



Connecting Cultures, Exploring Science: Road to Doha Student Workbook 2013 - 2014

Name: _____

School: _____

Partner School: _____



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Road to Doha: Program Overview

- **Welcome to Road to Doha: Challenge Letter**
- **Program Introduction**
- **Module Overview**
- **Scope and Sequence**

Welcome to Road to Doha: Challenge Letter

WHO ARE GLOBAL NOMADS?

Global Nomads fundamentally believe that all people, in all countries, from all cultures, are good. It's the misconceptions we're all raised with, taught or learned, that blind us to be otherwise. **Global Nomads** seek out these misconceptions and discuss them openly, honestly, and more importantly, face-to-face. **Global Nomads** are citizens of the world.

Calling All Youth:

Since 1998, Global Nomads Group has been connecting young people like you with their peers worldwide. **Global Nomads** – young people who embrace cross-cultural dialogue and celebrate both similarity and difference – are positively influencing their communities in over 50 countries, across all seven continents. Today, we ask you to join them as part of the Connecting Cultures, Exploring Science: *Road to Doha (R2D)* program.

As a **Global Nomad** in *R2D*, we challenge you to bring global voices into your local conversations. By connecting and collaborating with peers in North America, and Qatar we challenge you to answer: **“How do we, as youth, impact climate change in our communities?”**

As a **Global Nomad**, you will:

- **Collaborate** with your peers to identify an issue that you want to **change** in your community.
- Use arts and media to **create** a real-world solution to this issue.
- **Share** the project locally and globally.

By taking action, you can become a Global Nomad, a citizen of the world.

Are you ready for the challenge? Through discussion with your peers, you will identify an environmental issue that impacts you, as a young person, in your local or global community and that you want to positively influence. Together with your peers, you will investigate, analyze, and learn more about this issue in order to develop a project that implements a real-world solution in your local or global community.

Throughout the program, you'll use the following project documents to guide your progress:

- **Four Milestones**, or steps, will help you plan and implement your project. Curriculum activities and a **Project Guide** will lead you through completion of each milestone.
- The **Criteria Wheel** will guide you in making sure your project includes all of the elements of a successful and collaborative effort with your peers!
- In the **Project Format Options** guide, we've outlined **Project Types** across three themes: **Awareness, Advocacy, and Action**. Determine what you and your peers would like to accomplish through this project, and then brainstorm which format option will help you achieve this goal best.
- To streamline collaboration, review the **Project Team Roles** and make sure that everyone in your group has at least one role and responsibility for the project.

Be daring and creative, and don't be afraid to take risks. This is your opportunity to make a difference in the world in which you live. This is your opportunity to become a **Global Nomad**.

- **Global Nomads Group Team**

Program Introduction

Connecting Cultures, Exploring Science: Road to Doha (R2D) is a yearlong science-based virtual youth exchange program with high school students in North America and Qatar. In this program, we will be asking ourselves the Driving Question **“How do we, as youth, impact climate change in our communities?”** You and your classmates will be paired with another group in Qatar/ North America.

In this program you will engage in a number of activities that will prepare you to connect with partners through an online platform (C2C) and in interactive videoconferences (IVCs). Before each IVC your class will do at least one science based activity to give you greater insight into the science and politics around climate change. These activities will then be the basis for discussion during the IVC. During IVCs you will also have the opportunity to discuss other topics such as current events and sharing a “60-Second Showcase” of a talent or hobby. Last, but not least, you will be taking on the “Global Nomad” challenge! You and your partner group will create a collaborative project that addresses a relevant topic of your choosing, and which demonstrates how active global citizens can promote change in their communities – locally, nationally and globally!

Program Components: Details

Curriculum

Each of the five curriculum modules is divided into three steps. Here’s an overview of each step of the LEARN – ACT – REFLECT model!

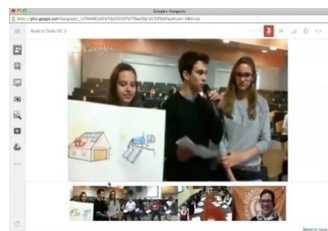
“SW” refers to pages of the Student Workbook where you can find worksheets and other resources.

Unit Overview	
LEARN	<ul style="list-style-type: none">• Dive into the topic and gain background information and skills.• Apply skills and knowledge through a short activity to share with program peers in an IVC.
ACT	<ul style="list-style-type: none">• Use knowledge and skills gained in step 1 to engage in an action-oriented collaborative project. This project will be showcased in an IVC with your peers.• Prepare for the IVC with an agenda.
REFLECT	<ul style="list-style-type: none">• Debrief and reflect on IVC dialogue.• Continue conversations through the online platform.

Interactive Videoconferences (IVCs)

Each curriculum module includes an IVC between partner schools. Because of the large time difference between partner schools (7-7 hours!) IVCs will most often occur before school in North America and after school in Qatar. During each IVC you will:

- Engage in live dialogue with your peers on the module topic;
- Share work from the module’s activity;
- Collaborate and prepare for Collaborative Projects.

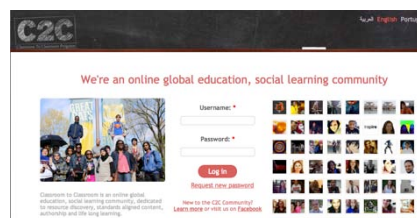


Connecting Cultures, Exploring Science: Road to Doha Program Overview

Online Platform

QFI's Classroom to Classroom (c2c) platform, a moderated, multi-lingual (Arabic, English, Portuguese) social networking site, will be used to post and share assignments from the *Connecting Cultures, Exploring Science* curricula. Assignments posted on this site will serve as the basis of the IVC dialogue. This space also allows participants to continue dialogue

outside of scheduled IVCs. This site is private and monitored GNG and QFI staff. Once you receive a username and password from your teacher, you can connect by logging in at <http://www.c2c.qfi.org>.



Classroom to Classroom (C2C)

by

Student-led Webcasts

This program will feature **three student-led webcasts**. A Global Nomads Group webcast is a sixty-minute live video broadcast event streamed over the Internet that could be hosted at your school (talk to your teacher about applying!). The event includes a panel of guest speakers who provide multiple perspectives on the selected environmental topic and a live chat-room where viewers (you) can ask questions to the panelists in real-time. On C2C, YOU will have the chance to vote on topics to be covered in the program and to contribute to videos that will be included in the webcast.



Coastal Conservation Webcast, March 2013

If your school is selected to host a webcast you will have the chance to work in various production roles, such as: conducting in-depth research, identifying field experts, creating a program script, moderating the guest panel, operating the camera, promoting the event, and engaging in social media.

QFI Official Blog

You are invited to submit blog posts to [QFI's Official Blog!](#) This blog is a platform to engage those who believe in the principle that education can transform for the better individual lives, communities, and nations. We are asking you to use knowledge gained from program activities and your personal interests to create one (or more than one) blog post relating to one of the following topics:

- Module 2: Water Use and Access,
- Module 3: Cause and Effect,
- Module 4: Society, Ethics and Politics
- Module 5: Collaborative Project Share

Blog entries will be accepted based on their content and should include: title, related image, the way the blog topic impacts your community and your partner school's community, a call to action for youth throughout the world to deal with the issue, your opinion and scientific fact relating to why the issue is important and how it is related to climate change. See more information in Appendix A.



Scope and Sequence

	MODULE 1: GLOBAL CLIMATE CHANGE	MODULE 2: WATER USE AND ACCESS	MODULE 3: CAUSE AND EFFECT	MODULE 4: SOCIETY, ETHICS & POLITICS	MODULE 5: ENVIRONMENTAL ACTION
Driving Question	<i>“How do we, as youth, impact climate change in our communities?”</i>				
Guiding Question	<i>What is global climate change? How does it impact your community and the world?</i>	<i>How is water used in your community? How is access to water affected by climate change?</i>	<i>How does pollution affect the availability of resources such as water, fertile soils and clean air?</i>	<i>How can societies create policies that deal with climate change today and tomorrow?</i>	<i>What role can you play in combating climate change?</i>
Enduring Understanding	Ecosystems are dynamic and subject to change.	All water on Earth is constantly recycled, reunified and reused. All the water used by humans must come from this cycle.	Human activities have an impact on the environment, whether deliberately or inadvertently. Environmental change in one part of the world can impact seemingly distant places and systems.	Societies create policies that are best for their own water, food and energy security. The global climate is affected by national policies and practices relating to energy use, waste, manufacturing and population control.	As a global citizen, you can create change within your community and the world.
Timeframe	October/November 2013	November/December 2013	January/February 2014	February/March 2014	April 2014
Learn	Think, Pair, Share: Climate Change	Climate Change and the Water Cycle	Energy and Waste	Climate Change Challenges	Beyond Fossil Fuels
	Personal Ecological Footprint	Personal Water Use	Packaging, Processing and Pollution		
Act	Community Lens	Milestone 1: Project Launch	Milestone 2: Outline & Content	Climate Change Challenges	Beyond Fossil Fuels
	IVC 1	IVC 2	IVC 3	IVC 4	IVC 5
Reflect	<i>How do changes in one country affect the rest of the planet?</i>	<i>How does water scarcity and the implications of water use or overuse impact countries worldwide?</i>	<i>What are the major pollutants in your and your partner country? What actions can you take to limit these pollutants and their negative impacts?</i>	<i>How can international cooperation work to address climate change?</i>	<i>How do we, as youth, impact climate change in our communities?</i>

Interactive Videoconference Scheduling

Road to Doha has five interactive videoconferences, one for each module, and three back-up videoconferences which will only be used if something prevents the meeting during the original date. Use this space to record the dates/times of your interactive videoconferences!

SAMPLE

Day	Wednesday	Date	October 17, 2013
Tech Dial-in Time		7:30	AM EST
Conference Start Time		8:00	AM EST

INTERACTIVE VIDEOCONFERENCE #1: GLOBAL CLIMATE CHANGE

Day		Date	
Tech Dial-in Time		_____:	_____
Conference Start Time		_____:	_____

INTERACTIVE VIDEOCONFERENCE #2: WATER USE AND ACCESS

Day		Date	
Tech Dial-in Time		_____:	_____
Conference Start Time		_____:	_____

INTERACTIVE VIDEOCONFERENCE #3: CAUSE AND EFFECT

Day		Date	
Tech Dial-in Time		_____:	_____
Conference Start Time		_____:	_____

INTERACTIVE VIDEOCONFERENCE #4: SOCIETY, ETHICS AND POLITICS

Day		Date	
Tech Dial-in Time		_____:	_____
Conference Start Time		_____:	_____

INTERACTIVE VIDEOCONFERENCE #5: ENVIRONMENTAL ETHICS

Day		Date	
Tech Dial-in Time		_____:	_____
Conference Start Time		_____:	_____

INTERACTIVE VIDEOCONFERENCE BACKUP A

Day		Date	
Tech Dial-in Time		_____:	_____
Conference Start Time		_____:	_____

INTERACTIVE VIDEOCONFERENCE BACKUP B

Day		Date	
Tech Dial-in Time		_____:	_____
Conference Start Time		_____:	_____

INTERACTIVE VIDEOCONFERENCE BACKUP C

Day		Date	
Tech Dial-in Time		_____:	_____
Conference Start Time		_____:	_____

Collaborative Project

- Collaborative Project Introduction
- Criteria Wheel
- Project Format Options
- Project Team Roles
- Project Guide
- Feedback Guide

Collaborative Project Introduction

The **Challenge Letter** (SW p. 5), which appeared at the beginning of your Student Workbook, is calling on you to become a GLOBAL NOMAD through completion of a project with peers, addressing an issue relevant and meaningful to your local and global community.

The GNG collaborative project is a project based learning activity that will help you take on this challenge. You will work together with your peers to develop solutions to real-world problems. With your partner school, you will collaborate to define a challenge in your local or global community and develop a project that addresses this issue by promoting positive change and community engagement.

Collaboration is defined as two or more people working together towards a common goal. Collaboration on projects (with peers in class and/or virtually, locally and/or globally) should take place in **at least** one of the following ways:

- Share feedback and reflections on projects
- Share resources for projects
- Co-construct one project with peers

Why am I doing this project?

The purpose of the collaborative project is to become a GLOBAL NOMAD, a citizen of the world, through using cross-cultural dialogue, media and technology to learn more about issues or needs in your local and global community, and to problem-solve to address these issues. The goal of this project is to answer R2D's driving question, and to engage local and global communities by sharing your knowledge and projects with wider audiences.

A **driving question (DQ)** provides the purpose for the project and guides its creation. **The Collaborative Project should answer the DQ.**

How will my peers and I complete this project?

The documents below¹ will support you and your peers in design, planning, and completion of the collaborative project and should be referred to throughout the project.

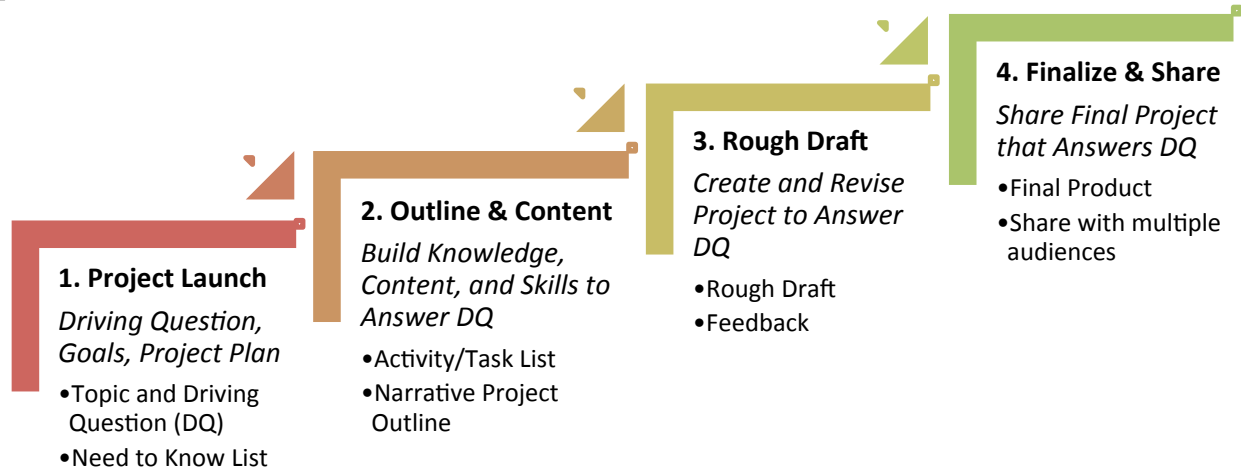
Criteria Wheel	p. 12
Project Format Options	p. 13
Project Team Roles	p. 14
Project Guide	p. 15 – 16
Feedback Guide	p. 17



The **Online Platform** will serve as the space for project communication, including sharing of feedback, ideas, and resources, between you and your partner school. As each milestone is completed, post work to the corresponding section of the online platform for feedback from peers. Once projects are complete, share these with peers on the online platform.

¹ The framing and supporting documents presented in this Collaborative Project Module were based on or adapted from resources of the 2013 Buck Institute of Education, *PBL 101 Workbook*

Four Milestones, or accomplishments, outline the step-by-step process for project completion. An overview of each milestone appears in the chart below and in each curricula unit. As you complete each milestone, return to the **Project Guide** (SW p. 16-17) to fill in or update information. A key component of each milestone is giving and receiving feedback from your peers. Be sure to do this before advancing to the next milestone!



The **Feedback Guide** (SW p. 16) will guide you in giving and receiving feedback from your peers. Revision should take place every time you receive feedback, adjusting and updating the project guide and project activities as needed.

Revision is when one changes or alters something in light of new ideas, suggestions, or evidence. In the collaborative project, you should revise the Project Guide and Activities **every time peer feedback is received.**

What are the criteria and guidelines for the project?

The collaborative project **Criteria Wheel** (SW p. 12) outlines six elements of a strong and successful project that can promote deep community impact. Project completion depends equally on all criteria elements, which work best in tandem to achieve your objectives and the goals of R2D.

Criteria Wheel

The Criteria Wheel outlines six elements of a strong and successful project.



Mobilize	<ul style="list-style-type: none"> Project answers the program's driving question. Project positively engages youth and communities, within and beyond GNG programs and community, in an active way.
Investigate & Analyze	<ul style="list-style-type: none"> Topic is relevant to your local and/or global community. Inquiry deepens your understandings of people, places, and relevant issues worldwide.
Communicate	<ul style="list-style-type: none"> Communication among peers involved in the project occurs throughout the project and in a timely fashion.
Collaborate	<ul style="list-style-type: none"> Collaboration with peers (in class, nationally, or internationally) takes place in at least one of the following ways: <ul style="list-style-type: none"> Share feedback and reflection on projects Share resources for one another's projects Co-construct one project with peers.
Document	<ul style="list-style-type: none"> Project creation and implementation is visually documented by students, for sharing with a wider audience. This could include picture, video, or written text (online or print).
Share	<ul style="list-style-type: none"> Project is shared with other GNG program peers. Project is shared with at least one additional group outside of GNG that is actively impacted by or involved in the project topic.

Project Format Options

The Project Format Options outline types of projects across three themes: **Awareness, Advocacy, and Action**. Determine what you and your peers would like to accomplish through this project, and then brainstorm which format option will help you achieve this goal best.

Goal <i>What do you want to accomplish?</i>	AWARENESS	ADVOCACY	ACTION
	Awareness projects inform others about an issue. They expand a community’s understanding of a problem, empowering people through knowledge.	Advocacy projects speak out or argue for a specific cause or policy that would address an issue. Advocates target decision-makers in a community who can help change the status quo.	Action projects develop and implement real-world solutions to community problems. They involve direct activities that support or counter a cause.
Sample Driving Questions	What impact does water scarcity have on our future?	How do we, as advocates, change city policies that would reduce water use?	How do we, as citizens, reduce our individual and school water usage?
Project Type	Public Service Announcement (PSA): <i>Widely-shared message that raises awareness or changes public attitude</i> Media Output: Visual arts, performing arts	Campaign: <i>A set of activities that promotes a specific cause, law, or change of behavior, often through media or politics</i> Media Output: Visual arts, performing arts, writing, event	
	Documentary*: <i>Media or art that objectively presents the stories of real-life people or events, often to raise awareness of a specific issue or move people to take action.</i> Media Output: Visual arts, performing arts, writing *Don’t forget! Documentaries are not limited to film. They can be radio podcasts, photo/art exhibits, interactive theatre, investigative journalism, and more!	Event: <i>In-person activity that produces a particular product or outcome (voter registration, fundraising)</i> Media Output: Event-based	
	Student Choice: <i>Design and implement your own type of project! Make sure it fits the criteria on pg. ##.</i> Media Output: All!		
Media Output	Visual Arts – Photography, drawing, painting, design, crafts, mural, film, posters Performing Arts – Radio, theatre, film, music, spoken word, dance Writing – Fiction/non-fiction blog, newsletter, journalism, letter-writing, creative writing, social media		

Project Team Roles

Team Roles will organize everyone's responsibilities around the project. Be sure every group member has at least one role!

Project Start

Project Completion and Sharing

Group Leader: You make sure all group members stay on task and meet deadlines! You are also responsible for communicating with your partner group and/or GNG staff, as needed. As the group leader, you should keep your peers focused and on schedule, making sure your project stays on topic, is action-oriented, and involves positive collaboration, feedback, and reflection with your partner group.

Research Committee: As part of this team, you conduct or lead background research on the chosen topic, which includes finding similar projects for inspiration and comparison. You should share what you learn with the Content Creation Committee to make sure the project is accurate, relevant to your chosen topic, and has the information necessary to make it successful.

Example: In a project to reduce your community's trash output, the research committee might research how much trash the community currently produces, where the trash goes, what current recycling options exist in the area, etc.

Logistics Committee: As part of this team, you make sure that the group has all necessary supplies and materials needed for project and your community event. You will also coordinate any travel needs, event planning and/or any venue reservations required.

Examples: Reserve venue for film screening/exhibition/community event; hire bus or translation services; recruit volunteer to assist with film editing, etc.

Content Creation Committee: As part of this team, you coordinate the creation of content of the project. This doesn't mean you have to create all of the content yourselves; similar to the Research Committee, other group members may be assigned roles in the creation process.

Examples: Storyboard, draft, and collect materials for project, which could be film, photos, posters, letter writing templates, mural, etc.

Documentation Committee: As part of this team, you visually document the project – in its creation and/or completion. You will make sure it can be easily shared with online and in person audiences

Examples: short film, time-lapse photography, etc.

Outreach Committee: As part of this team, you raise awareness about your project: engage in PR, social media, and or press media campaigns. You should also plan a community event, in coordination with the Logistics Committee.

Project Guide

As a **living document**, the **Project Guide** will lead the development of your project. Upon completion of each **milestone**, refer to this guide and fill in – **or revise** – the relevant information.

A. Project Overview

Refer to Project Format Options (SW p. 13) for additional guidance.

Topic: _____

Title: _____

Goal: ☐ Awareness ☐ Advocacy ☐ Action

Driving Question (DQ): _____

Objective: Based on your DQ and goal, what do you hope to achieve with your project?

Project Type: ☐ Campaign ☐ Documentary ☐ Event ☐ Public Service Announcement

Media Output: ☐ Visual Arts ☐ Performing Arts ☐ Writing ☐ Event-Based

Specific output (for example: radio piece, blog, photo story): _____

Calendar: If you are engaging in Interactive Videoconferences (IVCs), milestones should be completed and shared online one week before the related IVC, so you and your peers have time to give and receive feedback. You may have more than one milestone per IVC.

Milestone	IVC Number and Date <i>Ex: IVC 3, April 2</i>	Milestone Due Date <i>1 week before IVC (Ex: March 26)</i>
1 – Project Launch		
2 – Outline & Content		
3 – Rough Draft		
4 – Finalize & Share		

B. Target Audience

Who is the target audience? (ex: peers, teachers, community, family, country)

Why is this an important target audience?

How will we share our project with our audience? (ex: In local events? Online?)

C. Team Roles

Refer to Project Team Roles (SW p. 14) for additional guidance

Student Roles: *Record your group's roles here.*

Group Leader: _____

Research Committee: _____

Logistics Committee: _____

Content Committee: _____

Documentation Committee: _____

Outreach Committee: _____

Partner School Role (if applicable): *What do you need from your partner school?*

D. Activity and Materials Chart

Record the step-by-step process for completing your project in the chart below, taking into account all student roles. Specify the materials you need, deadline for each step (keep the milestone deadlines in mind!), and committee responsible for each activity.

Activity (Step)	Materials/Resources Needed	Deadline	School Responsible	Committee Responsible
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				



Feedback Guide²

Use the categories below to provide feedback on your group or partner's project or milestone. Remember to give constructive feedback that is respectful and includes specific ideas for growth, instead of general praise or criticism.

I hear/see...

What do you observe? How does the project make you feel or think? Does it motivate you to action?

I want more of...

What do you want to see expanded or enhanced? What worked well and compelled you to think or act a certain way?

I wonder...

What questions do you still have? What could strengthen the project? How could it more specifically answer the Driving Question?

² Adapted from: Buck Institute of Education. *PBL 101 Workbook*. California: Unicorn Printing Specialists, 2013.



Program Curriculum



Module 1: Global Climate Change

Background

The Earth's climate is naturally dynamic and varies. However, climate is dependent on interconnected micro and macro **ecosystems** and drastic change within an ecosystem can cause destabilization of that ecosystem. Change within an ecosystem can be brought on by something naturally occurring or can be the result of a human activity like development. We now understand that human activity can cause ecosystem imbalances and disturbances, which can lead to **global climate change**.

The **greenhouse effect**, naturally insulating our planet, has been intensified by our unsustainable usage of energy and our environment. Carbon, a **greenhouse gas**, cycles through the atmosphere, the hydrosphere (oceans, rivers), the biosphere (living organisms, including humans) and the geosphere (rocks, fossil fuels). However, carbon has increased dramatically in our atmosphere, increasing the rate of global climate change as well.

Human activities like our unsustainable use of energy, fossil fuels, increasing CO₂, deforestation, and growing populations are all factors behind global climate change. The consequences of global climate change includes more intensive storms, climate change related refugees and migrations, sea level rise, floods and food insecurity. These impacts of global climate change are not evenly spread out and the effects are based upon the local climate and topography of an area.

Module Objectives

- Learn about factors that cause global climate change;
- Understand the greenhouse effect and greenhouse gases;
- Take part in a cross-cultural collaboration, sharing thoughts regarding changes affecting their own communities and ecosystems and the world.

	Activity	Page
LEARN	Think, Pair, Share: Climate Change	20-22
	Personal Ecological Footprint (HW)	23-25
ACT	Community Lens	26-27
	Interactive Videoconference (IVC) #1	28-29
REFLECT	Reflect	30

**LEARN****Think, Pair, Share: Climate Change****OVERVIEW**

Follow your teacher's instructions to read one of the articles on the following pages.

INSTRUCTIONS

Use this space to record your notes on your assigned reading assignment:

In your notes make sure you answer

- *How do greenhouse gases impact climate change?*
- *How do carbon and temperature correlate?*
- *How do human activities impact climate change?*
- *What are these activities?*

Use this space to create two lists:

- List 1: What activities release greenhouse into the atmosphere?
- List 2: What actions can I personally take to limit emissions of greenhouse gases?

HEAT TRAPPING GASES IN THE ATMOSPHERE³⁴

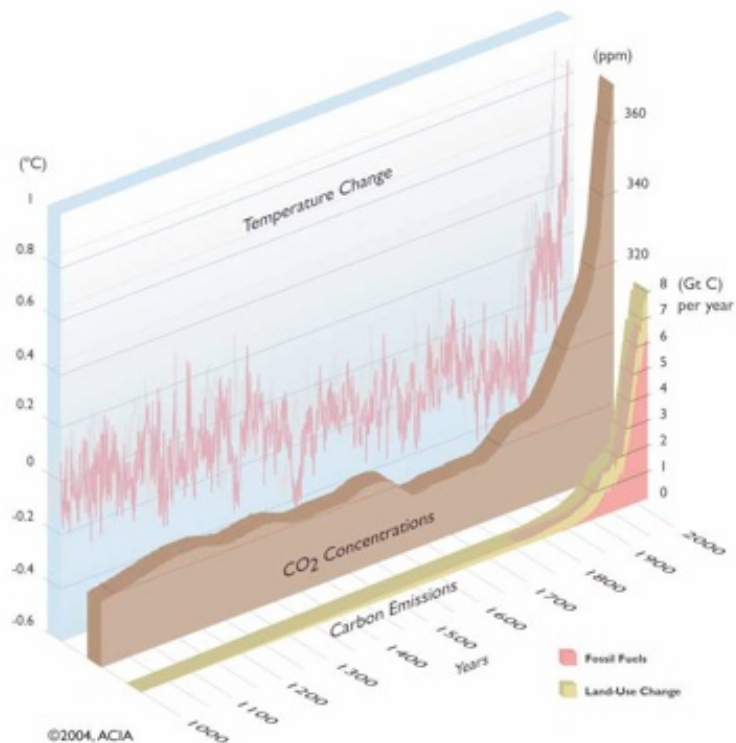
To study climate change, we need to understand certain gases in Earth's atmosphere that impact climate change. These gases act like a blanket in the atmosphere trapping heat and warming the planet. Scientists have called these gases "greenhouse" gases, because akin to an actual greenhouse made of glass and used to grow plants when it is too cold outside, these gases trap heat and help regulate the temperature on earth. When the amount of greenhouse gases in the atmosphere rises, temperatures on Earth rise as well, causing a change in the climate.

Some greenhouse gases occur naturally and some are man-made. Water vapor is a greenhouse gas that occurs naturally, as a result of Earth's water cycle. Other greenhouse gases such as chlorofluorocarbons (CFCs) are created entirely by humans. Many greenhouse gases that occur naturally are also released through human activities. For example, carbon dioxide (CO_2), nitrous oxide (N_2O) and methane (CH_4) are all cycled through Earth's atmosphere naturally. Human activities that burn fossil fuels such as oil or gas, increase the amounts of greenhouse gases in Earth's atmosphere, affecting the balance of natural cycles.

Some gases are more effective at trapping heat than others and stay in the atmosphere longer than others. The better a gas is at trapping heat and the longer it stays in the atmosphere, the more potential it has for aiding global warming.

Scientists who study climate change often focus on CO_2 because the amount in the atmosphere is much greater than any other greenhouse gas produced by human activities. CO_2 accounts for 74% of global greenhouse gas emissions from human activities and can remain in the atmosphere for up to 200 years.

The concentration of gases in the atmosphere is measured in parts per million (ppm), parts per billion (ppb) or parts per trillion (ppt). For reference, concentrations of carbon dioxide are currently about 388 ppm and concentrations of methane are over 1800 ppb.⁵



³ Adapted from: "Global Warming Lesson Plan 6-12 Lesson Plan," *Will Steger Foundation*, 2010, <http://willstegerfoundation.org/curricula-resources/grades-6-12>

⁴ Adapted from: "Climate Change: Connections and Solutions," *Facing the Future*, 2007, <https://www.facingthefuture.org/K12Curriculum/BuyCurriculum/tabid/550/CategoryID/16/List/1/Level/a/ProductID/15/Default.aspx-UiDQDmQ4W1M>

⁵ To see the most up to date concentrations of carbon dioxide www.co2now.org

THE GREENHOUSE EFFECT⁶⁷

You have most likely seen or heard the term climate change in many places- it seems as if everyone is talking about it. But what exactly is climate change, and how does it relate to our lives?

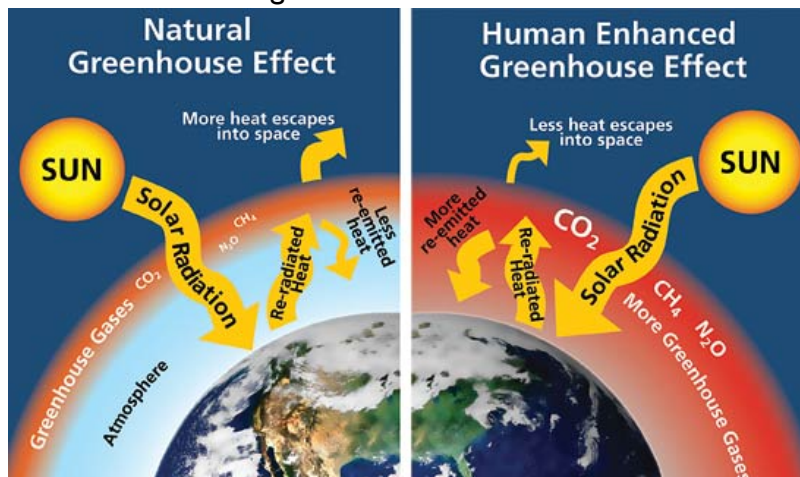
Climate change refers to any change in climate over time, whether caused by natural factors (such as volcanic eruptions) or human activities. Climate is average weather (including temperature, precipitation and wind) over a period of time (from months to millions of years). When we examine weather over many years, we can see climate patterns.

To study climate change, we need to understand Earth's greenhouse effect. The greenhouse effect is important because it makes conditions on Earth warm enough for many species to survive. Have you ever noticed that if, on a sunny day, a car has been parked in the sun with the windows rolled up the temperature is much higher inside of the car than it is outside? Or have you ever gone inside a greenhouse where plants are grown and noticed that the temperature is much higher inside than it is outside? If you have, then you've experienced a greenhouse effect.

The earth has gases within its atmosphere that, act like the layer of glass on a greenhouse and trap heat that would otherwise be lost to space. Energy, in the form of light and heat, comes from the sun. That energy is either reflected by the earth or absorbed and then re-radiated back towards space. When this out-going energy hits the layer of heat-trapping gases, some of it passes through back out into space, but some of it gets trapped and re-reflected back to earth.

The atmosphere and this heat-trapping effect make life as we know it possible on earth. Without the heat-trapping gases in our atmosphere, temperatures on earth would average around 0° F (-18° C) and the surface of the earth would be frozen. The climate change issue that we are facing now is a result of human enhanced greenhouse effect.

Image: The Greenhouse Effect



Natural Greenhouse Effect:

This shows the naturally occurring phenomenon in which gases in our atmosphere act like a blanket to retain some of earth's heat.

Human Enhanced Greenhouse Effect:

This shows how the increased greenhouse gases in our atmosphere as a result of human activities, leads to the increased retention of

⁶ Ibid.

⁷ Ibid.



Personal Ecological Footprint⁸

OVERVIEW

Complete the following chart based on a typical day in your home. Add the points in each category to obtain a subtotal, and transfer each subtotal to the summary chart. Use the grand total to calculate your ecological footprint.

Your ecological footprint is a measure of the amount of renewable and nonrenewable resources that are used by your activities. Ecologically productive land is required to support everything that you eat or use, and also to absorb the wastes you create.

Stuff	My Score	Transportation	My Score
1. All today's garbage could fit into a: _____ a. Shoebox (20) b. Small garbage can (60) c. Kitchen Garbage can (200) d. No garbage created today! (-50)		1. I travel to school by: _____ a. Foot or bike (0) b. Public transit/ school bus (30) c. Private vehicle; carpool (100) d. Private vehicle; 1 student (200)	
1. I recycle all paper, cans, glass and plastic: (-100) _____		2. Our vehicle's fuel efficiency is: _____ a. More than 30 mpg or 12.7 km/l (-50) b. 24-30 mpg or 10.2-12.7 km/l (50) c. 17-23 mpg or 7.2-9.8 km/l (100) d. Less than 17 mpg or 7.2 km/l (200)	
2. I reuse items rather than throw them out: (-20) _____		3. The time I spend in vehicles is: _____ a. No time (0) b. Less than half an hour (40) c. Half an hour to 1 hour (100) d. More than 1 hour (200)	
3. I repair items rather than throw them out: (-20) _____		4. How big is the car in which I travel: _____ a. No car (-20) b. Small (50) c. Medium (100) d. Large (200)	
5. I avoid disposable items as often as possible: a. Yes (-50) _____ b. No (60)		5. Number of cars in our driveway: _____ a. No car (-20) b. Less than 1 car per driver (0) c. One car per driver (50) d. More than 1 car per driver (100) e. More than 2 cars per driver (200)	
1. I use rechargeable batteries (-30): _____		6. Number of flights I take per year: _____ a. 0 (0) b. 1-2 (200) c. More than 2 (400)	
2. In my home we have X number of electronics? (computer, tv, stereo, dvd, Play Station, etc.) _____ a. 0-5 (25) b. 5-10 (75) c. 10-15 (100) d. More than 15 (200)			
8. How much equipment is needed for typical activities? _____ a. None (0) b. Very Little (20) c. Some (60) d. A lot (80)			
Stuff Subtotal: _____		Transportation Subtotal: _____	

⁸ Adapted from: "Ecological Footprint," *Institute for Sustainable Energy at Eastern Connecticut State University*, <http://www.easternct.edu/sustainenergy/education/documents/EcologicalFootprintLessonPlan.pdf>



Food	My Score	Shelter	My Score
1. I eat: _____		1. My house is: _____	
a. Meat more than once per day (600)		a. Single house on large lot (suburbs) (50)	
b. Meat once per day (400)		b. Single house on small lot (city) (0)	
c. Meat several times a week (300)		c. Townhouse/attached house (0)	
d. Vegetarian (no meat or fish) (200)		d. Apartment (-50)	
e. Vegan (no animal products including: meat, fish, eggs, dairy) (150)		2. Divide the number of rooms, no baths, by the number of people living at home: _____	
2. X of my food is grown locally or is organic: _____		a. 1 room per person or fewer (-50)	
a. All (0)		b. 1-2 rooms per person (0)	
b. Some (30)		c. 2-3 rooms per person (100)	
c. None (60)		d. More than 3 rooms per person (200)	
3. I compost my fruit/vegetable scraps _____		3. We own a second, or vacation home that is often empty: _____	
a. Yes (-20)		a. No (0)	
b. No (60)		b. We own/use it with others (200)	
4. X of my food is processed. _____		c. Yes (400)	
a. All (100)		Shelter Subtotal: _____	
b. Some (30)			
c. None (0)		Clothing	My Score
5. X of my food has packaging. _____		1. I change my outfit every day and put it in the laundry: (80) _____	
a. All (100)		2. I am wearing clothes that have been mended or fixed: (-20) _____	
b. Some (30)		3. One fourth of my clothes are purchased new each year: (200) _____	
c. None (0)		4. Most of my clothes are handmade or secondhand: (-20) _____	
6. I waste: _____		5. I give the local thrift store clothes that I no longer wear: _____	
a. None of my food (0)		6. I never wear X% of the clothes in my closet: _____	
b. One fourth of my food (25)		a. Less than 25% (25)	
c. One third of my food (50)		b. 50% (50)	
d. Half of my food (100)		c. 75% (75)	
Food Subtotal: _____		d. More than 75% (100)	
		7. I buy X new pairs of shoes every year: _____	
		a. (0)	
		b. 2-3 (20)	
		c. 4-6 (60)	
		d. 7 or more (90)	
		Clothing Subtotal: _____	



Energy Use	My Score	Water Use	My Score
1. In cold months, our house temperature is: _____ a. Under 15°C (59°F) (-20) b. 15 to 18°C (59 to 64°F) (50) c. 19 to 22°C (66-71°F) (100) d. 22°C (71°F) or more (150)		1. My shower (or bath) is: _____ a. No shower/no bath (0) b. Short shower 3-4 times a week (25) c. Short shower once a day (50) d. Long shower once a day (70) e. More than one shower per day (90)	
2. We dry clothes outdoors/on an indoor rack: _____ a. Always (-50) b. Sometimes (20) c. Never (50)		3. I flush the toilet: _____ a. Every time I use it (40) b. Sometimes (20)	
3. We use an energy-efficient refrigerator: _____ a. Yes (-50) b. No (50)		4. When I brush my teeth: _____ a. I turn the water off (10) b. I let the water run (40)	
4. We have a second refrigerator/freezer: _____ a. Yes (100) b. No (50)		5. We use water- saving toilets. (-20) _____ 6. We use low-flow showerheads. (-20) _____	
5. We use 5 or more compact fluorescent light bulbs: _____ a. Yes (-50) b. No (100)		Water Use Subtotal _____	
6. I turn off lights, computer and television when not in use: _____ a. Yes (0) b. No (50)		Summary Transfer your subtotals from each section and add them together. Divide the total by 300.	
7. To cool off, I use: _____ a. Air conditioning: Car (50) b. Air conditioning: Home (100) c. Electric Fan (-10) d. Nothing (-50)		Water Use _____ Food _____ Transportation _____ Shelter _____ Energy Use _____ Clothing _____ Stuff _____ <div style="text-align: right; margin-top: 10px;"> Total _____ / 300 = _____ Earths </div>	
8. My clothes washer is a: _____ a. Top load (100) b. Front Load (50) c. Laundromat (25)		If everyone lived like I do we would need _____ Earths to sustain the people of the world.	
Energy Use Subtotal: _____		Multiplying the number of Earths needed by 4.7 gives the number of acres used to support my lifestyle= _____ acres.	
Are you surprised by how many “Earths” or acres it would take to sustain you?		Worldwide there are 4.7 biologically productive acres available per person, not including other plants’ and animals’ needs.	
What activities surprised you as using a lot of resources?		Compare your total with the total from the average in your country and other countries at http://storymaps.esri.com//globalfootprint/	



ACT

Community Lens

OVERVIEW

Introduce yourself and your local environment to your peers through the creation of a short video or picture slideshow. The video/picture slideshow will be showcased during the IVC and will serve as a starting point for you to discuss local ecosystems, cultures, and your interests, as well as relevant community issues, with your peers. Hypothesize potential climate change impacts on your local environment. Use the “Impacts of Global Climate Change” on the following page to identify one or two potential impacts each picture may be vulnerable to as a result of global climate change.

Use the space below to record your notes:

EXPAND YOUR UNDERSTANDING

Interview Your Community

Identify one adult community member (parent, grandparent, teacher, etc.) to interview in order to better understand the changes in your environment over time. Ask the following questions:

- What was the local climate and ecosystem like when you were growing up?
- What were the living (animals, plants) and non-living features of your environment?
- How have these features changed over time?
- What environmental changes have you observed?

Share: Once complete, upload the video or picture slideshow to the online platform.

View: View your partner school’s video or picture slideshow, offer comments online, and compose 2-3 questions or comments to share during the IVC.

IMPACTS OF GLOBAL CLIMATE CHANGE ⁹
<p>Increasing Temperatures</p> <p>The global average temperature is predicted to rise between approximately 2 to 10° by 2100. However, these temperature increases will not occur equally, as the center of continents will be warmed more rapidly than coastal regions. Also, higher latitudes (the Arctic) are predicted to warm more rapidly than lower latitudes (the Tropics). Rising temperatures will impact both flora and fauna (plants and animals), and directly impact human life-styles.</p>
<p>Changes in Precipitation</p> <p>Precipitation patterns are projected to shift dramatically with some areas predicted to receive more and some less. Higher latitudes (closer to the poles) are predicted to see an increase in precipitation while lower latitudes (closer to the equator) are predicted to see less.</p> <p>Extreme precipitation events are predicted in the form of extreme droughts, floods, and erosion.</p>
<p>Increasing Evaporation</p> <p>Although in some areas there may be an increase in overall precipitation, the rate of evaporation will increase due to the rise in temperature. The areas most likely to be impacted are the interior of continents.</p>
<p>Warmer Oceans</p> <p>The ocean has already seen an increase in temperature and is predicted to continue to rise impacting both marine ecosystems and the likelihood of extreme hurricanes. Hurricanes receive their energy from heat energy that is stored in the ocean. As more heat energy accumulates in the oceans, hurricanes are predicted to become stronger and more intense.</p>
<p>Less Severe and Shorter Winters</p> <p>With increasing overall temperatures, most people will see shortened and less severe winters. In areas with traditionally cold winters, the hard frosts kill off insect pests and the accumulated snowmelts during the spring allow for a recharge of both surface and groundwater.</p> <p>Warmer winters will allow pests to survive and threaten local ecosystems. Less snow-pack that melts earlier would mean that water may be less available during the growing season (spring and summer) when plants need it most.</p>
<p>Disease and Human Health</p> <p>Disease carriers, like mosquitos and ticks, are predicted to expand their ranges as warmer winters will allow them to survive in once colder climates. The potential for waterborne diseases also increases as disease risk rises with decreased water and air quality.</p>
<p>Rising Sea Levels</p> <p>The sea level is predicted to rise anywhere from 4 inches (10 cm) to several yards/meters because of thermal ocean expansion and melting glaciers and icecaps. Low-lying coastal areas, deltas and small islands are at risk for flooding, erosion and in extreme cases evacuation.¹⁰</p>

⁹ Adapted from: "Global Warming Lesson Plan 6-12 Lesson Plan," Will Steger Foundation, 2010, <http://willstegerfoundation.org/curricula-resources/grades-6-12>



IVC #1 Preparation and Outline

OVERVIEW

The outline below will be used as a guide for discussion during IVC #1. Students review and complete this outline prior to IVC #1.

INTERACTIVE VIDEOCONFERENCE #1: Global Climate Change

Day	Date
Tech Dial-in Time	_____:
Conference Start Time	_____:

1. Introduction to *Road to Doha* (5 minutes)

GNG facilitator introduces all participating students to the *Road to Doha* program and the program's driving question: ***How do we, as youth, impact climate change in our communities?***. One representative from each school introduces him/herself and their classmates to their partner school.

- Name of Class Representative:
- Number of students participating in IVC #1:
- Local weather and temperature (in degrees Celsius and Fahrenheit):
- Interesting background about your school or community:

2. LEARN: Global Climate Change and Personal Ecological Footprint (20 minutes) –

Students share and compare their ecological footprint. One week prior to the IVC, they will post ecological footprint and view partner's results on C2C. They should prepare to present their findings and provide comments on peer results. <http://storymaps.esri.com/globalfootprint/>. Record three questions to ask your partner school regarding their Footprint.

Select four representatives. Three will explain their ecological footprint, and one will explain how they might reduce their ecological footprint.

- Name of Class Representative;
- Name of Class Representative;
- Name of Class Representative;
- Name of Class Representative;

After viewing the ecological footprint data posted by your partner school, record three questions or comments to ask during the IVC.

-
-
-



- 3. ACT: Community Lens (20 minutes)** - Each group introduces their school, local environment and potential climate change impacts to their peers through the presentation of their personal ecosystem pictures. One week before the IVC, post your work and view your partner's work on the online platform. Prepare to present your pictures and provide comments on the work of your peers.

Select three representatives to share their descriptive sentence about their personal ecosystem and climate change.
<ul style="list-style-type: none"> ➤ Name of Class Representative: ➤ Name of Class Representative: ➤ Name of Class Representative:
<p>After viewing pictures posted by your partner school, record 3 questions to ask during the IVC.</p> <ul style="list-style-type: none"> ➤ ➤ ➤

4. 60-Second Showcase! (10 minutes)

In each IVC, students will have the opportunity to share more about their personality through showcasing personal talents or interests for their peers. Students are encouraged to participate only once, until all classmates have shared with their peers.

60-Second Showcase! can include: playing a musical instrument, singing, dancing, reciting poetry, exhibiting art (paint, sculpture, etc.); showing any equipment, pictures or medals associated with a sports hobby; sharing any dress or dance associated with a custom or holiday; or explaining a family heirloom or other artifact of significance.

Encourage students to keep their presentations very visual (as non-verbal as possible). Presentation of the talent ***should not exceed 60 seconds***. Please be sure that students have all required materials to showcase their talent.

Select three student representatives to share a personal interest or talent for their peers in this IVC.

- Name of Representative:
- Name of Representative:
- Name of Representative:

5. Conclusion (5 minutes)

GNG facilitator thanks all students and teachers for participating and reminds participants to contribute to the online platform and prepare Module 2 activities for the upcoming IVC.



REFLECT

IVC #1 Debriefing Conversation

OVERVIEW

After each IVC, talk with your classmates and your teacher about your experience.

Use this space to record your reflections:

■ **CONNECT on the Online Platform to share your reflections with your peers and to prepare for the next IVC!**



Module 2: Water Use and Access

Background

The water cycle renews fresh water, one of the most important resources for life on earth. Water is needed for food production, economic development and human survival. Climate change is predicted to have a range of impacts on water resources. Variation in temperature and rainfall may affect water availability, increase the frequency and severity of floods and droughts, and disrupt ecosystems that maintain water quality.¹¹ By 2023, 1800 million people will be living in countries or regions with absolute water scarcity, and two-thirds of the world population could be under stress conditions.¹²

Throughout the world, underwater aquifers that take millennia to fill have been depleted by the rapid growth of megacities with surging populations. Many countries and regions are now satisfying the demand for water by withdrawing **groundwater** faster than it is replenished, thereby potentially depleting their supply for future generations. This type of mismanagement can lead to major disruptions in the natural **water cycle**.

Creating a sustainable future will depend on learning how to effectively manage water resources. We must understand the capacities and limitations of the natural water cycle, the consequences of overdrawing water resources and how to **conserve** water resources that are still available.

Module Objectives

- Gain a greater understanding of the water cycle;
- Describe water use and conservation in local communities;
- Use higher-order thinking skills to debate water conservation policies and solutions.
- Collaborate with peers within your class and in your partner school to complete Milestone One: Project Launch

	Activity	Page
LEARN	Understanding Climate Change and the Water Cycle	32
	Personal Water Use	33-35
ACT	Milestone 1: Project Launch	36-40
	Interactive Videoconference (IVC) #2	41-42
REFLECT	Debriefing Conversation	43

¹² Food and Agriculture Organization of the United Nations (FAO) and UN-Water

**LEARN****Understanding Climate Change and the Water Cycle¹³****OVERVIEW**

Climate change and human activities are affecting the way fresh water is distributed on Earth. In this lesson, examine the effects of climate change on the water cycle and what this might mean for our planet.

Use this space to record your notes:

¹³ Adapted from: Anytime Lesson Plan: “Earth’s Water: A Drop in Your Cup,” *California Academy of Sciences*, <http://www.calacademy.org/teachers/resources/lessons/earths-water-a-drop-in-your-cup/>



Personal Water Use

OVERVIEW

You will identify how climate change can affect water use and access using “**Projected climatic changes to the hydrologic cycle.**” You will then identify the way drinking water is accessed and used in your partner country.

INSTRUCTIONS

Use this space to record your notes:

- How can climate change affect the water cycle?
- How can climate change affect the amount of water people can access for drinking water?

After researching the ways that drinking water is accessed and used in your partner country, answer the following questions:

What are the water resources present?

How is fresh drinking water accessed?

Where is the drinking water from?

What processes make the water drinkable? (EX: Desalinization, UV rays)

Predict any changes to freshwater in your partner country in the year 2025.

Will there be enough fresh drinking water?

What steps might they take to protect and preserve their water resources?

2. **Share:** Students post their water usage data to the **virtual platform**.
3. **View:** Students review the data of three students from their partner school and comment on one of the following: How does their data compare? Explain why you think there are similarities and differences between your data and the other data?

CONNECT on the Online Platform to share your reflections with your peers and to prepare for the next IVC!

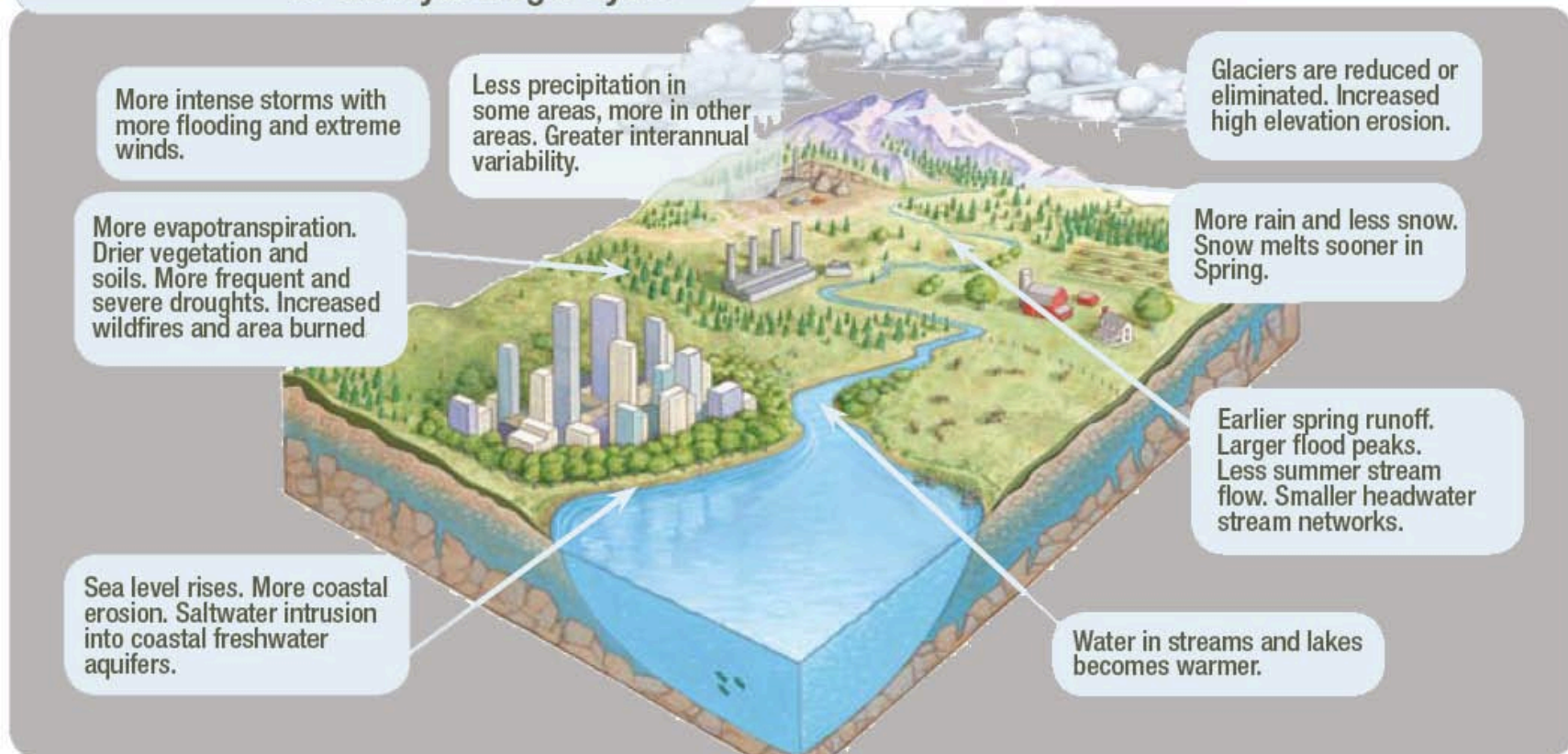


PERSONAL WATER USE CHART ¹⁴										
Record how much water you use everyday for a week. Break down your water use based on how many times each day you take part in the following activities.										
Activity	Sun	Mon	Tu	Wed	Th	Fri	Sat	Total Number of Times	Estimated Amount of Water Used	Total Weekly Use (L)
Washing face/hands									4 L	
Taking a Shower (standard shower head)									200 L	
Taking a shower (low flow shower head)									100 L	
Taking a Bath									150 L	
Brushing Teeth (water running)									8 L	
Brushing Teeth (Water turned off)									1 L	
Flushing the Toilet									20 L	
Shaving									8 L	
Getting a Drink									1 L	
Cooking a Meal									12 L	
Washing dishes by hand									40 L	
Running a Dishwasher									60 L	
Doing a Load of Laundry									120 L	
Watering Lawn									1200 L	
Washing Car									200 L	
Total Weekly Water Use by Students (liters)										

¹⁴ Adapted from: "Personal Water Use Chart," *Stevens Institute of Technology, Center for Improved Engineering and Science Education*, 2010, <http://www.ciese.org/media/live/curriculum/drainproj/personalwateruse.pdf>,



Projected climatic changes to the hydrologic cycle



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¹⁵ Adapted from: "In Brief: Climate Change and Water," *The United States Department of Agriculture*, 2008, [http://www.fs.fed.us/ccrc/files/CC and Water In Brief.pdf](http://www.fs.fed.us/ccrc/files/CC_and_Water_In_Brief.pdf)

**ACT****Milestone 1****Project Launch: Topic of Interest, Driving Question, and Need to Know List****OVERVIEW**

In this first milestone, you will determine your group's project topic and goals, develop a driving question, and create a "need to know" list to get your project started. Reflect on your first IVC, as well as local, national and international events, to draw inspiration for the environmental issue you would like your project to address.

In order to complete Milestone 1, you must return to the [Project Guide](#) (SW pgs. 16 & 17) and complete [Part A: Project Overview](#) and [Part B: Target Audience](#).

INSTRUCTIONS

1. **Introduce the Project:** Read the Challenge Letter (SW p. 4).
2. **Topic Selection Activity:** *What environmental issues in your local or global community do you want to positively influence with your project? Why are these important to you?*

Free Write/Draw on the Question above.



Identify Trends and Propose a Topic: Decide or vote on 1-2 topic(s) that you would like to explore further through the collaborative project.

Topic(s): _____

Why are these topics important to us? How do they connect to our lives and communities?

In the next IVC with your partner school, you will have the opportunity to discuss your topic(s) and receive feedback. You may decide to pursue the same topic together with your peers, or investigate different topics, with each other's support.

3. Identifying the Goal, Project Type and Media Output for the proposed project.

Using the **Project Format Options** guide (SW p. 13) brainstorm the following:

a. What **goal** do you want to accomplish with your project? (Check one box)

<input type="checkbox"/> Awareness	<input type="checkbox"/> Advocacy	<input type="checkbox"/> Action
Awareness projects inform others about an issue. They expand a community's understanding of a problem, empowering people through knowledge.	Advocacy projects speak out or argue for a specific cause or policy that would address an issue. Advocates target decision-makers in a community who can help change the status quo.	Action projects develop and implement real-world solutions to community problems. They involve direct activities that support or counter a cause.

b. What **project type** and **media output** do you think will help you achieve this project goal best?

Project Type: ☐ Campaign ☐ Documentary ☐ Event ☐ Public Service Announcement

Media Output: ☐ Visual Arts ☐ Performing Arts ☐ Writing ☐ Event-Based

Specific output (for example: radio piece, blog, photo story): _____



4. Crafting a **Driving Question (DQ)** for the proposed project.

What is a **Driving Question (DQ)**? A **driving question** provides the purpose for the project and guides its creation. **The Collaborative Project should answer the DQ.**

Characteristics of a Good DQ

- Provocative and challenging: It's about an important or urgent issue that must be addressed.
- Open-ended and not easily answered: It requires inquiry, research, and creativity.
- Relevant to your lives and community: It should inspire you to take action!

Format of a DQ: *The four-part structure will help students write a great driving question!*

DQ Part	1. Question word that frames the issue...	2. Person/entity that is the focus...	3. Action/challenge that the entity accomplishes...	4. Audience* for the action or challenge?
Ideas	How do/can, What, Should, Could	we as [youth, class, citizens], town, country, school	build..., create..., design..., solve..., make...	real world problem, for a group, for a public audience
Example	How do	we, as citizens,	reduce water usage	in our school?
	<i>How do we, as citizens, reduce water usage in our school?</i>			
Practice				

*The audience should be real people who you can reach, and who would benefit from the project.

Based on the guidelines above, write your Driving Question as a class: _____

5. **Need to Know List:** Now that you have a driving question, they must decide what knowledge and skills they already have, and what they need to know to complete this project.

Revisit and revise this list throughout the project, checking off the list as they answer “need to know” items during research.

6. **Project Guide:** Using the information recorded in Milestone 1 above, return to the Project Guide (pgs. 16 - 17) to complete Part A: Project Overview and Part B: Target Audience.

1. Project Launch
*Driving Question,
Goals, Project Plan*

CONGRATULATIONS!
✓ Milestone 1 is complete!



“Need to Know” Worksheet

What do you already know about the topic?	What do you still need to know to answer your driving question? <i>Try not to answer the questions you need to know right away! This process will be part of your research.</i>	Where will you get this knowledge? <i>Examples: resources, partners school, interviews, site visits</i>	What skills or equipment do you need to accomplish this?



IVC #2 Preparation and Outline

OVERVIEW

The outline below will be used as a guide for discussion during the second IVC. Review and complete this outline prior to IVC #2.

INTERACTIVE VIDEOCONFERENCE #2: WATER USE AND ACCESS

Day	Date
Tech Dial-in Time	____:____
Conference Start Time	____:____

IVC Outline

I. Introduction and Greetings (5 minutes)

GNG facilitator welcomes all participating students to the second IVC meeting. One representative from each school shares:

- Number of students participating in IVC #2:
- Something interesting that has happened in your community since the last IVC:
- A national/international event that has impacted you/your community since the last IVC:
- Local weather and temperature (in degrees Celsius and Fahrenheit):

II. LEARN: Personal Water Use Data (20 minutes)

Students share and compare their personal water use data. One week prior to the IVC, they will post data and view partner's data on C2C. One student from each class should lead a brief presentation on water use and access in their partner country.

Select one to two class representatives to share water use data

Select one to two class representatives to present on water use and access in the partner country.

Three questions or comments to ask during the IVC.

-
-
-



II. **ACT: Milestone 1: Collaborative Project Launch (30 minutes)**

In this second meeting, students will discuss progress towards completion of Milestone 1. Share your project topic and why this is significant and relevant to an issue in your life. Also share your driving question and key elements of your need to know list for feedback and comments from your partner school. During this conversation, decide whether you want to move forward with both projects, or if you want to choose/combine topics from each group to co-construct one project.

- Project topic and relevance:
- Driving Question:
- Need to Know:

-
- Feedback for peers:

III. **60-Second Showcase! (10 minutes)**

Select three student representatives to share a personal interest or talent for their peers. *Try to maintain Show and Tell as predominately visual or require little technical explanation, especially for IVCs using consecutive translation.*

- Name of Representative:
- Name of Representative:
- Name of Representative:

IV. **Conclusion (5 minutes)**

GNG facilitator thanks all students and teachers for participating and reminds participants to prepare the next module and collaborative project work for the upcoming IVC.



REFLECT

IVC #2 Debriefing Conversation

OVERVIEW

After each IVC, talk with your classmates and your teacher about your experience.

Record your reflections here.

CONNECT on the Online Platform to share your reflections with your peers and to prepare for the next IVC!

Module 3: Cause and Effect

Background

Our society demands “stuff”, things like plastic bags, **single-use** water bottles, and other everyday items. However, everything that involves metal and plastic uses **natural resources**, requiring energy to manufacture, and produces waste. Some products have a large impact on the environment, and some have less. Products that can be **recycled** have less of an impact on the environment and are considered environmentally friendly. Products that are not recycled or **reusable** are thrown into landfills or end up as pollutants in our natural environment.

Engineers consider the environmental impacts to our air, water and natural resources when creating a new product. To do this, engineers consider the entire **product life cycle** — from materials acquisition, materials processing, manufacturing, packaging, transportation, use and disposal of the product. These represent all the **life phases of a product**, similar to the life cycle of an animal found in nature. Looking at the life cycle of a product helps us understand the impact to Earth's natural resources and energy and, particularly, how we produce waste and what we can do to limit the **waste stream**.

Manufacturing and waste has a direct link to climate change, as all products require raw materials, production and transport, which all utilize energy and use nonrenewable resources like fossil fuels increasing the amount of greenhouse gases in our atmosphere. Our extreme usage of nonrenewable resources is one *cause* that leads to the *effect* of global climate change.

Module Objectives

- Gain a greater understanding of the impact human activities have on the environment
- Understand the source of pollution and how this pollution is dealt with in their own community.
- Collaborate with peers within your class and in your partner school to complete Milestone Two: Outline and Content

	Activity	Page
LEARN	Energy and Waste	44-45
	Packaging, Processing and Pollution	46-47
	Legacy of Litter	48-49
ACT	Milestone 2: Outline & Content	50-53
	Interactive Videoconference (IVC) #3	53-54
REFLECT	Debriefing Conversation	55



LEARN

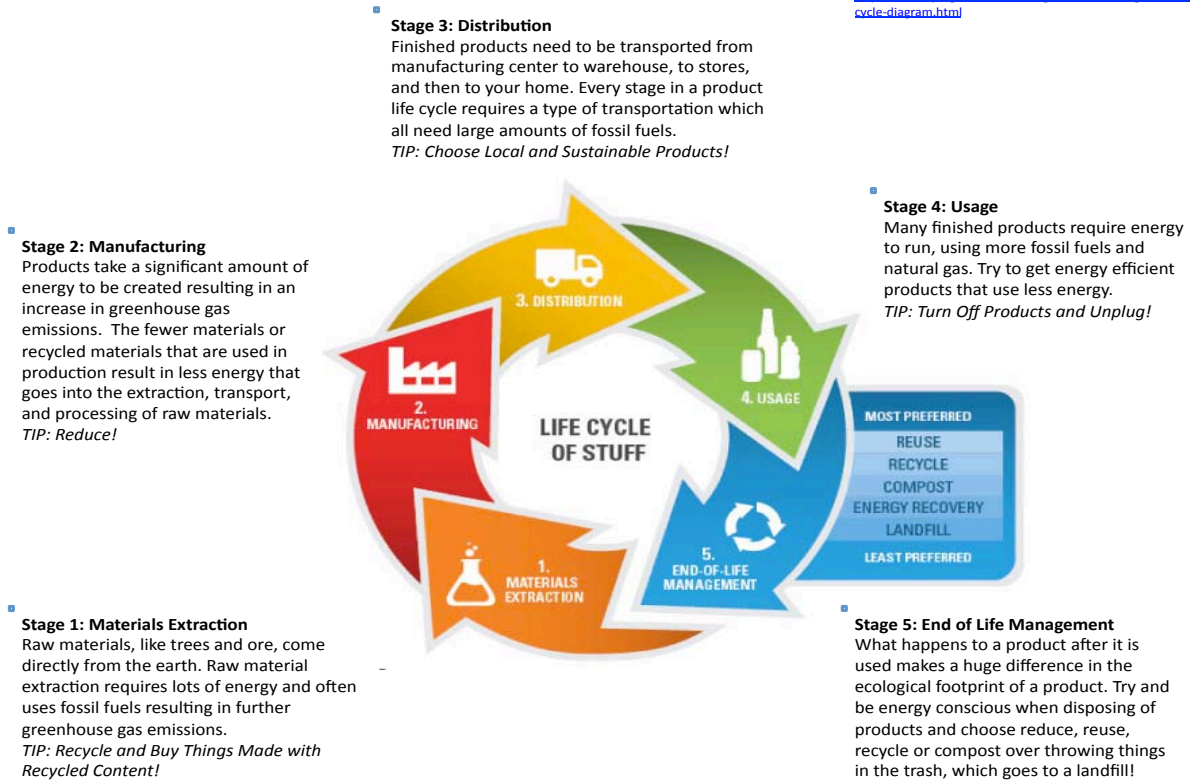
Energy and Waste

OVERVIEW

Identify types of litter and debris, and learn about the life cycle of products. You will also identify the environmental impacts of products they use every day.

Use the space below to record your notes:

Source: "Climate Change and the Life Cycle of Stuff"
<http://www.epa.gov/climatechange/climate-change-waste/life-cycle-diagram.html>



HOW LONG 'TIL IT'S GONE?

Estimated decomposition rates of common marine debris items

 AVERAGE LIFE EXPECTANCY



Packaging, Processing, and Pollution¹⁶
OVERVIEW

You will investigate the packaging of food items and evaluate if waste can be reduced.

Use the space below to record your notes:

WHAT'S IN YOUR LUNCH?

Tally the associated points for packaging.

The lunch with the lowest impact on the environment, the fewest amount of points, is a winner!

You accumulate points as follows:

- 0 points: No packaging!
- 1 point: One kind/layer of packaging
- 2 points: Two kinds/layers of packaging and so on... for each layer, or kind of packaging.

You subtract points as follows:

- -1 point: Recyclable packaging (If Applicable Use Recycling Guidelines for Your Area)
- -1 point: Reusable packaging (Create a list for the other uses)
- -1 point: If you can present a realistic alternative packaging techniques

¹⁶ Adapted from: "Bag It The Movie: What's in Your Lunch," *Bag It The Movie: Is Your Life Too Plastic?*, 2011, <http://www.bagitmovie.com/>

WHAT'S IN YOUR LUNCH?¹⁷

Tally the associated points for packaging. The lunch with the lowest impact on the environment, the fewest amount of points, is a winner! Tally the associated points for packaging.

Ex: Yogurt - +1 Plastic container, +1 Foil Top, -1 Recyclable, -1 Alternative Use; Apple – 0 No Packaging, -1 Compostable, 0 Not Reusable (Each food, depending on the amount of packaging or the re-usability of the packaging, is assigned points.)

FOOD	EX: YOGURT				
LAYERS OF (+1 point)	PLASTIC CONTAINER +1				
LAYER 2 (+1 point)	FOIL TOP +1				
LAYER 3 (+1 point)					
RECYCLABLE OR COMPOSTABLE (-1 point)	YES, IT HAS A 2 ON THE BOTTOM. -1				
REUSABLE? If so... Alternative Use Idea (-1 point)	YES, STORAGE FOR PONYTAIL ELASTICS. -1				
ALTERNATIVE WAY TO PACKAGE (-1 point)	BUY A LARGE YOGURT CONTAINER INSTEAD OF MANY SMALL ONES. I COULD MAKE MY OWN YOGURT -1				
TOTAL	-1				

¹⁷ Ibid.

A Legacy of Litter¹⁸**OVERVIEW**

Through a school site clean up you will collect and analyze debris data and compare it with you partner school. By the end of the exercise you should be able to explain how humans contribute to and help solve problems associated with waste.

INSTRUCTIONS

Use the space below to record your notes:

Share: Post the five most common items of debris found in your school site cleanup. Did this surprise you?

View: Compare and contrast the most common items of debris found in your and your partner school.

¹⁸ Adapted from: "Marine Debris: A Legacy of Litter," *National Geographic Education*, 2010, http://education.nationalgeographic.com/education/activity/marine-debris-a-legacy-of-litter/?ar_a=1

[illegible]

¹⁹ Ibid.



ACT

Milestone 2

Project Outline & Content

OVERVIEW

In this second collaborative project milestone, you will view a completed sample project in one of the three categories: awareness, advocacy, or action. Identify the steps in creating the sample project, and define what made it successful in achieving its goal. Then, model this process to outline the steps needed to complete your own project. Identify team roles and draft a narrative project outline.

To complete Milestone 2, you must fill-in Part C: Project Team Roles and Part D: Activity and Materials Chart of the Project Guide (pgs. 15 – 16).

INSTRUCTIONS

- 1. View Sample Project:** Based upon the intended goal of your own project, select one of the six projects below to view/read/observe:

Awareness	<i>OneLENS: Public Service Announcement</i> http://www.youtube.com/watch?v=Xn3aCGUG1qs&list=SP9807DC6DB80322F1	<i>YouthLINKS: Collaborative Mural</i> http://www.youtube.com/watch?v=mhPU1Mj1r1A&list=PLJo_lhg1LV0CuEU-sia2PqevX0F8ebsMO
Advocacy	<i>One Million Bones: Join the Movement!</i> http://www.youtube.com/watch?v=FFukmsLLG0k	<i>ETN: Student Interactive Theater</i> http://www.slideshare.net/mollyjlevine/etn-vocational-school-student-interactive-theater
Action	<i>Kids vs. Global Warming – Video and Blog</i> http://www.youtube.com/watch?v=PpMYkjyNJuw&feature=relmfu (Video) http://www.imatteryouth.org/home.html#lblog/ci6c (Blog)	<i>Shumate Middle School, STOMP Out Bullying Campaign:</i> http://www.thenewsherald.com/articles/2012/05/23/news/doc4fbc105f4d2ba723260472.txt?viewmode=fullstory

What did this project make you feel, think, or want to do as a result of viewing?

What elements of this project helped it reach its goal of awareness, advocacy or action?

What could have been strengthened to better reach the project goal?

In what ways do you think this project impacted its school and community?



- 2. Project Team Roles:** It took more than one person to complete the project you viewed. Indicate what roles they think individuals played in completing the project you viewed, referring to the Project Team Roles (p. 14) for guidance.

- ☐ Group Leader
- ☐ Research Committee
- ☐ Logistics Committee
- ☐ Content Committee
- ☐ Documentation Committee
- ☐ Outreach Committee

- 3. Activities and Materials:** What steps do you think the group took to complete the project you viewed? What materials or resources do you think the project team needed?

Record all of the steps, materials, resources, and roles students think were needed to make the sample project successful.

Activity (Step)	Materials/Resources Needed	Committee Responsible
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		



4. Now it's your turn! Identify Project Activities and Team Roles for Your Own Project:

Using your notes on what made the sample project successful, list the team roles, step-by-step process, and materials/resources needed to complete your own project.

Be as specific as possible in outlining steps. Don't forget to include deadlines with the IVC dates in mind!

Use the **Project Team Roles** (SW p. 15) to make sure **every person in the group has a role** in the collaborative project. If applicable, be sure you are prepared to discuss team roles with your partner school.

5. Project Guide: Using the information recorded in step 4 above, return to the Project Guide (pgs. 16 – 17) to record this information in Part C: Team Roles and Part D: Activity and Materials Chart.

6. Narrative Project Outline: Create a narrative outline for the project to help describe the story of your project. Project outlines could be in the form of:

- Image criteria/subject list for photo story
- Argument points for letter-writing campaign
- Storyboard for a short film
- Bulleted narrative of theatre/radio piece
- Interview questions for live debate

7. Presentation, Feedback, Revision: Present their narrative project outline to your peers for feedback, in class and during the IVC. Presentations should be 5-8 minutes in length and give peers a sense of the narrative, story, or argument that the project will tell. Use the **Feedback Guide** (p. 18) to give and receive feedback.

2. Outline & Content

*Build Knowledge,
Content, and Skills to
Answer DQ*

CONGRATULATIONS!

✓ Milestone 2 is complete!



IVC #3 Preparation and Outline

OVERVIEW

The outline below will be used as a guide for discussion during the third IVC.

INTERACTIVE VIDEOCONFERENCE #3: ENERGY AND WASTE

Day

Date

Tech Dial-in Time

____:____

Conference Start Time

____:____

IVC Outline

I. Introduction and Greetings (5 minutes)

GNG facilitator welcomes all participating students to the third IVC meeting. One representative from each school shares:

- Number of students participating in IVC #3:
- Something interesting that has happened in your community since the last IVC:
- Something you learned from the previous IVC:
- Local weather and temperature (in degrees Celsius and Fahrenheit):

II. Learn: A Legacy of Litter (20 minutes)

Using your experiences recording your lunch food packaging and the school cleanup activity, discuss what surprised you and comparing what you found that to your peers near and abroad.

What were the most common items found during the schoolyard cleanup?

What are alternatives to packaging and waste?

Select four representatives. Three will explain their ecological footprint, and one will explain how they might reduce their ecological footprint.

- Name of Class Representative; :
- Name of Class Representative;:
- Name of Class Representative:
- Name of Class Representative:

After viewing the ecological footprint data posted by your partner school, record three questions or comments to ask during the IVC.

-
-
-

III. Discussion on Flows, Cycles, and Pollution (20 Minutes)

What are ways to reduce waste and pollution?

Record three thoughtful and reflective questions.



-
-
-

IV. ACT: Milestone 2: Outline & Content (25 minutes)

In this third meeting, students will share their narrative project outlines for feedback from their peers. They also share one resource or current news article collected during the research phase. If applicable, students will also inform peers of what will be needed to help carry out the collaborative partnership of the project.

Use the **Feedback Guide** to guide your responses to your peers, and be sure to have someone recording notes to make revisions to your own work!

- Narrative Project Outline Presentation:
- Current Events on Collaborative Project Topic:

-
- Feedback Guide notes:
 - I hear / I see...
 - I want more of...
 - I wonder...

V. 60-Second Showcase! (10 minutes)

Select three representatives to share a personal interest or talent for their peers. Presentation of the talent should not exceed 60 seconds. *Try to maintain Show and Tell as predominately visual or require little technical explanation, especially for IVCs using continuous translation.*

- Name of Representative:
- Name of Representative:
- Name of Representative:

VI. Conclusion (5 minutes)

GNG facilitator thanks all students and teachers for participating and reminds participants to prepare for the next module and the collaborative project.



REFLECT

IVC #3 Debriefing Conversation

OVERVIEW

After each IVC, talk with your classmates and your teacher about your experience.

Use this space to record your reflections:

CONNECT on the Online Platform to share your reflections with your peers and to prepare for the next IVC!

Module 4: Society, Ethics & Politics

Background

Environmental public policy includes laws and agency-enforced regulations that deal with a society's interaction with the environment at all levels of government: local, state, national and international. The purpose of environmental public policy is to promote the common good, which can include the improvement of human welfare and the protection of the natural world. Human societies and their activities have the potential for doing great damage to the environment, which can have a direct impact on present and future human welfare. As societies develop, human activity assumes increasingly broader dimensions, with greater impacts on the whole society. The lack of environmental policy can result in costs to human welfare, which can be felt in the areas of health, economic productivity and the ongoing ability of the natural environment to support human life needs. Some policies are developed at local levels to solve local problems. However, many problems are broader in their scope and must be addressed at higher levels of government, including the international level.

The **United Nations Framework Convention on Climate Change** (UNFCCC) is an international treaty that addresses rising global temperatures and its affects on the earth's changing climate worldwide. The UNFCCC currently has 195 signatories²⁰, or parties that are in agreement with the terms and purpose of the treaty. The UNFCCC was adopted in 1992 and has been in effect since 1994. Every year a Conference of the Parties (COP) is held. During this meeting, signatories to the convention gather to discuss and assess the Convention's progress towards limiting and coping with climate change, and outline necessary steps for continued implementation of the Convention. The **Kyoto Protocol** is an international protocol of the UNFCCC that focuses specifically on reducing **greenhouse gas** emissions to combat climate change. The meeting of the parties to the Kyoto Protocol (CMP) is also held during the annual UNFCCC COP meeting. The 18th COP (COP 18/CMP 8) was held in Doha, Qatar in 2012.

Module Objectives

- Understand the efforts, challenges and outcomes of national/int'l environmental policies.
- Collaborate with peers within your class and in your partner school to complete Milestone Three: Rough Draft

	Activity	Page
LEARN	Climate Change Challenges	57-58
	International Community and Climate Change	59
ACT	Milestone 3: Rough Draft	60-62
	Interactive Videoconference (IVC) #4	62-63
REFLECT	Debriefing Conversation	64

²⁰ The UNFCCC has 195 total signatories, 194 states plus 1 regional organization

LEARN

Climate Change Challenges

OVERVIEW

You will explore ways that different countries and regions deal with climate change impacts and potential impacts.

INSTRUCTIONS

Use this space to record your notes:

GLOBAL RESOURCES ON CLIMATE CHANGE ²¹	
Potsdam Institute for Climate Impact Research: http://www.pik-potsdam.de/ International Research Institute for Climate and Society: http://irithree.ldeo.columbia.edu/	
United States Resources on Climate Change U.S. Global Change Research Program: http://www.globalchange.gov/ Energy Policy and Climate Change: http://www.usnews.com/topics/subjects/energy-policy-and-climate-change	Qatar Resources on Climate Change Qatar Foundation Telegraph – Qatar Tackles Climate Change: http://cdn.qf.com.qa/app/media/1204 Qatar could import fresh water from Chile: http://www.gulf-times.com/qatar/178/details/352150/chile-offers-to-export-fresh-water-to-qatar
Country Group #1 <i>United States, Canada</i> (Developed Country with Growing Emissions) <ul style="list-style-type: none"> - From 1992 to 2007, North American greenhouse gas emissions grew 20% - North America has one of the highest per-capita emissions in the world - Until 2007, the US was also the largest total emitter of greenhouse gasses (China has since surpassed the US) - The US is responsible for about 22% of the world's emissions of carbon dioxide - The US is one of the wealthiest countries in the world and has a highly diversified economy 	Country Group #2 <i>France, Germany, United Kingdom, Denmark</i> (Developed Countries that have already made substantive reductions in emissions) <ul style="list-style-type: none"> - These countries ratified the Kyoto Protocol and have been making reductions in greenhouse gas emissions. From 1990 to 2004 the countries achieved the following reductions (including land use changes and forestry): UK 58%, Denmark 22%, Germany 18%, Norway 18% - France closed it's last coal mine in 2004 and now gets 80% of energy from nuclear power - Some of the wealthiest countries in the world. - Historically responsible for significant amounts of greenhouse gas emissions.
Country Group #3 <i>Brazil, South Africa, Mexico</i> (Developing Economy Countries) <ul style="list-style-type: none"> - These countries signed the Kyoto Protocol, but were not assigned legally binding emissions targets. - Their emissions, both per capita (per person) and total, are substantially lower than the US. - As developing economy countries, they are responsible for fewer historical emissions. - Segments of populations are vulnerable based on poverty and lack of access to daily necessities. 	Country Group #4 <i>China, India</i> (Developing Economy Countries with rapidly growing emissions) <ul style="list-style-type: none"> - These countries signed the Kyoto protocol, but were not assigned legally binding emissions targets. - Their per-capita emissions are well below those of developed economic countries. - Their economies are growing rapidly and their greenhouse gas emissions are increasing rapidly as well.
Country Group #5 <i>Ecuador, Iran, Iraq, Qatar, Saudi Arabia</i> (Oil Producing Countries) <ul style="list-style-type: none"> - These countries signed the Kyoto Protocol, but as transitional economies, they were not subject to binding emission targets. - Compared to the US, the emissions of these countries are relatively small. - A large percentage of the wealth of these countries comes from oil production, processing, and export. 	Country Group #6

²¹ Adapted from: "Global Warming Lesson Plan 6-12 Lesson Plan," Will Steger Foundation, 2010, <http://willstegerfoundation.org/curricula-resources/grades-6-12>

International Community and Climate Change

OVERVIEW

You will identify environmental issues related to climate change and investigate related policy initiatives at the local, state, national and international level. You will choose a topic you find most important relating to climate change and write a position statement. The position should be based on personal opinion but supported with specific evidence and examples.

Record your notes below:

Crafting a Position Statement

How should decision makers approach the issue of climate change?

- **Keep it short:** Limit your letter to one page and one issue.
- **Identify the issue:** In the first paragraph state what issue you are writing about.
- **Focus on your main points.** Choose the three strongest points to support your argument and develop them strongly.
- **Make it personal.** State why the issue matters to you and how it affects you, your family, and your community.

Share: Post your position statement to the online platform.

View: View statements from your partner school and offer comments and feedback.

ACT

Milestone 3

Rough Draft

OVERVIEW

In this third collaborative project milestone, you will first update your Project Guide based on feedback from peers on the narrative outline. Then, you will gather content and create the first draft of your project, receive feedback from peers, and update and revise your project plan as needed.

INSTRUCTIONS

1. **Reflect and Revise:** Return to your Project Guide (SW p. 14-15) and “Need to Know List” (Milestone 1, SW p. 32) and update your “Activities and Materials Chart” (Part D) with feedback from your peers.

2. **Create Your Rough Draft:** Using the outline and updated “Activities and Materials Chart “ (Part D, Project Guide), as a foundation, continue gathering content and create a rough draft of the project.

3. **Presentation, Feedback, Revision:** Present your rough draft – and changes to the Project Guide – to peers in class and during the IVC. Presentations should be 5-8 minutes in length and give peers a nearly complete vision and understanding of how the project unfolds to achieve its goal. Use the **Feedback Guide** (SW p. 16) to give and receive feedback.

3. Rough Draft

*Create and Revise
Project to Answer
DQ*

CONGRATULATIONS!

✓ Milestone 3 is complete!

Project Guide

*This living document will guide the development of your project. Upon completion of each **milestone**, refer to this **Project Guide** and fill in – or revise – the relevant information.*

A. Project Overview

Refer to Format Options for additional guidance.

Topic: _____

Title: _____

Goal: ☐ Awareness ☐ Advocacy ☐ Action

Driving Question (DQ): _____

Objective: *Based on your DQ and goal, what do you hope to achieve with your project?*

Project Type: ☐ Campaign ☐ Documentary ☐ Event ☐ Public Service Announcement

Media Output: ☐ Visual Arts ☐ Performing Arts ☐ Writing ☐ Event-Based

Specific output (for example: radio piece, blog, photo story): _____

Calendar/Deadlines: *If you are engaging in IVCs, milestones should be completed one week before the IVC date, so you can share your work online and receive feedback from peers. You may have more than one milestone per IVC.*

Milestone	IVC Number and Date <i>Ex: IVC 3, April 2</i>	Milestone Due Date <i>Ex: March 25</i>
1 – Project Launch		
2 – Build Knowledge (Content / Outline)		
3 – Develop Answer to Question		
4 – Present Project to Answer DQ		

B. Target Audience

Who is the target audience? (ex: peers, teachers, community, family, country)

Why is this an important target audience?

How will we share our project with our audience? (ex: In local events? Online?)

C. Project Team Roles

Refer to Project Team Roles for additional guidance

Student Roles: Record your group's roles here.

Group Leader: _____

Research Committee: _____

Logistics Committee: _____

Content Committee: _____

Documentation Committee: _____

Outreach Committee: _____

Partner School Role (if applicable): *What do you need from your partner school?*

D. Activity and Materials Chart

Record the step-by-step process for completing your project in the chart below, taking into account all student roles. Specify the materials you need, deadline for each step (keep the milestone deadlines in mind!), and committee responsible for each activity.

Activity (Step)	Materials/Resources Needed	Deadline	School Responsible	Committee Responsible
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

IVC #4 Preparation and Outline

OVERVIEW

The outline below will be used as a guide for discussion during the fourth IVC. Review and complete this outline prior to IVC #4.

INTERACTIVE VIDEOCONFERENCE #4: INTERNATIONAL COMMUNITY AND CLIMATE CHANGE

Day

Date

Tech Dial-in Time

____:____

Conference Start Time

____:____

Interactive Videoconference Outline

I. Introduction and Greetings 5 minutes)

GNG facilitator welcomes all participating students to the fourth IVC meeting. One representative from each school shares:

➤ Number of students participating in IVC #4:

VII. Something interesting that has happened in your community since the last IVC:

VIII. A national/international event that has impacted you/your community since the last IVC:

IX. Local temperature and weather...

II. LEARN: Presentation of Climate Change Challenges (20 minutes)

Students share and compare the results from the Country Group Activity.

What are some similarities and differences between you and your partner countries stance on climate change?

One week prior to the IVC, they will post data and view partner's data on C2C. They should prepare to present data and provide comments on peer data.

Select four representatives. Three will explain different methods of combating climate change.

➤ Name of Class Representative;

➤ Name of Class Representative;

➤ Name of Class Representative;

After viewing the data posted by your partner school, record three questions or comments to ask during the IVC.

a.

b.

c.

III. Discussion on Climate Change: Cause and Effect (20 Minutes)

Using your experiences writing the position statement and comparing that to your peers near and abroad, record three thoughtful and reflective questions.

Have students read and provide feedback on other students' position statements on C2C.

X.

-
-

III. ACT: Milestone 3: Rough Draft (25 minutes)

In this fourth meeting, students will offer feedback on the rough drafts presented of one another's collaborative projects. Use the **Feedback Guide** (p. 17) to guide your responses to your peers, and be sure to have someone recording notes to make improvements into your own work!

➤ Rough Draft Presentation:

➤ Feedback Guide Notes:

- I hear / I see...
- I want more of...
- I wonder...

IV. 60-Second Showcase! (10 minutes)

Select three student representatives to share a personal interest or talent for their peers. Presentation of the talent should not exceed 60 seconds. *Try to maintain 60-Second Showcase as predominately visual or requiring little technical explanation.*

➤ Name of Representative:

➤ Name of Representative:

➤ Name of Representative:

V. Conclusion (5 minutes)

GNG facilitator thanks all students and teachers for participating and reminds participants that all collaborative projects must be completed by the next, and final, IVC.

REFLECT

IVC #4 Debriefing Conversation

OVERVIEW

After each IVC, talk with your classmates and your teacher about your experience.

Use this space to record your reflections:



CONNECT on the Online Platform to share your reflections with your peers and to prepare for the next IVC!

Module 5: Environmental Action

Background		
Climate Change is a major problem, but positive change can be made at a small, local level. Individuals have power in the future of our environment.		
Module Objectives		
<ul style="list-style-type: none">- Understand the efforts, challenges and outcomes of national/int'l environmental policies.- Understand that there is no one solution to climate change and one perfect energy source- Conclude the collaborative project by completing Milestone Four: Finalize and Share.		
	Activity	Page
LEARN	Beyond Fossil Fuels	67-68
ACT	Milestone 4: Final Product	69-70
	IVC #5	71-72
Reflect	Debriefing Conversation	73
Program Evaluation and Debrief	Student and Educator Online Surveys	Online

LEARN

Beyond Fossil Fuels

OVERVIEW

In this activity you research and prepare to engage in a debate on a foreign relations issue that impacts you and/or your partner country.

INSTRUCTIONS

1. **Create a Debate Prompt:**

Sample Debate Prompt: Solar Energy is a solution to the world's growing appetite for energy sources while having minimal impact on the environment.

2. **Define Your Debate Positions:**

Brainstorm 2-4 positions on the debate prompt. Each will serve as the main argument of one group or side in the debate, like a thesis statement would lead an essay. The position should directly respond to the prompt and be argued with the support of concrete evidence. **Students should consider perspectives from all sides of the debate.*

3. **Research and Prepare Your Positions:** use the Debate Graphic Organizer (SW p. 41) to prepare three arguments supporting each position. Each argument should include 2-3 pieces of evidence, quotes, or perspective from academic or media resources.4. **Debate!** Engage in a 20-30 minute debate on your prompt, using their research and well-crafted arguments. Use the format on the next page to guide the debate.

Debate Components

Opening Statement: An opening statement presents your position and gives a brief overview of the main argument. This is your first chance to engage your audience, be should be assertive and confident.

Rebuttal: Rebuttal statements use critical thinking to challenge other debaters' claims. Rebuttals may *refute* an argument, or prove that it is incorrect, by identifying flaws in the evidence or assumptions. Rebuttals can also acknowledge the valid elements of the other side's perspective, but then provide a **counter argument** that is stronger and more important than the original statement.

Challenging: When a debater is presenting, other groups may challenge, or present a question or statement aimed to provide information to the audience or contest the speaker's point with a counter argument.

Share: On the online platform share your opinions of the debate. Did you learn about other opinions and perspectives.

View: compose 2-3 questions or comments to share during the IVC.

<p style="text-align: center;">DEBATE FORMAT (20-30 minutes)</p>
<p style="text-align: center;">OPENING STATEMENTS: 1 minute per team</p> <p>Each team (up to 4) presents their opening statement, which includes their position on the debate prompt and an overview of their main arguments.</p>
<p style="text-align: center;">ARGUMENT and EVIDENCE ROUNDS: 5-7 minutes per team</p> <p>Each team (up to 4) has the opportunity to present their three main arguments and supporting evidence, followed by an opportunity for other teams to challenge, and concludes with a rebuttal. There will be as many rounds as there are teams.</p>
<p>The team presents its 3 main arguments and supporting evidence (2-3 minutes).</p>
<p>Opportunity to challenge*: Other groups ask any clarifying questions or challenge the presented arguments (1 minute).</p> <p><i>*Students may challenge only once per round, to encourage as many students to participate in the activity as possible.</i></p>
<p>Rebuttal: The presenting team has the opportunity to defend its position and clarify arguments (2-3 minutes).</p>
<p style="text-align: center;">CONCLUDING STATEMENTS: 2 minutes per team</p> <p>Each team (up to 4) has a final opportunity to argue for their position. The closing statement should recap the team's position and argument, while answering any lingering questions that were not answered during the rebuttal. As the last statement of their position, speakers should be persuasive and confident.</p>

Debate Graphic Organizer

Debate Prompt:

Group Position:

Arguments Supporting Position	Evidence from Media and Academic Resources <i>(Sources could include websites, newspaper, articles, video, etc.)</i>
Argument 1:	1. 2. 3.
Argument 2:	1. 2. 3.
Argument 3:	1. 2. 3.

POST-DEBATE:

What new perspectives did I learn about from my research or other group's arguments?

-
-
-

Did my opinion change, based on reflections from the debate, research, and prior knowledge? How?

ACT

Milestone 4**Final Product & Sharing****OVERVIEW**

In this final collaborative project activity, you will incorporate feedback from the rough draft, gather any additional content needed, and finish the creation of the final product. You will also implement a distribution plan to share the project with multiple audiences.

INSTRUCTIONS

1. **Reflect and Revise:** Return to your Project Guide (SW p. 14-15) and “Need to Know List” (Milestone 1, p. 32) and update with feedback from your peers on your rough draft.
 - a. Is your project addressing all six elements of a successful project according to the Criteria Wheel (SW p. 11)? If not, what elements of your project still need to be addressed to ensure your project is meeting the relevant criteria.
2. **Finalize the Product:** Based on feedback from peers on the rough draft of your project, and any additional content gathered, have students move forward with creation of the final product of their project. You should be able to answer the following upon completion of the project:
 - a. How does your project address your target audience and their needs and/or interests?
 - b. How does your project answer the DQ?
3. **Craft a Distribution Plan:** Use the “Call to Action” planning worksheet (SW p. 63) to identify where and how to share your project with your target audience (Project Guide, Part B).
4. **Keep Going!:** You have completed your final product, but make sure to share it with multiple audiences beyond your partner group! Share in local events, online, and more!

4. Finalize & Share
*Share Final Project
 that Answers DQ*

CONGRATULATIONS!

✓ Milestone 4 and your collaborative project are complete!

“Call to Action” Planning Guide

3

WHO:

- ✓ Who is the target audience? (Hint: See Project Guide, Part B: Target Audience)

4

WHY:

- ✓ Why is this an important target audience?

4

HOW:

- ✓ How will we engage this audience? (i.e. in what format? Film screening, art showcase, poetry reading, food festival)
- ✓ Where will we hold this event?
- ✓ On what day and time should we plan this event? Is this the best time to engage our target audience?
- ✓ How will we advertise our event to our target audience?

IVC #5 Preparation and Outline

OVERVIEW

The outline below will be used as a guide for discussion during the final IVC. Students should review this outline and provide appropriate responses in all text boxes prior to the final IVC.

I. LEARN: Debate Recap (25 minutes)

Students will reflect upon their exploration of multiple perspectives in their foreign relations debate, and learn about main arguments and evidence of their peers' debate topic and positions. Present the main arguments of your debate, and share how your perspectives changed. After viewing your peers' posts, record three questions for your peers on their debate topic, perspectives, or evidence. *Remember that, like you, your peers may be presenting perspectives different than what they personally believe!*

Select 2-4 class representatives to share their debate group's position, their most interesting piece of evidence, and one thing they learned from the debate.

Group Position:

Compelling Evidence:

What I Learned:

After viewing your peers' debate positions and evidence, record three questions to ask in the IVC.

-
-
-

II. ACT: Milestone 4: Final Product & Sharing (30 minutes)

Students share their completed Collaborative Project with their partner school. Introduce your project, discuss its significance to your community, any challenges or triumphs in completing the project, and your "Call to Action" distribution plan.

- Name of Representative; Introduction of Project
- Name of Representative; Explanation of Project's Significance
- Name of Representative; Explanation of Challenges or Triumphs

"Call to Action" Distribution Plan:

Comments for Your Peers:

III. 60-Second Showcase! (10 minutes)

Any students who have not yet shared their talents with their peers will have the opportunity to do so in this final IVC.

- Name of Representative:
- Name of Representative:
- Name of Representative:

IV. Culminating Discussion (20 minutes)

This is the final IVC meeting. Reflecting on the module topics and your experiences to date, record any final questions for your peers.

V. Conclusion (7 minutes)

GNG facilitator thanks all students and teachers for participating, reminds students to remain connected through the online platform, and invites all to join the GCA alumni network! Select one student representative to express final "thank you and goodbye" remarks on behalf of the class.

Name of Representative; Final Remarks:

REFLECT**IVC #5 Debriefing Conversation****OVERVIEW**

Engage your students in a short reflective conversation on their experiences to date. Complete the online educator feedback survey with your students' reflections in mind.

Record your reflections here.

Appendix A:

You and the QFI Blog

Qatar Foundation International's blog is dedicated to the stories, viewpoints, and experiences of those committed to *Connecting Cultures for Global Good*. It features the voices of those who make our community what it is: students, teachers, professionals, experts, QFI staff members, and all those who believe in the principle that education can transform for the better individual lives, communities, and nations.

Who: All participating students are invited to submit blog proposals to be shared on QFI's The Official Blog!!

What: There are two different blog types that you can submit.

1. **Climate Change and You**

1. Using knowledge gained from program activities and your personal interests you are invited to create a blog post relating to any or all of the following topics:
 1. Module 2: Water Use and Access
 2. Module 3: Cause and Effect
 3. Module 4: Society, Ethics and Politics
 4. Module 5: Collaborative Project Share
2. Each blog entry should discuss:
 1. The impact of the topic on your community
 2. The impact of this topic on your partner school's community
 3. The ways in which you, and youth around the world, can take action to deal with this issue
 4. Why is studying this important
 5. How is this topic related to climate change

2. **Webcast Communication**

1. If your school has already been selected to host a webcast, you will be asked to create an entry that promotes the webcast!
2. Each blog entry should discuss:
 1. The Who? What? Why? When? of the webcast
 2. A current event related to the topic with summary and explanation

Where: Send submissions to Helene Theros, QFI's Communication Manager at htheros@qfi.org.

Each submission must include:

- ☐ "Road to Doha Blog Post" as the subject, ☐ a title, ☐ your entry as an attachment,
- ☐ an image to be featured along with the post, ☐ your name and school you attend.

Blogging: Best Practices

1. Know what you want to write about. What's the **goal**? Have an idea of how you will wrap it up.
2. Create an engaging **title** to draw readers in.
 - **Example:** "Tell me and I forget. Teach me and I remember. Involve me and I learn."
 - **Better example:** "Is more engaging than "What I learned."
3. Likewise, the first two sentences should **hook** the reader as well. Use active verbs and don't be afraid to overstate.
 - **Example:** "Recently on a normal day at school there was a speaker for the school newspaper staff. Outside, a cluster of students gathered to pray."
 - **Better example:** "On a recent sunny afternoon at Stuyvesant High School, the track team warmed up in the lobby. On the sixth floor, the school newspaper staff assembled to listen to a speaker. Outside, a cluster of students gathered to pray."
4. **Research and try to be detailed.** The more new, **unique** information you have, the more interested readers will be.
5. **Include your own opinion.** What is your perspective on a given topic? Remember, however, that you are representing yourself, your school and the program. So be courteous, judicious, and respectful.
6. Make it **fun** to read.
 - **Example:** "Because of all of my obligations I had many overlapping commitments."
 - **Better example:** "Amid all these back-to-back summer schools, I needed to be in two places at once. I'm surprised I managed to do it without any superpowers."
7. **Provide Resources.** Don't be afraid to share **links** to other people, especially if somebody else has written a great post on something related to your topic.
8. Include **images** when you can.
9. **Explain jargon.** Readers won't necessarily know what you are talking about if you use technical words or acronyms.
10. **Keep blog paragraphs short:** Blog writing lends itself to shorter sentences and paragraphs for easier reading on a web page. Web readers want information fast and in small digestible chunks.
11. **Review** for spelling, grammar, and wordiness.