Climate Migration across the world

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DESIGN, EVALUATION, & RESEARCH

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This project was funded by Title VI grants from the US Department of Education awarded to: Center for South Asian Studies, Center for Southeast Asian Studies, Center for Middle Eastern & North African Studies, and Center for Latin American and Caribbean Studies

Climate Migration across the world

Overview:

- This mini-unit is designed for middle school geography or social studies classes, or related electives, and develops students' understandings of the concepts of human migration and climate change.

- The entire mini-unit is estimated to last 5-7 standard class periods, but can be adapted and condensed by teachers as needed. The lessons are highly flexible and customizable.

- World regions of focus include South Asia, Southeast Asia, Latin America and the Caribbean, and the Middle East and North Africa, with additional connections to other parts of the world.

Driving Questions:	Enduring Understandings:
● What does climate change have to do with migration? ● What are the reasons for climate-related migration? ● How is climate change impacting different world regions? ● What are the challenges faced by climate migrants?	● People's homes and livelihoods are threatened by increasingly inconsistent climate patterns that result in large-scale migration. ● Severe flooding, droughts, and other natural disasters cause crop failure and food insecurity, which ultimately forces people to flee their homes for sustainable economic opportunities. ● This is a global issue that requires large scale, systemic action to support climate migrants and address the root causes of climate change.

Learning Objectives:

Students will be able to:

- Identify climate change-related threats to communities in different regions of the world.
- Describe the problem of climate migration.
- Discuss the challenges faced by climate migrants and analyze their resilience.
- Propose solutions to support climate migrants and take action against climate change.

Key Concepts

- Climate change
- Climate migration
- Push and pull factors
- Urbanization
- Natural Disasters (e.g. Desertification, Aridity, Droughts, Flooding)
- Climate action

Lesson Sequence

Lesson 1: Introduction to climate change and climate migration
Lesson 2: Climate change, natural disasters, and migration
Lesson 3: Regional case studies
Lesson 4: Thinking about solutions
Lesson 5: Climate change conference simulation

Preparation

This mini-unit includes handouts, a slide deck , and a separate case study packet. Read through the lesson plans before teaching to identify copies you will need to make or provide digitally. Lessons also include several informal writing activities so students will need paper or notebooks where they can think through writing. Internet access is also important.

In addition, the lessons include paired thinking activities (Turn and Talks) and small group work, so consider the social dynamics of your classes and plan ahead for pairings and groupings so that all students are included.

Finally, be aware that this lesson was developed with the understanding that climate change is real and is human-induced. This is the overwhelming scientific consensus. Some of your students may believe that climate change is not real or that it is exaggerated. On the other hand, other students may be distressed and depressed about climate change and

may be feeling despair. This is an important topic to teach about, but not an easy one! Consult the resources below for some initial tips!

- https://www.scientificamerican.com/article/to-teach-students-about-climate-change-lsquo-just-the-facts-rsquo-isn-rsquo-t-enough/
- https://www.nea.org/advocating-for-change/new-from-nea/climate-change-non-believers
- https://www.edutopia.org/article/why-climate-change-tough-topic-teach
- https://www.npr.org/2019/04/25/716359470/eight-ways-to-teach-climate-change-in-almost-any-classroom

Lesson 1

Introduction to Climate Change & Climate Migration (slide 2)

Opening:

1. Begin the lesson with the "See-Think-Wonder" warm up on slide 4. Students should take 2-3 minutes to write down what they see, think, and wonder. Students should be able to identify a massive wildfire burning a forest. Some students may point to the wildfires in California as a reference point. Or, they may wonder where this is taking place. Have several students share their initial ideas.

2. Next, move to slide 5 and direct students to use their technology, textbook, or other tools to look up what the term "migration" means. After they write down/type what they find, students should describe the definition to a partner in a quick Turn and Talk. Then ask them to discuss what the picture of the fire might have to do with migration. Have several students share their ideas with the whole class and explain that they will learn more about these ideas over the next few lessons.

Guided Inquiry:

3. Advance to slide 6 and have students read the definitions out loud to introduce the difference between migration and immigration. Ask students next to share examples of each word and when they are used. For example, if students have traveled abroad, they may reference "customs/immigration at the airport," in which case you may use this example to demonstrate the processes that people must go through when entering and exiting countries.

4. Move on to slide 7 and introduce the idea of push and pull factors. Ask students to work with a partner to quickly generate ideas for push factors, things that make someone leave a particular place, and also pull factors, things that draw them to a particular new place. After a few minutes, have students start sharing their ideas, probing for clarification as needed. Make a class list either in a document on your screen or on a whiteboard. Use this activity as an opportunity to make sure that students understand push and pull factors, and supply important examples as needed. Potential Responses:

    - Push Factors
        - Limited access to clean water
        - Famine (food scarcity)
        - Violence / war

        - Crop failure
        - Pollution
        - National disaster (i.e., flooding, earthquakes, tsunamis)
    - Pull Factors
        - Food availability
        - More opportunities for work
        - Access to resources
        - Economic/political stability
        - Lack of violence

Collaborative and/or independent Inquiry

5. Explain to the class that they are going to learn about a particular type of push factor that is leading many people to leave their homes all around the world… and that push factor is climate change. Proceed to slide 8 and have a student volunteer read the definition of climate. Then, as directed on the slide, have students Turn and Talk in response to the prompts on the slide to explore the difference between weather and climate in your region. Ask several students to share some of their ideas, and clarify any misconceptions as needed.

   Advance to slide 9 and review climate features, and then ask the students if they want to add anything to their descriptions of the climate in your region with this new information. Then move to slide 10 and have students Stop and Jot as directed on the slide to continue to develop their thinking about climate. Quickly have a few students share their ideas with the whole class and use the opportunity to check for broad understanding of climate.

6. Proceed to slide 11 and have a different student or set of students read the text on the slide. Work through slides 12 and 13 the same way and then pause to have a discussion. Ask students to share, if they are willing, their own ideas about climate change, or different ideas they have heard from others. As needed, reinforce the following facts (while acknowledging that this can be a difficult topic to understand because there are mixed messages sometimes in the news): There is clear scientific evidence that average global temperatures are increasing, and almost all scientists agree that this increase is caused by increased carbon gas and methane in the atmosphere, and that this increase is because of human activity. Although there are politicians and people in the news media who disagree with this, every major scientific organization in the world that studies the climate is in agreement. In other words, there is no scientific debate. Also acknowledge that this can be a scary topic, but that there is hope and that we can all work together to try to manage our changing climate.

   Move on to slide 14, which has a graph produced by NASA, and have different students try to interpret it. Help them understand that the y axis shows average

changes in global temperature, and the x axis shows time, starting in 1880 to today. Explain that even a 2 degree increase matters, and that this is actually a pretty huge change. Remind students that water freezes at 32 degrees, but not at 33 degrees, so small changes can mean the difference between polar ice staying frozen or melting. Explain to the class that as the world gets a bit warmer, the areas of the earth that are usually frozen (at the North and South Poles) are starting to thaw a bit and that is causing an increase in the amount of water in the oceans (sea level rise) which is contributing to flooding in coastal areas. In a similar fashion, work through slides 15-17, and then have students reflect on the data with a partner to describe the overall pattern. Have a few students share their thoughts, and let them know they will learn about more specific problems caused by climate change in the next few lessons.

- For more information, check out: https://www.nationalgeographic.com/environment/article/global-warming-real?loggedin=true

7. Advance to slide 18 and ask students to discuss the images in groups of 2 or 3. Ask them to describe what they see and then think out loud about what these pictures have to do with climate change. Have several students share ideas, and then have them discuss what these pictures might have to do with migration. Use prompts and open questions to help them if they get stuck (e.g. "Do you think people are happy living in these places, or do you think that at least some of them might want to move?" Again, have a few students share their thoughts and then explain that in later activities, they will explore these connections in depth. Advance to slide 19 and have a volunteer read the definition out loud and explain that Climate Migration will be the focus moving forward.

Closing

8. Introduce students to the final conference activity to the students and explain that the unit will end with a simulated United Nations conference about climate migration at which they will represent different regions and will suggest different international solutions that will help each region (read through slides 20 and 21). Reinforce the idea that there are things we can do as individuals, and importantly, things that organizations and nations can do together to help manage this problem. In other words, although the problem is serious, there is still hope.

   Introduce the students to the global call to action through the UN Refugee Agency's "Beating the Heat" video. (3.5 minutes).
   a. Follow up with whole-group reflection questions (slide 22):
      i. How does the video describe **climate action**?
      ii. What **scarce resource** does the advisor speak about?

iii. What **decisions are the people** of Mauritania making to combat climate change?

b. Describe end-of-topic goals for conducting mock conference (slides 23):
   i. Research… in groups they will research a region.
   ii. Present… each group will present to the whole conference and discuss their unique regional issues.
   iii. Decide… as a conference they will discuss and decide on 4 global actions they want every country to take.

Lesson 2

Climate Change, Natural Disasters, and Migration (slide 24)

Opening:

1. Begin the lesson with slide 25 and images of 4 different natural disasters in action. Show students the slide and ask them to use a See-Think-Wonder protocol to respond to the images. They should write down a description of what they SEE in each image, then reflect on what these images lead them to THINK about, and finally jot down some things they WONDER about the images. After a few minutes, have several students share their thoughts, and then ask them what they think these images have in common. Discuss briefly as a whole class.

   Advance to slide 26 and have a volunteer read the learning questions out loud. Explain that this lesson will involve looking at specific regions of the world to answer these questions. Ask students to discuss how the images they just saw might be connected to these questions and take a few minutes to hear students' ideas.

Guided Inquiry

2. Advance to slide 27 and have student volunteers help read the text out loud. Explain that this paragraph is kind of complicated, but that together you will figure out what it means. After reading it out loud, tell the class you are going to need their help doing a close read of the paragraph. Read the first sentence out loud and ask students, "What things are increasing in this sentence? What is happening more?" Someone will hopefully help and say that "global surface temperatures" are increasing. Ask the class to help you figure out what that means by breaking it down, saying "What does global mean? What is the surface, and what are surface temperatures?" Using this kind of close reading process, work through the paragraph with the class, or have them rewrite it in small groups using more everyday language. Emphasize that they don't need to get every single word, but should focus on the big picture. Have a few students share their understandings of the relationship between climate change and natural disasters.

3. Advance to slide 28 and review, and then review slide 29. Use these two slides to explain in more depth the relationship between climate change and natural disasters. Then advance to slide 30 and have students Stop and Jot as directed on the slide using the connect-extend-challenge prompt. Emphasize that there are no right or wrong answers, just honest reflections on their thinking. Ask if anyone wants to share (always attending to equitable participation and trying to support and encourage as many different voices as possible) and discuss their ideas.

Collaborative and/or independent Inquiry

4. Advance to slide 31 and explain to the class that they will now engage in a quick research task in small groups. Organize them into groups of 3 to 4 and assign each group one of the types of natural disasters on slide 31, drought, floods, heat waves, or tropical cyclones. Try to evenly distribute the topics across the groups so that each type of disaster is being researched. Students will need internet access or a textbook with appropriate information. These websites may be good places to start.
    - https://kids.kiddle.co/Natural_disaster
    - https://www.nationalgeographic.com/environment/topic/natural-disasters-weather

    Consider dividing up tropical cyclones into groups that look at tropical storms, hurricanes, and typhoons.

    Move to slide 32 and review the information that students need to gather in their groups. Have students write down these questions, or keep the slide up to guide them as they work.

    If your students need support in how to gather information, do some quick think-aloud modeling with a different type of natural disaster like mudslides (see slide 33). Model what search terms you might use and how you would summarize the information. Emphasize to the students that they only need to answer the provided questions, and that they should do so in their own words.

    Students should develop a quick illustrated guide to their natural disaster on a piece of copy paper, a PPT or Google slide, or a piece of chart paper. This can be as basic as the four square table model provided on slide 33. Share this model with students after you talk through your think-aloud. Have them get to work as you move through the room monitoring progress and checking for understanding. Consider using a timer to help students stay focused and on task (20-30 minutes should be enough).

5. When students are done, have each group quickly present their work and teach the class about each kind of natural disaster. Then ask the students to consider how climate change is connected to their natural disaster, and how their natural disaster might displace people and lead them to migrate to someplace new. Advance to slide 34 and introduce students to two different processes of climate migration: Sudden Onset Events and Slow Onset Events. Have each group quickly discuss what kind of event lines up with their natural disaster.

Closing and Reflection:

6. To close out the lesson, go to slide 35 and provide students with the opportunity to listen to a poem called *Di Baladna*, which means *Our Land* in Arabic by world champion poet and United Nations High Commission on Refugees Goodwill Ambassador, **Emtithal (Emi) Mahmoud**. (https://www.youtube.com/watch?v=n5N9HYMfDUU).

   Explain that the poem starts off from the perspective of the earth and talks about the impact of climate change on earth and also on its people. Have students Stop and Jot after watching the video using the following prompts:

   - What feelings arise as you watch this video?
   - What message(s) is Emi trying to convey?
   - What questions might you have for Emi?
   - How does this poem connect to the concepts of climate change and natural disasters?

Lesson 3

Regional Case Studies (slide 36)

Opening

1. Project slide 37 and ask students to study this map of the world. Review the key and explain that darker gray colors in particular nations (like Colombia and Syria) have large numbers of people who are displaced (forced to leave their home and migrate to a different place), and that the more red dots in an area, the more they are experiencing greater temperature changes.

   Have students Turn and Talk about any patterns they see, and then ask different pairs to share their observations. Then explain that the impacts of climate change and natural disasters are global, everyone is impacted in some way, but that some regions are facing more problems than others. Point out that tropical regions north and south of the equator currently face the greatest challenges.

   Explain that they will next work in groups to research a particular region, and that they will represent this region in their simulated global conference on climate migration.

Collaborative Inquiry

2. Organize students into groups of 3 to 4 students if they are not already in groups. Project slide 38 and explain that they will work in their groups to research a particular region using the questions on the slide to guide them. Pass out copies of the Regional Research Guide (in the handout section below, one per student) and review each section of the handout. Assign each group to one region, making sure that roughly equal numbers of groups are focused on each region. Move students into their groups if needed.

   Pass out the appropriate case study packet to each group (case study packets are found in a separate document titled *Climate Migration Case Studies*.) You can provide either hard copies or digital versions, and groups need at least one copy to share (two would be better though to facilitate paired reading). Direct students to review the Research Guide and divide up tasks, and then to decide as a team how they want to proceed and read the case study information. Feel free to allow students to do additional research if devices and internet access is available.

   Explain that in the closing lesson, they will "jigsaw" and work with students who studied different examples in order to compare and contrast climate migration and climate change across regions. Because of this, explain that each student will need their own

copy of the Regional Research Guide with completed answers as they will have to share what they learned in their new groups.

3. Provide students the remainder of class time to engage with their groups (this will likely extend into the next class as well), access technology, and work together to complete all the sections of their Regional Research Guide. As needed, review norms and procedures for successful group work. Monitor progress and check for understanding as you move through the room. Groups may benefit from having assigned roles, such as the following:
    - Time keeper(s)
    - Document manager(s)
    - Recorder(s)
    - Spokesperson(people)

Closing

4. When the groups have completed their research guides, ask students to quickly Stop or Jot (or create an Exit Ticket if you prefer) that reflects on what they found most surprising, interesting, or important about their case study.

Lesson 4

Thinking about solutions (slide 39)

Opening

1. Begin this lesson by having students convene in the regional research groups from the prior lesson. Project slide 40 and have a student read the text on the slide. Ask students to discuss the question in their groups. Have different groups share their thoughts.

2. Advance to slide 41 and have different students read the information on the slide out loud. Talk through the slide, explaining that short term solutions are things that address the problems we have right now, like where a displaced family can go and where they will live. Long term planning is planning for problems we can predict and have to do with being better prepared, and also with making big changes at larger levels.

   Move on to slide 42 and again have students read the information. Explain that they are going to think about solutions for both climate change and climate migration, but focus on smaller parts of these very big issues. Proceed to slide 43 and talk through the difference between climate mitigation and adaptation and explain that both kinds of solutions are important. We need to slow down and decrease the harm of climate change, and also learn to live in a changing climate.

Collaborative Inquiry

3. Project slide 44 and provide students with copy or chart paper. Have them copy the table format on the slide and work as a group to review their regional research case study and identify possible solutions, including both short and long term ideas. They should then discuss the questions on slide 44 and jot down responses in the version of the table they have created.

Closing

4. Read or watch Tahsin's story below as they share their lived experiences: https://www.youtube.com/watch?v=KZuGMzybFiw&t=7s. Then ask students to respond to the following question in an exit ticket on slide 45: Why is it important that people in government and large international organizations like the United Nations listen to climate migrants and activists like Tahsin living in climate change affected areas? Why do we need to hear the voices of people impacted by these issues?

Lesson 5

Climate change conference simulation (slide 46)

Opening

Preparation notes: To prepare for this lesson, develop a grouping plan so that students are in groups made up of students who studied different regions.

1. Begin this lesson with slide 47, and then slide 48. Explain to the students that there is a yearly conference of nations, the UN Climate Change Conference of Parties (COP), at which the participating nations and organizations work to address climate change. The COP brings together heads of state, climate experts, and campaigners and advocates to agree on coordinated action to tackle climate change.

2. Organize the students into their new groups, with groups made up of different regional "experts." Advance to slide 49 and have a student read it out loud. Proceed to slide 50 and review the instructions. Pass out the Cross Region Comparison handout and review both pages. Explain to the students that they will use this handout to take notes as their group members share their research. When they are done, each group will share one big idea from their comparison (from the "What do they have in common?" row) as well as their four recommended action steps.

Collaborative Inquiry

3. Now give the students time to work in their groups. Monitor group work and attend to equitable participation. Consider setting time limits and using a timer for group members presenting their research to each other. Pull the class back together to refocus as needed and keep them moving towards their discussions of action steps (the second page of the Cross Region Comparison handout).

4. Have each group select a spokesperson if they have not done so already and give each group 3-4 minutes to share their ideas about common problems and their four recommended action steps. Using a digital tool like a Google Doc, or just your whiteboard or screen, jot down the named action steps, noting when the same idea is already up but not writing it again.

5. Now have students vote on their top three actions they think the conference should support. One way to do this is write the list of actions on the board and have students use sticky notes to label their top 3 choices (write a "1" on a sticky note and put it by your top choice, etc.). There are digital tools like PollEverywhere.com that you can use,

or you can just use a show of hands. If time allows, you can invite students to make a quick argument or pitch for their favorite solutions. Using the means that best fits your time and class, try to reach consensus on actions they support.

Closing

6. To close out the unit, discuss with students the process in which they just engaged. Ask them how they think the next actual international conference will be similar or different and what problems nations might have in taking on such big problems. End the unit by asking students to consider what they can do as individuals and with others in their own communities. Have them explore the websites linked below, or use the ideas on the final handout, Climate Action - Student Enrichment Opportunity. Ask students to write a final reflection on what they have learned and what actions they think they can take to be a part of the solution.

    - https://www.climaterealityproject.org/blog/5-climate-action-chores-kids
    - https://kids.nationalgeographic.com/science/article/climate-change#:~:text=What%20can%20we%20do%20about%20it%3F

HANDOUTS:

Handouts are below. As needed, adapt or recreate to provide more space for students to write.

Regional Research Guide

Geography

Region and countries in this case study:

Summary of climate change impact on this region:

Natural Disasters

What kinds of natural disasters typically affect this region?

Key Event: Provide an example of a natural disaster that affected the region recently.

How have these natural disasters affected the people in this region?

People & Economy

What types of work do people rely on for their livelihood?

What is the region's economy dependent on?

Where are people migrating to and/or from?

Effect on People

Climate Driver → (where does climate change come in to the picture)	*Environmental Condition* → (specific local impact of climate change on the environment)	*Effect on Livelihood* → (how it affects people's lives and ability to survive)	*New problems* (new problems caused by this cycle)
Example: Increased amount of storms with heavy rain.	Loosens soil on steep hills and causes more mudslides.	Kills people and destroys property and transportation networks. People can't get around.	People without insurance and resources lose everything and move to new cities increasing poverty there.
Your topic:			

Youth Climate Action Leaders
Who is the climate action leader profiled in your case study? Where are they from? What solutions to climate change do they support and call for?

Further Research

What questions does our team still have?

CROSS-REGION COMPARISON:

Region	Climate change and natural disasters	Challenges faced by people in this region	Short term needs	Long term needs
Middle East and North Africa				
Southeast Asia				
South Asia				
Latin America and the Caribbean				
What do they have in common?				

#	Concrete actions steps to help address climate change and the needs of climate migrants	Short or long term?
1		
2		
3		
4		

Climate Action – Student Enrichment Opportunity

Optional Post-Conference Activity

Choice Board

Write a letter to our state representative explaining the state of affairs in our community regarding climate migrants.	Learn about one natural disaster that our community faces and **create a list of 5 best practices** that either adapt or mitigate the effects of this natural disaster.	**Write a letter to our principal** requesting the materials and tools for us to build a garden and/or plant a tree.
Create a presentation for our principal explaining one thing we can do to support climate migrants in our region.	**Compile a list** of local, regional, and/or state-level organizations that tackle climate change and take action and share with our class.	**Interview an immigration attorney** about the process that migrants endure to migrate into the US and specifically to our state and community.
Create a list of 5 sustainable commitments that our school district should commit to in the next school year.	**Select a country or region** that you want to learn more about and describe the ways that their government or community has mitigated and/or adapted to severe weather patterns.	**Make a video** describing our city's environmental and sustainability commitments (how residents can recycle, reuse, reduce, etc).
Discover the jobs and opportunities that exist for someone that desires to pursue work related to climate action.	**Interview of local/regional government official(s)** and ask what is being done to welcome climate migrants and what else our community can do to take action against climate change.	**Investigate how to be a climate voter** and share what you learned by creating a video, poster, or letter.
Create a climate storytelling collection for our own community to see and hear. Example here.	**Determine a set of guidelines** that our school district should use to reduce food waste in our schools.	**Organize an educational event at our school** to educate our family, community, district leaders, and governmental leaders that creates a call to action. Create a sense of urgency for maintaining commitments to sustainable practices.

Sources

Natural Disasters
https://www.nationalgeographic.org/article/all-about-climate/
https://climatekids.nasa.gov/climate-change-meaning/
https://www.nytimes.com/interactive/2020/07/23/magazine/climate-migration.html
https://storymaps.arcgis.com/collections/af3858d32f84488f92dfaeef068fff52?item=2
https://www.unhcr.org/en-us/climate-change-and-disasters.html
https://www.youtube.com/hashtag/cop26

Displacement
https://wol.iza.org/articles/climate-change-natural-disasters-and-migration/long#:~:text=For%20instance%2C%20natural%20disasters%20closely,the%20UK%2C%20and%20the%20US.
https://wol.iza.org/articles/climate-change-natural-disasters-and-migration/long
https://www.internal-displacement.org/countries/united-states
https://www.deseret.com/2021/8/13/22617380/climate-change-wildfires-floods-natural-disasters-lead-to-climate-migration-refugees
https://www.wola.org/analysis/climate-refugees-hurricanes-2021/
https://www.oxfam.org/en/5-natural-disasters-beg-climate-action
https://www.unhcr.org/en-us/climate-change-and-disasters.html

Videos
https://www.youtube.com/watch?v=n5N9HYMfDUU&feature=emb_logo
https://www.youtube.com/watch?v=htF1BV4ITFQ&feature=emb_logo
https://www.youtube.com/watch?time_continue=16&v=oRiLLd2hX0E&feature=emb_logo
https://www.youtube.com/hashtag/cop26

Youth Climate Action
https://www.climategen.org/take-action/act-climate-change/take-action/