

# Educating for Just Climate Action: Guidelines for Excellence

## DRAFT – September 2023

### INTRODUCTION

*Educating for Just Climate Action: Guidelines for Excellence* was developed for the many different individuals and organizations conducting climate education. Education can play a crucial role in raising awareness and understanding of climate change, its causes, impacts, and potential solutions. Furthermore, effective education can build skills, instill hope, and energize learners to work on reducing risk and strengthening their communities. With this set of guidelines, we offer suggestions for creating learning environments that support the development of the knowledge, skills, and dispositions needed to make informed decisions and act. [BOX: DID YOU KNOW? DEFINITIONS OF ENVIRONMENTAL EDUCATION, EDUCATION FOR SUSTAINABILITY] [BOX: DID YOU KNOW? UN SUSTAINABLE DEVELOPMENT GOALS]

Whether you work with youth or adults, on behalf of an organization, or as an individual, these guidelines and the accompanying resources can help you and your partners design effective education programs that focus on climate change, address injustice, and ignite action. [BOX: RESOURCES YOU CAN USE! GLOSSARIES]

#### **Climate Change**

*Effective climate education is built on a foundation that reflects current climate science, enables learners to understand different perspectives, explores projections for change at the global and local scale, weighs a variety of potential solutions to mitigate and adapt to a changing future, and positions learners to be able to make informed decisions and act, individually and collectively.*

Climate change, the long-term shift in weather patterns and temperature, impacts natural ecosystems and human communities everywhere. Changes in the global temperature are shrinking glaciers, raising sea level, and changing precipitation patterns. “There is unequivocal evidence that Earth is warming at an unprecedented rate. Human activity is the principal cause.”<sup>1</sup> [BOX: DID YOU KNOW? DEFINITIONS OF CLIMATE CHANGE & GLOBAL WARMING]

Climate change impacts ecosystems through the displacement or loss of species, the increased spread of non-native and invasive species, and the disruption of the ecological balance between plant and animal species and the environmental systems they rely on. For example, coral reefs are dying due to warming ocean temperatures and changing water chemistry. Longer, more intense droughts threaten wildlife and freshwater supplies. Longer wildfire seasons are impacting economies and damaging human health. Temperature-sensitive fish and other marine life are changing migration patterns toward cooler and deeper waters to survive. Climate change can result in fundamental transformations of

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<sup>1</sup> NASA Global Climate Change. Vital Signs of the Planet, (2023, July 26). Retrieved from <https://climate.nasa.gov/evidence/>

current ecosystems and food webs, impacting all life on earth.

Climate change impacts human health and well-being. According to the EPA, “climate change affects the food we eat, the air we breathe, the water we drink, and the places that provide us with shelter. Climate change can also impact people’s health and well-being by altering the frequency or intensity of extreme weather events and spread of certain pests and diseases.”<sup>2</sup> Although climate change may benefit some areas (e.g., longer growing seasons, changing ranges), water- and food-related illnesses, forced displacement, workforce changes, increased hunger and poor nutrition, worsening air quality, spread of infectious diseases, respiratory and heart diseases, and threats to water quality and quantity are all impacts of climate change. [BOX: RESOURCES YOU CAN USE! CLIMATE CHANGE AND HUMAN HEALTH] [BOX: GUIDELINES IN PRACTICE - INTEGRATING SCIENTIFIC KNOWLEDGE AND TRADITIONAL ECOLOGICAL KNOWLEDGE]

### **Climate Justice**

*Effective climate education requires an understanding and a centering of climate justice, as well as a willingness to work toward solutions that address the impacts of climate change in People of Color, low-income, and Indigenous communities, paying attention to disproportionate climate impacts on women and LGBTQ+ people within these communities.*

Climate change impacts and actions taken to reduce climate change impacts are unevenly distributed across communities, regions, and the world — even within a single community, the consequences of climate change can differ among neighborhoods and individuals. Long-standing socioeconomic inequities can increase the exposure of certain communities, such as People of Color, low-income, and Indigenous communities, to climate change impacts (e.g., flooding, air pollution, excessive heat) while also reducing their access to the resources needed to respond. [BOX: DID YOU KNOW? DEFINITIONS OF CLIMATE JUSTICE AND ENVIRONMENTAL JUSTICE]

Climate justice addresses the unequal impacts of climate change by prioritizing the health and safety of those who face the greatest risk, especially as communities prepare for and recover from climate events such as extreme heat and cold, wildfires and wildfire smoke, and flooding. Justice centered climate education and action also create equitable opportunities for all peoples to be involved in the development of climate change solutions. [BOX: DID YOU KNOW? PRINCIPLES OF CLIMATE JUSTICE]

Climate justice recognizes the importance of:

- Distributing the costs and benefits associated with climate change equitably. It seeks to rectify the historical and current inequalities that have led to certain communities, such as low-income, People of Color, and Indigenous communities, being impacted disproportionately by climate change.
- Protecting and promoting access to food, water, shelter, and a clean environment, particularly for those who are most affected by climate change.

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<sup>2</sup> Environmental Protection Agency. Climate Change and Human Health, (2023, February 27). Retrieved from <https://www.epa.gov/climateimpacts/climate-change-and-human-health>

- Ensuring international cooperation and shared responsibility. Climate justice calls for developed countries, which have historically contributed the most to greenhouse gas emissions, to support and assist developing countries in their efforts to mitigate and adapt to climate change.
- Addressing the interconnections between social, economic, and environmental systems. Climate change is not only an environmental issue but also intertwined with issues of poverty, inequality, social justice, affluence, and capitalism. Addressing climate change also requires addressing its root causes and transforming existing systems that perpetuate injustice.
- Transitioning to a low-carbon and sustainable economy that is also socially just. It emphasizes the need to create climate-ready jobs, support workers and communities affected by the shift away from fossil fuels and ensure that the transition benefits all sectors of society.
- Ensuring equitable and inclusive involvement of communities with climate justice concerns in finding solutions. [BOX: RESOURCES YOU CAN USE! JEMEZ PRINCIPLES FOR DEMOCRATIC ORGANIZING] [BOX: GUIDELINES IN PRACTICE - HOUSTON YOUTH DIGGING IN TO PROTECT THEIR COMMUNITY]

### **Climate Action**

*Effective climate education inspires and prepares individuals and groups to engage in meaningful climate decision making and action.*

Climate change requires immediate and sustained actions – actions that reduce emissions, build resilient communities, and create good jobs that contribute to a healthy planet. Effective climate action requires sustained commitment and effort from individuals, communities, businesses, and governments worldwide. Every action, no matter how small, contributes to the necessary efforts of mitigating climate change and building a sustainable future. Actions can be short term and temporary (such as a stream cleanup) or long term and sustainable (such as a policy change). Actions can focus on reducing or preventing the emission of greenhouse gases into the atmosphere (climate mitigation) or responding to the impacts of climate change (climate adaptation). Actions can take place in a classroom, neighborhood, park or preserve, farmer’s field, homes, downtown business district, boardroom, or at the state’s legislature.

Effective climate action depends on the development of the ability to identify and critique alternative solutions and courses of action, select and plan appropriate action-taking and participate in climate action as an individual or as a group. [BOX: DID YOU KNOW? INDIVIDUAL AND COLLECTIVE ACTION] [BOX: DID YOU KNOW? CLIMATE MITIGATION, CLIMATE ADAPTATION, AND CLIMATE RESILIENCE] [BOX: GUIDELINES IN PRACTICE - TEENS FOR FOOD JUSTICE]

### **Who should use this set of guidelines? Where should they be used?**

This set of guidelines is being written to serve a broad range of educators interested in using education, in its different forms, as a tool for addressing climate change. It is important to note that by educator we mean those who have traditionally served in this role, such as classroom teachers, museum educators, community educators, university instructors, and career and

technical education teachers, as well as those who work with learners in other roles, such as volunteers and docents, youth leaders, weather broadcasters, members of civic clubs, community organizers, faith leaders, and supervisors. Educators facilitate learning opportunities. They help learners gain the knowledge, skills, and dispositions needed for effective climate action.

Educational activities may take place in schools, museums, aquariums, nature centers, religious organizations, workplaces, and community centers or other community gatherings. Participants in these educational activities might be traditional K-12 students, university undergraduates, members of youth groups, workers, policymakers, partners, or community members. Please note, because of this diversity, we will refer to those engaged in educational activities as learners, rather than students.

When these learners interact with others in the community who are not part of their group of learners, we will refer to these others as community members. [BOX: RESOURCES YOU CAN USE! CLIMATE CHANGE RESEARCH AND POLICY REPORTS]

### **How the guidelines are being developed**

These guidelines draw on educational practices honed by scholars and practitioners in diverse fields including education, climate justice, environmental justice, social change, community development, and communication. To ensure that these Guidelines for Excellence reflect a widely shared understanding of climate education and climate justice, background research was conducted and thought leaders in climate education, environmental justice, and climate justice were interviewed.

A team of climate education and climate justice professionals from a variety of backgrounds and organizational affiliations wrote the guidelines. This team took on the challenge of turning ideas about quality into tangible recommendations and examples. In addition, drafts of these guidelines were circulated widely to practitioners and scholars from across North America and around the world. Their comments were incorporated into successive revisions of the document. As of this draft, hundreds of scholars and practitioners have participated in the writing of these guidelines. When completed, it is our hope that the document will reflect our collective wisdom. [See the Appendix for a listing of the writing team members, those who were interviewed, and the advisory group]

### **How the guidelines are organized**

These guidelines are organized around key characteristics that provide a high-level framework for excellent, meaningful climate education, focused on climate justice and climate action. Under each key characteristic, we have included guidelines that describe how that key characteristic could be implemented. Each guideline is accompanied by several indicators that illustrate what the learner should be able to do, or the educator is doing, to address the guideline.

In addition, we have included case studies that illustrate the Guidelines in Practice. The guidelines are also accompanied by Resources You Can Use! And Did You Know? supporting

resources and informational boxes (e.g., definitions, explanations, references, and links to websites).

### **Guidelines Summary**

#### **Key Characteristic: Knowledge, Skills, and Dispositions to Foster Climate Action**

- A. Build awareness.
- B. Understand climate processes and systems.
- C. Understand human systems.
- D. Apply systems thinking.
- E. Develop action strategies and skills.
- F. Build personal and civic responsibility.

#### **Key Characteristic: Locally Focused and Community Driven**

- A. Know the community.
- B. Identify key individuals, organizations, and communities of interest.
- C. Build partnerships and collaborative relationships.

#### **Key Characteristic: Civic Engagement for Climate Action**

- A. Design civic engagement strategies.
- B. Support community conversations.
- C. Foster community level understanding of climate mitigation and action strategies.
- D. Take action.

#### **Key Characteristic: Hope and Celebration.**

- A. Recognize and acknowledge climate-anxiety.
- B. Develop self-efficacy, agency, and hope.
- C. Focus on just climate solutions.
- D. Celebrate.

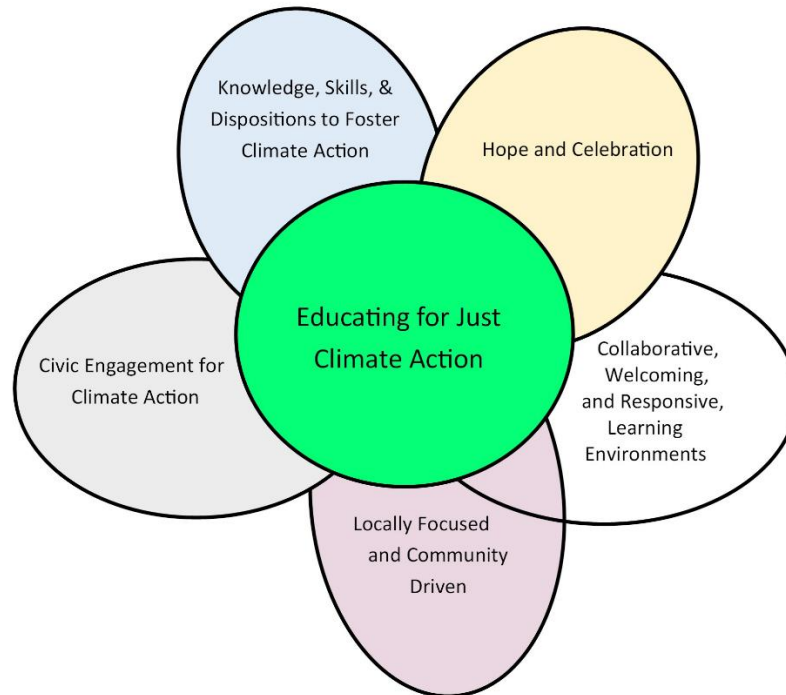
#### **Key Characteristic: Collaborative, Welcoming, and Responsive, Learning Environments**

- A. Ensure an inclusive learning environment.
- B. Engage in open inquiry.
- C. Explore worldviews and perspectives.
- D. Investigate climate change controversies.

### **How to use the Guidelines**

These guidelines should be taken together as a whole. They are not linear. Throughout the process of educating for just climate action, Key Characteristics will be visited and visited again. It is also important to note that not all indicators will be relevant in all contexts, but some in each guideline will be.

**NOTE:** This is a placeholder graphic to illustrate the five key characteristics of *educating for just climate action*.



## **KEY CHARACTERISTICS**

### **Key Characteristic: Knowledge, Skills, and Dispositions to Foster Climate Action**

Effective climate action depends on developing an essential set of knowledge, skills, and dispositions that enable learners to make informed decisions and to act, individually and collectively. Effective climate action is rooted in: 1) an understanding of Earth’s processes and systems, including Earth systems (e.g., atmosphere, hydrosphere, geosphere, and biosphere) and human systems (e.g., social, cultural, political, and economic), and 2) how these interact with and impact each other, 3) recognition of and knowledge about historic injustices and vulnerabilities that face some communities and individuals; and 4) an understanding of strategies and skills for effective individual and collective action that lead toward just climate change solutions. Learners understand the importance of the relationships among ecosystem health, community well-being, long-term sustainability, and climate resilience. They develop an understanding of the reciprocal interrelationships of the natural environment of which they are part. [BOX: RESOURCES YOU CAN USE! CLIMATE “LITERACY” FRAMEWORK – UPDATED/REVISED]

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#### **RESOURCES YOU CAN USE! “CLIMATE LITERACY”**

*Climate Literacy: The Essential Principles of Climate Science* was published in 2009. It has informed educators, policymakers, and scientists around the world. Currently, the U.S. Global Change Research Program is in the process of updating this important framework. Once the framework is published, information on how it can be accessed will be included in these guidelines. As appropriate, we also plan on revising Key Characteristic: Knowledge, Skills, and Dispositions to Foster Climate Action, with the new framework in mind.

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[BOX: RESOURCES YOU CAN USE! LEARNING FRAMEWORKS - NAAEE'S K-12 ENVIRONMENTAL EDUCATION: GUIDELINES FOR EXCELLENCE, EARLY CHILDHOOD EE PROGRAMS: GUIDELINES FOR EXCELLENCE, CEEI FRAMEWORK]

**A. Build awareness.** Starting as young children, learners build an appreciation that Earth is one, living, dynamic community. Learners develop a basic awareness of environmental interrelationships and the interdependence of all life forms, including humans. [BOX: DID YOU KNOW? DEVELOPING CARING PRACTICES FOR SOCIAL-ECOLOGICAL SYSTEMS]

*Learners should be able to...*

- Develop an awareness that humans are part of, depend on, and are affected by Earth's systems.
- Appreciate that the interrelationships among humans and natural systems influence our daily lives.
- Understand that a tradition of thinking of humans as separate from nature can lead to negative environmental impacts, including climate impacts.
- Recognize that climate change impacts are unevenly distributed across communities, regions, and the world and that inequalities can increase the exposure to climate change impacts for some, such as People of Color, low-income, and Indigenous communities.
- Acknowledge that concerns about climate change can surface emotions and lead to anxiety. Identify and access the tools and resources that can be used to understand and address these emotions.
- Recognize the interactions between land, ocean, and atmospheric cycles and systems that affect climate.
- Cultivate meaningful relationships and connections among people, the community, and with nature.
- Recognize that individuals can take private and personal actions and join with groups to take action together. [BOX: GUIDELINES IN PRACTICE - THIS IS INDIGENOUS LAND]

**B. Understand climate processes and systems.** Learners develop an understanding of climate processes and systems (e.g., hydrosphere, cryosphere, geosphere, and biosphere) and how these systems interact with one another and the atmosphere. Learners describe how human sustainability depends on Earth's climate systems. [BOX: DID YOU KNOW? EARTH SYSTEMS]

*Learners should be able to...*

- Explain, in simple terms, how the climate depends on Earth's systems. [BOX: DID YOU KNOW? ILLUSTRATION OF THE CLIMATE SYSTEM]
- Identify and access current information from a variety of sources including Traditional Ecological Knowledge, local knowledge, and Western or modern

science related to climate science and projected futures. [BOX: DID YOU KNOW? WAYS OF KNOWING]

- Access and explore varied sources of climate information, such as data collected from satellites, ice cores, tree rings, and sediment cores, and engage with stories or historical narratives and Indigenous language and other knowledge systems. Use this information to describe the local climate.
- Explain how changes in one climate system (e.g., hydrosphere, atmosphere, geosphere, and biosphere) can change another.
- Explore the impacts of climate change on biodiversity and ecosystem health.
- Explore how changes in Earth systems affect human communities, including communities with climate justice concerns.

[GUIDELINES IN PRACTICE - PLANT-IT MARSH & DUNES ENGAGES STUDENTS IN ECOLOGICAL STEWARDSHIP]

**C. Understand human systems.** Learners develop an understanding of human systems (e.g., social, economic, political, cultural) and ways that individual and group action influences climate change and climate resilience. Learners analyze differing beliefs and values within the same community and the larger society and consider how sustainable solutions rely on reconciling diverse perspectives. [BOX: DID YOU KNOW? HUMAN SYSTEMS]

*Learners should be able to...*

- Examine historical, ethical, cultural, geographic, economic, and sociopolitical relationships to further understand climate impacts and how these impacts are unevenly distributed across communities, regions, and the world.
- Appreciate that resource consumption and the use of technology impact natural systems, including climate systems, in ways that reduce environmental health, the capacity to be self-sustaining, and human well-being. Acknowledge that technology can be used to mitigate climate changes.
- Develop civic understandings related to the structure and processes of political and economic systems, especially at the local level, and how climate change related policies are made and implemented.
- Explore systemic barriers to climate actions and how they can be addressed (i.e., policies in schools, local and national governments, and organizations).
- Examine how human activities, both individual (e.g., energy use) and systemic (e.g., circular economy, carbon pricing), contribute to climate change and what actions might be taken to reduce the impact.
- Explore how communities with climate justice concerns understand local climate impacts and build systems to support community resilience.

**D. Apply systems thinking.** Learners apply systems thinking to understand how human activities cause and help mitigate climate change, and how climate change affects long-term environmental sustainability at varying, interconnected levels (e.g., local, tribal, national, and global). [BOX: DID YOU KNOW? SYSTEMS THINKING]



*Learners should be able to...*

- Trace how changes in one variable may impact another within a system. Analyze the interrelationships among the causes, impacts, and possible solutions of climate change and climate injustices.
- Use an understanding of climate systems to identify local climate change concerns, including those that might result from climate mitigation and adaptation activities. Analyze the implications of these concerns for environmental health, long-term sustainability, climate resilience, and climate justice.
- Explore the effects of human choices on climate systems and climate justice at varying, interconnected levels (e.g., local, tribal, regional, national, and global).
- Discuss the overlapping domains of social equity, economic prosperity, environmental sustainability, and cultural vitality and consider how they are impacted by climate change in a community. Consider how the impacts of climate change are intertwined with issues of poverty, inequality, and social justice.
- Analyze potential solutions to mitigate against and adapt to climate change through a lens of overlapping social, economic, and environmental systems.
- Explore ways that creating jobs can support climate justice and a community's transition to a low-carbon and sustainable economy.
- Investigate the relationship between a community's infrastructure (e.g., housing, transport, power, water, higher education) and climate resilience.
- Connect human health to climate impacts at the individual, family, and community levels.

**E. Develop action strategies and skills.** Learners develop an understanding of a broad range of climate mitigation and adaptation action strategies. They develop personal skills in communication, collaboration, and leadership to work collectively to bring about climate solutions.

*Learners should be able to...*

- Explore what contributes to climate change and what actions might be taken to reduce its impact (i.e., mitigating actions such as reducing use of fossil fuels, increasing energy efficiency, reducing meat in our diets. etc.).
- Investigate how the community might adapt to projected impacts of climate change (such as raising bridges and roadways in flood zones, moving vulnerable structures to higher ground, planting crop varieties that thrive with less water or greater temperature range, etc.).
- Listen actively and present their own perspectives about possible climate mitigation and adaptation strategies that could be relevant and useful in their community to encourage personal and community actions.
- Take turns leading discussions in small groups and contributing to small group decision making.

- Discuss examples of how others work individually and collectively toward just climate solutions and how to participate thoughtfully in inclusive environmental and community decision-making.
- Exercise problem solving skills by identifying the issue or concern, analyzing possible solutions, and deciding the best course of action.
- Practice conflict resolution skills when experiencing differing perspectives.
- Engage in discussions of local, national, and international issues related to climate change, climate resilience, and climate justice.

**F. Build personal and civic responsibility.** Learners understand that individuals and groups can make a difference and contribute to climate solutions. Learners develop a willingness and ability to act on conclusions about what should be done to work towards environmental quality and climate justice.

*Learners should be able to...*

- Describe the dynamics between exercising individual rights and responsibilities and addressing climate change and climate justice concerns.
- Explain the importance and evaluate the usefulness of civic dispositions such as trust, patience, self-discipline, tolerance, civility, respect, adherence to law, opposition to tyranny, standing up for the rights of others, and open-mindedness to the success of climate action.
- Exhibit personal agency by working independently and making choices to bring about just climate solutions.
- Examine the current and potential impact that community members, individually and collectively, have in maintaining or improving environmental quality, ensuring climate justice, and building climate resilience.
- Provide examples from various groups and communities (e.g., family, youth club, school, town, state/province, tribe, nation, world) that have contributed to environmental quality, climate justice, and climate resilience.
- Explain ways in which the decisions of one generation create opportunities and impose constraints on future generations.

[[BOX](#): RESOURCES YOU CAN USE! GREAT CLIMATE CHANGE TEACHING RESOURCE COLLECTIONS]

### **Key Characteristic: Locally Focused and Community Driven**

Climate action is an essential component of climate education. This action takes place in a community, which could be a classroom or school, a business or organization, a neighborhood or park, a town or city, or even a region or state/province. To be effective, climate action centers on community members' interests, priorities, challenges, and capacities and involves, by design, communities with climate justice concerns. Building partnerships (such as with school custodians, the apartment building owners, faith-based groups, local agency staff, members of civic organizations, or the homeowner's association) to incorporate the communities' diverse experiences and knowledge is key to creating community driven and responsive climate action. [[BOX](#): RESOURCES YOU CAN USE COMMUNITY ENGAGEMENT: GUIDELINES FOR EXCELLENCE]

**A. Know the community.** Learners build a detailed understanding of the community. For example, learners describe the community's geographic location, ecosystems, experiences with climate change and disproportionate impacts, community assets, leadership, decision-making processes, and past and current efforts to address climate justice.

*Learners should be able to...*

- Describe community assets, relationships, aspirations, and needs. For example, conduct a community assessment to identify social and ecological characteristics, relationships and challenges using various methods, like holding community interviews, engaging with stories from intergenerational community members, or holding a neighborhood gathering. [BOX: RESOURCES YOU CAN USE! COMMUNITY INVENTORY LIST] [BOX: DID YOU KNOW? COMMUNITY ASSET MAPPING]
- Develop an understanding of the make-up and history of the community, including geographic boundaries, landforms, waterways, infrastructure, and demographic characteristics.
- Investigate past impacts and future projections of climate change (e.g., storms, flooding, heatwaves, wildfires, and social and economic indicators), including frequency of events.
- Determine which individuals or populations in the community are most affected by climate change, positively and negatively, and identify how they are being affected. [BOX: RESOURCES YOU CAN USE! TOOLS FOR IDENTIFYING LOCAL ENVIRONMENTAL IMPACTS - e.g., EJSCREEN]
- Describe current and past efforts to address climate justice, enhance community well-being, improve climate resilience, and create climate solutions in the community. For example, describe how access to food, water, shelter, and a clean environment have been protected, particularly for those who are most affected by climate change.
- Investigate current and past efforts to develop community sustainability plans, climate change plans, resilience plans, etc. Determine how these plans address projected climate change impacts and whether they address any historical and current inequalities that may have led to communities with climate justice concerns being impacted unevenly. [BOX: GUIDELINES IN PRACTICE - MEET THE FUTURE: TRANSFORMING VACANT LAND IN DETROIT]

**B. Identify key individuals, organizations, and communities of interest.** Learners recognize that climate action requires the involvement of individuals and groups. Learners describe the community in terms of who will be involved in taking proposed actions, partners who can help imagine, improve, and approve the proposed actions, and those who will be affected by the action or inaction (either human or non-human).

*Learners should be able to...*

- Identify allies and supporters of climate change efforts as well as potential opponents.
- Determine which institutions, organizations, and agencies provide climate-related services in the community, such as social services (e.g., assistance for those who are food insecure, elderly, unhoused, unemployed or underemployed), economic

development, mental health, child welfare, educational and vocational services, and such. Analyze their strengths, funding, resources, and standing in the community.

- Gather information about individuals with complementary concerns and goals (e.g., government officials, policymakers, school principals and superintendents, members of the media, community leaders, business leaders, advocates and activists, faith leaders, medical professionals, educators, school board members), analyze their interests, and consider how their interests and climate change-related interests might intersect. [BOX: RESOURCES YOU CAN USE! MULTISOLVING]
- Identify the government agencies and elected officials involved in the development of policies and procedures related to climate change and climate justice.
- Identify current and historic figures, groups, events, strategies, and philosophies relevant to social justice, environmental justice, climate justice, and climate change, with particular attention to the local community.

- C. Build partnerships and collaborative relationships.** Learners recognize that authentic, trustworthy, effective partnerships and collaborative relationships take time to develop and require a willingness to learn continually from each other's experiences and perspectives regarding climate impacts, climate justice, and climate resilience. [BOX: DID YOU KNOW? CREATING EFFECTIVE PARTNERSHIPS]

*Learners should be able to...*

- Engage community leaders, government officials, and elected officials, especially those already working on climate change impacts and climate justice concerns. Explore priorities, capacities, and collaborative opportunities.
- Reach beyond existing networks and develop new partners and collaborators, including those who may have been left out of previous efforts. Build relationships with individuals and organizations known and trusted by communities with climate justice concerns. [BOX: RESOURCES YOU CAN USE! EXPANDING YOUR REACH – IDENTIFYING REPRESENTATIVES OF FRONTLINE COMMUNITIES]
- Take time to identify the co-benefits – shared interests and objectives – of working together toward climate action and climate justice.
- Build trust and create supportive environments that are conducive to personal growth and wellness of those involved (e.g., community members, educators, learners, and others).
- Listen to community members' perspectives and experiences, including how they talk about their community, its past, its present, and its future and how they talk about climate change.
- Build relationships, partnerships, and community across different backgrounds, including language, culture, religion, ethnicity, and such. Continually hone cultural awareness. Commit to on-going, two-way communication.
- Work across generations and build intergenerational power through relationships with community partners and other collaborators that represent diverse voices and cultures.
- Understand that frontline communities may hold different priorities and may be unwilling or unable to participate in climate related initiatives. Devote resources and energy to reduce perceived and real barriers to participation.

### **Key Characteristic: Civic Engagement for Climate Action**

Learners employ their knowledge of climate science, familiarity with the community, and group process and problem-solving skills to engage community members and design climate action strategies. Since climate change and climate justice impacts can be unique to each community, successful engagement strategies provide opportunities for learners and other community members to participate in conversations about concerns and potential solutions. Inclusive approaches to civic engagement increase the ability to develop collective action strategies that address climate impacts and climate justice concerns. [BOX: DID YOU KNOW? CIVIC ENGAGEMENT] [BOX: DID YOU KNOW? COMMUNITY ENGAGEMENT & OWNERSHIP]

**A. Design civic engagement strategies.** Collaboratively with partners, learners define their civic engagement goals and strategies for involving community members in climate change activities. Learners ensure that civic engagement strategies involve and welcome a broad array of peoples, such as people of different ethnic groups, cultures, sexual orientations and gender identities, abilities, ages, social groups, classes, language groups, and religious traditions, with respect and equity.

*Learners should be able to...*

- Understand the spectrum of possible civic engagement strategies (e.g., local to national, information dissemination to collaboration to community ownership) and how they can be used to involve others in the climate action planning process.
- Determine the desired civic engagement goals and match engagement tools and techniques to the type(s) of community-level climate engagement chosen.
- Inventory and select strategies, such as deliberative discussion, participatory budgeting, constructive dialogue, and community science, that can be used to provide active and meaningful ways for people to engage in climate change learning and decision-making activities. [BOX: DID YOU KNOW? DEFINITIONS AND EXAMPLES OF DELIBERATIVE DISCUSSIONS, ETC.]
- Build trust intentionally, by providing inclusive and welcoming opportunities for on-going learning, sharing, and involvement throughout the civic engagement process.
- Identify and remove barriers that prevent individuals and groups from engaging in climate discussions, including people from communities with climate justice concerns. For example, confirm that accommodations are available for people with childcare needs, transportation needs, and differing physical abilities (e.g., mobility, hearing, vision) as well as those from varying language groups and religious traditions.
- Ensure transparency, honesty, and inclusivity. Keep records of engagement activities, compile comments and feedback, and communicate the results widely.

[BOX: GUIDELINES IN PRACTICE - MORRIS AREA RURAL CITIZEN DIALOGUES]

**B. Support community conversations.** Learners create opportunities to engage in conversations about climate change, climate justice, and climate solutions with their collaborators and other community members. [BOX: DID YOU KNOW? USING LOCAL PHENOMENA TO COMMUNICATE CLIMATE SOLUTIONS]

*Learners should be able to...*

- Contribute to a collective understanding of climate change, climate justice and climate action-strategies by sharing knowledge, personal experiences, and resources. [BOX: RESOURCES YOU CAN USE! REAL TALK ABOUT CLIMATE CHANGE]
- Respect the diverse perspectives and competing priorities held by those involved. Understand that communities with climate justice concerns may hold different priorities related to climate change and climate action than others in the broader community.
- Honor multiple ways of knowing, including Traditional Ecological Knowledge and local knowledge, by building a shared understanding of the causes, impacts, and possible solutions to climate change. Recognize and integrate multiple ways of knowing, offering opportunities to view the world and climate change through Indigenous and Western lenses.
- Support intergenerational learning and sharing of climate stories, experiences, and resilience practices as well as climate solutions.
- Recognize and elevate the role of youth-centered and youth-led work in collective action and civic engagement as a pathway to solutions.
- Investigate how storytelling, art, dance, drama, and music can be used to engage and facilitate communications in and among community members and between communities in learning about climate change and climate justice impacts. [BOX: RESOURCES YOU CAN USE! YALE CLIMATE CONNECTIONS]

**C. Foster community level understanding of climate mitigation and adaptation strategies.**

Collaboratively, learners build collective awareness and understanding of climate solutions and possible action strategies. [BOX: DID YOU KNOW? COLLECTIVE/COMMUNITY LEVEL ENVIRONMENTAL LITERACY] [BOX: RESOURCES YOU CAN USE! COMMUNITY CLIMATE RESILIENCE PLANNING]

*Learners should be able to...*

- Investigate examples of local and regional climate action successes, including examples of community resiliency practices, community science programs, and climate-related careers. Identify policy options, especially related to local, climate change decision-making. Analyze differing perspectives that influence how climate change and climate justice decisions are made. Determine who makes decisions.
- Cooperatively identify actions that are meaningful to the community and contribute to noticeable change or are particularly relevant to a key issue or audience as the community becomes more resilient to climatic changes. For example, identify actions that support workers and other community sectors (e.g., business, industry) affected by the shift away from fossil fuels and consider how to ensure this transition benefits the whole community.
- Investigate ways to make climate-wise actions more accessible to community members, such as reducing meat consumption, increasing access to mass transportation, making renewable energies more readily available, providing funds for home weatherization projects, and creating walkable communities.

- Increase benefits and reduce barriers to the adoption of individual actions by working to understand community needs, priorities, and unique circumstances. [[BOX](#): RESOURCES YOU CAN USE! THE CARE FRAMEWORK/CBSM]
- Recognize that individual actions can scale to and influence collective impact.
- Understand that collective actions can influence systemic change through avenues such as policy, advocacy, and corporate responsibility.
- Identify individuals in the community who can influence decision making on a collective or systemic scale and co-create platforms to amplify their voices and shape policy outcomes. [[BOX](#): DID YOU KNOW? SOME METHODS OF ANALYZING ENVIRONMENTAL ISSUES] [[BOX](#): GUIDELINES IN PRACTICE - AMPLIFYING YOUTH VOICES FOR COMMUNITY ACTION]

**D. Take action.** Learners identify and critique alternative solutions and courses of action, plan action-taking, and participate in individual and collective climate action of their own choosing.

*Learners should be able to...*

- Recognize and encourage the participation of a range of community voices, including youth voices and the voices of those from frontline communities, in the process of exploring and selecting climate change action projects.
- Create plans for individual and collective climate action. Consider how climate-friendly actions can be modeled in the work of the group by using sustainable materials for campaigns, events and gatherings, travel, etc.
- Consider local actions to solve local challenges to mitigate or adapt to climate change.
- Develop criteria for gauging the effectiveness for proposed climate action strategies, including collective action. Apply the criteria to proposed climate actions before launching the project.
- Develop the capacity to implement climate actions by practicing applicable skills, including skills for individual and collective action.
- Identify and remove barriers that prevent individuals and groups, including communities with climate justice concerns, from taking action on climate change.
- Identify opportunities to create a solution for multiple concerns by working within a system. For example, a student involved with a climate action project on food waste might glean food from local farms, process the food, and then distribute it through her school's backpack program for food insecure families.
- Implement climate action plans of their own choosing. Reflect on the effects of their climate actions, consider unintended consequences, and weigh what, if anything, they would do differently. [[BOX](#): GUIDELINES IN PRACTICE - APIFM AIR QUALITY WORKSHOPS FOR URBAN STUDENTS]

**Key Characteristic: Hope and Celebration.**

Climate anxiety and environmental trauma can prevent people from engaging in climate actions, including climate justice solutions. Successful climate education recognizes the need to address climate-anxiety and to focus learning opportunities on hope, optimism, and mental well-being.

**A. Recognize and acknowledge climate-anxiety.** Educators support learners as they recognize and validate personal and emotional connections to climate change, climate justice, and their impacts. [BOX: DID YOU KNOW? CLIMATE ANXIETY]

*Learners should be able to ...*

- Recognize that past experiences with climate impacts (such as severe weather events, wildfires, flooding, and other upheavals) and climate injustices may prompt emotional responses. [BOX: RESOURCES YOU CAN USE! TRAUMA INFORMED TOOLKIT]
- Recognize that negative emotions related to climate change and climate injustices, like loss, grief, and guilt, are a healthy response to the climate crisis, are important components of humans' emotional ecosystems, and can catalyze individual and community responses to climate change.
- Acknowledge and address climate anxiety. Know that feelings of climate anxiety are real and can lead to feelings of helplessness.
- Access resources for addressing climate anxiety, despair, and trauma. Provide space for themselves and others, including educators, to maintain their own mental well-being and develop coping strategies. [BOX: RESOURCES YOU CAN USE! CLIMATE CHANGE & MENTAL HEALTH – HOW SOCIAL WORKERS CAN MAKE AN IMPACT]

**B. Develop self-efficacy, agency, and hope.** Educators support learners and their connections to communities to generate sustained purpose, self-efficacy, agency, and hope. [BOX: DID YOU KNOW? SELF-EFFICACY, AGENCY – INCLUDING PERSONAL AND COLLECTIVE]

*Learners should be able to...*

- Reflect on how laws, policies, and institutional decisions impact their lives, the lives of others, environmental health, climate resilience, climate justice, and community well-being.
- Consider how individuals – like themselves – and their own communities – influence laws and policies, and how laws are made and enacted, including implications for climate justice.
- Investigate how individual and collective actions can have cumulative effects, both in creating and addressing climate impacts and creating just solutions.
- Use case studies and other examples of individual and group actions taken to address climate change and climate justice to build positive imagery and hope.
- Explore self-efficacy and agency, understanding that what one does individually and in groups can contribute to climate solutions. [BOX: SELF-EFFICACY AND AGENCY ACROSS AGE GROUPINGS]
- Develop a sense of personal and civic responsibility, including a willingness and ability to take climate action based on one's own conclusions about what should be done to ensure environmental quality and climate justice.
- Develop a habit of reflecting on learning and action opportunities to recognize how one is growing. [BOX: DID YOU KNOW? BALANCING HOPE AND THREAT]



**C. Focus on just climate solutions.** Educators support learners as they center climate solutions and optimism in messaging and strategy development.

*Learners should be able to...*

- Create a shared vision of climate resilience, climate justice, and hope.
- Explore champions and leaders (including youth and members of frontline communities) in climate change action and climate justice and research their successes.
- Use inspirational stories to encourage a commitment to individual and collective climate action.
- Plan for the long-term sustainability of any climate change collective actions.
- Explore climate science and evidence-based climate solutions, such as those presented by Project Drawdown, to visualize a positive future. [BOX: RESOURCES YOU CAN USE! PROJECT DRAWDOWN]
- Evaluate existing climate messaging and communication and propose ways to shift the messaging to solutions-oriented, human-centered stories.
- Listen to and learn from community members who have enacted climate solutions, particularly those from communities with climate justice concerns, and generate collaborative messages of hope.

**D. Celebrate.** Educators and learners amplify and elevate stories of success.

*Educators and learners should be able to...*

- Identify and amplify indicators of progress toward just climate solutions in the community and elsewhere.
- Use culturally responsive, equitable evaluation to learn from the experience and make appropriate adjustments.
- Share and celebrate success at a variety of scales including locally and at regional, tribal, national, and global levels.
- Frame successes as learning opportunities for replication and scaffolding in further strategy generation.
- Work across sectors to communicate success stories and elevate potential collaborators and available resources.

**Key Characteristic: Collaborative, Welcoming, and Responsive Learning Environments**

Education for climate action relies on evidence-based instruction that creates effective, culturally responsive, and welcoming learning environments that are inclusive of the whole learning community. Instruction maximizes active learning about climate change and climate justice. Educators facilitate the investigation of climate impacts, analysis of climate justice concerns, and exploration of possible climate solutions and actions. Educators provide opportunities for climate action taking of the learners' choosing. As appropriate, instruction is co-designed in collaboration with partners. [BOX: DID YOU KNOW? CULTURALLY RESPONSIVE INSTRUCTION] [BOX: DID YOU KNOW? ACCESSIBILITY, DIVERSITY, EQUITY, AND INCLUSION]

**A. Ensure an inclusive learning environment.** Educators collaboratively foster an instructional environment, including learner interactions, that is safe, engaging, culturally relevant and responsive, accessible, supportive of relationship-building, intellectually stimulating, and motivating. [BOX: DID YOU KNOW? CULTURALLY RESPONSIVE INSTRUCTION] [BOX: GUIDELINES IN PRACTICE - ENVIRONMENTAL ACTION CIVICS]

*Educators should be able to...*

- Adjust climate change instructional practices to meet the needs of different ages, audiences, and communities. Explore local climate change impacts and climate justice concerns to ensure that instruction is personally relevant and meaningful to learners. [BOX: GUIDANCE FOR AGE-APPROPRIATE CLIMATE CHANGE LEARNING]
- Consider implications for climate justice in investigations of community history, conditions, issues, decisions, and impacts.
- Display enthusiasm, respect, care, fairness, and warmth, and support the social, emotional, and physical needs of the learners as they investigate climate systems, climate change, climate justice, and climate solutions.
- Demonstrate concern and offer alternatives for the learners' physical and emotional safety, especially during climate education experiences that are hands-on, take place outside, are in unfamiliar settings, or relate to controversial issues and strongly held beliefs. [BOX: DID YOU KNOW? POSITIVE LEARNING ENVIRONMENT]
- Demonstrate flexibility and modify instructional plans and approaches to take advantage of unexpected opportunities, including learner questions about climate systems, climate impacts, climate solutions, and climate justice.
- Respond to learners' interests and ways of knowing, adjust to meet their needs, and address scientific misconceptions.
- Offer sources of information that are relevant, accessible, timely, and represent participants' identities and cultural backgrounds.
- Provide multiple points of access to engagement, reaching learners where they are. For example, incorporate family and community knowledge by inviting guest speakers or employing activities using family interviews, storytelling, and community research. [BOX: RESOURCES YOU CAN USE! CULTURALLY RESPONSIVE INSTRUCTION CHECKLISTS] [BOX: RESOURCES YOU CAN USE! POSITIVE LEARNING ENVIRONMENT OBSERVATION CHECKLIST]

**B. Engage in open inquiry.** Educators design and implement instruction that is learner-centered and learner-directed. Educators respond to learners' interests and ways of knowing. Educators provide opportunities for learners to investigate the causes, impacts, and possible solutions for climate change and climate justice concerns of their own choosing. [BOX: DID YOU KNOW? LEARNER-CENTERED & LEARNER-DIRECTED]

*Educators should be able to...*

- Provide opportunities for real-life, hands-on exploration of climate systems, climate concerns, climate justice, and possible climate solutions. For example, provide opportunities for learners to collect, analyze, and evaluate their own data and draw their own conclusions.

- Facilitate sense-making, with a particular focus on making personal and community climate connections, including with People of Color, low-income, and Indigenous communities.
- Support and encourage learner voices, including youth voices and the voices of people from communities with climate justice concerns.
- Offer ways for learners to share power and make choices about the educational process, express themselves, provide leadership, collaborate, share their knowledge, make decisions, take responsibility for their own learning, and reflect. [BOX: RESOURCES YOU CAN USE! POSITIVE YOUTH DEVELOPMENT] [BOX: RESOURCES YOU CAN USE! THE ENVIRONMENTAL KINSHIP GUIDE – LEARNING FOR NATURE]
- Provide opportunities for culturally relevant and responsive open inquiry and investigation, especially when considering climate concerns that are controversial and require learners to reflect on their own and others’ perspectives.
- Ensure equitable opportunities for leadership to develop among learners and for leaders to step forward and grow, including opportunities for youth and those from communities with climate justice concerns.
- Provide learning opportunities focused on identifying and addressing power imbalances, especially among decision makers. [RESOURCES YOU CAN USE! DESIGNING PARTICIPATORY INSTRUCTION]

**C. Explore worldviews and perspectives.** Educators engage learners in an exploration of their worldviews and perspectives as well as the worldviews and perspectives of other learners and community members.

*Educators provide opportunities for learners to...*

- Explore differing worldviews concerning responsible and just climate resilience practices that lead to sustainable futures.
- Experience first-person narratives and stories that explore perspectives, knowledge systems, and resilience practices of communities with climate justice concerns.
- Investigate climate change concerns, considering evidence from different ways of knowing and viewpoints. For example, provide opportunities for a range of people knowledgeable about applicable fields and representing differing points of view to share their experiences and wisdom through materials or direct contact.
- Use multiple pathways for communicating and disseminating ideas.
- Participate in deliberative discussions, weighing a variety of options to address climate change concerns, including climate justice concerns.
- Practice self-awareness, working effectively and sensitively across different cultural contexts.
- Freely express their thoughts and conclusions using multiple ways of representation.
- Recognize unfairness that exists on the individual level (e.g., biased speech) and injustice at the institutional or systemic level (e.g., structural inequities) and how they contribute to climate injustice.

**D. Investigate climate change controversies.** Educators provide opportunities for learners to explore climate change controversies, including climate justice concerns, address scientific misconceptions, exercise media literacy, and practice climate communication strategies around the causes of climate change, impacts of climate solutions, and climate justice concerns.

*Educators provide opportunities for learners to...*

- Employ research-based tools to build media literacy. [BOX: DID YOU KNOW? 5 QUESTION TO ASK ABOUT MEDIA]
- Evaluate the accuracy, perspective, credibility, and relevance of information from a variety of sources, related to climate science, climate justice, and climate change impacts and potential solutions. [BOX: DID YOU KNOW? RELIABLE SOURCES]
- Explore common scientific misconceptions about climate change and understand why some people might hold these ideas.
- Construct arguments and communication strategies that address scientific misconceptions about climate change, climate justice, climate impacts, and possible solutions.
- Explore how climate misinformation and disinformation have been used over time to undermine social change and climate action. Identify key authors and distribution networks for climate disinformation.
- Use evidence-based modes to investigate the scientific consensus regarding climate change and to consider counterarguments.
- Develop and practice their deliberation skills to hear other perspectives and recognize areas of common ground.
- Compare, select, and use different methods of analyzing climate change, climate justice, and climate impacts, such as power mapping, risk analysis, cost/benefit analysis, root cause analysis, and social impact analysis.

## **APPENDIX: WRITING TEAM, THOUGHT LEADERS, AND ADVISORY GROUP**

### **Writing Team Members**

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### **Advisory Group**

A 20-person Advisory Group was formed. This group includes representation from NAAEE, NOAA, EPA, state departments of education, and universities (e.g., Haskell Indian Nationals University, Hamline University, Oregon State University), as well as the Center for Native American and Indigenous Research, Carnegie Museum of Natural History, Hitchcock Center for the Environment, Ten Strands, and the Houston Climate Justice Museum.

### **APPENDIX B – Glossary**

Coming soon.