

Creative Lessons To Open Classrooms & Minds To The World.



Fernando M. Reimers,
Robert Adams Jr., & Meghan Berka
With

The NEA Foundation Global Learning Fellows

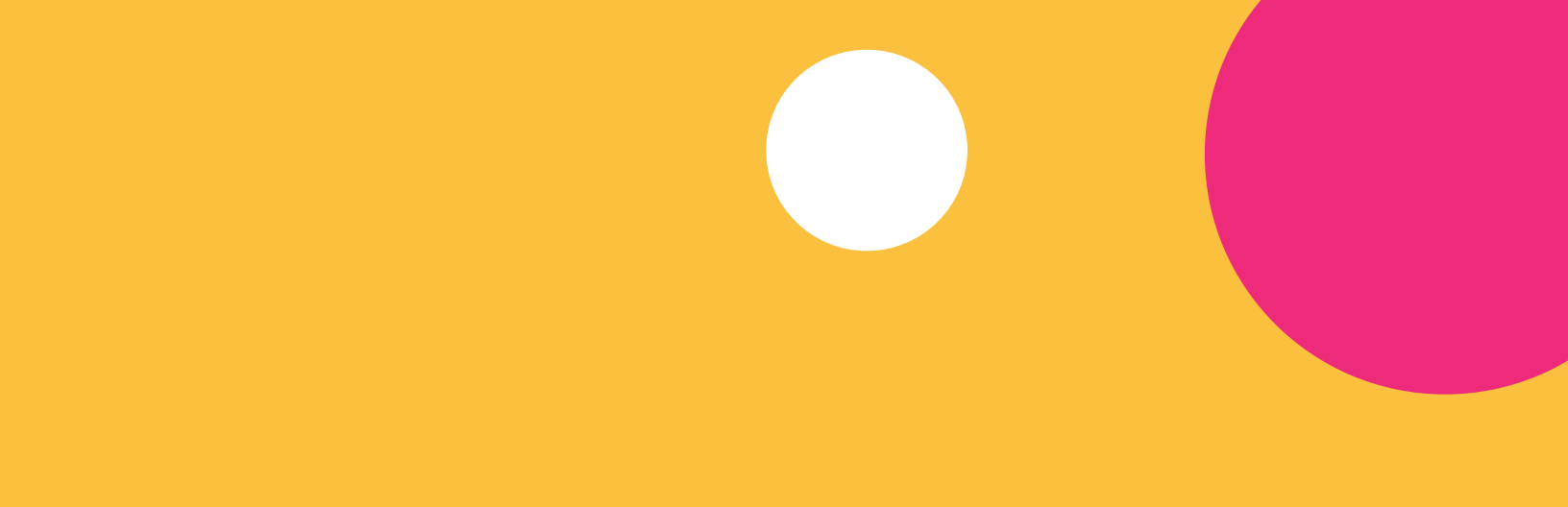
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NEA FOUNDATION

In 1969, the National Education Association (the NEA) spun off its charitable giving activities into the NEA Foundation for the Improvement of Education (NEAF), an independent public charity. Prior to the Foundation's creation, the NEA earmarked a portion of its members' annual dues to support educational experimentation. The NEAF was charged with investing these annual funds into strategic grantmaking geared toward improving American education. The NEAF operates like other philanthropic foundations with one significant difference—U.S. educators provide a majority of the NEAF's resources.

As the NEA Foundation celebrates its fiftieth anniversary, the mission, strongly rooted in the generosity of America's educators, remains the same: The NEA Foundation, through the unique strength of its partnership with educators, advances student achievement by investing in public education that will prepare each of America's children to learn and thrive in a rapidly changing world. The NEAF combines educators' generous contributions; their monetary resources and their collective wisdom, with donations from individuals, corporations, and other foundations. The Foundation redeploy these



resources to support educational innovations in classrooms and districts to sponsor professional development for educators across the nation, and to incentivize collaborative decision-making that include educator perspectives in schools and districts.

The Global Learning Fellowship (GLF) has been an important programmatic manifestation of the Foundation's mission for the last decade. The Foundation believes global competency—access to diverse language instruction; exposure to globally oriented content; and ample opportunities to participate in study abroad or international exchanges—is one of the fundamental skills public schools should offer to every student. Unfortunately, global competency is inequitably concentrated in wealthier districts, signaling a critical need to broadly and equitably allow access to global education regardless of zip code.

The NEAF's Global Learning Fellowship responds to the current inequitable concentration of global education in wealthier school districts. The program gathers a national cadre of globally oriented education leaders who are capable of advocating for equitable access to global education in their schools, districts, and states. The GLF provides fellows with ten months of professional development training organized around peer-to-peer learning. The fellowship concludes with a nine-day international field study that exposes fellows to the educational systems of other countries. Brazil, China, Peru, and South Africa have all hosted our GLF delegations.

The GLF represents a significant investment by the Foundation to facilitate leadership in global education. Therefore, the NEAF is always looking for ways to scale its efforts beyond the forty to fifty fellows the Foundation directly hosts each year. The lesson plan book in particular shares the wisdom of the GLF educators to a larger audience. Dr. Fernando Reimers, Ford Foundation Professor of Practice in International Education at the Harvard Graduate School of Education, generously allowed our fellows

to borrow the global education lesson plan template he developed with his Harvard graduate students as a foundation for this book.

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As the 2019 GLF lesson plan book process comes to a close, I would like to thank the GLF Class of 2019 for their hard work and patience. The Global Learning Fellowship team—Joanne Korandu, Meghan Berka, and Anna Smith—have done a wonderful job of holding the whole so that the fellows could have a meaningful experience. Special note of appreciation for Kristen Shannon for her continued assistance. This project would not have been possible without the constant support of the NEAF's President and CEO, Sara A. Sneed, the NEAF's Board Chair, Kevin Anderson, and the NEAF's Board of Directors. Finally, a special thanks to our editorial team, Michelle McKenzie and Miranda Galas.

Introduction

Developing Teacher Professional Capacity to Educate Global Citizens Through Collaborative Curriculum Design

Fernando M. Reimers, Ed.D.

For several years now, I have had the privilege of working with the National Education Association Foundation (NEAF) supporting the leadership development of the participants in the Global Fellows Program. I value this opportunity for at least two inter-related reasons: The first, is that there is no more important challenge in education than to help our students understand the world in which they live, a world increasingly interdependent in which we all share challenges and opportunities with others across all lines of difference, and where part of what we need to learn is to collaborate across those lines of difference. Global education is a way to help students develop the capacities for such collaboration with others on issues that matter.

The second is that the future of global education rests, as does the future of education more generally, on the work that teachers do, on their capacities and

dispositions to do this work, and on the support they receive to help their students gain capacities that empower them as architects of their own lives and contributors to a better world. High quality curriculum, and the instructional resources and partnerships essential to teach it, are the foundation of good instruction, and teachers must participate in developing such curriculum both bringing their expertise to the task, as well as developing their expertise as they partake in the task. But high quality curriculum requires more than the individual expertise of teachers working in isolation, it requires effective professional collaboration with colleagues. The work I have done with the Global Fellows of the NEA Foundation over the years has served to develop and demonstrate an approach to engage teachers in collaborative curriculum development in ways I hope has also empowered them as leaders in the profession.

The Urgency of Global Education

Since 2006, the World Economic Forum produces each year a report on the major global risks facing humanity. Drawing on the insight of a panel of experts, and on survey to a group of well-informed global leaders, the report identifies those risks in terms of their likelihood and impact. The risks identified are economic, environmental, geopolitical, societal and technological. Economic risks include asset bubbles, deflation, failure of financial institutions, failure of critical infrastructure, fiscal crises, high structural unemployment or underemployment, illicit trade, severe energy price shock and unmanageable inflation. Environmental risks include extreme weather, failure of climate change mitigation and adaptation, major biodiversity loss and ecosystem collapse, major natural disasters and man-made environmental disasters. Geopolitical risks include failure of national governance, failure of regional or global governance, interstate conflict, large scale terrorist attacks, state collapse or crisis, weapons of mass destruction. Societal risks include failure of urban planning, food crises, large-scale involuntary migration, profound social instability, rapid spread of infectious diseases and water crises. Technological risks include adverse consequences of technological advances, critical information infrastructure breakdown, large scale cyber-attacks and massive data fraud and theft (World Economic Forum 2019).

The most recent report identifies as the most likely risks: extreme weather events, failure of climate-change mitigation and adaptation, natural disasters, data fraud or theft and cyber-attacks. In terms of potential impact, the top five risks are weapons of mass destruction, failure of climate change mitigation and adaptation, extreme weather events, water crises and natural disasters (World Economic Forum 2019). It is noteworthy that many of these risks, particularly those related to climate change, conflict and misuse of technology, have persisted as top risks for multiple years, underscoring that these are difficult issues to tackle, in part because they require global cooperation. This highlights three related motivations for global education. The first is that, if we are to effectively manage those risks, people will need to be aware of them, care about them, and have the skills to address

them. Helping people develop those understandings and skills is one goal of global education. Secondly, because these risks require difficult choices for governments, it is necessary that many people develop a deep understanding of these risks, so they can provide the political support necessary for governments to address them. Thirdly, as these risks require global cooperation it is necessary to help people in various countries gain these capacities, so governments can collaborate constructively with the support of their respective populations. All of this will be very difficult as illustrated by the most recent report which sounds an alarm bell on the complexity of the challenge of sustaining collective will to address these risks:

“Is the world sleepwalking into a crisis? Global risks are intensifying but the collective will to tackle them appears to be lacking. Instead, divisions are hardening. The world’s move into a new phase of state-centered politics, noted in last year’s Global Risks Report, continued throughout 2018...The energy now being expended on consolidating or recovering national control risks weakening collective responses to emerging global challenges. We are drifting deeper into global problems from which we will struggle to extricate ourselves.” (World Economic Forum 2019).

One of the most severe global risks, climate catastrophe, has dominated the risk assessment for several years. The Intergovernmental Panel on Climate Change has stated that we have a decade to put in place serious changes to prevent global temperatures from rising above 1.5 degrees Celsius (IPCC 2018). In the US, the National Climate Assessment warned that absent significant reductions in emissions, average global temperatures could rise by 5 degrees Celsius by the end of the century (National Climate Assessment 2018). These changes in climate will have several negative effects. A recent UN report predicts global disruptions in the supply of food, food shortages will likely cause involuntary cross-national migrations. To prevent further climate change the report calls for changes in food consumption and agriculture production (IPCC 2018). A recent report documents that 17 nations are currently experiencing extreme water stress, which could impact a quarter of the

world's population (Hofste, Reig and Schleifer, 2019). These changes will in turn induce other changes that will impact sustainability. For instance, warming oceans are leading to an increase in methylmercury, a neurotoxicant, in fish. These increase levels of methylmercury will impact marine life, and humans who consume fish (Schartup et al. 2019).

These global trends and risks interact with each other, potentially compounding their effects. For example, in the United States, there are partisan political divides in how much confidence people have in scientists, which limits the credibility of scientists to inform public understanding on some of the risks discussed, such as climate change. Whereas 43% of democrats report that they have a great deal of confidence in scientists to act in the best interest of the public, only 27% of republicans share this view. Confidence in scientists increases with the level of science knowledge of the person, for those with low levels of science knowledge, only 26% report a great deal of confidence in scientists, compared to 45% among those with high levels of science knowledge who report a great deal of confidence in scientists (Funk, Hefferon, Kennedy and Johnson 2019, 3).

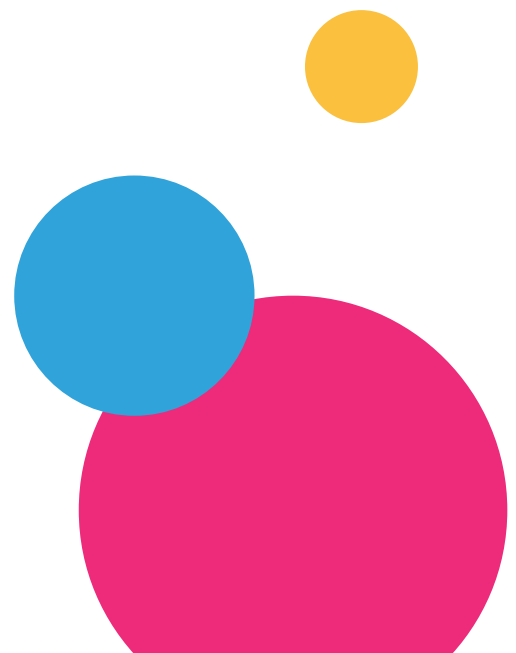
A challenge to global education is the emergence of a new tribalism, a form of intolerant and xenophobic nationalism, which explicitly challenges democratic norms and cosmopolitan ideas. A significant percentage of the population is dissatisfied with how democracy works in their country. 51% on average in 27 countries (Wike, Silver and Castillo 2019). Dissatisfaction with democracy is related to economic frustration, the status of individual rights and the belief that political elites are disconnected from the concerns of ordinary citizens and are corrupt (Ibid).

Societies are divided over race, religion, class and over how they view immigrants, one of the manifestations of globalization. Over the last decade, government restrictions and social hostilities based on religion have increased in 52 countries surveyed by the Pew Organization (Pew Research Center 2019). In the United States, the FBI has reported increases in hate crime over three consecutive years, they increased by 22% in 2017, more than half of them were anti-Semitic incidents (Byrd 2018).

Demographic changes and immigration are changing the ethnic and racial composition of many societies, which augments the urgency of educating people to understand the positive potential of this diversity and

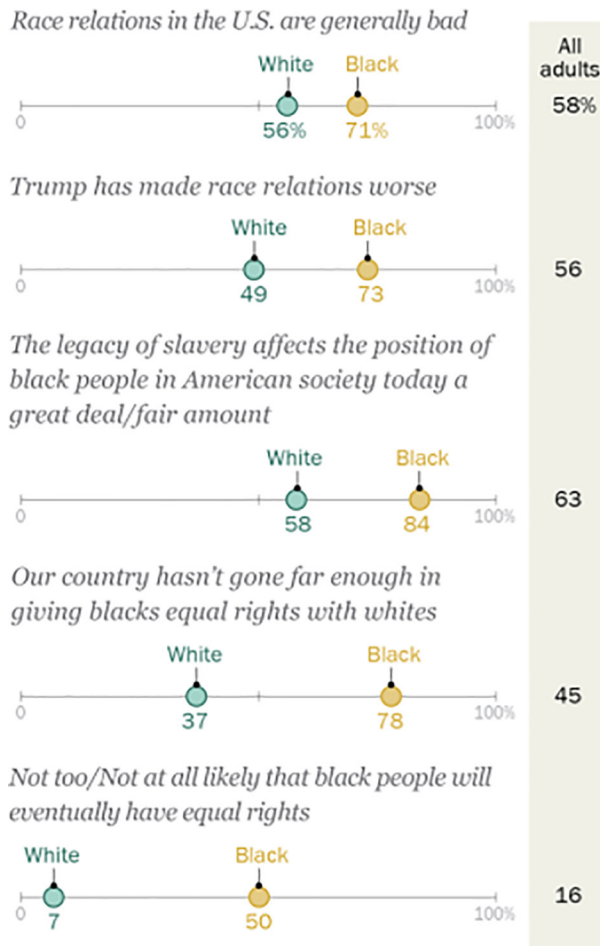
to be able to work productively and find common ground across lines of difference. In a more diverse context, the severe harm and conflict that prejudice and bigotry begets can augment its impact. In the United States, for example, higher population growth for minority groups and declining birth rates among whites will cause a country where ethnic minority groups will constitute the majority of the population by 2045. Whites will account for 49.7% of the population, Hispanics for 24.6%, blacks 13.1%, Asians 7.9% and multiracial groups 3.8% (Frey 2018). "Most Americans (57%) say the fact that the U.S. population is made up of people of many different races and ethnicities is a very good thing for the country, and another 20% say this is somewhat good. Small shares say this is somewhat (5%) or very (1%) bad, while 17% say it is neither good nor bad for the country. Similar shares of whites (55%), blacks (59%) and Hispanics (60%) say racial and ethnic diversity is very good for the country." (Horowitz 2019).

Despite these positive views of the majority of the population about racial and ethnic diversity, a recent survey to a nationally representative sample of Americans on attitudes towards race in the United States shows that the majority of the population (58%) believes that race relations are generally bad. This percentage is higher among blacks (71%) than whites (56%) (Horowitz, Brown and Cox 2019).



Most black adults have negative views about the country's racial progress

% saying ...



Note: Whites and blacks include those who report being only one race and are non-Hispanic.
 Source: Survey of U.S. adults conducted Jan. 22-Feb. 5, 2019.
 "Race in America 2019"

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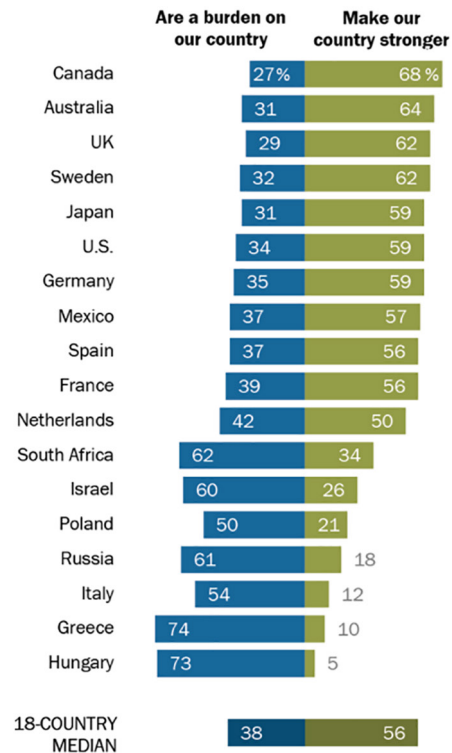
“Most Americans (65%) – including majorities across racial and ethnic groups – say it has become more common for people to express racist or racially insensitive views since Trump was elected president. A smaller but substantial share (45%) say this has become more acceptable.” (Horowitz, Brown and Cox 2019).

“About three-quarters of blacks and Asians (76% of each) – and 58% of Hispanics – say they have experienced discrimination or have been treated unfairly because of their race or ethnicity at least from time to time. In contrast, about two-thirds of whites (67%) say they’ve never experienced this.” (Ibid).

Public opinion surveys document also discrimination against immigrants. While the majority see immigrants as a strength, there are also many who see them as a burden to the country. Figure 1 summarizes the results of a 2018 Pew Research Survey in 18 countries, which account for half of the world’s population of migrants, in which people were asked whether immigrants made the country stronger or whether they were a burden.

Half or more in many destination countries view immigrants as a strength

Immigrants today make our country stronger because of their work and talents OR Immigrants today are a burden on our country because they take our jobs and social benefits



Source: Spring 2018 Global Attitudes Survey. Q54a.
 "Around the World, More Say Immigrants Are a Strength Than a Burden"

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Liberal democracies are experiencing several challenges reflected in declining support for democracy and in decline in democracy around the world. In 2018 democratic freedoms declined in 71 countries, whereas they improved in only 35 countries, this is the twelfth consecutive year of decline of democracy globally (Abramowitz 2018). A survey conducted by the Pew Research Center in 38 nations shows that while representative democracy is preferred by most of the population, there is also significant support

for non-democratic ways of government. Just under half of the population across these countries favors a system in which experts made decisions not elected representatives, and one in four persons thinks a system in which a strong leader can make decisions without interference from parliament or the courts would be a very good way to govern (Wike and Fetterolf 2018,139). Another 24% believe that a system ruled by the military would be very good (Ibid).

In contrast to these pressing risks and challenges, a more hopeful vision for the future of the world is expressed in a compact of seventeen goals, adopted at the UN General Assembly in September of 2015, they articulate the conditions for a world which is inclusive and sustainable.

These goals are:

<https://sustainabledevelopment.un.org/sdgs>



Each of these goals has in turn a number of specific targets, which operationalize the goals. Goal number 4, for example, focused on quality education for all, includes a target which focuses on global citizenship education, in ways reminiscent of the language of the right to education in the Universal Declaration of Human Rights:

“Target 4.7. by 2030 ensure all learners acquire knowledge and skills needed to promote sustainable development, including among others through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship, and appreciation of cultural diversity and of culture’s contribution to sustainable development” (UNESCO 2019).

An intentional global education which responds to these cultural imperatives would create opportunities for students to learn about and develop the skills to address the kinds of risks identified by the World Economic Forum and to contribute to achieve the United Nations Development Goals. In 2009-2010, with a group of colleagues, I developed a comprehensive curriculum, spanning from kindergarten to high school, aligned with the UN SDGs (we initially worked with the Millennium Development Goals, and later on substituted them with the Sustainable Development Goals as they were adopted at the UN General Assembly in 2015), with the Universal Declaration of Human Rights, and with the World Economic Forum Risk Assessment Framework. From the study of those goals, we developed a framework of competencies which a high school graduate should have in order to contribute to achieve such goals, and then used such framework to guide the development of 350 units to be taught in a special course, that would provide students explicit opportunities to integrate knowledge gained in various disciplines, as they worked on projects aligned with those competencies (Reimers et al 2016).

“... the overarching goal of our curriculum is to support the development of global citizenship, which is understood to be the result of competencies in understanding, caring about, and having the capacity to influence global affairs and to advance human rights. We built on a conceptualization of global competency that included knowledge, affect, and skills” (Reimers, 2009, 2010.)

Central to our conception of global competency is the notion of human agency—of empowerment—and we therefore sought to cultivate the mindset that individuals can make a difference, the desire to take initiative, the ability to act in leadership roles, and an understanding of responsibility.

The principles that guided our curriculum design were: defining clear outcomes for knowledge, affect, and action and focusing on interdisciplinary units that would be aligned with coherent themes in each grade as well as with an overall scope and sequence. Finally, we audited the entire curriculum to ascertain whether there were adequate opportunities for developing the intended capabilities throughout. We balanced such curriculum mapping with various features designed to support personalization, i.e. providing students opportunities to develop their own interests, to discover their passions, and to learn deeply about issues that were of interest to them. In particular, we depended on project-based learning, student collaboration, engagement from parents and community members, and student agency in shaping the high school curriculum as ways to personalize learning.

One of the pedagogical principles on which this design was grounded was to rely extensively on project-based learning and on active learning methodologies, such as Design Thinking, that place students at the center of their learning. We also sought to give students abundant opportunities to demonstrate understanding in the form of products that could be shared with peers, teachers, and other audiences, including students in other grades in the school and parents.

We also sought to create multiple opportunities for students to directly collaborate with peers in other countries with the use of technology for project-based work and remote communication. We viewed this collaboration to help them find their common humanity with diverse students.

The curriculum also provides multiple opportunities to directly engage students and teachers with parents and community members who can directly contribute knowledge and experience to support global education and thereby help students identify authentic connections between the local and global.

Throughout the entire K-12 curriculum, but particularly in grades nine through twelve, are opportunities for students to pursue their personal interests with greater depth, and to co-construct with their teachers a significant portion of the curriculum.

We defined those competencies as encompassing intercultural competency, ethical orientation, knowledge and skills, and work and mind habits:

1. INTERCULTURAL COMPETENCY

This includes the ability to interact successfully with people from different cultural identities and origins. It encompasses interpersonal skills as well as intrapersonal skills and ways to govern oneself in the face of cultural differences.

A. Interpersonal Skills

- i. Work productively in and effectively lead intercultural teams, including teams distributed in various geographies through the use of telecommunication technologies
- ii. Demonstrate empathy toward other people from different cultural origins
- iii. Demonstrate courtesy and norms of interaction appropriate to various cultural settings
- iv. Resolve culturally based disagreements through negotiation, mediation, and conflict resolution

B. Intrapersonal Skills

- i. Curiosity about global affairs and world cultures
- ii. The ability to recognize and weigh diverse cultural perspectives
- iii. An understanding of one's own identity, of others' identities, of how other cultures shape their own and others' identities, and of where one is in space and time
- iv. The ability to recognize and examine assumptions when engaging with cultural differences
- v. The recognition of cultural (civilizational, religious, or ethnic) prejudice and the ability to minimize its effects in intergroup dynamics
- vi. An understanding and appreciation of cultural variation in basic norms of interaction, the ability to be courteous, and the ability to find and learn about norms appropriate in specific settings and types of interaction

2. ETHICAL ORIENTATION

A. Appreciation of ethical frameworks in diverse religious systems.

B. Commitment to basic equality of all people.

C. Recognition of common values and common humanity across civilizational streams.

D. Appreciation of the potential of every person regardless of socioeconomic circumstances or cultural origin.

E. Appreciation of the role of global compacts such as the Universal Declaration of Human Rights in guiding global governance.

F. Commitment to supporting universal human rights, to reducing global poverty, to promoting peace, and to promoting sustainable forms of human-environmental interaction.

G. Ability to interact with people from diverse cultural backgrounds while demonstrating humility, respect, reciprocity, and integrity.

H. An understanding of the role of trust in sustaining human interaction as well as global institutions and recognition of forms of breakdowns in trust and institutional corruption and its causes.

3. KNOWLEDGE & SKILLS

In addition to highlighting the cosmopolitan links infused in the curriculum, as Kandel recommended a century ago, a global education curriculum should provide students with the knowledge and skills necessary to understand the various vectors of globalization. These include culture, religion, history and geography, politics and government, economics, science, technology and innovation, public health, and demography.

A. Culture, religion, and history and geography.

i. World history and geography, with attention to the role of globalization in cultural change.

ii. The study of religions as powerful institutions organizing human activity.

iii. Historical knowledge, which includes various perspectives and an understanding of the role of ordinary citizens in history.

iv. World geography, including the different areas of the world, what unites them, what differences exist, and how humans have changed the geography of the planet.

v. World religions, history, and points of contact between civilizations over time.

vi. Major philosophical traditions and points of connection.

vii. Performing and visual arts (e.g., theater, dance, music, visual arts, etc.) as a means to find common humanity.

viii. Different arts and ability to see connections

ix. Ability to view art as expression, to use art for expression, and to understand globalization & art.

B. Politics and government.

i. Comparative government.

ii. How governments work in different societies.

iii. Major international institutions and their role in shaping global affairs.

iv. Contemporary global challenges in human-environmental interaction.

v. Sources of these challenges, options to address them, and the role of global institutions in addressing these challenges.

vi. History of contemporary global conflicts and the role of global institutions in addressing these challenges.

C. Economics, business, and entrepreneurship.

i. Theories of economic development and how they explain the various stages in economic development of nations, poverty, and inequality.

ii. Institutions that regulate global trade and work to promote international development.

iii. Contemporary literature on the effectiveness and limitations of those institutions.

iv. The impact of global trade.

v. The consequences of global poverty and the agency of the poor.

vi. The demography and factors influencing demographic trends and their implications for global change.

D. Science, technology and innovation, and globalization.

E. Public Health, population, and demography.

4. WORK & MIND HABITS

A. Demonstrate innovation and creativity in contributing to formulating solutions to global challenges and to seizing global opportunities; seek and identify the best global practices; and transfer them across geographic, disciplinary, and professional contexts.

B. Identify different cultural perspectives through which to think about problems.

C. Understand the process of cultural change and that there is individual variation within cultural groups.

D. Carry out research projects independently.

E. Present results of independent research in writing, orally, and using media.” (Reimers et al 2016, lvii-lx).

Helping Teachers Gain Knowledge and Skills in Global Education

Because curriculum is not self-executing, a quality program of global education will require teachers with the expertise to teach that curriculum. Studies on deeper learning and 21st century skills emphasize the significant challenge and priority which building teacher capacity to translate 21st century curriculum into effective instruction represents. A recent National Research Council Report calls for significant changes in teacher preparation:

“Current systems of teacher preparation and professional development will require major changes if they are to support teaching that encourages deeper learning and the development of transferable competencies. Changes will need to be made not only in conceptions of what constitutes effective professional practice but also in the purposes, structure, and organization of preservice and professional learning opportunities.” (Pellegrino and Hilton 2012, 186).

Similarly, the US National Commission on social, emotional and academic development, underscores the urgency of the professional development challenge, calling to redesign educator preparation programs, create collaborative decision making in schools and districts, prioritize social, emotional, and cognitive skills and competencies in recruitment, hiring, orientation, and professional learning, incentivize innovation in teacher preparation programs, redesign licensure and accreditation, ensure that induction programs for new teachers support these domains and restructure adult workforce systems (Aspen Institute 2019, 50-53).

Teachers need to develop knowledge and skills in global education, and need to develop shared understandings with colleagues within their schools in order to be able to collaborate in the design and implementation of a coherent and rigorous curriculum which extends across grades and subjects beyond a few lessons on global topics here and there. A study of teachers in a network of schools in Denmark which were committed to advancing global education, found important variability in understandings of what global education was and in how it related to various subjects across teachers in these schools (Nilsson 2015). These

various conceptualizations include an education that is global, including understanding interconnectedness and interdependency, the process of globalization, themes like climate change, migration. A second conceptualization included an education to be global, encompassing understanding and respecting other cultures and people and gaining competencies to live in a global world. Finally, a third conceptualization included global education as teacher and school work, emphasizing the need for a coordinated approach and sharing resources at the school and the different challenges of integrating global education in various subjects (Nilsson 2015, 31).

In a study of curriculum reforms in Chile, China, India, Mexico, Singapore and the United States we found that as more ambitious goals were embraced by States and countries, the topic of teacher education and professional development received greater priority (Reimers and Chung 2016). A comparative study of programs of teacher professional development that focused on supporting teachers in developing the capacities to educate the whole child in Chile, China, Colombia, India, Mexico, Singapore and the United States, identified the following as characteristics which they shared:

1. These professional development programs reflect a conception of adult learning that sees it as socially situated and responding to current needs of teachers for learning.
2. This form of professional development involves sustained and extensive opportunities for teachers to build capacities, often extending an entire school year, or spanning across multiple school years, that contrasts with the more prevalent opportunities of short courses out of the school.
3. The modalities of professional development examined in this book are varied. They include independent study of new material, discussion with peers and others, individual or group coaching, demonstrations of new practices, independent research projects and opportunities for reflection.
4. The curriculum of the programs examined covers a blend of capacities, from a broad focus

on helping students develop capacities to a highly granular identification of particular pedagogies and instructional practices that can help students gain those skills.

5. The curriculum of these various programs reflects a view of learning which includes cognitive skills, in interaction with dispositions and socio-emotional skills.

6. Professional development includes exposure to visible routines, protocols and instructional practices, where teachers see in practice new forms of instruction or assessment.

7. These programs rely on a mix of opportunities for learning situated in the context of the schools where teachers work.

8. To support the intensive and sustained activities of professional development that these various programs advance, the organizations in charge build a range of partnerships with institutions outside of schools that contribute various types of resources.

9. These programs see teacher practice as situated in specific organizations and social contexts, and in general adopt a whole-school approach, rather than helping individual teachers increase their capacity.

10. The question of measurement. These programs all develop capacities among teachers to advance pedagogies with the goal of developing competencies that are not formally assessed in the school or school system. In this sense, the programs challenge the notion that “What gets measured gets done,” and suggest that teachers can make decisions about what and how to teach that can transcend the formal accountability structures in the school.

11. The organizations that support these various programs all model a learning orientation. They approach schools with an inquiry mindset, engage in dialogue with school staff about their learning goals, use various forms of feedback to assess whether their work is achieving the intended results, and implement measures to course correct and generate continuous improvement in their work. (Reimers 2018)

These features of high-quality professional development programs can be replicated in programs to increase the level of expertise of teachers for global education. Some of these principles were reflected in a book I wrote, with my graduate students, to help disseminate the approach to global education

curriculum illustrated with the World Course. When the book *Empowering Global Citizens* was published in 2016 I began to receive feedback that underscored the need to support the development of teacher capacities to design and teach this kind of curriculum, aligned with an ambitious framework of competencies, in turn aligned to the UN Sustainable Development Goals.

To address this need I developed, in collaboration with my graduate students, a resource book which included a protocol to establish a school-wide process of global education, that explained how to develop curriculum aligned with the UN Sustainable Development Goals, and that illustrated with a small number of lessons what this curriculum could look like in practice (Reimers et al 2017). The proposed thirteen steps process recognized the importance to create a process specific to the school which would help teams of teachers collaborate in developing a shared vision for global education, develop a curriculum prototype, and learn from experience. The protocol also suggested that schools sought to join networks with other schools following a similar process to accelerate the learning opportunities resulting from their shared experience in attempting similar goals. The steps proposed in this process were:

1. Establish a leadership team. This team will form the guiding coalition that will design and manage the implementation of the whole school global citizenship education strategy.
2. Develop a long term vision. What are the long term outcomes for students, for the school and for the communities that these graduates will influence that inspire this effort?
3. Develop a framework of knowledge, skills and dispositions for graduates of the school that is aligned with the long term vision.
4. Audit existing curriculum in the school in light of the proposed long term vision and global competencies framework.
5. Design a prototype to better align the existing curriculum to the global competencies framework in step 3 (the sixty lessons presented in this book can serve as an initial prototype, or as a sacrificial proposal that leads to the prototype a particular school adopts).
6. Communicate vision, framework and prototype to the extended community in the school, seek feedback and iterate.
7. Decide on a revised prototype to be implemented

and develop an implementation plan to execute the global education prototype.

8. Identify resources necessary and available to implement the global education prototype.

9. Develop a framework to monitor implementation of the prototype and obtain formative feedback.

10. Develop a communication strategy to build and maintain support from key stakeholders.

11. Develop a professional development strategy.

12. Execute the prototype with oversight and support of the leadership team.

13. Evaluate the execution of the prototype, adjust as necessary, and go back to step 4.

new knowledge and skills. Essentially, teaching any curriculum is based on two hypotheses: If we teach A students will learn B, and if students learn C outcomes D, E and F will be achieved for them and for their communities. Most teachers do not formally test their hypotheses, much less do so publicly. The process we have devised is one that allows teachers to work within a transparent framework that helps them make visible what are the hypotheses they are testing, and to learn from that process. As teachers do this work in collaboration with their colleagues, in a school wide process, this helps build shared knowledge about what works well.

I have found that engaging teachers in collaborative work discussing the relationship between curriculum, pedagogy and big challenges such as how to build a world that is inclusive and sustainable resonates with deep values for many teachers. Many teachers joined the profession in order to contribute to society and to make a lasting impact in helping their students develop, as shown by table 1 which presents data from an OECD study of teachers on some of the reasons teachers joined the profession. Engaging teachers in the design of curriculum to ‘improve the world’ taps on this powerful intrinsic motivation of many teachers.

This process sees the task of creating a global education curriculum as an opportunity for professional development, based in the school, and the collaboration among teachers in developing, teaching and evaluating this curriculum as a means to build their own expertise in doing so, as a result of experimentation. In effect, the process is designed to build the capacities of teachers to advance global education as they embark on designing and implementing a school wide program of global education. The approach is built on the premise that all learning requires an opportunity to practice, and that it is the reflection on that practice, that helps develop

MOTIVATION TO JOIN THE PROFESSION, BY TEACHERS' TEACHING EXPERIENCE (FROM OECD 2019 I.4.1)

Table 1.

Results based on responses of lower secondary teachers

	Teaching allowed me to influence the development of children and young people		Teaching allowed me to benefit the socially disadvantaged		Teaching allowed me to provide a contribution to society	
	Total		Total		Total	
	%	S.E.	%	S.E.	%	S.E.
Alberta (Canada)	98.8	(0.4)	77.8	(2.2)	94.7	(1.1)
Australia	96.0	(0.4)	79.8	(0.7)	92.6	(0.5)
Austria	95.6	(0.3)	75.3	(0.7)	87.1	(0.6)
Belgium	95.5	(0.3)	70.3	(0.8)	86.3	(0.6)
- Flemish Comm. (Belgium)	96.7	(0.3)	77.0	(1.0)	91.9	(0.5)
Brazil	95.4	(0.5)	93.7	(0.6)	97.2	(0.3)
Bulgaria	94.5	(0.6)	64.5	(1.0)	92.3	(0.6)
CABA (Argentina)	86.2	(1.0)	74.6	(1.1)	91.5	(0.8)
Chile	96.7	(0.4)	94.4	(0.7)	97.8	(0.4)
Colombia	98.2	(0.4)	95.8	(0.7)	98.8	(0.3)
Croatia	95.3	(0.4)	79.6	(0.7)	91.3	(0.5)
Cyprus	94.7	(0.6)	86.4	(1.1)	94.6	(0.7)
Czech Republic	92.6	(0.5)	67.9	(0.9)	89.0	(0.6)

Denmark	94.2	(0.6)	64.1	(1.2)	75.7	(1.1)
England (UK)	97.2	(0.4)	81.4	(1.2)	92.5	(0.6)
Estonia	87.5	(0.8)	62.3	(1.2)	81.8	(0.8)
Finland	82.7	(0.8)	59.5	(1.0)	65.6	(0.9)
France	92.1	(0.5)	70.3	(0.9)	83.1	(0.7)
Georgia	97.0	(0.4)	85.4	(1.0)	96.4	(0.4)
Hungary	92.7	(0.5)	69.2	(1.3)	84.4	(0.9)
Iceland	78.7	(1.2)	57.4	(1.4)	80.2	(1.2)
Israel	96.7	(0.4)	91.0	(0.8)	96.0	(0.4)
Italy	78.5	(0.7)	85.8	(0.6)	93.8	(0.4)
Japan	89.0	(0.6)	66.3	(0.9)	81.6	(0.7)
Kazakhstan	93.9	(0.4)	78.0	(0.7)	92.5	(0.5)
Korea	88.4	(0.6)	72.7	(0.8)	79.7	(0.9)
Latvia	93.2	(0.6)	80.0	(1.0)	92.6	(0.5)
Lithuania	91.4	(0.4)	71.5	(0.9)	85.5	(0.6)
Malta	96.3	(0.5)	84.2	(0.9)	92.8	(0.8)
Mexico	98.8	(0.2)	93.9	(0.5)	98.2	(0.3)
Netherlands	86.1	(1.4)	41.6	(2.3)	80.1	(1.5)
New Zealand	95.8	(0.5)	80.4	(1.2)	92.5	(0.6)
Norway	88.9	(0.5)	61.2	(1.0)	79.1	(0.7)
Portugal	94.0	(0.4)	90.2	(0.4)	93.2	(0.4)
Romania	98.1	(0.2)	89.0	(0.7)	96.0	(0.4)
Russia	88.1	(0.7)	80.7	(0.9)	90.9	(0.7)
Saudi Arabia	94.0	(0.6)	90.6	(0.7)	92.9	(0.6)
Shanghai (China)	93.3	(0.4)	80.7	(0.8)	92.8	(0.5)
Singapore	97.8	(0.3)	88.4	(0.7)	95.4	(0.4)
Slovak Republic	93.2	(0.5)	61.6	(1.0)	92.3	(0.5)
Slovenia	88.8	(0.8)	60.5	(1.4)	86.8	(0.8)
South Africa	98.1	(0.4)	88.6	(1.1)	97.1	(0.5)
Spain	88.6	(0.6)	79.4	(0.7)	90.5	(0.5)
Sweden	93.5	(0.6)	77.7	(0.9)	86.8	(0.7)
Chinese Taipei	94.0	(0.4)	87.9	(0.6)	94.2	(0.4)
Turkey	97.8	(0.3)	91.1	(0.4)	98.3	(0.2)
United Arab Emirates	97.5	(0.2)	90.5	(0.4)	97.2	(0.2)
United States	98.7	(0.3)	83.8	(1.0)	96.5	(0.6)
Viet Nam	98.8	(0.2)	95.2	(0.5)	98.7	(0.2)
OECD average-31	92.3	(0.1)	74.7	(0.2)	88.2	(0.1)
EU total-23	90.7	(0.2)	75.5	(0.3)	88.7	(0.2)
TALIS average-48	93.2	(0.1)	78.2	(0.1)	90.4	(0.1)

1. For example, hours, holidays and part-time positions.

Notes: For additional information on interpretation of the results, see Annexes A and B.

Statistically significant values are indicated in bold (see Annex B).

Information on data for Cyprus:

<https://oe.cd/cyprus-disclaimer>

Information on data for Israel:

<https://oe.cd/israel-disclaimer>

Source: OECD, TALIS 2018 Database.

As schools join others in improvement networks, these networks of schools become a means to augment the collective capacity of the participating schools and their access to expertise resident in the network, and this augments the capacity to test the hypotheses underlying any curriculum. This is what Tony Bryk and his colleagues have called ‘improvement networks’, adapting to the field of education well established principles of the field of improvement science (Bryk et al 2015).

Engaging Teachers as Constructors of Expert Knowledge in Global Education

The process described above of school based innovation with support of a school network, is one that simultaneously recognizes teachers as experts of the process of curricular innovation, while engaging them in a learning community that further develops that expertise and that enables them to create knowledge based on practice.

In *The Reflective Practitioner*, a classic book on professional practice and education, Donald Schon argues that the ability to reflect on the knowledge which guides practice is essential to the improvement of professional practice (Schon 1983). A reflective practitioner "turns thought back on action and on the knowing which is implicit in action." While trying to make sense of an action, a reflective practitioner "reflects on the understandings which have been explicit in his action, understandings which he surfaces, criticizes, restructures, and embodies in further action" (Schon 1983). Practitioners often guide their practice with problem-solving knowledge that goes beyond the mechanic application of principles or conclusions drawn from basic science. Schon also argues that the failure to comprehend this often leads institutions involved in professional education to base the curriculum on a paradigm which assumes that professional practice is simply the application of the general principles drawn from basic research in the field to problems of practice. I share Schon's view that such a paradigm is limited and insufficient to fully support effective professional practice, particularly when professionals encounter 'messy problems'.

This epistemological stance recognizes that when practitioners solve problems they learn from the consequences of their actions, and the knowledge they gain makes them better at solving problems in the future, hence better professionals. Solving problems, especially complex, messy, adaptive or divergent problems, thus requires much more than mechanically applying lessons drawn from research to new situations, and involves forms of creation, design of solutions, and experimentation. While good professionals learn from these private experiments that constitute their practice, this knowledge is often

accessible only to the practitioner, because it is not processed in a way that allows others to learn from it. This is called 'tacit' knowledge.

Constructing opportunities to learn from such knowledge as in the thirteen step process outlined earlier, transforms tacit knowledge into public knowledge and is critical to the development of education as a profession.

Some of the most fundamental critiques to university-based professional education concern whether the curriculum provides enough access to knowledge essential for effective practice, and whether such university-based professional education remains too theoretical and disconnected from the fields of practice for which it is preparing individuals. Donald Schon in *The Reflective Practitioner* argues that the classical model that sees practice as a mere application of foundational principles is responsible for this disconnect. It is not uncommon to hear voices from various fields of practice state that the deficiencies of professional preparation require that novices are taught what they need to know in the first years of professional practice. This challenge is compounded as technological change has increased the demands for professional practice in most fields, making clear that initial professional preparation is but one step in a long trajectory of development, that should extend throughout the careers of most professionals. Life-long professional preparation is recognized as essential to support people in their careers, especially as they take on new assignments for which their previous preparation and experience does not adequately prepare them.

Using the book 'Empowering Students to Improve the World in Sixty Lessons' as a starting point, I have worked with networks of teachers in developing global education curriculum, such as the Rete Dialogue, a network of teachers in Italy committed to democratic education, in translating and adapting this book to the Italian context. Over a year, this network of teachers translated the original book, taught these lessons, and then modified them, as part of a learning community in which they collaborated in this process

across various regions in the country. The result of this process was a revised curriculum, reflecting the learning these teachers had drawn from their practice in experimenting with the original lessons (Reimers, Barzano, Fisichella and Lissoni 2018).

Similarly, this is the work I have done with the Global Learning Fellows and the NEA Foundation. The result of our work includes a curriculum, inspired by 'Empowering Students to Improve the World in Sixty Lessons' in which teams of teachers from all US States collaborated designing grade specific lessons aligned with the UN Sustainable Development Goals, taught them in their respective schools, and then improved based on their various experiences teaching them. This collaboration over a year, relying on the use of communication technology, led to a publication which this group of teachers then used to further advance global education in their schools (Reimers, Adams

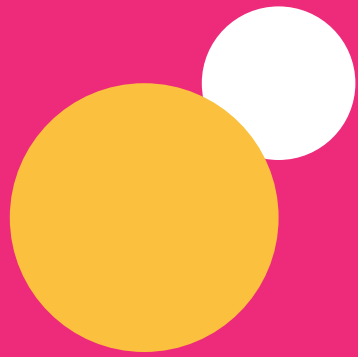
and Shannon 2018). This book is another product of that collaboration.

While this approach to professional development based on peer learning and networking is capacious, it is relatively rare, only 44% of the teachers reported participating in it, in the OECD study of teachers, this is low in comparison to 70% of teachers who report participating in traditional forms of professional development, such as courses or seminars (OECD 2019, 152).

I am delighted to see this book, the product of a group of exemplary public educators in designing lesson plans to help empower students as global citizens, available to the public. It stands as an example of the power of teacher collaboration to develop relevant curriculum that prepares students to understand and positively transform the communities in which we live into more inclusive, just and inclusive communities.







Kindergarten Lesson Plans

Kindergarten Lesson Plans



LESSON PLAN TITLE

What is Hunger?

DESIGNERS

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SUMMARY AND RATIONALE

This lesson will teach students about hunger. Students will reflect on what it means to be hungry and explore emotions/behaviors that are tied to hunger

GRADE

Kindergarten

TIME FRAME

35-45 minutes

SUBJECTS

Social Studies
Language Arts
Social-Emotional Learning

STANDARDS

Sustainable Cities and Communities (SDG 11) and Peace, Justice, and Strong Communities (SDG 16).

INSTRUCTIONAL GOAL

- Recognize that there are people in the world who do not have access to food
- Describe emotions and behaviors associated with hunger
- Develop an understanding or empathetic attitude towards those who are facing hunger

UNDERSTANDING

Students will understand that food gives them energy and makes them feel good. Students will learn that some children and families do not have enough food to eat. Student will gain an understanding of what it might feel like to face hunger.

ESSENTIAL QUESTIONS

- Why is food important?
- What do you feel like when you are hungry?
- How would you feel if you didn't have any food to eat when you were hungry?
- Do you think it is fair that some people in our community do not have food to eat?

STUDENT LEARNING OBJECTIVES

- Identify an emotion linked to hunger
- Understand that food helps our bodies
- Recognize that hunger is an issue that some children and families struggle with

ASSESSMENT

Students will complete a drawing response during Activity One. These responses (drawing or verbal) can be used to consider students' understanding.

SCORE

4 Advanced	Student successfully responded to 6 out of 6 questions
3 Proficient	Student responded to 5 out of 6 questions
2 Emergent	Student responded to 4 out of 6 questions
1 Basic	Student responded to 3 or less questions

SEQUENCE OF ACTIVITIES**INTRODUCTION**

⌚ 5 minutes

Explain to students that they are going to be learning about food and hunger. Provide the students markers, crayons, and paper.

ACTIVITY ONE

⌚ 10 minutes

- Have students draw their favorite foods on one side of a sheet of paper.
- Have students turn their paper over and draw pictures to the following questions.
- How do you feel when you eat your favorite foods?
- How does your body feel when you are hungry?
- How would you feel if you didn't have food to eat when you were really hungry?
- What would you do if you did not have any foods or snacks at home?
- What activities are hard to do when you are hungry?

ACTIVITY TWO

⌚ 20 minutes

Explain to the students that you are going to read them a story about two friends.

One of the characters has a refrigerator full of yummy and healthy foods. The other character only has milk and bread. This character and her family is facing an issue called "hunger". This means that they do not have enough food to eat and they do not have money to buy more food.

Read aloud *Maddie's Fridge* by Louis Brandt.

The online version can be found here

<https://www.youtube.com/watch?v=zbnvG5OkcYw>.

CLOSING ACTIVITY

⌚ 10 minutes

After the reading lead a classroom discussion. It is suggested to have students answer the following questions with a partner. This technique will engage more learners and allow for more ideas to be shared. While students are partner-sharing, the teacher can walk around to different groups to hear the ideas being discussed.

- How did it make you feel when you learned that Maddie's family did not have enough money to buy food?
- Why did Maddie ask Sofia to keep her empty fridge a secret?
- What is the difference between Maddie's fridge and Sofia's fridge?
- Why did Sofia bring food to school in her backpack?
- If you were Sofia what would you do to help Maddie?
- How do you think Sofia feels when she is eating dinner with her family and thinking of Maddie?
- How would you feel if you didn't have any food to eat when you were hungry?
- How did both characters help each other?
- What activities are hard to do when you are hungry?

RESOURCES FOR STUDENTS

- Family Resource Guide http://www.scholastic.com/hungrytohelp/pdfs/Feeding_America_FamilyActionPlan.pdf
- Worksheets and recipes from the read aloud *Maddie's Fridge* by Louis Brandt <https://www.loisbrandt.com/>

RESOURCES FOR TEACHERS

- Anchor Chart Paper
- Writing Utensils-markers, crayons, and pencils
- Online read aloud of *Maddie's Fridge* by Louis Brandt <https://www.youtube.com/watch?v=zbnvG5OkcYw>
- Picturing Hunger Worksheet http://www.scholastic.com/hungrytohelp/pdfs/Feeding_America_FamilyActionPlan.pdf





LESSON PLAN TITLE

Who Doesn't Have Food?

DESIGNERS

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SUMMARY AND RATIONALE

Students will be able to identify hunger in their community and what community resources there are to help eliminate it.

GRADE

Kindergarden

TIME FRAME

30 minutes

SUBJECTS

Performing Arts
Social Studies
Language Arts
Social-Emotional Learning
Empathy

STANDARDS

This lesson helps achieve SDGs 11 and 16.

INSTRUCTIONAL GOAL

Students will identify if hunger is present in their community.

UNDERSTANDING

Students will understand that not all children or adults in their community have enough food. There are children just like them in their neighborhood/community who do not have enough to eat. Students will understand that they can help alleviate the problem.

ESSENTIAL QUESTIONS

- Who is hungry in our community? (how many children do not have enough to eat?).
- Are there local resources to help feed those who are hungry?

STUDENT LEARNING OBJECTIVES

The students will learn that there is a need in their community, voice that need, and be able to explain how they and others can help.

ASSESSMENT

Students' accurate explanation of how everyone in the story contributed to the soup, the similarities/differences to our community, and how sharing is important are formal assessments. Checking for understanding with the paper plate activity can be a formal assessment. No summative assessments for this lesson.

SEQUENCE OF ACTIVITIES

MOTIVATOR

⌚ 15 minutes

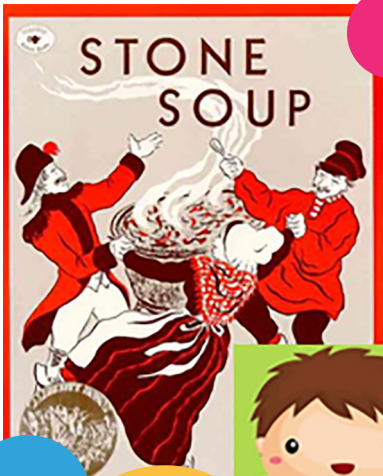
Students will read or watch the story “Stone Soup” and then act it out. As a group, students will explain how the main character elicited everyone in the town’s participation to create the stone soup and alleviate all their hunger through cooperation.

QUESTIONS TO ASK

- Who was hungry in the story?
- How did all the characters participate in feeding the crowd?
- Did the stone have magical properties/was the stone magic?
- How did working together help everyone?

Students will discuss how the village in the story is like their community. Basing “Stone Soup” from the Stories to Grow on series of books is best, but here are two good video versions:

<https://www.youtube.com/watch?v=ToBDv5RfCyc>
<https://www.youtube.com/watch?v=trbHdayluLA>

**WORKTIME**

⌚ 10 minutes

Remind students that food is necessary for humans to survive. Show students a blank paper plate and a grocery ad. Explain to students that they are going to get 6-7 minutes to cut out pictures of food and glue it to their paper plate.

After students finish the paper plate activity, have students sit in a circle with their paper plates. Explain to students that 1 out of every 5 children in our country struggle with hunger. Show children this statistic by taking away the paper plate from every 5th child in the classroom. Hold a classroom discussion about this statistic. If teachers want to find statistics for their state feedingamerica.org can provide data for all 50 states.

QUESTIONS TO ASK

- How did you feel when your plate was taken away?
- How did it make you feel when your classmate’s plate was taken away?
- Do you think it is fair that some children in our community face hunger?
- Why is it important that every child has a plate of food?
- How can we help people who are facing hunger?

CLOSING ACTIVITY

⌚ 5 minutes

The teacher will introduce students to local resources that help hungry people in their community. This can prepare students for lesson 4.





LESSON PLAN TITLE

Why is Food a Human Right?

DESIGNERS

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GRADE

Kindergarden

TIME FRAME

30-45 minutes

SUBJECTS

Social Studies,
Geography
Language Arts
Social-Emotional Learning
Empathy

STANDARDS

Sustainable Cities and Communities (SDG 11) and Peace, Justice, and Strong Communities (SDG 16).

INSTRUCTIONAL GOAL

- Lesson 1:
Students will understand what hunger is
- Lesson 2:
Students will identify if hunger is present in their community
- Lesson 3:
Students can explain why food is a human right
- Lesson 4:
Students can generate ideas about how to help fight hunger in their community
- Lesson 5:
Students will increase awareness about hunger around the world

UNDERSTANDING

Students will understand that all living things need food and water to grow. Just as no one kind of flower or plant deserves food more than another, we are all connected here on this Earth and every single one of us deserves food to live, grow, and thrive too. In this way, food is a human right for all people because each person has value. The students' actions can make their school, neighborhood, and the world better by helping make sure everyone has the food they need.

ESSENTIAL QUESTIONS

- What do plants need to grow?
- Is it the same for all living things?
- Is one type of plant greater than another?
- What do people need to grow?
- Are any people better than another?
- What can students do to help make sure people have the food they need?

STUDENT LEARNING OBJECTIVES

The students will learn that all living things have value and need food and water to grow. Students will learn that they can share to help others who are hungry and that all people deserve healthy food to eat.

ASSESSMENT

Student performance on sorting the plants into which ones needed water can be used as an informal assessment.

The engagement of students and participation in the discussions during carpet time is a good measure of their understanding. The charts produced during work time and the coloring/drawing pieces offering ideas of ways they can share will assess their understanding of the standard.

SEQUENCE OF ACTIVITIES

MOTIVATOR

⌚ 10-15 minutes

As a whole group on the discussion carpet, students will view a variety of pictures of plants and flowers that are living and in several states of failing to thrive. They will sort these pictures by which ones have what they need and which ones need help. What do the plants need to grow well? Students who need some prior knowledge can view the 2 minute Sesame street video before resorting of pictures to conclude that plants need water to survive.

https://www.youtube.com/watch?time_continue=154&v=ZDjFZVqiLvY

WORKTIME

⌚ 10-15 minutes

Students will discuss in small table groups what they think people need to live and grow. They will draw their ideas on chart paper to be displayed around the room. After 10-15 minutes of work time, the students will regroup on the carpet for the discussion of their charted ideas. What do people need to grow? Then they will watch this minute and a half video from Compassion International that explains about good nutritious food to help kids grow and thrive.

<https://vimeo.com/120632940>

The teacher will refer back to the plant pictures to pose a critical thinking question: “If there is only one pitcher of water, how should we water the plants? Let students talk to their ‘elbow partner’ to come up with ideas and let them share after about 5-7 minutes. Ask students if one plant should get more water than another and try to steer the conversation toward ‘sharing’ the water we have or ‘spreading around less to give all the plants some water”.

RESOURCES FOR TEACHERS

- List print or online resources that can help teachers prepare the lesson.

- We are all connected

<https://www.youtube.com/watch?v=SpIgpdy9rjU>

- Compassion International about nutritious food

<https://vimeo.com/120632940>

- Sesame Street Grover growing a plant video clip

https://www.youtube.com/watch?time_continue=154&v=ZDjFZVqiLvY

- Plant sorting cards (next page)

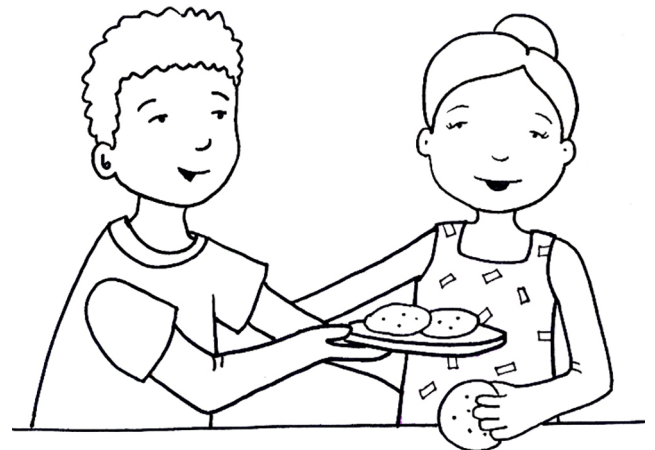
CLOSING ACTIVITY

⌚ 5 minutes

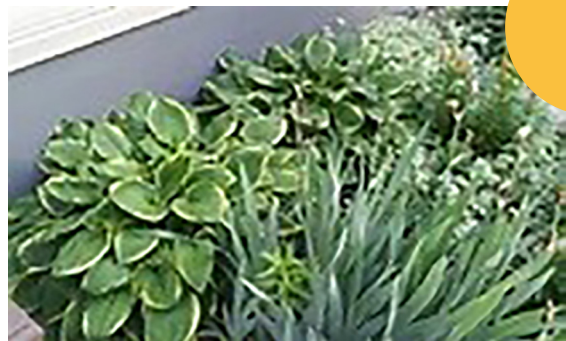
Encourage the students to think the same about our food. Sharing what we have and being aware that everyone deserves to have good nutritious food to eat. This is called a “human right” and there are people all over the world working together to make sure everyone has these things. They can wrap up watching the compilation “We are all connected”

<https://www.youtube.com/watch?v=SpIgpdy9rjU>

Then have students color or draw ways they can share food with others.

RESOURCES FOR STUDENTS

PICTURES TO SORT:
Who has what they need?





LESSON PLAN TITLE

Hunger Around the World

DESIGNERS

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GRADE

Kindergarden

TIME FRAME

30-45 minutes

SUBJECTS

Social Studies
 Geography
 Language Arts
 Social-Emotional Learning
 Empathy

STANDARDS

Sustainable Cities and Communities (SDG 11) and Peace, Justice, and Strong Communities (SDG 16), and SDG 2.

INSTRUCTIONAL GOAL

- Lesson 1:
Students will understand what hunger is
- Lesson 2:
Students will identify if hunger is present in their community
- Lesson 3:
Students can explain why food is a human right
- Lesson 4:
Students can generate ideas of how to help fight hunger in their community
- Lesson 5:
Students will increase awareness about hunger around the world

UNDERSTANDING

Students will understand that there is food insecurity in our country as well as in countries around the world. Students will understand that sharing food with those who need it is one way to help more people be fed.

ESSENTIAL QUESTIONS

- Is hunger a problem in other countries around the world?
- What would a world without hunger look like?
- How could we make that happen? This question is the beginning of generating ideas about how to fight hunger in a community.

STUDENT LEARNING OBJECTIVES

- Students will understand that hunger exists in other countries around the world.
- Students will identify continents that experience the most hunger.
- Students will learn that one way to help people that do not have enough food is to share what you have.
- Students will brainstorm ways that we can help people that do not have enough food in our community and abroad.

ASSESSMENT

Written on a circular pancake-shaped piece of paper like in the Kenyan story *Mama Panya's Pancakes*, students will answer the question with a picture, phonetic spelling or through dictation.

How did the families in this story work together to make sure everyone had enough food?

SEQUENCE OF ACTIVITIES

OPENER

⌚ 5 minutes

We have learned a lot about how everyone does not have enough food to eat and how that isn't fair. You have thought of some good ideas of how we could help people in our city and make a difference. People that care about the world try to think of ways to make things better for everyone. We call them "changemakers". That's what you are!

EVENTS

⌚ 30 minutes

Explain to the children that we have many families in the United States that do not have enough food. Ask, **"Do you think that this is a problem in other countries around the world?"**

Show students the **World Hunger Map**

<https://reliefweb.int/map/world/hunger-map-2018>

This map from 2018 shows the degrees of hunger around the globe with a color-coded system. The darker the color the more hunger and poverty. After explaining how the colors work, ask students what they notice. They will eventually comment on how the continent of Africa has countries with the hungriest people. Find Kenya on the map and share the story, **"Mama Panya's Pancakes"** by Mary Chamberlin.

NAIROBI, KENYA

Identify the country of Kenya where one in four children do not have enough food to eat. (Use representation to help understanding). Explain that there are big cities in Kenya (show photos), but most people in Kenya are farmers and live in small villages. It is important to show a diversity of photos when teaching this lesson including photos of big cities and people dressed in western clothes, so children don't think that all people in Kenya live in huts and wear traditional clothing.

There has not been enough rain over the years (drought) so growing food has been hard. When food is hard to grow, it is difficult to have enough food to feed your family or to sell at the market. (Show photos of a few huts, farmers, and children in Kenya) Tell the children that you are going to read a book about Mama Panya and her son, Adika, who are walking to the market to get the ingredients to make her special pancakes. Along the way, her son invites many people to dinner, and she is worried that they will not have enough food. Find out what happens at dinner time! The teacher will introduce students to local resources that help hungry people in their community. This can prepare students for lesson 4.

If we have enough food, sharing is one way that others can get some of the food they need.



- How was there enough food for everyone?
- What does it feel like to share?
- Does it ever feel hard to share?

Tell the children that we are going to make Mama Panya's Pancakes today. Explain that pancakes are made all over the world, but that they can taste differently than what you are used to. Show the students the ingredient for Mama Panya's Pancakes. You could have the batter ready to cook or have the children work in small groups to measure and combine the ingredients. While the pancakes are cooking...

Students will each be given a large, paper pancake made of light brown paper. Students will draw a picture and write an answer to the question, **How did the families in this story work together to make sure everyone had enough food?** Mama Panya had enough food because....

CONCLUSION

🕒 5 minutes

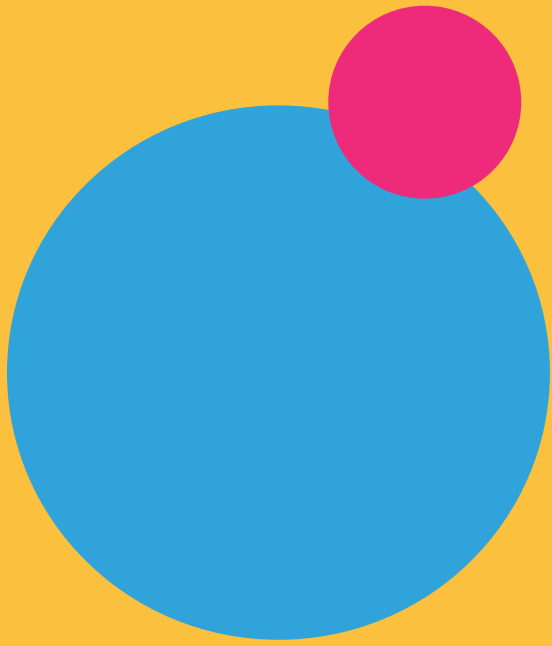
Food is a human right and everyone in the world should have enough food to eat. If we are going to reach the Sustainable Development Goals to help the world, we need to create ways to make things more equitable.

RESOURCES FOR TEACHERS

- World Hunger Map
<https://reliefweb.int/map/world/hunger-map-2018>
- Mama Panya's Pancakes: A village Tale from Kenya by Mary and Rich Chamberlin
- Perhaps a possible pancake breakfast can be a money fundraiser for a cause?
- Perhaps to ask families / teachers to have pancakes for a meal and contribute any leftover meal money to a cause.
- Possible partnership with an IHOP or Perkins restaurant to raise funds "Pancakes with a Purpose, Pancakes for a Pal type fundraiser.







First & Second Grade Lesson Plans

First & Second Grade Lesson Plans



LESSON PLAN TITLE

Take Action for Peace

DESIGNERS

Erica Jones:ewebber77@hotmail.com, Susan Koch:susank@mpsvt.org, Jennifer Morris:jennifermo@spokaneschools.org, and Melissa Collins:melissacollinsbct@gmail.com

SUMMARY AND RATIONALE

This lesson encourages primary learners to explore the concept of peace, discover activists for peace, and determine ways in which they can make the world a more peaceful place.

GRADE

1st & 2nd
(appropriate for K-2)

TIME FRAME

1 hour and 15 minutes

SUBJECTS

Writing
Reading
Social Studies
Speaking
Listening

PREREQUISITE

Pre-read at a prior session: “What is Peace” by V. Radunsky and “Children Around the World” illustrated by Donata Montanari.

SPEAKING & LISTENING

<http://www.corestandards.org/ELA-Literacy/SL/K/>.

LITERACY

Reading informational text

<http://www.corestandards.org/ELA-Literacy/RI/K/>.

READING LITERATURE

<http://www.corestandards.org/ELA-Literacy/RI/K/>.

STANDARDS

This lesson addresses Sustainable Development Goal #16. This lesson supports systems thinking competency. Students will learn how systems operate to encourage peaceful interaction. The lesson also supports problem solving. During role-playing experiences, the students will identify problems and generate real-world solutions.

UNDERSTANDING

Children can be peacemakers by identifying problems and developing solutions. Children will create a more peaceful world through their actions. Children will understand the role activists play in promoting social justice.

ESSENTIAL QUESTIONS

- Why is peace important? Without peace, what would the world look like? Would it be the same or different?
- What does peace mean to you ?
- Can this mean different things for different people?
- How do communities deal with conflict?
- What are some peaceful ways to deal with conflict?
- How can we contribute to make the world a more peaceful place?

SUMMATIVE ASSESSMENT

Groups will complete “Response to Reading Template.”

4	3	2	1
The group defines a problem and offers two or more solutions to the problem.	The group defines a problem and offers a solution to the problem.	With prompting, the group defines a problem and offers a solution to the problem.	With prompting, the group defines a problem.

SUMMATIVE ASSESSMENT

Criteria checklist for “What does peace mean to you?”

4	3	2	1
The learner describes peace using words or pictures and provides examples of activists.	The learner describes peace using words or pictures.	With prompting, the learner describes peace using words or pictures.	The learner orally describes peace.

SEQUENCE OF ACTIVITIES

OPENING ACTIVITY - MOTIVATOR

⌚ 5 minutes

- Teacher asks class: What does the word peace mean to you?
 - › Write or draw it on the note card.
- Pair up students. Have them share with their partner (person next to them) what they think they know about what peace means.
- Teacher asks class: Why is peace important?“ accept all responses

“TAKE A STAND” - GROUP MOVEMENT ACTIVITY

⌚ 5 minutes

- The group will create a line with two endpoints “agree” and “disagree”. In this activity, students will find a place on the line to describe their feelings in response to these prompts.
- Quiet spaces make me calm
 - I sometimes make mistakes
 - I feel good when I help people
 - Listening is hard for me
 - I notice when someone is left out.
 - I think about how others might feel
 - I know what peace feels like

PEACE ROLE PLAY

- Teacher asks the class: “What does peace look like in action?”
- I want you to silently think about what peace looks like at school, in our community, and in our world.
 - › List responses on a “Peace Anchor Chart” - Ways to respond- list peaceful actions and not peaceful actions.
 - › Students are grouped into small teams of 2-3. Each group will have a different scenario describing a conflict. Groups will have a chance to demonstrate how they can respond to the conflict.
 - **Scenario 1:** “You and a friend are waiting in line to go up the ladder and go down the slide on the playground. Another child runs over and cuts in front of both of you in line. What do you do?”
 - **Scenario 2:** “There is a child in your neighborhood who often calls you names. You do not know why they call you these names, but you do know that it hurts your feelings. You think maybe this other child could be jealous of you. What do you do?”
 - **Scenario 3:** “You accidentally bump someone on the playground and they fall down and begin to cry. What do you do?”
 - **Scenario 4:** “Two students reach for the playground ball at the exact same time. They each say that they touched it first. What do you do?”
 - **Scenario 5:** “At story time, one learner keeps interrupting, and making noises. It is hard to hear the story. What do you do?”

GROUP REFLECTION

- How did it feel to be a peacemaker?
- There are many peacemakers in the world they are called activists?



INTRODUCTION TO VOCABULARY & ACTIVISTS

🕒 10 minutes

Vocabulary: Activist, Activism and Taking Action

ACTIVIST

An activist is a person who campaigns for some kind of social change.

Example: Someone who's actively involved in a protest or a political or social cause can be called an activist.



ACTIVISM

Activism is the use of direct action to achieve an end, either for or against an issue.

Example: When people tie themselves to trees to protect the forest from being cut down, it is an example of activism.



TAKING ACTION

The process or state of acting or of being active.

Example: When you participate in a march protesting the closing of a neighborhood library, you are taking action.

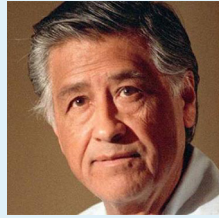


INTRODUCE ACTIVISTS

Share stories and photos of 5 global activists- brief overview of each



Malala Yousafzai



Cesar Chavez



Isatou Ceesay



Karim Wasfi



Wangari Maathai

BOOK: READ ALOUD

🕒 10 minutes

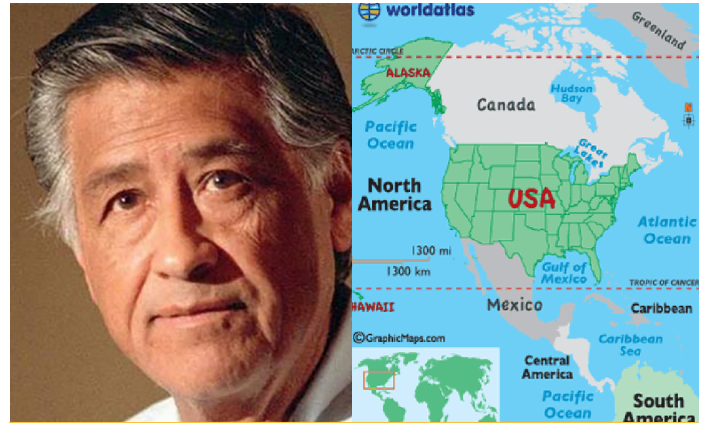
Students choose on which activist they want to learn more about.

- Wangari's Trees of Peace: A True Story from Africa
<https://www.youtube.com/watch?v=jK1NndEf6f0>
- One Plastic Bag: Isatou Ceesay and the Recycling Women of the Gambia
<https://www.youtube.com/watch?v=gHskUChyKgs>



MALALA YOUSAFZAI

As a young girl, Malala Yousafzai defied the Taliban in Pakistan and spoke out publicly against the Taliban's prohibition on the education of girls. She demanded that girls be allowed to receive an education. She was shot in the head at the age of 15 by a Taliban gunman, but survived and went on to be the youngest person to receive the Nobel Peace Prize, which is one of the most important awards that anyone can receive. Malala is fighting to give back to girls what poverty, war and discrimination tried to take away.



CESAR CHAVEZ

Cesar Chavez is best known for making people aware of the struggles of farm workers for better pay and safer working conditions. He knew all too well the hardships farm workers faced. Cesar succeeded through nonviolent tactics (boycotts, pickets, and strikes). Cesar Chavez and his United Farm Workers union sought recognition of the importance and dignity of all farm workers.



ISATOU CEESAY

Isatou has been empowering women and contributing to one of the most important issues around waste in Gambia by teaching plastic recycling and organic waste recycling for over 17 years. She has educated her fellow villagers not to let trash pile up around their homes. Instead she has taught them the importance to reclaim waste and do plastic recycling by making items with it to make money.



KARIM WASFI

The famous conductor of the Iraqi National Symphony Orchestra, played his Cello on the site of a car bomb in an act of defiance and appeal to the humanity of both terrorists and civilians. He established the Peace Through Art initiative. Karim has been appearing at the sites of explosions across Baghdad. Just hours after attacks, he can be seen seated in the ash and rubble in a black suit jacket, long hair combed back, playing his cello. For him, this combination of music and place has become a form of resistance.



WANGARI MUTA MAATHAI

Wangari was a Kenyan environmental political activist and Nobel laureate. She saw that in her country a lot of trees were being chopped down so she decided to do something about it to help her environment and the people. She ended up winning the Nobel Peace Prize, which is one of the most important awards that anyone can receive, for contribution to sustainable development, democracy and peace.

EVALUATE: RESPONSE TO READING

⌚ 15 minutes

- How will your group work to make the world a more peaceful place sheet?
 - › “How can you make the world a more peaceful place?”
 - › Explain the problem and what you can do.
- Connect it to the UN Sustainable Development Goals
- Groups share out with one other group and give them time to make revisions.

POST-ASSESSMENT

⌚ 5 minutes

- Teacher asks class: What does the word peace mean to you?
 - › Write or draw it on the note card.
 - › Share with a friend
 - › Add or revise What

GROUP NAME: _____

DATE: _____

HOW CAN YOU MAKE THE WORLD A MORE PEACEFUL PLACE?

- As a group look at the United Nations Sustainable Development goals. Circle the one you want to work on and talk about the problem and what you can do.



- Write and/or draw the issue and how you would fix the problem.

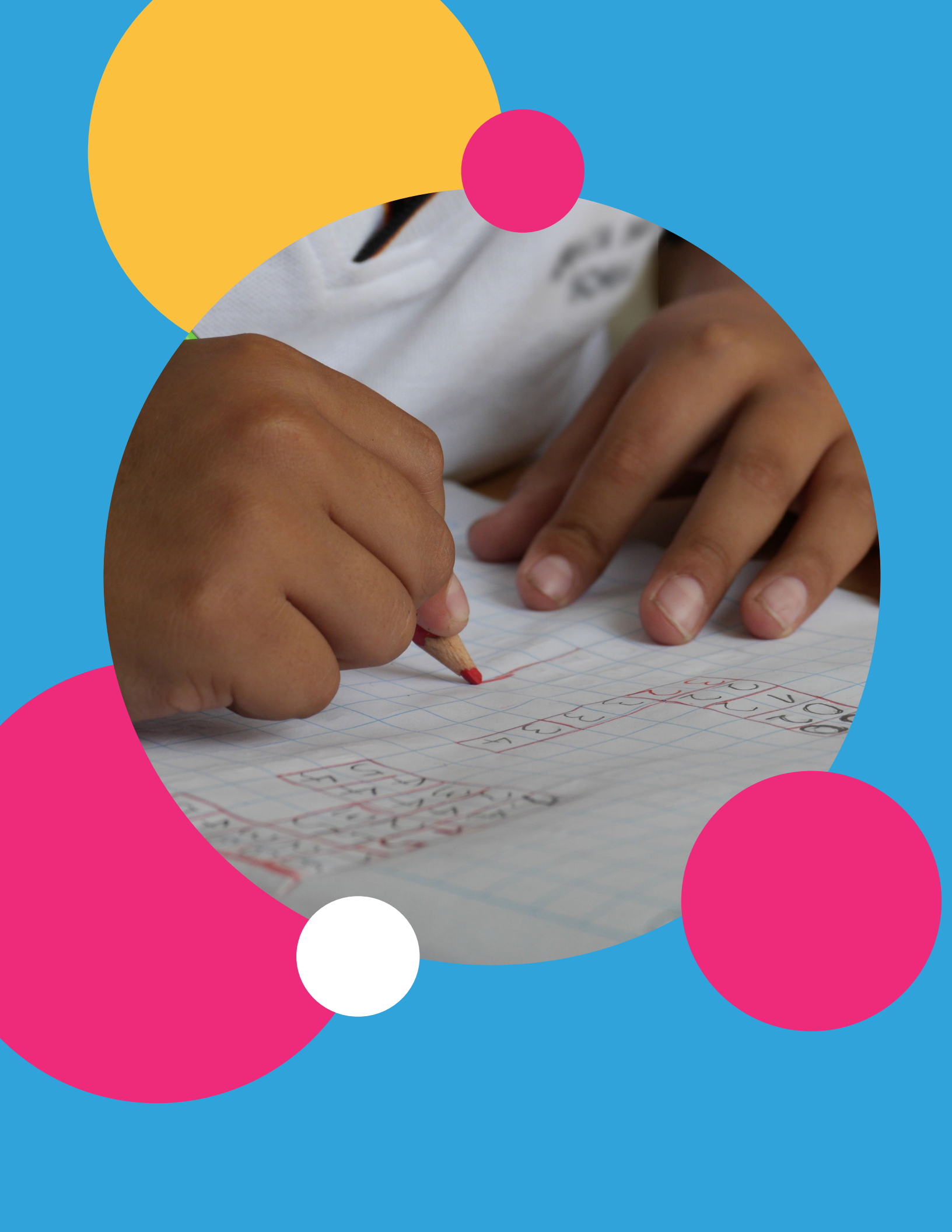
RESOURCES FOR STUDENTS

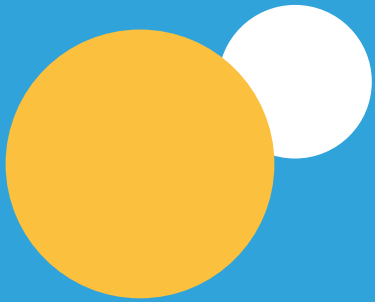
- Peacemakers, SDG cards, manila paper or other foldable
- One Plastic Bag (YouTube)
- What Does Peace Feel Like? By V. Radunsky
- Good People Everywhere by Lynea Gillen
- I am Human: A Book of Empathy by Susan Verde
- We Can Get Along by Lauren Murphy Payne

RESOURCES FOR TEACHERS

- What Does Peace Feel Like? By V. Radunsky
- Good People Everywhere by Lynea Gillen
- I am Human: A Book of Empathy by Susan Verde
- We Can Get Along by Lauren Murphy Payne







Third & Fourth Grade Lesson Plans

Third & Fourth Grade Lesson Plans

LESSON PLAN TITLE

Internet Access for All: A Question of Equity

DESIGNERS

Jennifer Metzler, Erin Sears, Wendy Turner, Lisa Jacobsmeyer

SUMMARY AND RATIONALE

The internet is an important component of 21st century life, particularly in education, yet not all homes, schools, communities have access to the internet. This lesson serves to raise awareness of the internet as an essential utility that enables people to have access to information, government and financial services, and educational opportunities. Students will practice perspective-taking to help students understand how access to the internet supports sustainable communities and strong institutions.

GRADE

3rd & 4th

TIME FRAME

1-2 sessions, 45-60 min. each

SUBJECTS

Language Arts
Science
Social Studies
Mathematics
Technology
Arts

INSTRUCTIONAL GOAL

Students will gain awareness and build empathy regarding internet access in their community. Students will identify stakeholders who are affected by the presence or absence of the internet. Student perspective-taking will foster empathy toward people and communities with limited internet access.

STANDARDS

- SDG 11: Sustainable Cities and Communities: Make cities and human settlements inclusive, safe, resilient and sustainable.
- SDG 16: Peace and Justice and Strong Institutions. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels.

UNDERSTANDING

- The internet is an essential utility that impacts quality of life.
- The internet is a critical component of a quality 21st century education.
- Access to the internet affects many groups of people (stakeholders).

ESSENTIAL QUESTIONS

- Why is access to the internet an essential utility?
- How does access to the Internet contribute to a quality 21st century education?
- How can communities increase internet access for residents?

STUDENT LEARNING OBJECTIVES

- Students will analyze and respond to Internet access data (small and/or whole group).
- Students will identify groups or individuals who are affected by the presence or absence of Internet access.
- Students will think about (with a partner or small group) the perspective of a stakeholder and share (orally or in writing) that stakeholders' thoughts about equitable internet access.
- Students will write an individual reflection on their changing understanding of how access to the Internet affects people.

ASSESSMENT

As an assessment, students will write a reflection demonstrating their changing understanding of how access to the Internet affects the stakeholders within the community. The reflection will be in the form of an exit ticket which asks them to describe what they used to think before the lesson and explain how their thinking has changed. We will know that students have met the objective if they are able to demonstrate their broadened understanding of the importance of the Internet in modern life and how equitable access affects the quality of life for members of their community.

Suggested exit ticket: “I used to think.... Now I think.....”

Name _____

EXIT TICKET

What I thought at the beginning of the lesson:	What I think now:

Name Michelle 35

EXIT TICKET

What I thought at the beginning of the lesson:	What I think now:
I thought everyone had the internet at first.	I think now that it would be good if we had the internet free.

SEQUENCE OF ACTIVITIES

OPENER

Students reflect on and respond to the following questions:

- Do you have access to the Internet at home?
- How do you use the Internet for school work?
- Why is it important for your education and learning to have access to the Internet?
- What would happen if you didn't have access to the Internet?

Teachers may use the following methods to gather this data: Google Forms, Menti, Poll Everywhere, or even chart paper and post it notes. Student responses are shared with the whole group.

CORE EVENTS

- Introduce vocabulary: internet, access, education, perspective, stakeholder, empathy
- Video Provocation: Students watch and discuss video.
- “75 million Americans don't have internet. Here's what it's like” video:

<https://www.youtube.com/watch?v=m7I2YiobGKU>

CIRCLE OF VIEWPOINTS ACTIVITY

Brainstorm stakeholder perspectives using the following scenario based on the video:

A family who does not have internet access needs to use computers at the public library to complete students' homework.

1. Teacher places photograph of a library's public computers in the center of large chart paper. (See Circle of Viewpoints image.)
2. Students brainstorm stakeholders affected by scenario and teacher writes stakeholders in a circle radiating from the photo (like sun's rays).
3. After students have completed brainstorming, class discusses the perspectives of the different stakeholders.
4. Students work in pairs or small groups to write short descriptions about internet access from a chosen stakeholder's perspective.
5. Student groups role play the perspective of their stakeholder.
6. Students discuss the different perspectives and how the stakeholders are affected by the lack of internet access.

CONCLUSION

A possible next step could include student-led brainstorming of how they can take action to increase Internet access within their community.

RESOURCES FOR TEACHERS**VIDEOS**

- If You've Never Heard of the 'Homework Gap' :
<https://www.youtube.com/watch?v=yqkAlwGsxwE>
- 75 million Americans don't have internet. Here's what it's like:
<https://www.youtube.com/watch?v=m7I2YiobGKU>
- If the World were 100 People:
<https://www.youtube.com/watch?v=A3nllBT9ACg>

PRIMARY SOURCES

- US Census Computer and Internet Use Visualizations:
<https://www.census.gov/topics/population/computer-internet/library/visualizations.html>

PRIMARY SOURCES

- US Census Computer and Internet Use Visualizations:
<https://www.census.gov/topics/population/computer-internet/library/visualizations.html>

BACKGROUND INFO

- Internet access:
https://en.wikipedia.org/wiki/Internet_access
- Digital Divide:
https://en.wikipedia.org/wiki/Digital_divide
- Strategies: Analyzing Maps
http://www.loc.gov/teachers/usingprimarysources/resources/Analyzing_Maps.pdf

POETRY

http://www.loc.gov/teachers/classroommaterials/primarysourcesets/poetry/pdf/teacher_guide.pdf

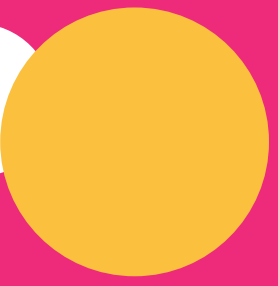
CIRCLE OF VIEWPOINTS

- <http://tpsconnect.org/2018/06/28/how-to-teach-empathy-using-primary-sources-the-circle-of-viewpoints-plus-extension/>
- <http://www.pz.harvard.edu/esources/circle-of-viewpoints-vt>

RESOURCES FOR STUDENTS**BOOKS**

- Roone, Anne. (2015). *You Wouldn't Want to Live Without the Internet!* New York: Franklin Watts.
- Bjerklie, David. (2017). *Technology For All: Wi-Fi Around the World - TIME FOR KIDS®* Informational Text. New York: Teacher Created Materials.







Fifth Grade Lesson Plans



Fifth Grade Lesson Plan



LESSON PLAN TITLE

A³ : Awareness, Advocacy, Action

DESIGNERS

Allison Shriver: akshriver@k12.wv.us, Isabel Bozada: iskabo@mac.com, and Michael Pope: maddscientist50@hotmail.com, assisted by Peter Mili: pdotmili@gmail.com

SUMMARY AND RATIONALE

In this lesson, the teacher will introduce the United Nations Sustainable Development Goal 11, Sustainable Cities and Communities, through the lens of access to clean water (Global Goal 6). This is a lesson that could proceed a larger conversation about the United Nations Sustainable Development Goals, access to clean water, and development within a city or community. Through this lesson, your students will learn about the United Nations Sustainable Development Goals and consider how they might be impacted if they lacked a resource as essential as clean water. When your students are done with this lesson, they will be ready to explore issues of community development and sustainability with both a local and global lens.

GRADE

3rd to 5th

TIME FRAME

1 hour (with possible extension if needed)

SUBJECTS

Science
Social Awareness
Current Events

STANDARDS

- United Nations Sustainable Development Goal 11. Sustainable Cities and Communities, through the lens of access to clean water (Global Goal 6).
- 3-5-ETS1-2. Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.

PRIMARY INSTRUCTIONAL GOAL

- Students will learn about how access to clean water and other resources impacts global communities.

INSTRUCTIONAL GOALS FOR EXTENSION ACTIVITIES

- Students will generate proposed solutions to increase access to clean water in a community.
- Students will compare their proposed solutions including how communities can increase access to clean water to make their communities more sustainable.
- Students will be able to communicate how access to clean water leads to sustainable cities and communities around the world.

UNDERSTANDING

- Clean water is an essential part of human life.
- Access to clean water impacts the sustainable development of a community.
- Citizens can engage in direct action to promote access to clean water and promote the sustainable development of a community.

ESSENTIAL QUESTIONS

- How does access to clean water contribute to a sustainable community?
- How is clean water essential in everyday life?
- How can people promote the need for access to clean water?

STUDENT LEARNING OBJECTIVES

- Students will develop an understanding of access to clean water impacting global communities.
- Students will generate proposed solutions to increase access to clean water in a community.
- Students will compare their proposed solutions including how communities can increase access to clean water to make their communities more sustainable.
- Students will communicate how access to clean water leads to sustainable cities and communities around the world.

AWARENESS

Given small group class discussion, exploratory videos and inquiry based facilitation from the teachers, students will create their own understanding of water access and fair practices in two different areas. Students should be able to explain issues caused by water issues, and areas affected by water issues with 90% improvement from pretest to post test.

ASSESSMENT

Pre/Post Test

1. What are UN Sustainable Development Goals?
2. What is Global Goal 11?
3. What does sustainable mean for communities?
4. What is the impact of water on communities?

SEQUENCE OF ACTIVITIES**BEFORE THE LESSON: PREPARATION**

Before the lesson, all your students should take the pretest (above). This will give you valuable information to guide the work that you and your students are about to do together.

Students should be seated in groups of 3-5 with ample space to work individually and collaboratively. Have a piece of paper and pencil ready for each student or have an online word processing document prepared and shared out with your students.

Have a means to write down what your students say, whether that is a chalkboard, whiteboard, electronic whiteboard, or a large piece of paper that all students can see.

At the end of the lesson, you will need enough space to bring your students together in a circle. It is also highly recommended that you choose a talking piece to ensure that all voices are heard. This talking piece could be something small like a special rock or other item.

OPENER: BUILDING AWARENESS

🕒 10 minutes

Have a piece of paper and pencil ready for each student or have an online word processing document prepared and shared out with your students. Students will begin by individually creating a list of all the ways they use water in their everyday life. Ignite their thinking by asking the following questions:

- How do you use water in the morning, afternoon, or evening?
- How does your family use water?
- What are things you do that use water that you might not think of?
- What kinds of foods do you cook with water?
- What kinds of drinks are made with water?
- How do you use water to make your body or environment cleaner?

When students have had about five minutes to create their lists of different ways they use water, share with them that they are going to be learning about how something as simple and basic as water can deeply impact the ways humans live. Explain that you are going to be learning about the problems that exist both around the world and in their community, and how people work together to solve these problems.

On a smart board or computer that all students can see, introduce the United Nations Sustainable Development goals by watching the video “The World’s Largest Lesson” on YouTube <https://youtu.be/cBxN9E5f7pc>



#GlobalGoals
The World's Largest Lesson

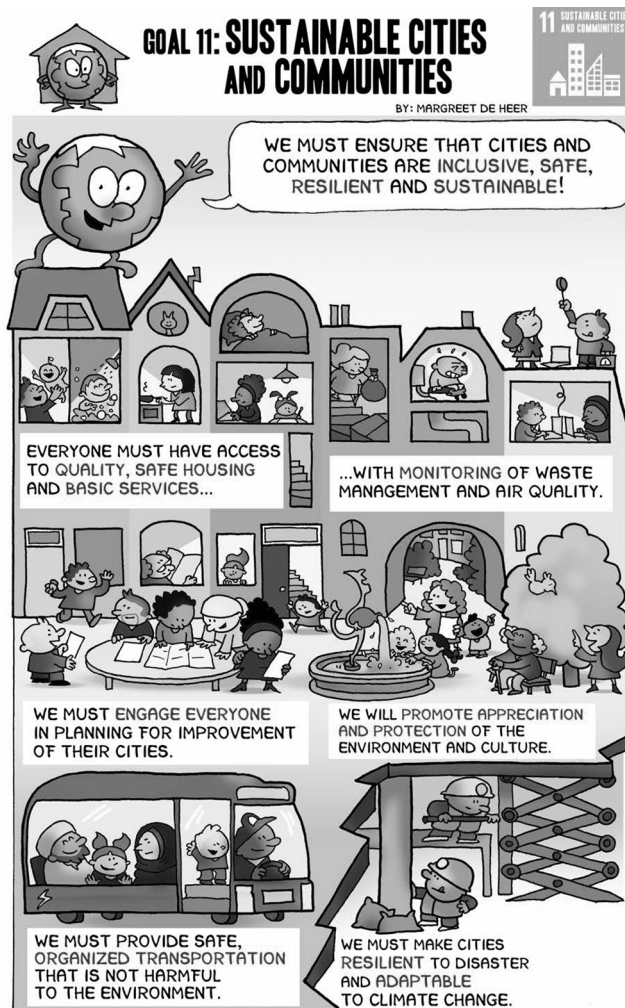
In this video, the idea of basic need” like “fresh water, clean air, and healthy food” is introduced, and how problems like climate change and inequality keep people from meeting their basic needs. As the video shares different problems, students will see video representation of the problems in a child-friendly format. The video introduced the United Nations Global Goals for Sustainable Development and shares how these goals we will make the world “safer, fairer, and more just for everyone” and that there is a plan for us to check our progress towards these goals, but first, we need to make these goals “famous,” so everyone knows about them!

When the video is finished, explain to students that they are going to be working on something that other students and experts from around the world are working on, that they are part of a much larger group of people that are all working hard to solve problems.

ADVOCACY

🕒 20 minutes

Give each group a full page copy of the cartoon below, which was created by Margreet De Heer for World’s Largest Lesson to help students understand Global Goal 11. Have students work in their groups of three to five to share what they notice and wonder about the cartoon.



Use the following questions to spark their thinking if they get stuck:

- What do you notice the people are doing in the cartoon?
- What do you notice about the words in the cartoon?
- What do you wonder about why the United Nations had to create this goal?
- What do you wonder about our world if one of these conditions were missing? What if all of them were missing?

After students have spent about 5 minutes working with their group to write what they notice and wonder, have them share out. Write their ideas where everyone can see them under headers “notice” and “wonder”. Continue until all groups have shared and all ideas have been added.

Have students take a few moments to look over their thinking. Pause for questions or things that they notice. When students have finished sharing out have them go back to their lists of ways that they use water.

In their groups, have them come up with how not access to clean water having would impact a community. Prompt them: How would it impact a community's ability to be "inclusive, safe, resilient, and sustainable"? What if only some people do not have access? How would that impact their lives?

For example, if some people in a community do not access to water for basic sanitation like bathing and toilets, then their community will be dirty, and people will not be able to stay healthy. Give students 5-10 minutes to come up with different ideas how access to water might impact a community and their ability to be "inclusive, safe, resilient, and sustainable"?

ACTION

⌚ 20 minutes (or more as needed)

Gather students together in a circle, either seated or on the floor. Introduce norms for your time in the circle (the person with the talking piece should be the only person talking, practice active listening, all ideas are welcome and valued, etc.).

You will be working with your students to make three rounds in your circle (everyone will get three chances to speak). As you progress through the rounds, the talking piece will be passed on to the person sitting to the left of the current speaker.

These are your first two questions:

- What did you learn today that surprised you or made you think differently?
- How would your life change if your family no longer had access to clean water?

At the end of the first two questions, when the talking piece comes back to you, explain to your students that many people around the world live in communities that have things that impact their ability to be "inclusive, safe, resilient, and sustainable" sometimes this is a lack of access to necessities like access to water, housing, transportation, and even clean air to breath. Have students sit and think about those words for a moment. On the final pass around the circle, have students respond to the question: "How would you feel if your no longer had access to something that you need?"

These ideas are a lot to think about for today, but this reflecting provides an excellent jumping off point for an entire unit about community development. Below are some extension activities that provide next steps in your curriculum and valuable opportunities for your students to engage in action to solve global problems: Learn how access to water impacts the community in Cape Town, South Africa. Connect with individuals in Cape Town to learn about what they experience. Explore innovative solutions to water shortages (see video resource below)

- Learn about how the water crisis in Flint and how Little Miss Flint (video below) worked within her community to help people. Have students consider the question, "Are there ways you could help communities like Flint?"
- Engage in an analysis of community resources and come up with a plan of how to connect individuals in the community with those resources (ex. If your community is a food desert and people do not have access to fresh groceries, how could you connect them with fresh groceries?)
- Brainstorm a theme or slogan for a sign or poster you could create to bring attention to the crisis of access to community resources like water.
- What are ways water can be purified (see below, under action), waste can be processed, and pollution can be decreased? Engage in the scientific process to unpack solutions and try them for yourself!

RESOURCES

- Initial Video: 2 mins Water Cycle for Kids.
<https://www.youtube.com/watch?v=9pqh6tLEOhs>
- Video: 24 mins Water Crisis Cape Town South Africa.
<https://www.youtube.com/watch?v=jQQT9ZjmeTA>
- Little Miss Flint and the Flint Water Crisis
<https://www.goodmorningamerica.com/living/story/miss-flint-making-difference-community-years-water-crisis-62543899>
- Video: 6 mins Water Crisis looms in South Africa.
<https://www.youtube.com/watch?v=Z6UxTTrdsZo>
- Video: 3 mins Flint's water crisis, explained in 3 minutes.
<https://www.youtube.com/watch?v=NUSiLOWkrIw>

END OF LESSON REFLECTION

⌚ 20 minutes

Students discuss what they learned about:

- › 1. Basic human needs for clean water and its importance to others around the world

RESOURCES FOR STUDENTS

- List print or online resources that can support students in carrying out the activities.
- The Power of Student Activism
<https://www.youtube.com/watch?v=1RbTRDRkpCk>
- 10 Kids that Have Changed the World
<https://www.youtube.com/watch?v=GzDp0ziPA6M>
- Be the Change
https://www.youtube.com/watch?v=Z8oJV_mBY9g

RESOURCES FOR TEACHERS

- List print or online resources that can help teachers prepare the lesson.

Awareness

- Initial Video: 2 mins Water Cycle for Kids.
<https://www.youtube.com/watch?v=9pqh6tlEOhs>
- Video: 24 mins Water Crisis Cape Town South Africa.
<https://www.youtube.com/watch?v=jQQT9ZjmeTA>
- Video: 6 mins Water Crisis looms in South Africa.
<https://www.youtube.com/watch?v=Z6UxTTrdsZo>
- Video: 3 mins Flint's water crisis, explained in 3 minutes.
<https://www.youtube.com/watch?v=NUSiLOWkrIw>

Advocacy

- Teaching Social Justice In the classroom.
<https://education.cu-portland.edu/blog/classroom-resources/teaching-social-justice/>
- World's Largest Lesson, Goal 11
<http://worldslargestlesson.globalgoals.org/global-goals/sustainable-cities-and-communities/>
- (cartoon for lesson)
http://cdn.worldslargestlesson.globalgoals.org/2016/06/A-To-Do-List-for-the-Planet_Page_12_Image_00011.jpg

Action

- Article: 4 ways to address the water crisis.
<https://www.virgin.com/virgin-unite/leadership-and-advocacy/4-ways-address-water-crisis>
- Articles on natural purification in 2nd/3rd World:
<http://www.fao.org/home/en/http://www.fao.org/sustainable-development-goals/goals/goal-11/en/>
- Using natural seed to purify water:
<https://agricultureandfoodsecurity.biomedcentral.com/articles/10.1186/s40066-018-0177-1>







Sixth Grade Lesson Plan

Sixth Grade Lesson Plan



LESSON PLAN TITLE

The Value of Water: Use it, Abuse it, and Lose it

DESIGNERS

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SUMMARY AND RATIONALE

Since ancient times water has been one of the most important substances on earth and needed by both animals, marine life, humans, and plants. Students will investigate the various uses of water including domestic, agricultural, industrial, recreation and hydropower. Students will examine the impact of human reliance on water and necessity of protecting water on a global level.

GRADE

6th

TIME FRAME

Four 50-minute classes

SUBJECTS

Social Studies

(Science, Reading / Language Arts, and Math)

ACCOMMODATIONS & MODIFICATIONS

Take into consideration that ESOL (English to Speakers of Other Languages) & ESE (Exceptional) students will need modifications to the lesson (chunking, teacher-student assistance, peer partnering, accommodations, extended time, for ESE students following their IEP, etc.).

OVERVIEW

- Day 1 - Review of historic and modern use and abuse of water systems
- Day 2 - Small and Large group Discussion: Compare and evaluate
- Day 3 - Local expert visits class to discuss local use, management of water resources, and conservation efforts (prevention, intervention, and damage control)
- Day 4 - Presentations on water problems and solutions to promote active civic involvement

INSTRUCTIONAL GOAL

INTERCULTURAL COMPETENCY

- **Intrapersonal Skills:** The ability to recognize and weigh diverse cultural perspectives on the use of water resources.

KNOWLEDGE & SKILLS

- **Politics & Government:** Contemporary global challenges in human-environmental interaction.
- **Culture, religion, and history and geography -**
 - › Map ancient river civilizations.
 - › Understand the historic uses and abuses of bodies of water.

WORK & MIND HABITS

- Identify different cultural perspectives through which to think about problems.
- Carry out research projects independently identifying current and global challenges related to water and possible solutions.

STANDARDS

UN SDG 11: SUSTAINABLE CITIES & COMMUNITIES

- 11.4 - Strengthen efforts to protect and safeguard the world's cultural and natural heritage
- 11.5 - By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations
- 11.6 - By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management.

UN SDG 11: SUSTAINABLE CITIES & COMMUNITIES

- #3 - Good Health & Well-being
- #6 - Clean Water & Sanitation

UNDERSTANDING

- Humans both past and present have relied on rivers and other bodies of water.
- Humans impact rivers and other bodies of water.
- Through sustainable management, the use of rivers and other bodies of water can continue to support human life and all living things into the future.

ESSENTIAL QUESTIONS

- How have rivers or bodies of water contributed to the development of human settlement?
- How have humans negatively impacted bodies of water?
- How do humans positively impact bodies of water?
- How can bodies of water be protected for use today and in the future?
- Why are rivers or bodies of water important to your community?

STUDENT LEARNING OBJECTIVES

COGNITIVE LEARNING OBJECTIVES

- The Learner is able to evaluate and compare the sustainability of their and other settlements' systems in meeting their needs, particularly in the areas of food, energy, transport, water, safety, waste treatment, inclusion and accessibility, education, integration of green spaces and disaster risk reduction.
- The learner understands the historical reasons for settlement patterns and while respecting cultural heritage, understands the need to find compromises to develop improved sustainable systems.

SOCIO-EMOTIONAL LEARNING OBJECTIVES

- The Learner is able to connect with and help community groups locally and online in developing a sustainable future vision of their community.
- The Learner is able to contextualize their needs within the needs of the greater surrounding ecosystems, both locally and globally, for more sustainable human settlements.

BEHAVIORAL LEARNING OBJECTIVES

- The Learner is able to speak against/for and to organize their voice against/for decisions made for their community.

ASSESSMENT

FORMATIVE ASSESSMENTS

- Interactive class river/Post-it activity
- Ancient river civilization blank map
- Threats to Rivers research
- Guest speaker questions and reflection

SUMMATIVE ASSESSMENTS

- Presentation
- Flipgrid reflection

SEQUENCE OF ACTIVITIES

OPENER & DAY 1 ACTIVITY



OBJECTIVE

Students will examine historic and contemporary uses and abuses of water around the world. Students will determine actions that they can take to preserve water sources.

OPENER

- View YouTube video: Colorado River - I am Red https://www.youtube.com/watch?time_continue=30&v=mqYcC7jEe44
- Randomly group students into threes or fours. Give each group blue and red Post-it notes.
- Inform students that blue and red Post-it notes will be used to communicate ways that rivers are used (blue Post-it tabs) and abused (red Post-it tabs.) The purpose of the red Post-it notes is to draw attention to the toxic or damaging nature of the abuse.
- Each Post-it note will be used to communicate one idea.
- As students view the video, they record on Post-it notes all the ways they saw or heard that humans use (blue) or abuse (red) the Colorado River.
- When they are finished viewing the video, students will compare their sticky tabs looking for similarities and trends. Students will determine 3-5 strong examples of uses and 3-5 strong examples of abuses. One person from each table group will read the examples out loud to the class as they place the Post-it tabs on the 'river' hanging on the wall.



SUPPLIES

- Black permanent markers
- Blue, red, yellow square Post-It notes (cut in half to conserve)
- Large blue paper cut into the shape of a river taped on the wall or board.
- Computers (one for each student)
- Earphones

ACTIVITY PART 1: ANCIENT RIVER CIVILIZATIONS

- Inform students that like the Colorado River today, rivers in ancient times were important to the societies they supported. Review the rivers that were important to early river civilizations.
- Display Early River Civilizations map on the SmartBoard.
- Ask: "What rivers do you recognize?"
- Ask: "How did people in ancient civilizations use the rivers?" (Possible answers include: transportation, religious ritual, trade, agriculture, habitat for plants/animals used by humans, mud for architecture, fresh water for drinking and washing) "How did ancient people abuse their rivers?" (Ideas might include over irrigation/salinization, damming of rivers, overuse of water.)
- Students are to use prior knowledge and record on the blue and red Post-it notes; all the ways ancient people used and abused the rivers they lived along.
- Students will then compare their Post-it notes as a group, looking for trends in ideas. They will decide on 3-5 strong examples of uses and 3-5 strong examples of abuses. One student from the group will read the "abuse" Post-it notes to the class as they place them on the river. Another student from the group will read the "uses" Post-it notes to the class as they place them on the river.

ACTIVITY PART 2: USE OF BODIES OF WATER TODAY

- Say: “*Today, communities depend on water from all kinds of sources including rivers, lakes, reservoirs, aquifers, inland seas, and the ocean.*”
- Ask: “*How do people today use rivers or other bodies of water?*”
- Students should reflect individually on the question. They should record all ideas on blue Post-It notes. These ideas should not include anything that has already been shared. These should be in addition to how ancient civilizations use rivers. (Answers may include: hydroelectricity, cooling power plants, salt production, mining, recreation, sanitation, fountains, firefighting, manufacturing, toilets, pools)
- Students should compare their ideas as a group looking for trends in answers and determine 3-5 strong examples. These examples will be read out loud by a student in the group as the Post-it tab is placed on the river.
- Collectively discuss how rivers or bodies of water are used or abused in your local area. Every time a student suggests an idea, have them write it on the respective colored Post-it note, and put it on the river on the board.
 1. Discussion Question Prompt: How are rivers or bodies of water used in our local community?
 2. Discussion Question Prompt: How are rivers or bodies of water abused in our local community?
 3. Discussion Question Prompt: How are local rivers or bodies in our community protected?
 4. Discussion Question Prompt: Why is it important to protect our local rivers or bodies of water?

ACTIVITY PART 3: ABUSE OF BODIES OF WATER TODAY

⌚ 10 minutes

- Students use the websites provided to explore more ways that humans use and abuse rivers today. Students will each need a laptop and earphones.
- Youtube: Sacred but polluted (Ganges)
https://youtu.be/MUOnIFZ__6E
- The Guardian: Threatened Rivers of the World
<https://www.theguardian.com/sustainable-business/gallery/2016/sep/22/worlds-threatened-rivers-pollution-industry-agriculture-in-pictures>
- Smithsonian: Exploring the World’s Most Imperiled Rivers
<https://www.smithsonianmag.com/travel/exploring-the-worlds-most-imperiled-rivers-47048630/>
- As they find something to add to the class river, they should use either the Post-it notes, or blue and red permanent markers. Writing with permanent markers on the class river itself will get kids up for longer and will encourage them to pause at the river and read some of the other ideas. It will also help you conserve Post-it notes. The teacher will also be able to monitor the progress of students during this independent work as he/she will be able to distinguish between information that was contributed by the individual and the group.

CONCLUSIONS: TAKING ACTION

Display the images from World’s Watershed mapped in detail and remind students that even if we don’t live directly near rivers, each of us use and affect them.

Students are to go to the website 50 Ways to Save Your River! and read through the list, identifying one action they could take to reduce the abuse on local bodies of water. Students are to record this item on the yellow Post It note and put it on the class river. These Post It notes are to represent the ‘boats’ that clean up the poison of the river.

DAY 2 ACTIVITY - GUEST SPEAKER

OBJECTIVE

Students will develop questions and interview a guest speaker from their local water management, including uses and abuses. Students will devise a plan to remedy any issues their town has regarding water use and management

KEY TOPICS SUGGESTED FOR PRESENTATION

- Community water needs and use
- Threats to the water resources
- Management of the water sources

POSSIBLE QUESTIONS FOR GUEST SPEAKER

- Is our town water safe to consume?
- How much water waste do we generate as a town?
- What steps can be taken to keep our water clean?
- How do the factories in our town use and protect our water?
- Are there problems with our water system that should be addressed?

PRESENTATION WRAP-UP

1. Have students discuss and/or devise a plan to remedy any issues their town has regarding water use and management. Brainstorm and discuss challenges or obstacles for the town to overcome.
2. And/or have students circle back to their Rivers from Day 1 and add anything after the expert presentation.

DAY 3 ACTIVITY - DISCUSSION & RESEARCH

OBJECTIVE

Students will discuss, reflect, and research local, national, or international water management resulting in a presentation on water problems and solutions.

PART 1- WATER MANAGEMENT CLASS DISCUSSION

Students will engage in a class discussion, reflecting on what they learned from the guest speaker. Suggested Discussion Questions:

- Were you surprised about the water use in your community?
- How does the community dispose of their waste?
- “Where does our community get its fresh water?”

- “How does our community use bodies of water?”
- “Will water management by the local community be enough to sustain water resources and human development?”
- “Who should be responsible for water management?”
- “How did/does the indigenous people who live/lived in this area use bodies of water?”
- What steps can be taken globally to ensure water use and management is sustainable for all future generations?

PART 2- WATER PROBLEMS & SOLUTIONS PRESENTATION RESEARCH

Students choose a water related topic, selecting their preference of presentation (individual, pairs, triad, quad), and demonstrate their creativity by creating an informative video, oral presentation, PowerPoint, poster board, dramatization, artwork, skit, rap or poem.

Students choose from a Choice Board of Multiple Intelligences on how to create a presentation for other students within their school community explaining problems and solutions to water management.







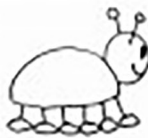

The presentation must include the following information:

- Use of water systems
- Abuse/potential threats or loss of the world’s water system
- Management of water systems/solutions to water system problems

Rubric on the next page to be used with oral presentations including: organization, subject knowledge, graphics, mechanics, eye contact, articulation

Suggestions: Waterborne diseases, pollution in the drinking water in Flint, Michigan (national) and in Jakarta, Indonesia (International), Red Tides that kill marine life, toxic green algae, hydroponics, aquaculture, aeroponics

CHOICE BOARD FOR MULTIPLE INTELLIGENCES

<p>Verbal/Linguistic</p> <ul style="list-style-type: none"> • Write instructions • Keep a personal journal • Create a poem • Create TV ads • Read stories to others • Retell in your own words • Teach concept mapping • Create crossword puzzle 	<p>Logical/Mathematical</p> <ul style="list-style-type: none"> • Create a time line • Compare/contrast ideas • Create an outline for a story • Design a map • Decipher codes • Create patterns • Design a game to show... 	<p>Visual/Spatial</p> <ul style="list-style-type: none"> • Create a poster • Draw a map • Create visual diagrams • Draw from different perspectives • Create a comic strip • Graph results of a survey 
<p>Interpersonal</p> <ul style="list-style-type: none"> • Tell stories • Teach a cooperative game • Role play a situation • Discuss and come to a conclusion • Survey or interview others 	<p>Free Choice</p>	<p>Body Kinesthetic</p> <ul style="list-style-type: none"> • Make up a cooperative game • Practice physical exercise • Conduct hands-on experiments • Construct a model or representation 
<p>Musical Rhythmic</p> <ul style="list-style-type: none"> • Create raps • Play musical instruments • Write to music • Teach dance steps • Make up sounds and sound effects • Write a jingle • Create rhymes that... 	<p>Naturalist</p> <ul style="list-style-type: none"> • Collect and categorize data, materials, or ideas • Discover or experiment • Take a field trip • Study means of survival • Adapt materials to a new use • Label and classify 	<p>Intrapersonal</p> <ul style="list-style-type: none"> • Keep a personal journal • Write about personal experiences • Think about and plan... • Review or visualize • How would it feel to... • Imagine and write about the future 

Teacher Grading Rubric - Oral Presentation

	4	3	2	1
Organization	Student presents information in logical, interesting sequence which audience can follow.	Student presents information in logical sequence which audience can follow.	Audience has difficulty following presentation because student jumps around.	Audience cannot understand presentation because there is no sequence of information.
Subject Knowledge <ul style="list-style-type: none"> • use • abuse/potential threats • management/solutions 	Student demonstrates full knowledge (more than required) by answering addressing topic information and all class questions with explanations and elaboration.	Student is at ease with topic information and expected answers to all questions, but fails to elaborate.	Student is uncomfortable with information and is able to answer only a few questions.	Student does not have grasp of information; student cannot answer questions about subject.
Graphics	Student's graphics explain and reinforce text information and presentation ie, graph, map	Student's graphics relate to text and presentation.	Student occasionally uses graphics that rarely support text and presentation.	Student uses no graphics
Mechanics	Presentation has no misspellings or grammatical errors.	Presentation has no more than two misspellings and/or grammatical errors.	Presentation has three misspellings and/or grammatical errors.	Student's presentation has four or more spelling errors and/or grammatical errors.
Presentation <ul style="list-style-type: none"> • eye contact • articulation 	Student maintains eye contact with audience, seldom returning to notes. Student uses a clear voice and correct, precise pronunciation of terms so that all audience members can hear presentation.	Student maintains eye contact most of the time but frequently returns to notes. Student's voice is clear. Student pronounces most words correctly. Most audience members can hear presentation.	Student occasionally uses eye contact, but still reads most of report. Student's voice is low. Student incorrectly pronounces terms. Audience members have difficulty hearing presentation.	Student reads all of report with no eye contact. Student mumbles, incorrectly pronounces terms, and speaks too quietly for students in the back of class to hear.

DAY 4 ACTIVITY - PRESENTATION & REFLECTION

OBJECTIVE

Students will synthesize their research on a water-related topic, while using presentation skills, to demonstrate comprehension of site specific water use, abuse, and management.

PRESENTATION

Students share their presentations to students in grades K-5. The five minute presentations should include the uses and abuses of water sources and sustainable management of water resources.

CONCLUDING REFLECTION ACTIVITY

Students create a Flipgrid video where they must state and explain:

- three ideas or concepts they learned
- two ideas or concepts that surprised them and
- one thing they intend to start doing based on what they learned.

Collective responses should indicate if students demonstrated comprehension of the material. Flipgrid responses can be peer reviewed, or privately viewed by teacher.

ADDITIONAL WEBLINKS FOR STUDENTS

- YouTube Video: Colorado River - I am Red
https://www.youtube.com/watch?time_continue=30&v=mqYcC7jEe44
- Early River Civilizations Blank Map
https://php.radford.edu/~vga/wp-content/uploads/2013/09/WH13a_Attachment_A.pdf
- YouTube Video: Sacred but Polluted: River Ganges drowns in a sea of rubbish
https://www.youtube.com/watch?v=MUOnIFZ__6E&feature=youtu.be
- The Guardian: Threatened Rivers of the World
<https://www.theguardian.com/sustainable-business/gallery/2016/sep/22/worlds-threatened-rivers-pollution-industry-agriculture-in-pictures>
- Smithsonian: Exploring the World's Most Imperiled Rivers
<https://www.smithsonianmag.com/travel/exploring-the-worlds-most-imperiled-rivers-47048630/>
- World's Watershed mapped in detail
<https://bigthink.com/strange-maps/gorgeous-river-watershed-maps?rebelltitem=5#rebelltitem5>
- 50 Ways to Save Your River
<https://www.friendsoftheriver.org/2016/01/28/551/>

ADDITIONAL WEBLINK RESOURCES

- Water pollution || What are the causes of water pollution?
<https://www.youtube.com/watch?v=Om42Lppkd9w>
- What is water pollution and how can you help?
https://www.ducksters.com/science/environment/water_pollution.php

WEBLINK RESOURCES FOR TEACHERS

- WWF - Threats to Rivers
https://wwf.panda.org/our_work/water/freshwater_problems/river_decline/
- WWF - Threatened Rivers (List of rivers and how they are threatened)
https://wwf.panda.org/our_work/water/freshwater_problems/river_decline/10_rivers_risk/

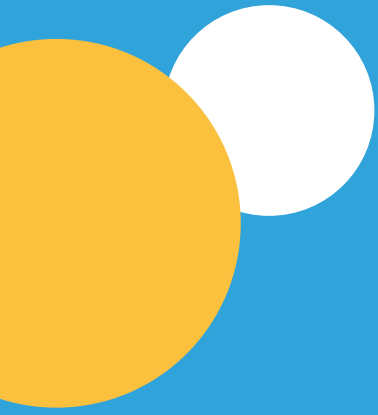
- Threats to the Ganges River
<https://www.dw.com/en/indias-polluted-ganges-river-threatens-peoples-livelihoods/a-17237276>
- Cleaning up the Ganges - Financial Times
<https://www.youtube.com/watch?v=i9jX3BjtXgQ>
- Youtube: Sacred but polluted (Ganges)
https://youtu.be/MUOnIFZ__6E
- Go Ganges! Video of two adventurers who follow the Ganges from the headwaters to the river's mouth
<https://vimeo.com/ondemand/goganges>
- National Geographic's Learning Framework, the mindset of an explorer: ASK (Attitudes, Skills, Knowledge)
www.nationalgeographic.org/education/about/learning-framework/

EXTENSION IDEAS

- Field trip to local water treatment planned
- Visit local river/water bodies
- Participate in beach, lake, or river clean up service learning activities
- Exploration of spiritual and religious significance of rivers and other bodies of water
- Impacts of water abuse on threatened species and habitat loss
- Threats to water scarcity, climate change, and population growth
- Explore historic cases of water management
- Identify 2 creative ways humans in the past used water. For example, in 1695, the oldest fort in St. Augustine Florida called Castillo de San Marcos was designed in a way that the latrine was on the top level and human waste would fall to the bottom level. Then, when it was high tide, the Atlantic Ocean would enter the lower level of the fort and wash away the human waste.
- Four Corners (Physical activity to demonstrate comprehension)- To plan, put a list of multiple choice questions together. Each question should have four answers. Students gather in the center of the room, reading each question and its possible answers aloud. Students then move to the corner that represents what they believe is the correct answer. For example, the top-left room corner can be option A, the bottom-left can be B and so on. Depending on which answers students select (which corner they choose), the teacher should gain an understanding of class/student comprehension.
- Red light/Green Light Activity - Allow students to give you real-time feedback as you teach with double-sided red/green cards made from red/green construction paper cut into index card size, glued and laminated. As you deliver a lesson, students should hold the green side toward you if they understand everything. If something's unclear, encourage them to turn the red side forward. When you see red, stop and clarify — or expand upon — your points until you see green again. This should help you quickly assess if students are processing content as you deliver it.







Seventh Grade Lesson Plans

Seventh Grade Lesson Plans



LESSON PLAN TITLE

Student-Led Community Needs Assessment

DESIGNERS

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SUMMARY AND RATIONALE

Provide an overview of the lesson. Explain how it fits into the entire curriculum. This lesson encourages 7th graders to examine what is essential for effective and safe schools across the world and to consider the role of school as an "accountable and inclusive" institution.

GRADE

7th

TIME FRAME

45 minutes

SUBJECTS

Social Studies
ESOL
Language Arts

INSTRUCTIONAL GOAL

Students will be able to...

- Explain what an SDG is
- Identify the components of SDG 16
- Audit their own community as a strong institution

STANDARDS

- **SDG 16: Peace, justice and strong institutions:** Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels.
 - › 16.6 Develop effective, accountable and transparent institutions at all levels
 - › 16.7 Ensure responsive, inclusive, participatory and representative decision-making at all levels
 - › 16.8 Broaden and strengthen the participation of developing countries in the institutions of global governance
 - › 16.B Promote and enforce non-discriminatory laws and policies for sustainable development
- **Global Competencies**
 - › Recognize Perspectives
 - › Articulate how differential access to knowledge, technology, and resources affects quality of life and perspectives
 - › Investigate the World
 - › Identify an issue, generate questions, and explain its significance
 - › Analyze, integrate, and synthesize evidence to construct coherent responses

UNDERSTANDING

- Schools as strong institutions
- Resources provided by schools
- Resources students need to attend school/learn/succeed

ESSENTIAL QUESTIONS

What two to four essential questions guide this lesson? These should be aligned with the understandings and stimulate inquiry and discussion. The questions inspire critical thinking. The questions inspire critical thinking and posting them here will serve to remind you to ask these questions.

- Why are schools important and necessary institutions?
- Without schools what would the world look like?
- What is necessary to have a strong school?
- Who is responsible for supplying the "stuff" needed to create and maintain a school?
- Why do schools need accountability?
- What would education look like without accountability?
- If gaps exist in supporting schools, what might be some solutions?
- How can we support strong schools across the world?

STUDENT LEARNING OBJECTIVES

- Cognitive Learning Objective
 - › The learner is able to analyze and describe the strengths and weaknesses of institutions, their role and importance in society, and ways they need to be supported and held accountable.
 - › The learner will generate solutions to institutions that have gaps in support or systemic problems.
 - › The learner will examine, compare and contrast other institutions in society and how the institution provides justice, peace, and safety in our world.
- Socio-Emotional Learning Objectives
 - › 4. The learner is able to reflect on the role of strong, effective institutions such as school and their meaningfulness in a peaceful society.
- Behavioral Learning Objective
 - › 1. The learner is able to critically assess issues of peace, justice, inclusion, and strong institutions in their region, nationally, and globally.

ASSESSMENT

Describe assessment tools which could help teachers know whether students have achieved the intended objectives, include checklists, rubrics, tests and quizzes, informal checks for understanding.

DIAGNOSTIC ASSESSMENTS

- Observe students brainstorming to gauge concepts that students already have about school as a transparent institution. (#1 below)

FORMATIVE ASSESSMENTS

- Partner generated ideas and suggestions (#2 below)
- Monitoring group discussion (#3 below)

SUMMATIVE ASSESSMENTS

- Proposed solutions (#5 below)

SEQUENCE OF ACTIVITIES

List the sequence of events for this lesson. Include an opener (motivator), core events of the lesson and a conclusion. Indicate how students should be grouped and the question or provocation that will guide their work in each event.

1. As students walk into class have this question on the board: "Why do we have school?" Ask students to discuss with an elbow partner the reasons why we and others across the world have institutions called school. Capture the student's ideas on the board and generate a list of reasons why we have schools. [5 min.]

2. With a different partner (consider different ways to group students) ask: "What are some obstacles that would make it difficult to be ready for school each day; what do you need for school each day?" Give students a few minutes to generate ideas to share with the class. [5 min]

3. Split class into groups based on birth months and give each group a different school scenario or type where students don't have everything they need. Students will answer the following questions based on their scenario and then report back to the class. Findings can be gathered by the teacher on the

board or online using a shared spreadsheet so that students can see the comparison between areas. [20-25 min]

- Does the school appear to be safe? If not, what could be done to solve this?
- Is the school accessible to all children? If not, what could be done to solve this?
- Does the school have a conducive environment essential for learning? If not, what could be done to solve this?
- Does the school have materials (furniture, books, technology) necessary to be successful? If not, what could be done to solve this?
- Does the school have competent educators and support staff necessary? If not, what could be done to solve this?
- Is the school accountable to the community and other stakeholders? If not, what could be done to solve this?

4. Bringing It Home. Students are now asked to answer the same questions about their local schools. Students will reflect and offer suggestions and solutions to improve their own schools. [5 min]

5. Exit Slip: Say “Today, we have been focusing on school as one example of an institution that plays an important role in society. On the index card you were given write down other institutions that exist in our communities and nation and explain HOW they provide justice, peace, and safety in our world.” [5 min]

RESOURCES FOR STUDENTS

List print or online resources that can support students in carrying out the activities.

- Comics that teach SDG's
<http://www.comicsunitingnations.org/>
- A guide to the SDG's for students and young people
SDG 16 → pg. 25
https://www.unicef.org/agenda2030/files/TWWW_A4_Single_Page_LowRes_English.pdf
- Poster that describes SDG 16
http://cdn.worldslargestlesson.globalgoals.org/2016/06/A-To-Do-List-for-the-Planet_Page_17_Image_0001.jpg

RESOURCES FOR TEACHERS

List print or online resources that can help teachers prepare the lesson.

Resources for Strong Institutions Lesson:

- Create scenarios
Tell Global Education Statistics
<https://www.globalpartnership.org/data-and-results/education-data>
- Create scenarios
Show different classrooms around world
<https://www.thisisinsider.com/school-classrooms-around-the-world-2017-7>
- Create scenarios
Malala's Nobel Peace Prize Speech
https://www.malala.org/newsroom/malala-nobel-speech?gclid=EAIaIQobChMI5Yzr2tul3wIVgSaGCh01xgNGEAAAYASAAEgLH8_D_BwE
- Create scenarios
Show Education Index (data on education across the world)
https://en.wikipedia.org/wiki/Education_Index
- Create scenarios
Show Education Index over several years
<http://hdr.undp.org/en/content/education-index>
- Discusses Peace of Mind (Mindfulness)
<https://teachpeaceofmind.org/peace-of-mind-at-lafayette/>
- Create scenarios
SDG 16 description, facts/figures, links
<https://www.un.org/sustainabledevelopment/peace-justice/>
- “Storytelling For Action #ENDViolence In and Around Schools” Lesson Plan/Resources for Teachers
<http://cdn.worldslargestlesson.globalgoals.org/2018/10/UNICEF-Comic-Contest1.pdf>

Resources regarding SDG 16:

- Teaching the SDG's Handbook - SDG 16 → pg. 72
https://www.iau-hesd.net/sites/default/files/documents/teaching_the_sustainable_development_goals.pdf
- United Nations description of SDG 16
<https://www.un.org/development/desa/disabilities/envision2030-goal16.html>
- SDG 16 description, facts/figures, links
<https://www.un.org/sustainabledevelopment/peace-justice/>
- Blog dedicated to teaching SDG's
<http://www.teachsdgs.org/blog>
- Resources to teach SDG's
https://www.unicef.org/agenda2030/69525_82235.html
- Description of SDG by UNICEF
https://www.unicef.org/agenda2030/files/Global_goals_for_every_child_2_pager_Sept_2015_.pdf
- Description of SDG 16 by UNICEF
https://www.unicef.org/agenda2030/files/sdg16_peacejustice2_final.pdf

- Resources for SDG 16
<http://worldslargestlesson.globalgoals.org/global-goals/peace-and-justice/>
- Description of SDG 16
https://www.un.org/sustainabledevelopment/wp-content/uploads/2017/01/16-00055p_Why_it_Matters_Goal16_Peace_new_text_Oct26.pdf
- Teaching the SDGs Guidebook - 16 → pg. 72
https://www.iau-hesd.net/sites/default/files/documents/teaching_the_sustainable_development_goals.pdf

EXIT TICKET RUBRIC

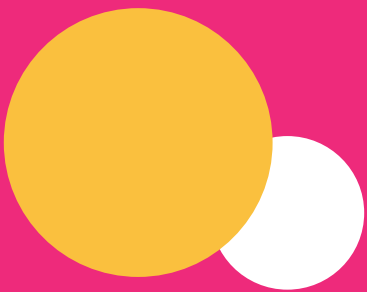
	EXCEEDS	MEETS	EMERGING
NAMES OF OTHER INSTITUTIONS	Student is able to name at least three other institutions.	Student is able to name two other institution.	Student is able to name one other institution.
EXPLANATION OF HOW THE INSTITUTION PROVIDES JUSTICE, PEACE, AND SAFETY IN OUR WORLD	Student describes in detail how the institution meets all these criteria.	Student describes in some detail how the institution meets some of these criteria.	Student describes in brief or non-complete terms how the institution meets the criteria.
EXAMPLES USED TO SUPPORT IDEA	Student uses numerous examples to support his/her idea.	Student uses a few examples to support his/her ideas.	Student does not support ideas with any examples.







Eight Grade Lesson Plans



Eight Grade Lesson Plan



LESSON PLAN TITLE

Youth-Led Social Activism

DESIGNERS

Aaron Baker: bakerleft@aol.com, Jennifer Rose: jrose@er9.org, Kimberly Eckert: kimberly.eckert@wbrschools.net, and mentor, Jake Miller: jakemiller@ymail.com

SUMMARY AND RATIONALE

If young people understand that their actions can make a difference they may be motivated to bring about change in their school or community that brings more equity. Learning about activism will allow students to better understand the injustices they and others around them face. Social issues like racism, inequality, violence, bullying, etc. are real problems they experience every day. These are important skills to prepare them for real life.

GRADE

8th

TIME FRAME

2-3 class sessions
(a larger time commitment if it leads to action)

SUBJECTS

Social Studies
Language Arts

PRIMARY INSTRUCTIONAL GOAL

The ability to recognize perspectives, while accessing divergent sources of knowledge, opinions, and experiences in order to understand one's role and responsibility as active citizens in a global community.

STANDARDS

- UN Goal 16: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels
- Targets
- 16.3: Promote the rule of law at the national and international levels and ensure equal access to justice for all
- 16.7: Ensure responsive, inclusive, participatory and representative decision-making at all levels
- 16.B: Promote and enforce non-discriminatory laws and policies for sustainable development
- CCSS.ELA-LITERACY.SL.8.4
Present claims and findings, emphasizing salient points in a focused, coherent manner with relevant evidence, sound valid reasoning, and well-chosen details; use appropriate eye contact, adequate volume, and clear pronunciation.
- CCSS.ELA-LITERACY.SL.8.5
Integrate multimedia and visual displays in presentations to clarify information, strengthen claims and evidence, and add interest.

ESSENTIAL QUESTIONS

- What is justice?
- What is worth fighting for?
- What are the roles and responsibilities of citizens and government regarding issues of social justice?
- What are the responsibilities of the individual regarding issues of social justice?
- How do citizens participate effectively in bringing about social change/justice?

UNDERSTANDING

Individual citizens can and do access power and affect change through participation in civic society.

- Individual citizens and groups participating in movements and organizations continually shape and reshape society.
- Knowledge of the past helps one understand the present and make decisions about the future.
- Examining social and civic issues helps to expand one's understanding of the world, its people, and themselves.
- Recognizing a diversity of viewpoints benefits all.

STUDENT LEARNING OBJECTIVES

- Students will be able to understand how local action connects with regional, national, and global issues.
- Students will be able to show empathy and solidarity for those suffering from injustice in their own country as well as in other countries.
- Students will be able to ask meaningful questions, find information, drawing conclusions, and reflect on possible solutions relevant to an important social issue.
- Students will be able to present research based on evidence that considers multiple perspectives and draws reasonable conclusions concerning an important social issue.
- Students will be able to articulate their personal and collective responsibility as citizens relative to issues of social justice?
- Students will be able to act individually or collectively, in response to a local, regional, or global issue, in order to impact change.

ASSESSMENT

Describe assessment tools which could help teachers know whether students have achieved the intended objectives, include checklists, rubrics, tests and quizzes, informal checks for understanding.

SEQUENCE OF ACTIVITIES

BEFORE THE LESSON: PREPARATION

1. Create a gallery walk of at least 5 posters that illustrate a variety of student-led protests or examples of activism. (Posters can include images, text, quotes, clips from newspapers etc.,).
2. Divide students into groups of 4. Give each student a handout with the title of poster. Direct each group to stand at a different poster. Students will spend 1 minute examining the poster and write on their paper one thing the poster makes them question or something they remember learning about the event.
3. After students view all the photos ask them to stand near the poster they are most curious to learn more about. Which one resonates with you the most? Stand near that poster. Share their different questions with their classmates about all the posters. Then, have them discuss why they chose this event/ poster.
4. Have a large group discussion about some of the things students are questioning and/or thinking.
5. Students will work in small groups to research the different protests lead by young people.
6. Students will create a Google Slide presentation that outlines the historical background, challenges faced, outcome, and lasting impact.
7. Students will share their findings in small groups so that all students become familiar with the variety of protests/youth led activism.
8. Students will discuss their role and responsibilities as citizens, regarding issues of social justice? What is worth fighting for? Share in a large group discussion.

RESOURCES FOR TEACHERS & STUDENTS

- Activism isn't just for adults and teens. We need to teach younger kids to be activists, too:
<https://ideas.ted.com/activism-isnt-just-for-adults-and-teens-we-need-to-teach-younger-kids-to-be-activists-too/>
- Classroom Walkouts and School Protests. Freedom Forum Institute. 2019. 30 January 2019.
<https://www.freedomforuminstitute.org/first-amendment-center/primers/18655-2/>
- Knight Lab:
<https://cdn.knightlab.com/libs/timeline3/latest/embed/index.html?source=1Gb0pxJvQFamOaIixYPzljrM2iCTysEkOwV3rJBbA97A>

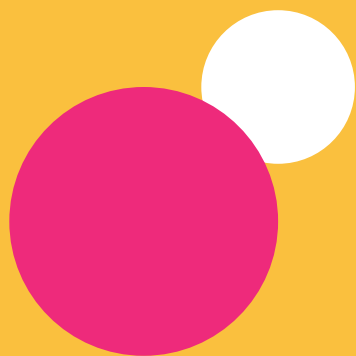
- Kurzius, Alexa. “He Solves Conflicts With Kindness.”
<https://junior.scholastic.com/issues/2018-19/031119/he-solves-conflicts-with-kindness.html#970L>
- Smith, Patricia. “We’re the Generation That’s Going to End It”:
<https://junior.scholastic.com/issues/2017-18/040218/we-re-the-generation-that-s-going-to-end-it.html#1150L>
- National School Walkout: Thousands Protest about Gun Violence Across the US.:
<https://www.nytimes.com/2018/03/14/us/school-walkout.html>
- Smith, Patricia. “We’re the Generation That’s Going to End It”:
<https://junior.scholastic.com/issues/2017-18/040218/we-re-the-generation-that-s-going-to-end-it.html#1150L>
- The Youth Activists who Proved Critics Wrong in 2018.:
https://mashable.com/article/youth-teen-activists-2018/#WNIuk7_aEqF
- The 50th Anniversary of the Tinker v. Des Moines Schools Decision.:
<http://www.iptv.org/video/story/32660/50th-anniversary-tinker-v-des-moines-schools-decision>
- Tinker vs. Des Moines:
http://landmarkcases.org/en/landmark/cases/tinker_v_des_moines
- “7 Times in History When Students Turned to Activism.” New York Times. 5 March 2018. 2 February 2019.:
<https://www.nytimes.com/2018/03/05/us/student-protest-movements.html>

OTHER RESOURCES

- Sample Gallery Walk Poster (this is on a Google Doc, posters should be made full size. Sticky chart paper works well):
https://docs.google.com/document/d/1foKFmqB_j36rnH1-kIWWkGfoKtR2uP_At6S8Q5Z4os/edit
- Grading Rubric:
https://docs.google.com/document/d/1ZahIK5142F4UymwAUBEFQA_mBj4tgAj311mCIFGXiq0/edit







Ninth Grade Lesson Plan

Ninth Grade Lesson Plan



LESSON PLAN TITLE

Making Waves: Discussing Water and Quality of Life

DESIGNERS

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SUMMARY AND RATIONALE

The United Nations Sustainable Goal number 6 states that due to bad economics or poor infrastructure, millions of people including children die every year from diseases associated with inadequate water supply, sanitation and hygiene. Having access to clean water is an essential part of life and a human right, and therefore an essential concern for urban, rural, and other communities in an urbanizing world.

In this lesson, students will research efforts that different communities in the world are making to help people access clean water and maintain it. Students will explore what causes shortages of water and how people survive in environments that lack good drinking water. A three to four day lesson plan that includes questions and research activities will provide students with the opportunity to compare the issues and efforts surrounding water in their own communities to issues and efforts in other US and global communities. Making these comparisons will allow students to reflect and propose possible solutions to issues and challenges found in different types of communities: urban, rural, suburban, or urbanizing.

GRADE

9th

TIME FRAME

Two days - 45 Minute Lessons

SUBJECTS

Social studies
science
English
ELL
world languages

INSTRUCTIONAL GOAL:

To recognize having access to water as a human right that is essential for individual's daily living, as well as for sustainable development in all communities.

- To learn through research what various societies in the world are doing to help individuals have access to water in their communities (urban, rural, suburban or urbanized), and what they are doing to maintain it.
- To compare the efforts that different societies (including my own) are making to guarantee that all individuals have access to water, and to recognize differences and similarities between them.
- To make connections between global and local issues in relation to access to water, and to find possible solutions to those issues.

STANDARDS

1. UN Sustainable Development Goal Number 16: Promote Just, Peaceful, and Inclusive Societies. Peace, Justice, and Strong institutions.

GOAL TARGETS

- 16.6 Develop effective, accountable, and transparent institutions at all levels.
- 16.12 Promote and enforce non-discriminatory laws and policies for sustainable development.

2. UN Sustainable Development Goal Number 6: Ensure Access to Water and Sanitation for all. Clean Water and Sanitation.

GOAL TARGETS

- 6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity.
- 6.B Support and strengthen the participation of local communities in improving water and sanitation management.

3. UN Sustainable Development Goal Number 11: Make Cities Inclusive, Safe, Resilient, and Sustainable: Sustainable cities and communities.

GOAL TARGETS

- 11.3 By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries
- 11.5 By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations.
- 11.A Support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning.

UNDERSTANDING

- Access to clean water is a human right that is essential for both the survival of the species and for living daily life in a healthy and successful way.
- All communities worldwide have the responsibility to ensure that all members have access to water in an equitable way, regardless of race, socioeconomic status, age, area of living, etc.
- All communities should create and foster an environment that promotes appropriate discourse surrounding equitable ways of accessing clean water both locally and globally.

ESSENTIAL QUESTIONS

- How do different communities in the world (urban, rural, or urbanizing) support access to clean water for all?
- How do individuals survive with limited access to clean water?

STUDENT LEARNING OBJECTIVES



- Students will be able to identify arguments to support a position on an issue by achieving 2 out of 3 on the rubric.
- Students will be able to articulate positions while responding to the ideas of others while using discussion/starter stems by achieving 2 out of 3 on the rubric.
- Students will reflect on the quality of participation in the debate.
- Students will be able to distinguish between opinion, preferences, and biases from researched facts and will use confirmed data to uphold their discussion contributions by achieving 2 out of 3 on the rubric.
- Students will be able to use appropriate presentation behavior during the group discussion by using appropriate volume control and turn taking by achieving 2 out of 3 on the rubric.
- Students will be able to use appropriate participation behavior during the group discussion by using appropriate eye contact, body language, active listening skills, and appropriate respectful behavior when others are speaking during the discussion by achieving 2 out of 3 on the rubric.

ASSESSMENT

Rubric for assessment of information/test-based constructed response

FISHBOWL DISCUSSION



	Does not yet Meet the Standard (1 point)	Meets the Standard (2 points)	Exceeds the Standard (3 points)
Quality of Information Discussed 	<ul style="list-style-type: none"> *student does not answer the questions asked *student focuses on personal opinions rather than evidence 	<ul style="list-style-type: none"> *student answers the questions asked with minimal sidetracking *student uses some evidence to support their claims 	<ul style="list-style-type: none"> *student stays on topic and answers the questions asked *student uses EVIDENCE to support claims, not personal opinions *student uses discussion starters/stems *student addresses classmates by name
Student Participation	<ul style="list-style-type: none"> *student does not participate in the discussion *student has a lot of idle time spent not speaking 	<ul style="list-style-type: none"> *student rarely participates in the discussion *student has some idle time spent not speaking 	<ul style="list-style-type: none"> *student participates in the discussion *student utilizes the entire discussion effectively from start to finish
Quality of Presentation	<ul style="list-style-type: none"> *the student is rude to others *student attacks other students personally *student is loud and/or rowdy 	<ul style="list-style-type: none"> *student exhibits mixed behaviors during the discussion *student speaks at an appropriate volume for most of the discussion 	<ul style="list-style-type: none"> *student is polite and respectful to their peers during the discussion *student speaks at an appropriate volume for the entire discussion
Spectator Participation 	<ul style="list-style-type: none"> *student does not participate as a spectator *student distracts groups who are discussing 	<ul style="list-style-type: none"> *student provides some comments for both groups *student remains quiet for most their peers' discussions 	<ul style="list-style-type: none"> *student provides meaningful comments for both groups *student is quiet and respectful of their peers during the discussion
Total Score: /12			

SEQUENCE OF ACTIVITIES

Prior to this lesson: Students will have been given the 4 or 5 guiding questions to help guide students in their research. Students will be gathering information on two communities, their own and one of their choosing (or the teacher's choosing).

GUIDING QUESTIONS

- How has water impacted culture?
- What actions do people take when they have limited access to clean water?
- Why do some communities not have access to clean water?
- What impact does shortage of water have on quality of life?
- What actions can have an impact water shortages?

OPENER

Students examine the four photographs that display images of water throughout the world. How can you relate to the different pictures shown? Think, pair, share these photographs. This leads to the teacher introducing the lesson and leading the discussion before students are broken into groups.

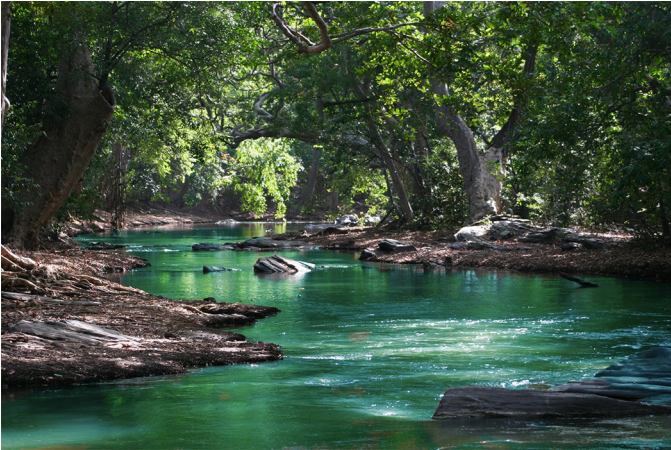


ROOM SETUP

Place half the desks in a circle in the center of the room. Form a second circle of desks around the first.



Here are some copyright free pictures.
These pictures are from <https://www.pexels.com/search/water/>. Teachers may use pictures from this website free of charge.



LESSON

Students will be broken down into two groups. Using the research completed the day before, students will use their data to respond to the four key questions. Students will have been given the discussion questions the day before and they will prepare to answer all of them but, they will discuss only two during the Fish Bowl. Students will be encouraged to use accountable talk during the discussion.

Half the group will discuss two questions while the other half listens and makes observations. Then the groups will flip-flop. The half that is observing the discussion is expected to fill out a “Student Spectator Comment Sheet.”

Each discussion will be 10 minutes long. Students will not know before-hand which question they will be discussing. Students will be graded on the quality of their discussion as well as their written comments as spectators.

NAME: _____ DATE: _____

WATER NOTES

- Question:

A helpful fact I learn...	This fact made me curious about...	I found out...	Document resources here

Name: _____

Fishbowl Discussion Notes*My personal goals for today:***Speaking****Listening***Space for Notes from My Discussion**Discussion #1*

Interesting Point #1:

Connection to My Essay:

Interesting Point #2:

Connection to My Essay:

Interesting Point #3:

Connection to My Essay:

STUDENT SPECTATOR COMMENT SHEET

YOUR NAME: _____

- Listen carefully as your classmates discuss two questions. Jot down your observations on how your classmates discuss their responses to the two questions. Listen to see if your peers use evidence to support their statements.



POSITIVE POINTS

NAME	POSITIVE POINTS

MISSED OPPORTUNITIES

NAME	OPPORTUNITIES MISSED

CLOSING

Students will complete an Exit Slip - How could you impact a water shortage?

- Use the discussion points collected during the Fish Bowl to write a position or argument paper.
- Create a work of art that reflects both sides of the discussion.
- Role play a perspective in this discussion (represent a corporation, government representative, a student, a farmer, etc.)
- For students with more experience in organized discussions, have students prioritize water needs in their discussion.
- Develop a piece to be used on social media that shares both sides of the discussion.
- Write a take-action letter to a local or international legislator proposing a plan that is supported by evidence collected during the research and arguments used during the discussion .
- Perform an experiment to see how much water is used when brushing your teeth, bathing, cleaning dishes, etc. Adjust see if you can cut down the amount of water used in your home. Share ideas on how you can persuade other family members to reduce the amount of water used in your home.
- Create a survey to better understand the views your peers and/or community members have about water. As a class or small group use the information you gained from the fishbowl activity to decide which views are healthy and which ones are concerning. Create a plan to help make local changes to better impact our views on water.
- Decide the most important facts you learned during the fishbowl discussion. Create an infographic showing what you have learned. Share your infographic with your peers.
- Prepare to participate in a formal debate about water. Use the information you learned during the fishbowl discussion to help you prepare.
- Create a list of water related idioms. In teams identify a connections of what was learned during the fishbowl discussion and how they might relate to the listed idioms.
- Optional for the teacher who wishes to have students decide on making a global change about water by creating a campaign to spread the message around this issue: Ex. Display presentation in the gym or the cafeteria.

RESOURCES FOR STUDENTS

- What is a fishbowl discussion? What should you expect to do during this assignment?
 - <https://www.youtube.com/watch?v=JVCFLVZA3w>
 - *Fishbowl Discussion: Examples and Techniques
- A guide to the SDG's for students and young people SDG 16→ pg. 25
 - https://www.unicef.org/agenda2030/files/TWWW_A4_Single_Page_LowRes_English.pdf
- How Has Water Impacted Culture? Here is a starting point to help you research this topic.
 - https://www.who.int/water_sanitation_health/Water&cultureEnglishv2.pdf
 - <https://sswm.info/arctic-wash/module-1-introduction/further-resources-sustainability-relation-water-sanitation/water%2C-sanitation-and-culture>
 - <http://www.dwaf.gov.za/Documents/Other/RMP/SAADFCulturalWaterUseJun05.pdf>
- What actions do people take when they have limited access to clean water? Here is a starting point to help you research this topic.
 - <https://www.theguardian.com/global-development-professionals-network/2015/jul/01/global-access-clean-water-sanitation-mapped>
 - <https://www.sdcwa.org/water-shortage-and-drought-response>
 - <https://theconversation.com/how-cape-towns-water-crisis-could-make-people-sick-91255>
 - https://19january2017snapshot.epa.gov/climate-impacts/climate-impacts-water-resources_.html
- Why do some communities not have access to clean water? Here is a starting point to help you research this topic.
 - <https://www.theguardian.com/environment/2012/nov/30/climate-change-water>
 - <http://efc.web.unc.edu/2018/02/13/clean-water-access-challenges-in-the-united-states/>
 - <https://www.globalcitizen.org/en/content/why-do-so-many-people-still-struggle-to-access-cle/>
 - https://en.wikipedia.org/wiki/Water_issues_in_developing_countries
- What impact does shortage of water have on quality of life? Here is a starting point to help you research this topic.
 - <https://www.seametrics.com/blog/water-shortage-consequences/>
 - <https://water.org/our-impact/water-crisis/>
 - <https://www.who.int/news-room/fact-sheets/detail/drinking-water>
 - <https://www.worldwildlife.org/threats/water-scarcity>
 - <https://lifewater.org/blog/water-poverty/>
 - <https://www.independent.co.uk/news/world/world-water-day-2016-what-happens-when-you-dont-have-clean-water-a6946026.html>
- What are the impacts of water shortages?
 - <https://mashable.com/2016/03/22/water-crisis-how-to-help/#x7z0k1urAPq7>
 - <https://thewaterproject.org/why-water/poverty>
 - <https://theconversation.com/some-remote-australian-communities-have-drinking-water-for-only-nine-hours-a-day-86933>

RESOURCES FOR TEACHERS

- Accountable Discussions
 - <http://www.theteachertoolkit.com/index.php/tool/accountable-discussions>
- Accountable Talk Stems
 - <https://educationcloset.com/wp-content/uploads/2015/09/AccountableTalk-Stems.pdf>
- Fishbowl
 - <https://www.facinghistory.org/resource-library/teaching-strategies/fishbowl>
- Engage Your Students with Fishbowl Discussions
 - <https://blog.teacherspayteachers.com/engage-your-students-with-fishbowl-discussions/>
- Elements of a Fishbowl Discussion
 - <https://www.youtube.com/watch?v=FaakCE0z1aQ&t=124s>
 - <https://www.tes.com/lessons/h1wUBPQ6h1F8jQ/global-goals-introduction>

UN SUSTAINABLE DEVELOPMENT GOALS LINKS

- <https://www.un.org/sustainabledevelopment/cities/>
- <https://www.un.org/sustainabledevelopment/peace-justice/>
- <https://www.un.org/sustainabledevelopment/es/water-and-sanitation/>
- <https://www.un.org/sustainabledevelopment/water-and-sanitation/>
- <https://www.tes.com/lessons/h1wUBPQ6h1F8jQ/global-goals-introduction>

GROUP NOTES

- Capacity and desire to mediate conflict
- Volunteer in programs that advocate for youth (community service).
 - › Ninth graders will begin to understand, through their own experience, the need, importance, and impact associated with community service and advocacy (so should we shape this to have something to do with urbanization and cities?)
- Recognizing and reporting signs of students struggling with mental health issues
- Upstander/bystander
- Learning how to take action within a school system
- Recognizing the NEEDS of a school community
- Making connections between local and global issues
- Fostering empathy skills
 - › Ninth graders will further develop and apply their empathy-building skills, then use them to understand the connections between empathy and justice. Through exploring their own and their classmates' perspectives (through dialogue and stories, perhaps), they will recognize their different experiences of peace and justice.
- Recognize and identify systems that unequally distribute power and justice (local, national, international), in cities and other places.

› Ninth graders will know what a system is and be able to recognize local systems and perhaps others.

- Develop a tool kit allows students to ensure safety and rights of all community members
- Exercises civic rights and responsibilities that promote peace and justice

FOOD FOR THOUGHT

(not learning expectations for ninth graders)

- What are the systems that make cities sustainable and unsustainable? How could ninth graders come to recognize these systems?
- Are sustainable cities just and peaceful--how important is that to their sustainability?

Interesting challenge: if our ninth graders are in the first year of a new school, they may just be learning what systems operate in that new school--but they could interview older kids to learn about those kids' perceptions of the school's systems; kids who are the oldest kids in a "middle school" may be able to describe all the systems that have dictated the last few years of their school lives.

- How do different communities support the right for all people to access clean water?
- How do different cultures communicate the importance of maintaining clean and safe water for human consumption?
- How do individuals survive with limited access to clean water?
- What actions can we take to solve our water shortage problems?

Pick a quadrant(s) from a global approach:

- Q1: Investigate the World
- Q2: Recognize Perspectives
- Q3: Communicate Ideas
- Q4: Take Action

****How do different communities support access to clean water for all?

- Why do some communities not have access to clean water?
- What actions do people take when they have limited access to clean water?
- What actions can we take to solve our water shortage problems or what actions must we take to maintain access to clean water?
- What impacts does shortage of water have on quality of life?
- What is the cultural impact of water on a community?

Opener: painting/piece of art

Closing: Exit Slip -- How could you impact a water shortage?







Tenth Grade Lesson Plans

Tenth Grade Lesson Plan



LESSON PLAN TITLE

Fighting the Garbage Monster - A Lesson in Two Parts

DESIGNERS

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SUMMARY AND RATIONALE

This lesson is composed of two parts. In the first part, students learn how their actions at the local level (trash) can impact other areas of the world. In the second part, students concretely measure that impact and try to create and implement a solution. Depending on the goals of the teacher, more time might be spent on Part I with students tracking trash from the local watershed to the ocean and look at the action project as an extension. Alternatively, if the teacher wishes to focus more on the action-oriented aspect, they might briefly introduce Part I and spend more time with Part II where students create a plan, carry it out, gather data and reflect on the results.

GRADE

7th-12ed

TIME FRAME

One class period can be budgeted for the initial investigation. One class period for the trash audit and one for the Socratic seminar. Multiple class periods (and as much as multiple weeks) may be used for Part II the action-oriented part of the lesson depending on how much data you wish students to gather and if they are to present to stakeholders outside of the classroom

SUBJECTS

Biology
Environmental Science
Geography
Chemistry
Engineering

SUSTAINABLE DEVELOPMENT GOALS

- The Learner is able to contextualize their needs within the needs of the greater surrounding ecosystems, both locally and globally, for more sustainable human settlements.
- Students will be able to describe the interconnectedness of artificial and natural systems, as well as the interconnectedness of local and global systems.

INSTRUCTIONAL GOALS

- Students will be able to explain the geography of their local watershed and its connection to the world's oceans, animals and ecology.
- Students will be able to assess the impact of their community's waste production on other parts of the world and design possible local solutions.
- Students will be able to identify a quantifiable goal to reduce plastic and/or other solid waste in their school/community.
- Students will evaluate the effectiveness of their plans based on quantitative data gathered.

STANDARDS

- **MS-ESS3-2.** Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects.
- **MS-ESS3-3.** Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.
- **MS-ESS3-4.** Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems.
- **HS-ESS3-1.** Construct an explanation based on evidence for how the availability of natural resources, occurrence of natural hazards, and changes in climate have influenced human activity.
- **HS-ESS3-2.** Evaluate competing design solutions for developing, managing, and utilizing energy and mineral resources based on cost-benefit ratios.
- **HS-ESS3-3.** Create a computational simulation to illustrate the relationships among the management of natural resources, the sustainability of human populations, and biodiversity.
- **HS-ESS3-4.** Evaluate or refine a technological solution that reduces impacts of human activities on natural systems.
- **HS-ETS1-1.** Engineering Design. Analyze a major global challenge to specify qualitative and quantitative criteria and constraints for solutions that account for societal needs and wants.

UNDERSTANDING

- Students will be able to explain the connection of their local watershed to the ocean.
- Students will be able to internalize that their actions on a local level have global consequences.
- Through extensions, students will be able to develop an action plan on a related topic that interests them.
- Students will understand that actions taken on a small scale locally can have far-reaching benefits as well as consequences.
- Students will be able to explain that “taking action”/ activism can take many forms and requires an understanding of the barriers to the solution.

ESSENTIAL QUESTIONS

- Why is it important to preserve all components of the local and global ecosystem?
- How do actions you take on a local level affect the environment on a global level?
- What can, and should people be doing to improve local and global environment conditions?
- What are the possible forms of action a person can take to solve a problem?
- What forms of action are effective?

STUDENT LEARNING OBJECTIVES

- Students will be able to describe how trash related in their local ecosystem could travel to the ocean.
- Students will be able to describe the Pacific Ocean Garbage Patch.
- Students will be able to develop an action plan for decreasing trash and debris in the world's oceans.
- From The Asia Society's “Global Performance System Rubric” for 10th grade science in the domain of “Take Action”:
- Develop an action plan that details individual and collaborative actions or policy based on experimental or research findings that increase awareness and improve local and/or global conditions.
- Evaluate available technology and personal views to determine the impact on actions and to consider additional ways to address alternate viewpoints or solutions to the science issue.
- Implement an action plan in creative or innovative ways and collects data and analyzes it to determine the impact of actions on the local or global science issue and identify possible unintended consequences.
- Articulate how the project influenced feelings, thinking, choices, actions and awareness of alternative thoughts and ideas.

ASSESSMENT

- Students could create a journal entry describing an understanding of the learning objectives above.
- Students could create an advertisement (paper or digital) explain the problem and possible solutions.

FOR PART II

The following checklist from the Asia Society (<http://asiasociety.org/files/science-10-rubric.pdf>) could be used:

PLANNING	EVIDENCE OF IMPLEMENTATION	REFLECTION
<ul style="list-style-type: none"> • Considers previous actions and/or barriers • Steps clearly described • Student identifies personal steps • Student identifies collaborative steps • Plan is implementable • Appropriate forms of media communication chosen • Appropriate forms of data collection • Plan is clearly linked to quantifiable goal (i.e. reduction of waste) informed by earlier audit • Bonus: creativity of plan 	<ul style="list-style-type: none"> • Concrete evidence from a third party observer (letter, review, interviews) • Transparent data gathered • Other documentation (i.e. photos, journaling, etc.) 	<ul style="list-style-type: none"> • Honest analysis of data/ documentation • Explores change in viewpoint • Articulates limitations and/or notes suggestions for improvement • Evaluates unanticipated consequences of action taken

PART I - BACKGROUND

The learner will trace the journey of a piece of trash from their own local watershed to the ocean. They will be investigating the larger question of how garbage can get from their hands to the oceans if it is not properly disposed of (and sometimes even when it is), directly demonstrating their own interconnectedness with natural systems and the connectedness of their own local watershed with global ones.

SEQUENCE OF ACTIVITIES

Use the following or something similar (another video or article) to introduce the lesson:

<https://www.nationalgeographic.com.au/animals/how-did-sea-turtle-get-a-straw-up-its-nose.aspx>

https://www.washingtonpost.com/video/national/researchers-remove-straw-from-sea-turtles-nose/2017/06/13/8d4fdcae-5077-11e7-b74e-0d2785d3083d_video.html?noredirect=on&utm_term=.02f06cf56039

- Pose the questions to students: “Where do you think that straw came from? Could it have come from here? IF it came from here, HOW could it have gotten to the turtle?”
 - Have students use computers or tablets with internet access to trace where the rivers in their local watershed go until they exit to the ocean.
 - Look at ocean currents and determine where trash might go from where the trash enters the ocean.
 - Have students create maps showing the journey of garbage from their hometowns to the ocean. Challenge them to look for the furthest place they can trace a direct route to.
 - Have students discuss implications for improper disposal of garbage on local watersheds as well as the oceans via a Socratic Seminar. (see attached resources for directions on Socratic Seminars)
- Investigate the Great Pacific Garbage Patch and develop a publicity and action campaign.
 - Investigate the use of plastics in our society and try to recommend alternatives.
 - Investigate where recycled plastics go and what they can be used for and create a publicity campaign.
 - Create a publicity and action campaign challenging other students to eliminate plastics from their lives. Is it even possible? Collect feedback.
 - Research the garbage patch, plastics or other related issues. Write letters to their legislators asking for change, citing scientific data.

RESOURCES FOR STUDENTS

List print or online resources that can support students in carrying out the activities (see teacher resources below).

Resources will vary based on geographic location. There should be a state department in charge of keeping data for your local watershed. Have students choose the closest stream or river to them and trace where it goes until it gets to the ocean. Students could be given a map to trace the path, so they can see this graphically. Then they should look at the ocean currents in the region where the final river enters the sea to determine where their trash might go from there. Resources will vary based on geographic location. There should be a state department in charge of keeping data for your

local watershed. Have students choose the closest stream or river to them and trace where it goes until it gets to the ocean. Students could be given a map to trace the path, so they can see this graphically. Then they should look at the ocean currents in the region where the final river enters the sea to determine where their trash might go from there.

PART II - ACTION PLAN

OVERVIEW

SEQUENCE OF ACTIVITIES

1. Review conclusions reached during Part I (it may be worth doing a school audit) 5- 10 minutes
2. Examples of Different Types of Actions (10 -20 minutes)
 - › Videos of different types of actions- reducing waste by reusing materials, creating biodegradable alternatives, engineering design to remove existing waste
3. Student plan action to reduce plastics (see following page). Depending on the class size and atmosphere, they will carry out the action in groups or as a class. Some examples students could pursue: placing recycling bins in classrooms and creating an environmental club to empty them, replacing plasticware and serving trays with reusable silverware or paper trays, campaigning local government for a bag ban, creating a video to encourage classmates to use reusable bottles.
4. Students Carry Out the Determined Action- Depending on time, class size, and initiative of students, the action plans could be carried out during class or outside of school.
5. Students fill out Reflection Sheet-depending on time and scale of project, this could also be a presentation made to the class or other stakeholders

GROUP PROTOCOL	WHOLE CLASS PROTOCOL
<p>a. Provide individual students with paper/whiteboards/computer to brainstorm possible solution actions for 5 minutes</p> <p>b. Students join groups of 3 to 4 students and share ideas 10 minutes</p> <p>c. Groups will evaluate and select a plan (as a class or in groups) 10-20 minutes</p> <p>Questions to ask in groups:</p> <ul style="list-style-type: none"> • Is the plan concrete? • Does the plan involve data gathered from the audit? • Is the plan implementable? <p>d. Groups fill out the Action Plan sheet 45 minutes</p> <p>e. Once the Action Plan sheet is filled out, groups should conference with the teacher for critique and approval using the assessment rubric for “Planning” provided earlier. If action plan is unsatisfactory, the teacher could instruct students to rewrite it.</p>	<p>a. Provide individual students with paper/whiteboards/computer to brainstorm possible solution actions for 5 minutes</p> <p>b. Students share ideas with whole class 10 minutes</p> <p>c. Class deliberates and selects an action plan (as a class or in groups) 10-20 minutes</p> <p>Questions to ask class:</p> <ul style="list-style-type: none"> • Is the plan concrete? • Does the plan involve data gathered from the audit? • Is the plan implementable? <p>D. The class discusses how to fill out the action plan</p>

DIFFICULTIES WITH LESSON

Students may have plans such as “Recycle” or “Stop Using Plastic” which is not specific enough, so it will be important to have a check-in conference with individual groups before they try to implement their plan.

You may need to prompt with further questions such as:

- What specific objects will you target for recycling/reduction etc.?
- How will you ensure that it is recycled/reduced etc.?
- How will you get buy in from others to recycle/reduce those items?

Another option is to present example action plans before students begin brainstorming. See included materials below. One example uses an unrelated problem (so students won’t copy the example). Another example is a possible action related to the trash project.

Ask student:

- What makes the “Meets” side better than the “Do not meet”?
- Are any of the answers connected to each other? How? (i.e. if people thought impoverished shouldn’t have to buy bags, action is to give away free reusable bags)

RESOURCES FOR STUDENTS

INITIAL QUESTIONS FOR BRAINSTORMING & EVALUATING IDEAS

PLANNING A SOLUTION

- What is your goal? Relate it to your findings during the trash audit. Express in quantifiable terms (i.e. how many kg of plastic waste will be reduced or removed).
- Why is this goal important for your community and the planet?
- What has already been done in your area to help reduce plastics or other solid waste?
- What barriers/obstacles existed then or now that might get in the way of your plan? Think of physical, economic or cultural barriers (i.e. people think a bag ban will restrict their freedom).
- What form will your action take? Is your solution education/advocacy/engineering/behavioral modification?
- Describe concrete steps to your plan.
- What steps can you personally take towards the goal?
- What steps require the assistance of others? How will you enlist their help?
- What forms of media will you use to communicate with others? Why?
- What do you need to learn?
- What resources/materials do you need? How will you acquire them?
- How long will it take you to implement your plan?
- What forms of evidence can you gather to show that you attempted your plan?
- What forms of evidence can you gather to show the impact of your plan? How will you collect and record data?

REFLECTION AFTER THE EXPERIMENT

- What parts of your plan went well? Why?

According to the data you gathered, what progress did you make towards the goal we set? Please explain how the data was collected and informs conclusions.

1. Was the goal realistic?
2. Could the goal be reached if given more time?
3. How might the progress you made impact the global concern of trash/solid waste/plastic?
4. What barriers or obstacles did you come across as you tried to implement your plan?
5. How did you try to overcome these barriers/obstacles?
6. What unanticipated consequences or benefits came about because of your plan?
7. If you were to repeat your plan, what changes would you make?
8. Overall, how did this project impact your view of yourself as someone who could take action and create change?
9. How did this project impact your view on the problem of solid waste/plastic on the global scale and the future?

PLANNING A SOLUTION - TEACHER EXAMPLE A

This is an example to show to students to give greater clarity of expectations and depth of answers.

What is your goal? Relate it to your findings during the trash audit. Express in quantifiable terms (i.e. how many kg of plastic waste will be reduced or removed).

DOES NOT MEET	MEETS
Get students to do homework	Increase the amount of homework completion from 20% to 90%

Why is this goal important for your community and the planet?

DOES NOT MEET	MEETS
Students need to do homework	Homework provides important practice for students outside of school, reinforces instruction in long term memory, and prepares students for in class learning activities. Students who do meaningful homework assignments learn more.

What has already been done in your area to help reduce plastics or other solid waste(or in this case increase homework completion)?

DOES NOT MEET	MEETS
Lots.	Students have planners. Teachers maintain websites with homework assignments. Teachers call home when students do poorly in class.

What barriers/obstacles existed then or now that might get in the way of your plan? Think of physical, economic or cultural barriers (i.e. people think a bag ban will restrict their freedom).

DOES NOT MEET	MEETS
Students don't like to do homework.	Some students refuse to carry backpacks and planners because they think they aren't cool. Many students have lots of sports/jobs/activities and little time to do work. Some students don't have support at home. Some students believe homework is just "busy work". Some students don't have access to internet at home and can't access the website.

What form will your action take? Is your solution education/advocacy/engineering/behavioral modification? How will it help reach the goal?

DOES NOT MEET	MEETS
Make students write in their planners every day before class	Create a 25 minute time slot for whole school where students can complete "homework" and ask teachers for additional help. Students who have difficulty arranging rides for after school support will be able to see teachers. They will still be at school and have access to the internet and websites.

Describe concrete steps to your plan.

DOES NOT MEET	MEETS
<ol style="list-style-type: none"> 1. Hand out planners. 2. Tell students to take them out at the beginning of class each day 	<ol style="list-style-type: none"> 1. Draft a schedule that consider lunch and other conflicts 2. Discuss with school "Time and Space" committee 3. Meet with school board for schedule change approval 4. Explain new schedule to students 5. Arrange make up times with students during time slot

What steps can you personally take towards the goal?

DOES NOT MEET	MEETS
Tell students to do homework	Draft the schedule Have more one on one conversations with students Create presentation for school board

What steps require the assistance of others? How will you enlist their help?

DOES NOT MEET	MEETS
School order planners	Need buy in from other teachers. Ask them to look over proposed schedule. Explain reduction of calls home and after school time supporting students. Need school board approval. Explain increased learning and no increase in teacher hours as some time will come from contract hours.

What forms of media will you use to communicate with others? Why?

DOES NOT MEET	MEETS
Whiteboard	Emails to other teachers and board members Prezi for board meeting-engaging

How long will it take you to implement your plan?

DOES NOT MEET	MEETS
A lot	Potentially 1 year as will have to wait until new school year to begin to make schedule changes. Then will need 1 month to gather data

What forms of evidence can you gather to show that you attempted your plan?

DOES NOT MEET	MEETS
Students' homework	"Time and Space" committee meeting minutes School Board meeting minutes Documentation of arranged times with students

What forms of evidence can you gather to show the impact of your plan? How will you collect and record data?

DOES NOT MEET	MEETS
A lot	Create a spread sheet of all homework assignments and number of students completing each assignment BEFORE schedule change and AFTER schedule change

PLANNING A SOLUTION - EXAMPLE B

This is an example to show to students to give greater clarity of expectations and depth of answers.

What is your goal? Relate it to your findings during the trash audit. Express in quantifiable terms (i.e. how many kg of plastic waste will be reduced or removed).

Stop using plastic bags	Decrease the use of plastic bags from 100 kg a week to 20 kg a week at the local grocery store
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Why is this goal important for you community and the planet?

Plastic is bad for the ocean.	A lot of our trash is plastic bags which won't decompose. We find lots of plastic bags around town. They can strangle ocean life.
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What has already been done in your area to help reduce plastics or other solid waste?

I don't know	People have already spoken to the town council to introduce a bag ban or charge 10 cents per bag, but it was voted down.
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What barriers/obstacles existed then or now that might get in the way of your plan? Think of physical, economic or cultural barriers (i.e. people think a bag ban will restrict their freedom).

People like convenience.	People think reducing plastic is important, but they believe a bag ban will restrict their freedom. Some have said poor people shouldn't have to choose between buying grocery bags and food.
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What form will your action take? Is your solution education/advocacy/engineering/behavioral modification?

Tell people to use reusable bags	We will set up a media center at the local grocery store for 1 week and distribute free reusable bags.
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Describe concrete steps to your plan.

Tell people to use reusable bags	<ol style="list-style-type: none"> 1. Carry out fundraisers or approach local business to donate to purchase of reusable bags. 2. Create a video presentation to display on laptop about reusable bags. 3. Find a company to make reusable bags online or locally and make an order 4. Contact grocery store to ask permission to set up table. 5. Hand out reusable bags for free to customers.
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What steps can you personally take towards the goal?

Take reusable bags to the store.	Contact individual businesses Write script and film video.
----------------------------------	---

What steps require the assistance of others? How will you enlist their help?

Other people-tell them plastic is bad	Contacting the grocery store-tell them our free bags may reduce their costs Business donations-offer to put names of businesses on reusable bag Art department or Graphics Design at vocational school - to design bags.
---------------------------------------	--

What forms of media will you use to communicate with others? Why?

Talking?	Phone calls and emails for grocery store and businesses - need to write script Video is engaging, and we might get tired explaining to lots of people
----------	--

What do you need to learn?

Nothing. I know that plastic is bad.	Who makes reusable bags and how much they cost? How to use graphics design software
--------------------------------------	--

What resources/materials do you need? How will you acquire them?

Bags	Funding from local businesses Access to graphics design software
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How long will it take you to implement your plan?

1 day to get bags	1 week to contact businesses A couple days to design bags Time it takes for bags to be made 1 week at grocery store 1 months' worth of data
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What forms of evidence can you gather to show that you attempted your plan?

Picture of people with reusable bags	Emails Photos of finished bags and photos of us at supermarket
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What forms of evidence can you gather to show the impact of your plan? How will you collect and record data?

Count bags	Ask supermarket to tell us how many bags they use in 1 week before plan (boxes opened) Ask supermarket how many bags were used each week for 4 weeks
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RESOURCES FOR TEACHERS

- <https://www.nationalgeographic.com.au/animals/how-did-sea-turtle-get-a-straw-up-its-nose.aspx>
- <http://time.com/5339037/turtle-video-plastic-straw-ban/>
- <https://www.plasticsoupfoundation.org/en/files/what-to-do-with-plastic-waste/>
- <https://news.nationalgeographic.com/news/2015/01/150109-oceans-plastic-sea-trash-science-marine-debris/>
- <https://www.usatoday.com/story/tech/science/2018/03/22/great-pacific-garbage-patch-grows/446405002/>
- <https://thewest.com.au/news/sound-southern-telegraph/city-of-kwinana-initiative-nets-impressive-results-ng-b88919325z>
- <https://www.usnews.com/news/news/articles/2018-09-08/massive-boom-will-coral-pacific-oceans-plastic-trash>
- <https://www.sltrib.com/news/2019/01/06/huge-trash-collecting/>
- <https://2minuteshowersongs.com/>
- <https://www.facinghistory.org/resource-library/teaching-strategies/socratic-seminar>

SCHOOL WASTE AUDIT

STUDENT GROUP: _____

LOCATION: _____ DATE: _____

DIRECTIONS

- 1) Collect garbage from a variety of locations around the school (cafeteria, classrooms, gym, hallways, etc.)
- 2) Separate garbage into appropriate waste streams (compost, recyclable plastics, nonrecyclable plastics, glass, landfill, milk cartons, etc.)
 - a. Place each waste stream in large bags so they can be weighed
- 3) Using a fish weight scale, weigh and record each waste stream
 - a. Determine the overall weight and the percentage of total waste for each waste stream
 - b. Determine the appropriate destination for each waste stream

			BEST DESTINATION FOR WASTE					
WASTE STREAM	WEIGHT (POUNDS)	PERCENTAGE OF TOTAL WASTE	LANDFILL	RECYCLE	REUSE	REDUCE	COMPOST	OTHER

TOTAL WEIGHT COLLECTED: _____







Eleventh Grade Lesson Plans

Eleventh Grade Lesson Plan



LESSON PLAN TITLE

Show Me The Clean Water!

DESIGNERS

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SUMMARY AND RATIONALE

The Earth is 70% water, yet 2.7 billion people find safe drinking water scarce for at least one month every year. One in nine or 844 million people lack safe drinking water. Of the 500 largest cities in the world, one out of four is now “water stressed.” Natural resource problems like these are rarely the result of one country, region, or city and never solved without the active collaboration of many. The United Nations’ SDG #11, Creating Sustainable Cities and Communities, targets to enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries.

In this lesson, groups of 3-4 students will learn about national and international water problems, then select water issues and develop an action plan that seeks to educate their school or city community.

GRADE

11th

TIME FRAME

Three 50-minute periods or an extended three more 50-minute periods

SUBJECTS

History
Social Studies
Environmental Science

INSTRUCTIONAL GOALS

Students will learn that water issues exist all over the world and it is the role of both governing bodies and citizens to provide awareness and develop solutions to these issues.

STANDARDS

- CA HSS.11.11- Students analyze the major social and domestic policy issues in contemporary American society.
- CA RH.11.7- Integrate and evaluate multiple sources of information presented in diverse formats and media to address a question or solve a problem.
- CA WHST.11.7- Conduct short as well as more sustained research projects to answer a question or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating an understanding of the subject under investigation.
- PA 4.3.12.B. - Analyze factors that influence the local, regional, national, and global availability of natural resources.
- S-ESS3-1- Construct an explanation based on evidence for how the availability of natural resources, occurrence of natural hazards, and changes in climate have influenced human activity.

UNDERSTANDING

In 2010, the UN declared water as a human right, but there is a problem with clean water availability throughout the world, and more so in poor and rural communities. However, causes can be studied, and solutions can be made through advocacy and action.

ESSENTIAL QUESTIONS

Civilizations and cities have historically developed along water sources.

- What happens when that water source cannot sustain the city?
- What are similar causes for water problems in the world's major cities?
- Who is charged with developing solutions?

STUDENT LEARNING OBJECTIVES

- The student will be able to analyze information from multiple sources.
- The student will be able to categorize causes, problems, and solutions.
- The student will be able to develop solutions for a water problem in their school or community.

ASSESSMENT

Students will create a Public Service Announcement and Awareness Posters or (extension) a presentation to school or local city officials. Students will share their product with the school community. For example, students can create QR Codes of their PSA and post throughout campus on Earth Day or they can display their advocacy poster near drinking fountains.

SEQUENCE OF ACTIVITIES**DAY 1****ACTIVITY 1 (OPENER)**

Where does the water in the school's drinking fountain come from? Trace the source of that water as far back as you can (natural source) and the process to get it in the building (infrastructure). Another option, What is in the tap water? Students can use this website to get started <https://www.ewg.org/tapwater>. This website will provide the utility company that provides water to their community and tells what is found in the tap water.

ACTIVITY 2

As individuals students are assigned to read or listen to stories about water problems in the United States and complete the inside the U.S. graphic organizer. Links to all articles, video, and podcast are located on the

graphic organizer. Teachers can choose to find other articles, videos, podcasts that meet their student's academic needs, align with their community, or select only one story for all students.

ACTIVITY 3

As a class, students share out the "interesting facts" they found. Through class discussion, determine which fact was the most alarming. Open sharing about ideas the United States government could do to help the situation. Apply information about the discussion to our community. How would we react to a situation like that of other U.S. cities? Would our reactions be any different than someone else from around the world? As a ticket-out-the-door, write what you can do about the city water crisis.

DAY 2**ACTIVITY 4**

In groups, students choose one of the twelve cities to research, and answer the outside of the U.S. graphic organizer about water issues.

ACTIVITY 5

As a class, discuss how water issues in the U.S. are similar and/or different than water issues outside the U.S. What are some solutions? What does thinking global but acting local look like in our school community?

ACTIVITY 6 (CLOSER)

Introduce the assessment. Students will create a 30 second Public Service Announcement on a water issue or and/or an advocacy poster. Students can use an online tool such as Adobe Spark to create their PSA.

<https://www.youtube.com/watch?v=iWrx0SxTaBw>. Here is a good article for students to read about how to compose a PSA <https://www.govtech.com/education/news/How-to-Create-the-Perfect-Public-Service-Announcement.html>

Example of PSA:

https://www.youtube.com/watch?v=uqajniK_OqI
If the advocacy poster is selected, students follow the same suggestions for the PSA but create a poster instead.

DAY 3

Workday for PSA/Advocacy Poster.

DAY 4-6 (EXTENSION)

- First, students will learn about the role of the school and city governance, the process members of the community must complete to presentation at their public meetings.
- Second, students will discuss the water problem they want to address and the solutions. This is a continuation of a problem that was brought up during days 1-3.
- Finally, students will create the presentation and complete the process of signing up to speak at a board meeting or city council meeting.

RESOURCES FOR TEACHERS

<https://water.org/our-impact/water-crisis/>

- Online resources can be found linked throughout the lesson and graphic organizers

WATER ISSUES INSIDE THE UNITED STATES**DIRECTIONS**

Read or listen to your respective story and complete this graphic organizer. Be sure to answer with concise details.

- #1: Read about what is happening in Michigan. <https://www.dogonews.com/2016/1/20/the-water-crisis-in-flint-michigan>
- #2: Listen to what is happening in the Navajo Nation. <https://www.youtube.com/watch?v=qjMLyISKoT0>
- #3: Read about what is happening in Pennsylvania. <https://pennfuture.org/Blog-Item-A-Primer-on-Pennsylvanias-Water-Crisis-Challenges-Impacting-Every-Community> and <https://pennfuture.org/Blog-Item-Part-II-A-Primer-on-Pennsylvanias-Water-Crisis-Solutions>
- #4: Listen to what is happening in California. <https://www.latinousa.org/episode/valley-of-contrasts/>

What is the water problem?	What caused the problem?
----------------------------	--------------------------

<p>List and explain the significance of three people, places or things mentioned in the article:</p> <ol style="list-style-type: none">1.2.3.	<p>List three interesting facts or figures from the article:</p> <ol style="list-style-type: none">1.2.3.
<p>What can the United States government do to solve the problem?</p>	<p>What can we do to make sure that this problem does not happen in our community?</p>

WATER ISSUES OUTSIDE THE UNITED STATES**DIRECTIONS**

Research one of the following cities who is/will be facing a water shortage. A good place to start your research is the article [The 11 cities most likely to run out of drinking water - like Cape Town](https://www.bbc.com/news/world-42982959) at <https://www.bbc.com/news/world-42982959>. Be sure to answer with concise details!

Bangalore	Cape Town	London	New Delhi
Beijing	Istanbul	Mexico City	Tokyo
Cairo	Jakarta	Moscow	Sao Paulo
Which city did you choose? In which country is it located?		What is the city's current population?	
What is their water problem?		What caused the problem?	
List and explain two people, places, or things connected to the water issue: 1. 2.		List two interesting facts or figures from the research: 1. 2.	
Compare and contrast water issues from the U.S. city and the international city.			

PUBLIC SERVICE ANNOUNCEMENT RUBRIC (20 POINTS)

CATEGORY	4	3	2	1
Point of View - Awareness of Audience	Strong awareness of audience in the design. Students can clearly explain why they felt the vocabulary, audio and graphics chosen to fit the target audience.	Some awareness of audience in the design. Students can partially explain why they felt the vocabulary, audio and graphics chosen to fit the target audience.	Some awareness of audience in the design. Students find it difficult to explain how the vocabulary, audio and graphics chosen to fit the target audience.	Limited awareness of the needs and interests of the target audience.
Point of View - Purpose	Establishes a purpose early on and maintains a clear focus throughout.	Establishes a purpose early on and maintains focus for most of the video.	There are a few lapses in focus, but the purpose is clear.	It is difficult to figure out the purpose of the video.
Content	The video includes exactly the right amount of detail throughout. It does not seem too short nor does it seem too long.	The video composition is typically good, though it seems to drag somewhat OR need slightly more detail in one or two sections.	The video seems to need more editing. It is noticeably too long or too short in more than one section.	The video needs extensive editing. It is too long or too short to be interesting.
Sound Quality	Sound quality is clear and consistently audible throughout the presentation.	Sound quality is clear and consistently audible throughout the majority (85-95%) of the presentation.	Sound quality is clear and consistently audible through some (70-84%) of the presentation.	Sound quality needs more attention.
Visual Clarity	Video did not rock/shake and the focus was excellent throughout.	Video did not rock/shake and the focus was excellent for much of the video.	Video had a little rocking/shaking, but the focus was excellent throughout.	Problems with rocking/shaking AND focus.

ADVOCACY POSTER RUBRIC (20 POINTS)

CATEGORY	4	3	2	1
Use of Class Time: Productivity and Focus	Used time well during each class period. Focused on getting the project done. Never distracted others.	Used time well during each class period. Usually focused on getting the project done and never distracted others.	Used some of the time well during each class period. There was some focus on getting the project done but occasionally distracted others.	Did not use class time to focus on the project OR often distracted others.
Graphics - Relevance	All graphics are related to the topic and make it easier to understand. All borrowed graphics have a source citation.	All graphics are related to the topic and most make it easier to understand. All borrowed graphics have a source citation.	All graphics relate to the topic. Most borrowed graphics have a source citation.	Graphics do not relate to the topic OR several borrowed graphics do not have a source citation.
Graphics - Originality	Several of the graphics used on the poster reflect an exceptional degree of student creativity in their creation and/or display.	One or two of the graphics used on the poster reflect student creativity in their creation and/or display.	The graphics are made by the student but are based on the designs or ideas of others.	No graphics made by the student are included.
Required Elements (TBD by teacher)	The poster includes all required elements as well as additional information.	All required elements are included on the poster.	All but 1 of the required elements are included on the poster.	Several required elements were missing.
Knowledge Gained	Student can accurately answer all questions related to facts in the poster and processes used to create the poster.	Student can accurately answer most questions related to facts in the poster and processes used to create the poster.	Student can accurately answer about 75% of questions related to facts in the poster and processes used to create the poster.	Student appears to have insufficient knowledge about the facts or processes used in the poster.







Twelfth Grade Lesson Plan

Twelfth Grade Lesson Plan



LESSON PLAN TITLE

Developing Sustainable Cities

DESIGNERS

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SUMMARY AND RATIONALE

The sustainability of our neighborhoods, communities and cities are the responsibility of each citizen of the world. It is imperative that as global citizens, we preserve our planet for ourselves and for future generations. This can be achieved on a local level with the goal of building and maintaining sustainable communities by getting students to recognize the gaps in their own cities, it is a way to begin the process of sustainability at the grassroots level.

GRADE

12th

TIME FRAME

Two-50 minute periods

SUBJECTS

Social studies
Language Arts
Any research project
Independent or collaborative study
Science
Engineering/Project Lead the Way

STANDARDS

SDG 11 which reads: Make cities and human settlements inclusive, safe, resilient and sustainable.

UNDERSTANDING

Students will review SDG#11 and understand that it is their responsibility to advocate for sustainable cities and a sustainable earth.

INSTRUCTIONAL GOAL

- Students will connect United Nations SDG 11 to their own community.
- Students will research and identify how their communities already are working toward sustainability.
- Students will identify possible solutions to make their communities more sustainable.

STUDENT LEARNING OBJECTIVES

- In groups of three or four, students will review SDG #11, define what it means to have sustainable cities, brainstorm ways in which students can contribute toward the preservation of the planet, research their local government's sustainability efforts, and brainstorm possible solutions to address any gaps in those efforts.
- Students will complete assigned projects with 80% accuracy within the allotted time.
- Students will be able to define sustainability, brainstorm ideas 2-3 ideas leading to the preservation of the planet, identify 2-3 efforts towards sustainability, identify 2-3 gaps in sustainability, and brainstorm 2-3 possible solutions to make their city more sustainable.

ESSENTIAL QUESTIONS

- What can we do as individuals to contribute towards a sustainable neighborhood?
- What can we do in our communities to ensure that we are contributing toward the sustainability of our cities?
- What is our responsibility as global citizens toward ensuring that we preserve our planet for the next generation?
- In what ways is my community (un)sustainable? How can my community become more sustainable?

PLAN OR SEQUENCE OF ACTIVITIES

Students will work in groups of three or four to complete the following activities:

1. Watch the UN video on sustainable cities and communities. Discuss how the UN defines sustainability and have students brainstorm how students see sustainability in their own communities.
2. Working in groups or partners, students Google their city or state to examine 1. 2-3 ways that their city or state is sustainable, 2. 2-3 ways that their city is not sustainable.
3. Look at the UN Sustainable Development Goal 11 Targets, examining gaps in their own cities/ states.
4. Brainstorm 2-3 possible solutions to make their city more sustainable.
5. Students research sustainability efforts in one other city in another country of their choosing.

ASSESSMENT

Completed graphic organizer and final paragraph that demonstrates understanding of the gap between their city and the UN's ideal with possible ways to move forward.

SEQUENCE OF ACTIVITIES**RESOURCES FOR STUDENTS**

A computer
Pen or pencil
Paper
Access to city document

RESOURCES FOR TEACHERS

A computer
City documents
Video about SDG 11
Link to UN Sustainable Development Goal 11

EXTENSION

If more time is available OR as part of a CAPSTONE PROJECT lead students a more in-depth process of understanding the intricacies of local city governance. Have students work towards ACTION about encouraging greater sustainability in their local community through the process of governance. NOTE: students could also consider these issues from a STATE perspective

1. Students will read closely and understand complex city governance documents that address sustainability specifically.
2. Identify areas of needs within the city based on the goals and objectives of SDG #11 and connect it to a process of addressing those needs within the city process of governance.
3. Design solutions in collaboration with other stakeholders to address greater sustainability.

ENGLISH 12, UN SUSTAINABLE DEVELOPMENT GOAL #1:
SUSTAINABLE CITIES AND COMMUNITIES

STEP 1

After watching the UN SDG video, consider how you would define sustainability:

Sustainability is...

STEP 2

From your own experience, write down 1-2 ways do you see sustainability around you in your city?

1.

2.

STEP 3

Research and Google our city/state. Many cities will include information including sustainability plans. If you can't find any information on your specific city, consider searching your state to see what it outlines.

STEP 4

Identify 2-3 ways that your city/state is already sustainable:

1.

2.

3.

STEP 4

Identify 2-3 ways that your city/state is already not sustainable:

1.

2.

3.

STEP 5

Examine the UN Sustainable Goal 11 Targets document and identify 2-3 gaps between the document and what your city/state does not do (these may relate to the items in Step 4 that you've already identified).

1.

2.

STEP 6

Consider the gaps that you've selected

1. With your group, brainstorm possible solutions and steps towards that solution, aiming for specificity (ex: develop a composting program at school - develop a proposal for the school that considers location of compost pile or composting bins, look up possible grants, etc.).

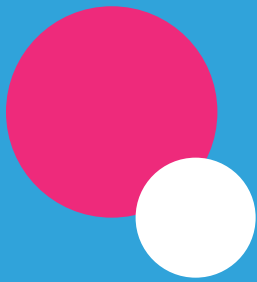
2. In addition, consider allies within the city or community who could assist with the proposed solutions.

STEP 7

Considering the larger context: What is our responsibility as global citizens toward ensuring that we preserve our planet for the next generation?







Secondary STEM Lesson Plan

Secondary STEM Lesson Plan



LESSON PLAN TITLE

Sustainable Cities

DESIGNERS

Kirstin Bullington: kobullington@gmail.com, Holly Miller: hmiller@hse.k12.in.us, and Kathleen Wilson: kwilson1023@comcast.net

SUMMARY AND RATIONALE

In this lesson, students will design solutions to make cities more sustainable. As there are multiple targets within this goal, high school students will be given choice as to their grouping, scope, and approach to creating a working prototype using an engineering design process.

GRADE

Secondary STEM

TIME FRAME

Three weeks (50-60 minutes each class with optional extension time)

SUBJECTS

Science

Math

CTE (Career, Technology, Engineering)

STANDARDS

UN Sustainable Development Goal #11:
Sustainable Cities and Communities

- Target Goal 11.7: Provide universal access to safe, inclusive and accessible, green and public spaces, particularly for women and children, older persons and persons with disabilities

- Competencies:

- › Systems Thinking
- › Strategic
- › Collaboration
- › Integrated Problem-Solving

UNDERSTANDING

- With half of humanity (3.5 billion people; estimated 5 billion by 2030) living in urban areas, global communities will need to work together to ensure that these cities are sustainable.
- Equal access to fresh, nutritious, affordable food is often lacking in urban areas, impacting people's overall health and wellbeing. Some cities are addressing this issue by creating community gardens, which have additional benefits for the environment.

ESSENTIAL QUESTIONS

- How can we design solutions to improve urban quality of life?
- How can we optimize urban infrastructures to minimize the impact of cities on human health?
- How can we ensure access fresh, nutritious foods for all?

INSTRUCTIONAL GOALS

Design solutions to identified challenges to sustainability in their community.

- Identify community stakeholders and laws/regulations applicable to the problem.
 - › Be able to contact local community organizers and officials to navigate existing infrastructure.
- Identify the needs of a community to describe the necessary components to a sustainable city (including affordable housing, green spaces, accessible transportation systems, cultural and natural heritage sites, and air quality and waste management).
- Use a decision matrix (or decision-making process) to objectively prioritize the challenges of a community to focus resources on the most needed areas.
- Apply the science and mathematics principles behind urban infrastructures, spaces and gardens to create prototypes to improve conditions.
- Conduct quality tests (water, air, soil, heavy metals, etc.) to determine baseline statistics for the targeted community.
- Analyze the carrying capacity/the max population that can be sustained by local/global resources.

STUDENT LEARNING OBJECTIVES

I. By the end of the Sustainable Cities project, students will be able to identify sustainability problems specific to urban areas.

- › A. Percent of students correctly defining sustainability issues on post-KAP survey
- › B. Percent change in students' rubric scores in technical content
- › C. Percent change in students' rubric scores in creating a decision matrix

II. By the end of the Sustainable Cities project, students will create solutions to the challenges associated with sustainability in urban areas and quantify their improvements.

- › A. Number of prototypes created to address identified sustainability problems
- › B. Percent reduction in sustainability indicator (water, air, carbon, and/or energy), as selected by student group
 1. Significant sustainability progress is 30% or higher of positive change.

III. By the end of the Sustainable Cities project, students will be able to see themselves as change agents for problems in sustainability.

- › A. Percent change in students agreeing or strongly agreeing with the belief that they have the knowledge and skills to solve sustainability problems, as measured in pre and post-project KAP Surveys.

ASSESSMENT

FORMATIVE ASSESSMENT

Students will be required to keep a project journal to record daily progress, respond to teacher prompts, and to complete a reflection activity upon conclusion of their presentations. Teachers may grade each journal entry on a scale (for example 1-3; 1-5; 1-10), based on the level of detail, and/or read journal entries when meeting with groups, as a daily check-in conversation starter.

Journal ~ Daily Check-in Questions

Today's Date:	
Today my group completed (or worked on) this task/step:	
Questions/concerns I have after today's work:	
Our plan for the next project working day:	

Journal ~ Final Reflection Activity

Which group’s presentation (not your own) best met the challenge posed by our three essential questions? Provide specific evidence for your choice.	
Thinking about your own group’s solution/product, what are the next steps that need to be taken to implement your idea to address the challenges of sustainable cities?	

SUMMATIVE ASSESSMENT

Teacher will assess student work by using the NGSS Engineering Practices Rubric. Students will also be using this rubric as one of their self-assessment tools. (See rubric below.)

Additional assessment option: For a more personalized learning experience, one option for final grading is to have the students create their own rubric with Rubistar once they have identified the deliverable they will create. There are simple frameworks that they can select and modify for their specific deliverable (prototype, website, etc.), and students can easily submit to the instructor for approval.

NGSS ENGINEERING PRACTICES RUBRIC

STUDENT (S): _____

DATE: _____

ENGINEERING PRACTICE (NGSS)	BEGINNING	PROGRESSING	PROFICIENT	ADVANCED
Defining problems	We understood the design problem.	We understood the design problem. We attended to some of the constraints of the problem. We used some science knowledge to limit possible solutions.	We had a good understanding of the design problem. We attended to multiple criteria and constraints. We used science knowledge to limit possible solutions.	We had an exceptional understanding of the design problem and could clearly articulate it. We attended to multiple criteria and constraints and understood the relationships between them. We used science knowledge and could clearly articulate the science behind our design.

Planning and carrying out the investigation	We collected data on the performance of our prototype under at least one condition.	We collected data on the performance of their prototype under more than one condition.	We collected data on the performance of our prototype under a range of conditions. We evaluated the accuracy of our data collection method(s).	We collected significant amounts of data under a wide range of conditions. We improved the accuracy of our data collection methods.
Analyzing and interpreting data	We collected some performance data of our prototype.	We collected performance data on our prototype using a single trial. We analyzed the performance data of the single trial.	We collected performance data of our prototype using multiple trials. We analyzed the performance data from multiple trials. We considered the limitations of data collection and analysis.	We collected some performance data of our prototype using multiple trials. We analyzed data on the performance of our prototype using multiple trials. We created and/or used different tools to improve precision and accuracy of the data.
Designing solutions	We completed a design project, engaging in the design cycle, to construct and implement a solution.	We completed a design project, engaging in the design cycle, to construct and implement a solution that met specific design criteria and constraints.	We completed a design project, engaging in the design cycle, to construct and implement a solution that met specific design criteria and constraints. We optimized performance of a design.	We creatively used the engineering design process to implement a solution that exceeded specific design criteria and constraints. We optimized performance of a design. We applied and could clearly articulate many scientific ideas or principles to design, construct, and/or test a design of an object, tool, process or system.
Obtaining, evaluating, and communicating information	We described our solution in writing or through oral presentations.	We described our solution using scientific and technical information in writing or through oral presentations.	We described our solution using clear and accurate scientific and technical information in writing or through oral presentations.	We creatively described our solution using clear and accurate scientific and technical information in writing or through oral presentations.

SEQUENCE OF ACTIVITIES

OPENER/MOTIVATOR

- a. Prior to launching the project, students will take a brief KAP (knowledge, attitudes, and perceptions) survey to determine their pre-existing knowledge and beliefs about sustainability, challenges in urban areas, and the extent to which they believe they can design solutions to urban problems.
- b. Kickoff video & total class discussion: <https://www.bbc.com/reel/video/p06sbtzz/tricks-from-the-most-densely-populated-city>
 - i. What is the value of having green spaces within a city?
 - ii. How does the video show examples of people creating local solutions to a global problem?
- c. Optional activity- read NPR Article (as a class), “And This is How We Stopped Climate Change” and have students discuss their impressions.

CORE ACTIVITIES

- a. Speed brainstorm: Whole class brainstorm on what problems exist in cities - gallery walk - each subtopic of SDG 11 is written on chart paper and students move from paper to paper as instructed, writing either a question they have about the topic or an idea for a solution. Students may not repeat an idea or question already on the paper. This allows for rapid generation of ideas and piling on, without the judgment students sometimes feel in groups.
- b. After brainstorming rounds are complete, students move freely to read other ideas around the room and then stand near the target that they most want to work with. (Alternatively, students may create a decision matrix in which they rank each target based on number of ideas, their personal interest, feasibility of a solution within three weeks, etc.).
- c. In groups based on target/solution interest, students will use the PMIEF Project Management Framework to define their problem, plan their class time, and narrow the scope of their problem to one community. Teacher will help students identify available resources and refine their problem statement to reflect the scope of their problem.

If working collaboratively with a global partner, students will complete the defining and planning documents in tandem and refer back to their targeted city.

- d. Students will conduct research related to the problem statement and selected community and ensure that their proposed solutions are sustainable and appropriate for that community. (This may be the students’ own community or a community with which they have a connection.)
- e. Based on student groups’ planning documents, students will create a reference design, test their prototype, and make quantifiable improvements to their reference design until it meets the criteria they established previously.
 - i. Optional activity: If students have access to Solidworks (CAD software), they can quantify the sustainability improvements of their project, and earn a Certified Sustainability Associate credential. See teacher references.

f. Depending on the size of the class and availability of resources, teacher may elect for all students to work jointly on one project, or to have multiple projects occurring concurrently.

CORE ACTIVITIES

- g. Students will present their solutions to an authentic audience, including the community for which the solution has been proposed. After presenting, students will be given feedback and will complete a reflection activity in their project journals to consider what their next steps should be.
- h. Students will complete a post-project KAP survey to determine what effect the project has had on their knowledge, attitude, and perceptions of their capacity to affect change regarding sustainable cities.
- i. Students will complete a self-assessment, using the NGSS Rubric for Engineering Design. (Rubric is adapted to meet specific needs of this project.)

RESOURCES FOR STUDENTS

- United Nations SDG website - Goal #11 Sustainable Cities and Communities
<https://www.un.org/sustainabledevelopment/cities/>
- Newsela article “What is Sustainability?” - Good introduction, overview, and connection to STEM:
<https://newsela.com/read/lib-sustainability-overview/id/37905/>
- Good article for stimulating discussion on possible sustainable cities:
<https://www.npr.org/sections/goatsandso/da/2019/03/11/688876374/its-2050-and-this-is-how-we-stopped-climate-change>
- “Vertical Farming is Here” (TEDxYouth - speaker Dickson Despommier - The Greenhouse Project: Science and Sustainability for K-12)
<https://www.youtube.com/watch?v=-ydeazX2W6M>
- “How a Rooftop Farm Feeds a City” (TEDxUdeM - speaker Mohamed Hage)
<https://www.youtube.com/watch?v=kSQm09twKEE>

RESOURCES FOR TEACHERS

- Project Management for Youth Framework: <https://pmief.org/> (Excellent resources on teaching project management either within the PBL framework or traditional project management terminology).
- Asia Society STEM Modules for Building Global Competencies: <http://www.core101.org/login/index.php> (Requires free registration; 10 modules designed to help teachers facilitate globally-focused projects with students. There is a wealth of resources in their toolkit for this purpose)
- Practical Action: A wealth of resources on design challenges, background on global sustainable development projects, and lesson plans.
<https://practicalaction.org/>
- Rubistar: Great rubric generator for instructors who do not have set rubrics for their curriculum (and a great way for high school students to have a voice in how they will be graded; if they have to create a rubric for their final grade)
<http://rubistar.4teachers.org/index.php>
- Solidworks Sustainability: For schools using Solidworks as their CAD program, there is an add-on tool that allows students to quantify improvements to energy, carbon, air, and water. For schools that do not have access to Solidworks, students can still be credentialed as a Certified Sustainability Associate by studying the online module (<https://www.solidworks.com/sustainability/sustainable-design-guide/ch1-introduction-terminology.htm>) and scoring 80% or higher on the Sustainability exam.
- Global Cities: <https://www.globalcities.org/> One option for students to work collaboratively with another school (intended for middle school students)

PHOTOS OF STUDENT WORK

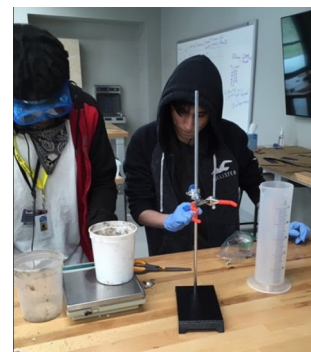
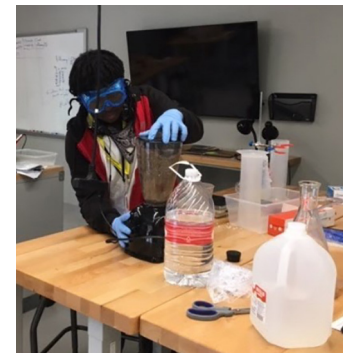
Student prototype of city gardening using recycled materials:



Students researching aquaponics as source for sustainable food production:



Students researching aquaponics as source for sustainable food production:







Secondary Art Lesson Plan

Secondary Art Lesson Plan



LESSON PLAN TITLE

Playground Utopias:

Designing Safe, Accessible, and Sustainable Parks, Playgrounds or Communal Spaces

DESIGNERS

Sarah Johnston: sarjohnston@gmail.com, Lindsay Johnson: mrs.lindsay.johnson@gmail.com, Michelle Cromer: michelle.pauken@rockwallisd.org, Amie Robinson: amierobinson@gmail.com

SUMMARY AND RATIONALE

Students will explore how artists, designers, and architects create work that shapes or impacts public awareness of a social issue: Sustainable Parks and Cities. They will brainstorm to identify a problem impacting living environments at a local, domestic, or global scale. Students will collaborate using the creative process to envision, design, or improve the identified concern. They will investigate how artists consider health and safety concerns when designing spaces in addition to the materials (recycled) used.

GRADE

9th - 12th

TIME FRAME

3-4 sessions

SUBJECTS

Art
Math
Social Studies
Language Arts
Career/Vocational
Technology

UNDERSTANDING

People create and interact with objects, places, and design that define, shape, enhance, and empower their lives. Artists play a powerful role in shaping our understanding of these concepts, especially in a global context.

INSTRUCTIONAL GOALS

- Students will use the artistic process to further understand and analyze The Global Goals for Sustainable Development Goal 11: Sustainable Cities and Communities.
- Students will recognize how they, as artists, can become active members of their communities and the greater world around them, and learn from other artists who have designed or redesigned spaces and cities or human settlements to be inclusive, safe, resilient and sustainable.
- Students will appreciate the need for universal access to safe, inclusive and accessible, green and public spaces, particularly for women and children, older persons and persons with disabilities.
- Students will consider ways in which artists can use recycled materials and design spaces that align to policies embracing resource efficiency, sustainability, utilize local materials, etc.
- Students will analyze and research solutions to existing environmental problems facing many urban communities such as air quality, clean water access and waste management.
- Students will build teamwork and collaboration skills in working together to conceptualize, design, and build models of their sustainable spaces.

NATIONAL CORE ARTS STANDARDS (SECONDARY)

- **High School Proficient:** VA:Cr1.1.1a Use multiple approaches to begin creative endeavors. VA:Cr1.2.1a Shape an artistic investigation of an aspect of present day life using a contemporary practice of art or design. VA:Cr2.2.1a Explain how traditional and nontraditional materials may impact human health and the environment and demonstrate safe handling of materials, tools, and equipment. VA:Pr6.1.1a Analyze and describe the impact that an exhibition or collection has on personal awareness of social, cultural, or political beliefs and understandings. VA:Re.7.2.1a Analyze how one's understanding of the world is affected by experiencing visual imagery. VA:Cn10.1.1a Document the process of developing ideas from early stages to fully elaborated ideas.
- **High School Accomplished:** VA:Cr2.2.1a Demonstrate awareness of ethical implications of making and distributing creative work. VA:Cr2.3.1a Redesign an object, system, place, or design in response to contemporary issues. VA:Pr6.1.1a Make, explain, and justify connections between artists or artwork and social, cultural, and political history. VA:Re.7.1.1a Recognize and describe personal aesthetic and empathetic responses to the natural world and constructed environments. VA:Cn11.1.1a Compare uses of art in a variety of societal, cultural, and historical contexts and make connections to uses of art in contemporary and local contexts.

ESSENTIAL QUESTIONS

- How do objects, places, and design shape lives and communities? How do artists and designers determine goals for designing or redesigning objects, places, or systems?
- How do artists and designers create works of art or design that effectively communicate?
- How can we use **art** and **design** to create *inclusive, safe, resilient* and *sustainable* cities and communities?

STUDENT LEARNING OBJECTIVES

- Students will work together in small groups to brainstorm and identify a problem and solutions for sustainable parks, playgrounds, or communal spaces.
- Students will create sketches and drawings detailing their own designs to address the identified problem.
- Students work in teams to build small scale models

of their design using recycled materials.

- Students will use a template to write a public art proposal and prepare a presentation that promotes their design for a sustainable park.

ASSESSMENT

Sketchbooks
Self-Reflections
Rubrics
Gallery Walks
Critiques

SEQUENCE OF ACTIVITIES

MOTIVATION

Share images of parks and communal spaces-consider emphasizing a global perspective when selecting artists. View video of Isamu Noguchi's Moerenuma Park and engage students in a class conversation about their own experiences with communal spaces such as parks and playgrounds.

CORE LEARNING ACTIVITIES

Discussion:

Divide students into smaller groups and distribute cards (and images) with guiding discussion questions: What makes a park, playground, or communal space fun? Safe? Sustainable? Are these spaces in our community safe? How do they differ from spaces in other environments-rural, suburban, urban? How are they the same or different from spaces in other countries/cultures? Are these spaces accessible to all? Are these spaces sustainable? Do they provide green space? What materials were used to create them? Do they reflect/respect the culture of the inhabitants around them? How can we design/redesign a given space that empowers us as artists to improve the community or environment?

Design:

After teams have identified what elements make a safe, accessible, and sustainable parks, playgrounds or communal space, students will work together or individually to create drawings and sketches of a new or improved design. Considerations for designs

should include the percentage of nature or green space, vertical or horizontal layout, environmental innovations (rainwater collection, etc.), transportation (bike lanes and safe well-lit walkways), accessibility of playground equipment, location, economic cost, public art and community pride, etc.

Building Models:

Students will create small scale models of their designs using recycled materials. Inspiration can be drawn from models created by artists such as Noguchi and Kingelez.

Revision:

In a mini critique, have each group present their models and ideas with the entire class in a chance to perceive and analyze their artwork. Encourage students to ask each other questions that dig deeper into the essential questions and ask, “what if?”. Based on comments and feedback from teacher and peers, students will revise their model designs and move on to the reflection stage.

Reflection:

As a culminating activity, have students write or complete a public art proposal template. Proposals should consider location, cost, materials, etc. Students can then create a visual campaign or community presentation with models, public proposal, and/or slideshow to influence stakeholders.

EXTENSION

Consider taking field trips to local parks, green spaces, or community. If possible, invite local artists, architects, and urban planners from the community to meet with students and share in their design process and discussion of global concerns connected to sustainable cities and living spaces. Encourage students to submit their sustainable park design to high school design contests.

MATERIALS

Drawing paper or sketchbooks, pencils, color pencils, templates, scissors, glue, glue sticks, cardboard pieces for bases, contact collage board, cardboard scraps, pipe cleaners, wire, recycled materials (bottle caps, lids, plastic water bottles, foil, cardboard tubes, newspaper, small boxes, egg cartons, cork, etc.), rubber bands, natural materials (sticks, leaves, etc.)

DIFFERENTIATION

Use pre-sticky collage board for base of model to adjust for motor skill development. Allow students to use gloves if desired for sensory aversion to certain materials, provide adaptive tools including scissors and handles for drawing materials, designated communication devices and symbols handouts to facilitate student participation in discussion, large image printouts and slant-boards for students with trouble seeing Smartboard.

RESOURCES FOR STUDENTS

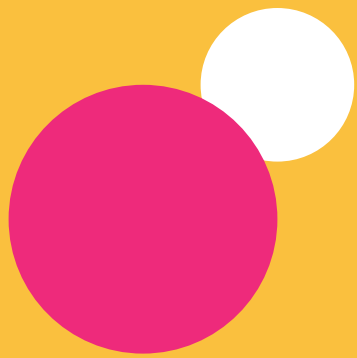
- <https://www.nytimes.com/2018/05/31/arts/design/bodys-isek-kingelez-review-moma.html>
- Bodys Isek Kingelez: City Dreams | MoMA LIVE <https://youtu.be/RB4jgBx16vY>
- Global Cardboard Challenge Resource Guide: <https://cardboardchallenge.com/>
- List of High School Design Contests: <https://www.discoverdesign.org/challenges> <http://projectosmosis.org/annual-all-high-school-design-competition>

RESOURCES FOR TEACHERS

- Bodys Islek Kingelez: City of Dreams <https://www.moma.org/artists/68319>
- Isamu Noguchi: Playspaces <http://www.louisapenfold.com/noguchi-playspaces/> (<https://www.noguchi.org/>)
- Video: Isamu Noguchi's Moerenuma Park <https://youtu.be/6GxWSK5XRSI>
- Carsten Höller: Slides <https://www.artsy.net/article/artsy-editorial-carsten-holler-adults-slides-seriously>
- Artists' Playgrounds: <https://www.artsy.net/article/artsy-editorial-picasso-noguchi-11-artists-designed-spectacular-playgrounds>
- Ideas for vertical gardens/rooftop farms: <https://land8.com/project/urban-2/>
- Ana Serano: Cartonlandia <https://www.anaserrano.com/iii/>
- El Anatsui: Artist using recycled materials <http://el-anatsui.com/>
- Snarkitecture: The Beach







Global Leadership Fellows (GLF) 2019 Class Bios

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Rachel Arens

High School Science Educator
Omaha, Nebraska

Rachel holds a Bachelor of Arts in Biology and a Master of Science in Biology. She uses those skills to teach science, technology, engineering and mathematics (STEM) classes at a high school level. She teaches Advanced Placement (AP) Environmental Science, Plants/Propagation, Advanced Horticulture, Anatomy/Physiology courses, and Biology courses. She is very connected at her school along with the other educators and expects the most from her students. She enjoys getting her students involved in service learning projects in order to teach state standards while also helping the community.

Aaron Baker

Middle School Social Studies Educator
Oklahoma City, Oklahoma

Aaron has seven years of experience teaching U.S. History and Local and Global Citizenship at the middle school level. He sings and plays the guitar, which he brings into his class lessons, as well as his great communication skills that allow him to convey his messages. Aaron has a Bachelor of Arts in Bible and Missions as well as a Master of Arts in Theological Studies – concentration in Youth Ministry.

Isabel Bozada

Elementary School Innovation Educator
Reynoldsburg, Ohio

With a Bachelor of Science in Education focusing on Early Childhood Education, Isabel is an expert on early elementary school learning. She has taught in second and third grade classrooms, using a globally focused STEM curriculum. She was also elected as a member of the Principal's Advisory Council and has piloted programs in the school that focus on the connection between student success and social-emotional learning.

Lydia Rayfield

Elementary School Kindergarten Educator
Cheyenne, Wyoming

Lydia graduated from the University of Wyoming with a Bachelor of Arts in Elementary Education and also received a Master of Arts in Reading with an emphasis on Elementary Education. She has taught as a Kindergarten educator for the past six years and also serves as a mentor for college students studying in the field of education. Lydia is very involved in her community by being a foster parent and running her ice cream truck business.

Kirstin Bullington

STEM Educator
Columbia, South Carolina

Kirstin is a 15-year STEM educator who is National Board Certified in Adolescence and Young Adulthood Science. She teaches Biology, Physical Science, Computer Science, and Pre-Engineering courses all at the high school levels. Kirstin graduated university with a Bachelor of Arts in Music and a Bachelor of Science in Biology and hold a Master of Public Health in International Health and Development.

Jacqueline Carrero

Middle School ESOL Educator
Hollywood, Florida

Jacqueline is a National Board Certified educator who teaches ESOL (English for speakers of other languages) and Intensive & Advanced reading classes. She mentors new and student teachers, as well as prepares ELL (English language learners) and students with disabilities (SWD) for state assessments. Jacqueline has a Bachelor of Arts in Early Childhood and Elementary Education along with a Master of Science in Special Education.

Christopher Erickson

High School English and History Educator
Ann Arbor, Michigan

Christopher graduated from the University of Michigan with a Bachelor of Arts in Education: English and History), and a Master of Arts in Teaching: Curriculum, Instruction, and Assessment. He teaches Gender Studies, English, and History at the high school level along with acting as the CAS (Creativity, Activity, Service) Coordinator for the IB (International Baccalaureate) program. Chris is very involved in his community and spends much of his time volunteering to provide support to other teachers and spread his knowledge of teaching.

Mark Easterday

High School Social Studies Educator
Elliottsburg, Pennsylvania

Mark holds a Bachelor of Arts in History with minors in Anthropology and International Relations as well as a Master of Arts in East Asian Studies with a minor in Mandarin Chinese Language. He has lived all of the world and served with the United States Air Force, giving him a very interesting perspective when teaching Modern World History, Pennsylvania History, and U.S. History at a high school level. Mark is very involved in the community and works to serve it as best as he can.

Ruth Cebreros

High School Social Studies Educator
Hawthorne, California

Ruth Cebreros holds a Bachelor of Arts in Behavioral Science as well as a Master of Arts in Education. She teaches U.S. History and AP Macroeconomics at the high school level. Ruth is the International Baccalaureate Program Coordinator at her school and is the IB Student Club Advisor. Ruth has held many different positions within the high schools where she's taught, giving her a wealth of experience to bring to the classroom and further her students' education.

Kimberly Eckert

High School English/Language Arts/Literature Educator
Brusly, Louisiana

Kimberly graduated with a Bachelor of Social Work and holds a Masters of Education in Special Education and teaches English at the high school level. Kimberly is very involved with Student programs at her school, she led a Best Buddies Club and sponsors the GSA (Gay-Straight Alliance) Club, Dance Team, EF Tours Group, Genius Hour, and Chess Club all at the high school where she works. Kimberly also supports her fellow teachers by serving as an Instructional Coach at the school.

Melissa Collins

Elementary School Second Grade Educator
Memphis, Tennessee

Dr. Collins graduated with a Bachelor of Science in Early Education, is a Master of Education in Administration, and holds a PhD in District-Level Administration. Melissa is a second grade educator and chair of her department and is very involved in the school where she works. She is on the Climate and Culture Team, the Marketing Team, Chair of the STEM Fest, Chair of Parental Involvement, Co-Chair of School Leadership, and coordinates the mentor program.

Terrilyn Fleming

High School Drama/Performing Arts Educator
Louisville, Kentucky

Terrilyn holds a Bachelor of Science in English and Theatre as well as a Master of Arts in English with Emphasis on Playwriting. She has a passion for theatre and uses that passion to be the best educator for her students. Terrilyn teaches Drama and Arts & Humanities and sponsors the Gay-Straight Alliance, Competitive Dance Team, and Black Student Union at her school.

Edward (Ted) Halbert

High School English and Theatre Educator
Brighton, Colorado

Edward holds a Bachelor of Arts in Communication with an emphasis on Public Relations and a Masters of Education in Curriculum and Instruction with an emphasis on the Arts. He teaches English classes at the high school level and directs and produces quality theatrical performances which are great opportunities for students to become involved in something fun and stimulating. Ted also supports his fellow teachers through holding leadership positions and membership on different departmental teams of teachers.

Sarah Hicks

Middle School ESOL Educator
Alabaster, Alabama

Sarah graduated from the University of Alabama with a Bachelor of Arts in English and a Master of Arts in Education specializing in English as a Second Language (ESL). She is an ESOL (English for Speakers of Other Languages) Classroom Teacher and teaches English as a foreign language to newcomer students. Sarah works to use different types of innovative technology in her classroom to support learning and also provides ESL professional development to other teachers within her district.

Christopher Gleason

Middle School Instrumental Music Educator
Sun Prairie, Wisconsin

For fifteen years, Christopher has been a Middle School Instrumental Music Educator teaching Grade Bands, Jazz Ensemble, Friday Morning Ensembles, Marching Band, and serves as the Band Lesson Academy Coordinator. Chris holds a Bachelor of Music Education and a Masters of Education in Professional Development and shares his passion for music through leadership opportunities and community engagement.

Lindsay Johnson

Middle School Visual Arts Educator
River Forest, Illinois

Lindsay holds a Bachelor of Fine Arts in Visual Communication, a Master of Arts in Teaching, and a Master of Education in Technology in Education. She brings technology skills into the classrooms by co-teaching with educators at all grade levels and leads the fifth to eight grade Animation Club and fifth to eight grade Tech Genius Bar. Lindsay also facilitates many professional development workshops to educate her fellow educators on best practices to bring technology into the classroom.

Erica Jones

Elementary School Second Grade Educator
Byram, Mississippi

Erica holds a Bachelor of Science in Elementary Education K-8 English and Mathematics, and a Master of Science in Elementary Education. She is a Second Grade Classroom Educator and is involved in many leadership positions at her school. Erica serves on the Mississippi Department of Education Task Force, is a State Coach on the Teacher Leadership Initiative, and is on the Leadership Team at the school where she works.

Lisa Jacobsmeyer

Elementary School ESOL Educator
Dumfries, Virginia

Lisa is a National Board Certified Teacher and holds a Bachelor of Arts in Biology and Conceptual Foundations of Modern Medicine, a Master of Arts in History of Science, and a Master of Education in Education and English as a Second Language. She teaches Language Arts, Social Studies, Math, and Science to English language learners in grades K-5. Lisa supports her fellow teachers by conducting professional development workshops, serves as a mentor to new teachers, and serves as an educational leader.

Susan Koch

Elementary First Grade Educator
Montpelier, Vermont

Susan has thrived as an Elementary Educator for 20 years. She graduated with a Bachelor of Arts in Elementary Education and holds a Master's Degree in Education. Susan is an advocate for all her students so in order to reach all learning styles, she has created an outdoor learning curriculum called ECO, Educating Children Outdoors.

(Alba) Nelly Korman

High School Spanish Language Educator
St. Louis Park, Minnesota

Nelly holds a Bachelor of Arts in Modern Languages: Foreign Language Teaching and Linguistics and a Master of Arts in Educational Leadership. She is an AP Spanish Language and Culture Educator and serves as a translator for students and their families during parent-teacher conferences and other events.

Kerry Konda

High School Social Studies Educator
Aberdeen, South Dakota

Kerry is a Debate, Speech, and American Government Educator at the high school level. She also serves as the Head Speech and Debate Coach at the school where she works and has proven to be outstanding. Kerry holds a Bachelor of Science in Education: Secondary Speech/Debate and Secondary Social Studies, and a Master of Science in Education: Leadership and Administration.

Sandra Makielski

Middle School Social Studies Educator
North Kingstown, Rhode Island

Sandra has been a Middle School Educator from over twenty years teaching World Geography and Current Events courses. She also supports students by offering tutoring sessions before and after school as well as working to incorporate all learning styles into her lesson plans. Sandra graduated with a Bachelor of Arts from Michigan State University.

Myla Liljemark

Middle School Social Studies Educator
Seward, Alaska

Lyla teaches United States History and Ancient Civilization courses at the middle school level. She incorporates many aspects of global education in her classroom by having regular Skype calls with other students from Australia and Uganda and has also organized professional informational calls for the students, including one with an FBI agent. Lyla holds a Bachelor of Arts in History with a minor in German and a Master of Arts in Teaching, Secondary Education in Social Studies.

Jennifer Metzler

Elementary School Fourth Grade Educator
Tuscan, Arizona

Jennifer holds a Bachelor of Arts in Elementary Education, with a minor in TESOL and has a Master of Education in Educational Leadership. She has traveled extensively across the world, through educational and scholarship opportunities, learning all about many cultures. She attempts to bring global learning and her knowledge of these different communities in the classroom through story books and other works of literature.

Holly Miller

Middle School Stem Educator
Fishers, Indiana

Holly received a Bachelor of Science in Social Work/ Psychological Science, a Master of Social Work, a Master of Arts in Teaching, and is currently a Doctoral Student studying Pragmatic Research in STEM Education. Holly is an Elementary School STEM Educator who works to reach all learning styles in her classroom and uses many hands-on teaching skills in order to ensure the highest achievement from her students.

Susan Pomasko

Social Studies Educator
Marlborough, New Hampshire

Susan instructs sixth through eighth graders in geography, civics and government, history, economics, writing, and reading courses. In addition to her responsibilities in the classroom, she works with her fellow teachers to further develop the curriculum to be in line with district and national standards, as well as contain elements of initiatives that better support all students. Susan holds a Bachelor of Science in Elementary and Special Education and a Master of Education in Curriculum and Instruction

Michelle Pauken

High School Visual Arts Educator
Rockwall, Texas

Michelle holds a Bachelor of Arts in Spanish and Art, a Master of Arts in Art History, and a Ph.D. in Humanities, Aesthetic Studies. As a visual arts educator, she incorporate aspects of global learning into her lessons. She tasks students to incorporate different cultures into their work and make that their mission to expand their minds and further develop empathy.

Jennifer Morris

Elementary School Third Grade Spanish Immersion
Educator
Spokane, Washington

Jennifer is a third grade class Educator teaching, in Spanish, Math, Science, Spanish, and Global Issues. She graduated with a Bachelor of Arts in Early Childhood Development, minoring in Spanish and a Master's Degree in Teaching, Elementary Teacher Education Program. Jennifer is very involved in her community and school and works with her fellow teachers to make global competency more of a priority in the classroom.

Michael Pope

Middle-High School STEM Educator
Japan

Michael holds a Bachelor of Science in Middle School Education as well as a Master of Science in Middle School Education, Science and Social Studies. Michael is very involved at the school where he works and invested in each and every one of his students. He does this through the GT AVID program he coordinates, the projects he has started in order to get students more interested in science, and through coaching soccer at the school.

Elizabeth Rich

Elementary School Discovery Educator
Atlanta, Georgia

Elizabeth graduated with a Bachelor of Science in Criminal Justice and Pre-Law and a Master of Education in Educational Psychology. She is a Discovery Educator, grant writer, and Technology Committee Member. As a Discovery Educator, Elizabeth supports a very diverse group of students with many different learning styles.

Allison Shriver

Elementary School Fifth Grade STEM Educator
Mt. Hope, West Virginia

Allison is National Board Certified and holds a Bachelor of Science in Elementary Education and a Master of Arts in Special Education. She is a fifth grade science and math teacher and has developed many innovative programs in order to cater to all students' needs. These programs include: grades three through five task forces, programs that delve deeper into math comprehension, hands-on STEAM activities, and family and school gallery walks to share the information learned in STEAM classes

Amie Robinson

Special Education Educator
Brooklyn, New York

Amie is very dedicated to making sure she reaches all students and their learning styles. She is involved in Special Olympics and Best Buddies and organizes activities for students with disabilities to visit museums and theaters. Amie has a Bachelor of Fine Arts, a Master of Fine Arts, and a Master of Education in Special Education and Early Childhood Education.

Jennifer Rose

Middle School Social Studies Educator
Easton, Connecticut

Jennifer is a seventh grade Global Studies Educator. She takes advantage of teaching this course by using it as an opportunity to educate and broaden the minds of all her students globally so that they are well-informed citizens. Jennifer has a Bachelor of Arts in Interdisciplinary Social Science, a Secondary Education Teaching Certification in History and Social Studies, and a Master of Science in Curriculum and Instruction.

Jane Rosenow

High School English/Language Arts Educator
Kansas City, Kansas

Jane is an English Language Arts/Composition and Research Educator as well as a Senior Academic Advisor. Jane is committed to supporting at-risk students and those who have disabilities in addition to giving those motivated students the resources needed to take charge of their own learning. She has a Bachelor of Arts in English and Political Science, a Master of Arts in Journalism and Communication, and a Master of Arts in Teaching English to Speaker of Other Languages (TESOL).

Erin Sears

Elementary School Third Grade Educator
Altoona, Iowa

Erin is an Elementary School Third Grade Educator who brings global education to the classroom through inquiry and service-based teaching practices. She tasks students to think critically and ask questions in order to be the most socially conscious. Erin graduated with a Bachelor of Arts in Art History and a Master of Arts in Teaching, Elementary Education.

Jennie Robinette

Elementary School Kindergarten Educator
Asheville, North Carolina

Jennie is a Kindergarten Classroom Educator who teaches all subjects. In addition to her classroom responsibilities, Jennie serves on the Executive Council at her school and attends and leads professional development for educators. She has a Bachelor's Degree in Elementary Education and a Master's Degree of Education with a concentration in Creative Arts in Learning.

Gabriel Tanglao

High School Social Studies Educator
Bergenfield, New Jersey

Gabriel holds a Bachelor of Arts in Political Science, a Master of Science in Teaching Secondary Social Studies Education, and a Master of Arts in Economics, Education, and Entrepreneurship. He teaches Social Studies and AP US History at a high school level and is an advisor to his school's Lemon Club and Together Everyone Can Help (TECH) Club. Gabriel supports his fellow educators by keeping involved in his local teachers' associations and councils.

Jody Lynn Tolley

High School American Sign Language Educator
Salt Lake City, Utah

Jody Lynn is a High School Sign Language Educator who has developed many projects to support deaf students. She has created an American Sign Language textbook along with supplementary materials to support other educators and has also directed plays using American Sign Language (ASL), taught honors classes using ASL, and coaches a team at the American Sign Language Competition. Jody Lynn has a Bachelor of Science in Special Education and a Master of Education in Communicative Disorders and Deaf Education.

Wendy Turner

Elementary School Second and Third Grade Gifted and Talented Educator
Wilmington, Delaware

As Delaware Teacher of the Year, Wendy has been able to travel around Delaware and the United States attending professional development workshops and conducting a few of her own. She holds a Bachelor of Science in Accounting and a Master of Education. She currently works at an Elementary School as a second and third grade Gifted and Talented Educator.

Cassidy Urie

Middle School Math Educator
Columbia, Missouri

Cassidy received a Bachelor of Science in Education, Secondary Mathematics with a minor in Human Development and Family Studies as well as a Master of Education in Curriculum and Instruction and a Master of Education in Educational Leadership. She has had the opportunity to travel to many places and learn about different cultures and works to bring this into her classroom instruction. Cassidy teaches Math 6, Math 8, and Algebra 1 courses.

Cody Vest

High School English/Language Arts Educator
Rogers, Arkansas

Cody teaches Pre-AP English 9 and English 12 at the high school level. He holds a Bachelor of Science in Education in English and a Master of Education in Instructional Improvement and is currently finishing his Ph.D. in Interdisciplinary Leadership Studies. Cody assists in curriculum development at the district level and is also involved in coaching teams and sponsoring clubs at the High School where he teaches.

Maggie Wachtl

High School Science Educator
Augusta, Maine

Maggie holds a Bachelor of Arts in Genetics with a minor in Spanish as well as a Master's in Teaching and Learning. She is an AP Biology and AP Chemistry educator, along with other sciences courses. She works to share her knowledge of technology by training other teachers how to use helpful programs within the classroom.

Kathleen Wilson

Middle School Science Educator
Scituate, Massachusetts

Kathleen holds a Bachelor of Science in Elementary Education as well as a Master of Education in Critical and Creative Thinking. She teaches grade eight Science using a variety of project-based techniques that allow students of all learning types to succeed. She even holds some lessons in the local museum where she works and conducts evening lessons for elementary age students.

Maryellen Wolfinger



Middle School Science Educator
Bethesda, Maryland

Maryellen is a Science 8 Investigations in Earth Space Educator at the Middle School level. She received her Bachelor of Science in Environmental Science, her Master of Education in Secondary Science Education, and is currently in the process of getting her Doctor of Education in Curriculum and Instruction. Maryellen has shown leadership as an educator by presenting in different venues, representing groups of teachers, leading professional development workshops, and leading student groups.

Laura Wommack

High School STEM Educator
Plummer, Idaho

Laura received a Bachelor of Science in Family and Consumer Science Education as well as a Master of Arts in Curriculum and Instruction with an emphasis on STEM. She is currently a High School STEM teacher and works to infuse global education in the classroom. She does this through sharing personal stories of travel and exposing her students to different cultures in their lessons.



In this increasingly flattened world, learning to think critically about global affairs is of utmost importance. Students need to learn how local and global affairs are interdependent; they need to be able to identify shared interests and to collaborate with others across national borders. Twelve Lessons to Open Classrooms and Minds to the World is the result of a collaborative effort organized by the NEA Foundation to support outstanding teacher-leaders in developing 21st century global curriculum that is aligned with the United Nations (UN) Sustainable Development Goals – a universal call-to-action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity. This collection of k-12 lesson plans created by the NEA Foundation Global Learning Fellows is an easily- accessible guide that provides educators with the essential tools to be able to prepare students for active global citizenship.

“The NEA Foundation Global Learning Fellowship inspires, educates, and opens minds and hearts to limitless learning opportunities... I have no doubt that their students will experience deep and permanent lessons on how to live well in this global society.”

Sharon Gallagher-Fishbaugh, Former Chair, NEA Foundation Board of Directors,
2009 Utah State Teacher of the Year

“The NEA Foundation Global Learning Fellowship is a gift to us all...I witnessed how Fellows asked questions and used their wonderful learning community – each other – to digest invaluable lessons and experiences. These will undoubtedly enhance their worldview and simply enrich their leadership in the classroom from a global perspective”

Kevin Anderson, Chair, NEA Foundation Board of Directors,
Senior Vice President of National Partnerships, EverFi, Inc.



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