of purposes.

Standard 6: Students apply knowledge of language structure, language conventions (e.g., spelling and punctuation), media techniques, figurative language, and genre to create, critique, and discuss print and nonprint texts.

Standard 9: Students develop an understanding of and respect for diversity in language use, patterns, and dialects across cultures, ethnic groups, geographic regions, and social roles.

Standard 11: Students participate as knowledgeable, reflective, creative, and critical members of a variety of literacy communities.

Standard 12: Students use spoken, written, and visual language to accomplish their own purposes (e.g., for learning, enjoyment, persuasion, and the exchange of information.

WWF CLIMATE WITNESS FORM

Climate Witness gathers hundreds of stories from people around the world who can see real climate change. Have you seen things changing over time? Let us know !

Instructions

- *Please fill in your personal information in Section 1*
- *Please tick the boxes for climate changes or consequences in Section 2, 3, 4 or 5. You may not have observations for every section, but we ask you to tick* ***at least one box from Section 2 or 3****.*
- *Only tick boxes where you have personally observed an impact or consequence, not assumptions*
- *Write your witness story in your own words. Please use the guides to writing in Sections 6 and 7 of this form, they will make it task easier, and make it consistent with other stories*.
- Attach your story to the form and send to: **WWF International,** Climate Witness Program, GPO Box 528, SYDNEY NSW 2001. or Fax: +61 (0)2 9281 1060.

1.YOUR PERSONAL INFORMATION

Your full name

Village or Town

Your Postal Address

State/County/Province

Country

Telephone

Email

Date of Birth

Age last birthday

Profession

Location of Observations

Length of time of observations

☐ Are you in principle available to answer questions from journalists?

☐ Are you prepared to travel to your capital for Climate Witness event if the costs were reimbursed?

☐ Are you prepared to travel internationally for Climate Witness event if the costs were reimbursed?

☐ Are you interested in receiving notices about similar climate witness stories from around the world?

☐ Are you interested in receiving notices about other climate witness stories from your county?

☐ Are you interesting in receiving WWF's climate witness newsletter once every 2 months?

2. YOUR CLIMATE OBSERVATIONS

Instructions *Please tick the* changes *you have witnessed directly in your area:*

Changes in Temperature	***Increase***	***Decrease***
Number of hot days	☐	☐
Number of cold days	☐	☐
Sea water temperature	☐	☐

Changes in extreme weather		
Heat waves	☐	☐
Tropical/extreme storms	☐	☐
New storm types	☐	☐
Hurricanes	☐	☐

Changes in precipitation	***Increase***	***Decrease***
Rainfall	☐	☐
Snowfall	☐	☐

Changes in ocean and wind currents		
Altered currents/upwellings	☐	☐
Tropical cyclones	☐	☐
Driving rain		
Extreme hail	☐	☐
Monsoon	☐	☐

3. CONSEQUENCES OF CHANGES

Instructions *Please tick the* consequences *of any climate changes you have witnessed directly in your area:*

Marine or freshwater systems

- Coral Reefs ☐
  - *Bleaching* ☐
  - *Algae or seaweed growth* ☐
- Marine ☐
  - *Abundance of plankton* ☐
  - *Open sea seasonal patterns* ☐
  - *Open sea geographical patterns* ☐
  - *Rocky shore & intertidal communities* ☐
  - *Kelp forests and seaweed* ☐
  - *Invasive species, bacteria, micro-organisms* ☐
  - *Fish populations, recruitment* ☐
  - *Sea birds and marine animals* ☐
  - *Marine biodiversity* ☐
- Changes in marine fisheries ☐
- Changes in lakes ☐
  - *Productivity or abundance of species* ☐
  - *Community composition* ☐
  - *Algal community composition* ☐
  - *Fish migration* ☐
  - *Annual and seasonal cycles* ☐
  - *Changes in rivers* ☐
  - *Species abundance, distribution & migration* ☐

Coastal processes and zones

- Changes to coastal wetlands ☐
- Changes in storm surges, flood heights and ☐
- Coast land loss, damage or sea-level rise ☐

Human health

- Heat and cold health effects ☐
- Vector-bourne, rodent bourne diseases ☐
  - *Tick Vectors* ☐
  - *Lyme disease* ☐
  - *Malaria* ☐
  - *Dengue fever* ☐
  - *West Nile virus* ☐
  - *Leptospirosis* ☐
  - *Hantavirus pulmonary syndrome* ☐
  - *Schistosomes/ Bilharzia* ☐
- Emerging food and water-bourne disease ☐
  - *Salmonellosis* ☐
- Pollen-and dust –related ☐
- Health effects from wind, storm and floods ☐
- Health effects from drought, or famine ☐
- Food/water safety ☐
- Air quality and disease ☐
- Ultra violet radiation and health ☐

Terrestrial Systems

	Deserts	Grassland & Savannahs	Forests & Woodlands	Tundra & Arctic	Mountains
Changes in seasonal patterns	☐	☐	☐	☐	☐
Changes in species distribution and abundances	☐	☐	☐	☐	☐
Changes in species form and reproduction	☐	☐	☐	☐	☐
Species community changes	☐	☐	☐	☐	☐
Species evolutionary process	☐	☐	☐	☐	☐
Wildfire/bushfire	☐	☐	☐	☐	☐

Freshwater Systems

	River	Lake	Groundwater	Snowmelt draining	Temperature	Chemistry
Changes in surface of groundwater systems	☐	☐	☐	☐		
Floods	☐	☐				
Droughts	☐	☐				
Physical and chemical aspects of rivers	☐				☐	☐

Glaciers, ice or permafrost

	Increase	*Decrease*
Mountain glaciers	☐	☐
Ice caps/sheets/shelves	☐	☐
Snow cover	☐	☐
Frozen ground	☐	☐
Sea ice	☐	☐
Ocean freshening or circulation	☐	☐
Lake and river ice	☐	☐

Agriculture and Forestry

	Crop & livestock	*Forestry*
Changes in seasonal patterns	☐	☐
Changes in management practices	☐	☐
Changes to yield (*please specify*)	☐	☐
Pests and diseases (*please specify*)	☐	
Livestock	☐	

4. IMPACTS TO INDUSTRY SECTORS

Instructions *Please tick if you have witnessed any* effects to industry *in your area*

A Agriculture, forestry and fishing

- 01 Crop and animal production, hunting and related
  - 011 Growing of perennial crops ☐
  - 012 Growing of non-perennial crops ☐
  - 013 Plant propagation ☐
  - 014 Animal production ☐
  - 015 Mixed farming ☐
  - 016 Support activities for agriculture ☐
  - 017 Hunting, trapping and related activities ☐
- 02 Forestry and Logging
  - 021 Silviculture and other forestry ☐
  - 022 Logging ☐
  - 023 Gathering of non-forest products ☐
  - 024 Support services to forestry ☐
- 03 Fishing and aquaculture ☐

B Mining and quarrying ☐

C Manufacturing ☐

D Electricity, steam, gas & air-conditioning ☐

E Water supply, sewerage, waste management ☐

F Construction ☐

G Wholesale and retail trade, repair of motorbikes & cars ☐

H Transportation & storage ☐

I Accommodation and food service activities ☐

J Information and communication ☐

K Financial and insurance activities ☐

L Real estate activities ☐

M Professional, scientific & technical activities ☐

N Administrative support service activities, tourism ☐

O Public administration and defense ☐

P Education ☐

Q Human health and social work activities ☐

R Arts, entertainment and recreation, including sport ☐

S Other service activities ☐

T Activities of households as employers ☐

U Activities of extraterrestrial organizations and bodies ☐

5. PERSONAL IMPACTS

Instructions *Please tick if you have experienced any* personal effects *due to climate changes*

Livelihood ☐

Personal Property ☐

Business profits ☐

Occupational health and safety ☐

Insurance premiums ☐

Social issues ☐

Security ☐

Safety ☐

Other (*please specify)* ☐

_____

6. GUIDE TO WRITING YOUR CLIMATE WITNESS STORY

What do we do with your story?

- We publish your story on the website to share it with people all around the world.
- We will also gather all the stories and pass them on to our climate scientists.
- The information in your stories will create a large database of observations adding to our knowledge of climate change.

WWF is interested in:

- How fast the climate is changing
- What the effects will be to fragile ecosystems and communities
- Your views on addressing the problem of climate change

General tips on writing

- We can only accept stories in English at this stage of the program.
- **Be specific.** It is better to say “the rainy season starts in September now, instead of October” rather than “it rains earlier than it used to”.
- **Try not to use jargon words.** “Jargon” means words or phrases that are only known by people in your profession or location.
- **Keep the sentences simple and clear.** Remember that readers may not speak English as a first language.

7. CONTENT OF YOUR STORY

Please use this guide to write your climate witness story.

1. **Start with a paragraph about yourself.** The story should start with your name, town or city, state or province and country. Please include your profession or recreation.

   "My name is Giuseppe Miranti. I am 26 years old and I live in Piacenza, a province in the North of Italy. As the owner of a bio-agricultural company – Aziende Agricole Miranti – I produce fruit and vegetables and do organic cereal and livestock farming. I'm also a bee-keeper." – Guiseppe Miranti, Italy

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2. **Tell us how long you have lived or worked in the area.** The length of time observing changes is an important part of climate science.

   I am 62 years old and have lived in Kunduchi for 42 years. - Rajabu Mohammed Soselo, Tanzania

   I've been working in the fields since the age of 18 - José Luis Oliveros Zafra, Spain

   Our family has lived here in Togoru for as long as anyone can remember – Kini Dunn, Fiji.

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3. **Tell us how you observe or experience climate.** If some of the information comes from other people, then mention that in the story too.

   I have kept records of when apple trees blossom. – Johnothan Banks, Australia

   By working with the women in my community I have heard many stories about changes in our local environment in the past 20-30 years - Nelly Damaris Chepkoskei, Kenya

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4. **Tell us the changes you are witnessing.** This section should just be about what is happening in your local area. It might be changes in the seasons, the rainfall, the tides, or something else. It is important to describe only the changes – keep them separate to your description of what the changes mean for your community (see next point).

   Many of the people in my village have experienced the ice fields melting that used to last all summer, and there is no more old ice left here. – Vladilen Kavry, Russia

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5. **Tell us the *consequence* of the climate changes.** "Consequences" could be problems for wildlife or farm animals, damage to crops, to buildings near the sea, or to people. If they affect you personally, your neighbours or your livelihood, please explain how in this part of the story.

   The bears depend on sea ice to get to their prey, mostly seals and without sea ice their hunting ground is shrinking. The polar bears cause problems because they come looking for food in the village and often attack the sled dogs. – Vladilen Kavry, Russia

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6. **Tell us what solutions you want to see from local or national leaders, or what you plan to do locally.** Climate witness stories can draw attention to the urgency of the problem and the need.

   [Climate change] needs to become a greater priority for everyone - politicians, business and people like you and me. Please listen to me and WWF and take action to ensure that CO2 emissions are cut across Europe. - Cassian Garbett, England.

WWF Climate Witness Programme Consent Form

I, …… of ……..…… ……..…. on this date…… hereby give consent to WWF International to use my Climate Witness testimonial and photos attached to this form for any purposes they see fit in raising awareness of the dangerous effects of climate change around the world and promoting effective solutions to the climate problem.

I realize that any form of active participation in the Climate Witness programme is voluntary. I also realize that I may be called upon to present my story in person for a range of media opportunities at some point in the future or for as long as the Climate Witness Programme is active. This may require me to travel either locally or to international events and where ever possible WWF agrees that my travel costs will be covered.

I am aware that I am not to use the WWF or Climate Witness Programme logos in any instance without the consent of the WWF liaison person who has been appointed to me. I have noted the specific solutions to climate change which my national WWF office is promoting and I broadly agree with these. If I would like to promote other solutions to climate change publicly I will only do so after consulting with my Climate Witness person.

I have been informed that all my personal information and contact details will remain confidential at all times unless the use of them is authorized by me and the WWF liaison person appointed to me as a way of maintaining privacy.

I understand that the testimonial prepared and associated photos will be approved and chosen by me/us before anything is used in any format for publication.

This consent form has be signed by Climate Witness

Name ……..

Signature ……

Date ……

And witnessed by WWF Liaison Person

Name ……..

Signature ……

Date ……

Sample Interview Questions

1. How long have you lived in the area?

2. What is your occupation? Has your occupation changed?

3. How much time do you spend outdoors now? Did you spend more/less time outdoors in the past?

4. How much would you say your life today is affected by climate? *Significantly/Somewhat/Not at all*

5. How much was your life in the past affected by climate? *Significantly/Somewhat/Not at all*

6. How often do you follow weather forecasts?

7. Overall, would you say that climate has changed significantly during your lifetime? If so, how has it changed?

8. **How would you respond to the following statements?**

Compared to the past, today's summer temperatures are
Much hotter *somewhat hotter* *same* *somewhat cooler* *much cooler* *not sure*

Compared to the past, today's winter temperatures are
Much colder *somewhat colder* *same* *somewhat warmer* *much warmer* *not sure*

Compared to the past, the number of unusually hot days now is
Much more *somewhat more* *same* *somewhat fewer* *fewer* *not sure*

Compared to the past, the number of unusually cold days now is
Much more *somewhat more* *same* *somewhat fewer* *fewer* *not sure*

Compared to the past, our climate today is
Much wetter *somewhat wetter* *same* *somewhat drier* *much drier* *not sure*

Compared to the past, the first frost now occurs
Much earlier *somewhat earlier* *same time* *somewhat later* *much later* *not sure*

Compared to the past, bird migration in the spring now occurs
Much earlier *somewhat earlier* *same time* *somewhat later* *much later* *not sure*

Compared to the past, ice breakup in spring now occurs
Much earlier *somewhat earlier* *same time* *somewhat later* *much later* *not sure*

We have more heavy downpours now than in the past
Strongly agree *Agree* *Disagree* *Strongly disagree* *not sure*

We have more droughts now than in the past
Strongly agree *Agree* *Disagree* *Strongly disagree* *not sure*

We have more snow now compared to the past
Strongly agree Agree Disagree Strongly disagree not sure

9. What do you believe to be the consequences of these changes?
   What will happen in your area if theses changes continue?

10. What are the options to prevent further changes?

11. What role do you believe the government should play with this problem? Local? Federal?

12. What will you do in your own community?

Permission Form for Participants in WWF's "Climate Witness Oral History Project"

Thank you for submitting your work to WWF's Climate Witness Oral History Project. By choosing to submit your work -- which could be text, a photograph, or any other work of authorship – you represent that your submission is your original work and that you have the right to submit it as part of this project. You give WWF permission, perpetually and throughout the world, without compensation or credit, to publish, copy, distribute, display, or otherwise use your work for non-commercial purposes, and to give others permission to use it for non-commercial purposes. You also give WWF permission to edit or modify your submission, and to use your name, likeness, and city and state in connection with it and with this project. While these rights do not obligate WWF to use your submission, we do thank you very much for your participation.

All who submit their work for inclusion in the project must sign.

Agreed:

Signature: _____ Print Name: _____

Address: _____ Telephone No.: _____

_____ Date: _____

If the above individual is not yet 18 years old, the following statement must be signed:

I am the parent/legal guardian of the above-named child/minor and as such am fully authorized to enter into this agreement on his/her behalf.

.

Child's name: _____ Printed Name: _____

Parent's signature: _____ Telephone No.: _____

Address: _____ Date: _____

****Please return to Teacher****