



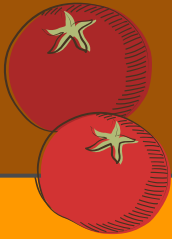
Grief, Resiliency, Empowerment: A Community Conversation about the urgency and opportunity of sustainability education



September 20, 2019: Youth lead the Boston Climate Strike

How will the world look in 2050 for class of 2024?

44 years old: perhaps buying a home, settling into a career, building a family...



Pakistan 2022 (Red Cross)



Lahaina, 2023 (LA Times)



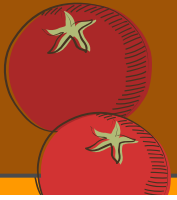
Great Barrier Reef (NPR)

SEA LEVEL RISE MARINE HABITAT DEATH

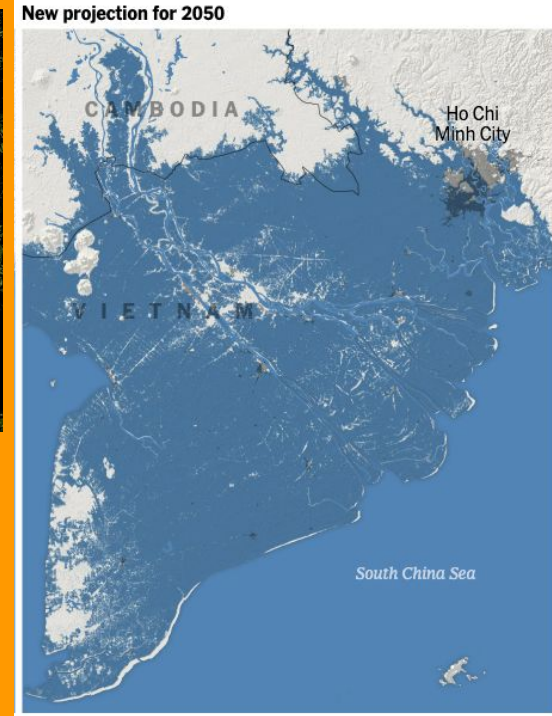


How will the world look in 2050 for class of 2024?

44 years old: perhaps buying a home, settling into a career, building a family...



Guatemala (New York Times)



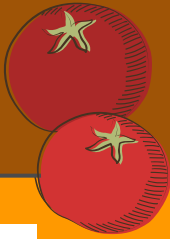
LOSS OF FARMLAND MIGRATION/BACKLASH

Vietnam at high tide, 2050 (New York Times)



How will the world look in 2050 for class of 2024?

44 years old: perhaps buying a home, settling into a career, building a family...



Protests in Little Haiti, Miami over climate gentrification (National Catholic Reporter)



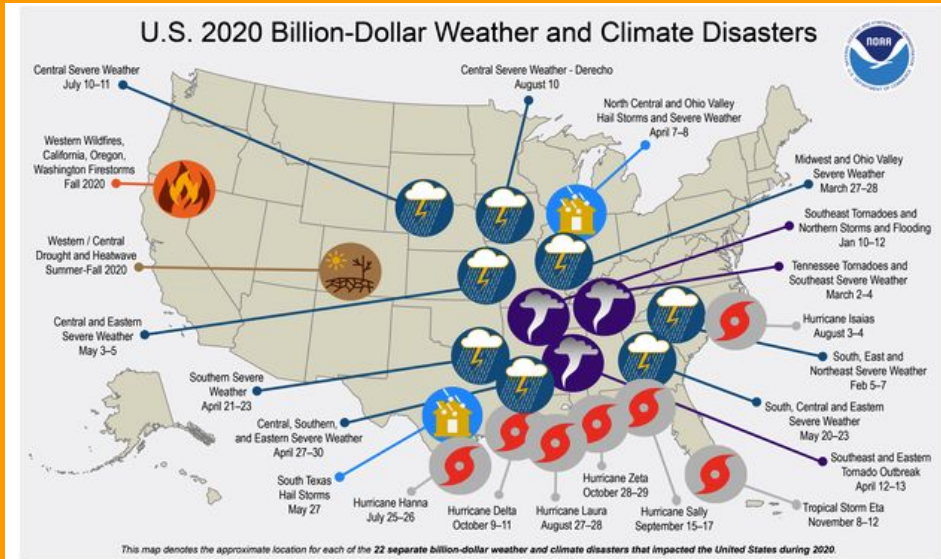
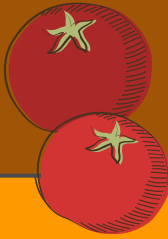
Projected swath of earth uninhabitable from heat in 2070, New York Times

DISPLACEMENT



How will the world look in 2050 for class of 2024?

44 years old: perhaps buying a home, settling into a career, building a family...



In 2020, the United States experienced record-smashing 22 weather or climate disasters that each resulted in at least \$1 billion in damages, including a record 7 linked to landfalling hurricanes or tropical storms. NOAA map by NCEI.

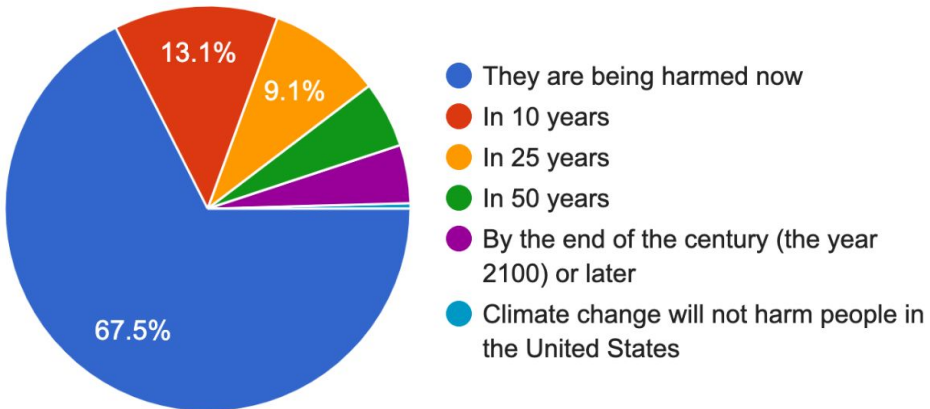
Several Billion \$+ weather events, 2020 (climate.gov) erode GDP



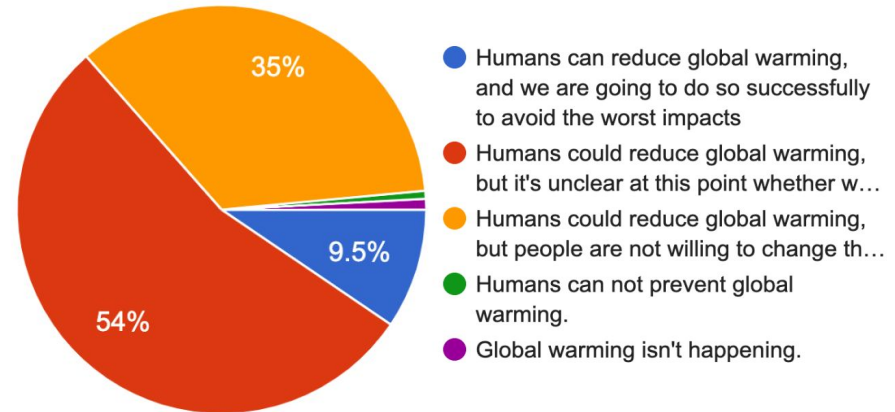
Does climate change already harm people in the United States? Do you have faith we will adequately address climate change?

Over 2-in-3 BHS students say climate change harms people in the United States now...Nearly 9-in-10 believe we will not do what we need to do to avoid the worst impacts.

When do you think climate change will start to harm people in the United States, if at all?

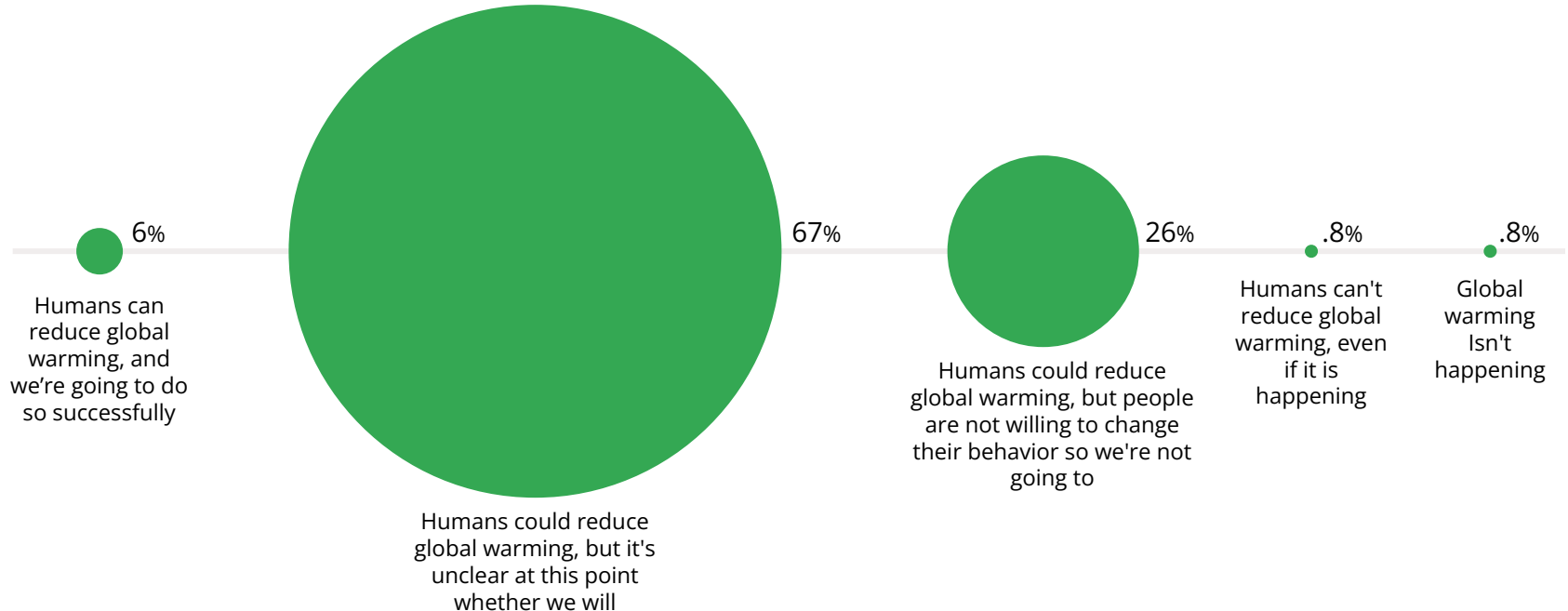


Which of the following statements comes closest to your view?



Nearly all BHS students are not confident global warming will be stopped

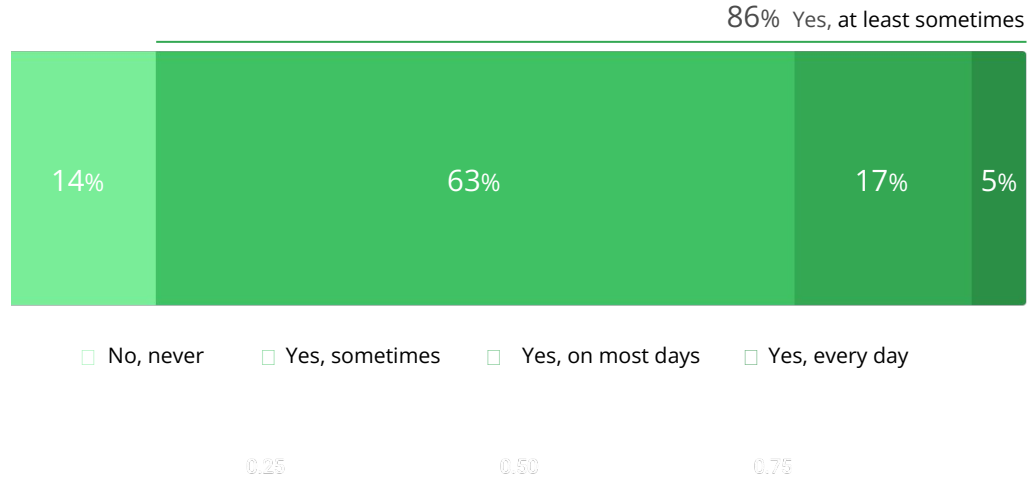
VIEWS ON CLIMATE CHANGE



Nearly 9-in-10 BHS students have thought about climate change and for 1-in-5, it's on their minds "most days"...

CLIMATE CHANGE'S PRIMACY

In the past month, have you thought about climate change?

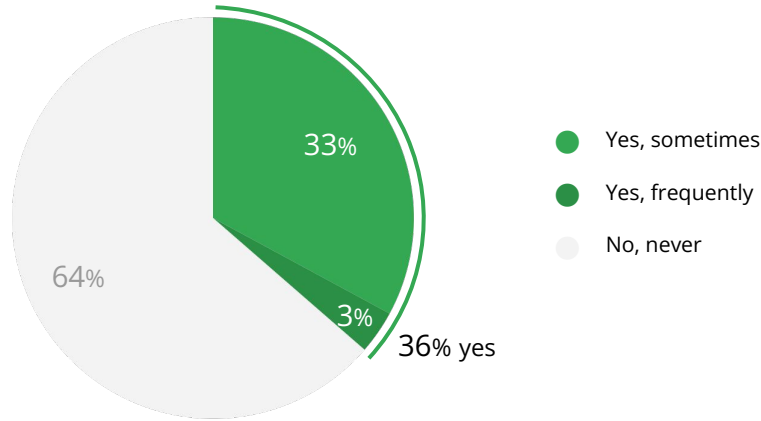


...and it's taking a toll

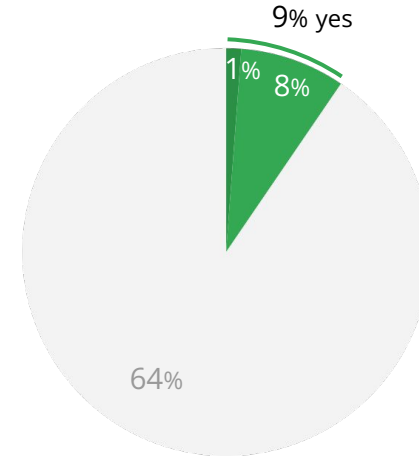
Over 1-in-3 BHS students say climate change negatively impacts their mental health at least sometimes and 1-in-10 report it inhibits their ability to perform normally in school.

CLIMATE CHANGE'S IMPACT ON MENTAL HEALTH & WELL BEING

In the past month, have you had thoughts or feelings about climate change that negatively impact your mental health or emotional well being, or cause you anxiety or depression?



In the past month, have you had thoughts or feelings about climate change that interfere with your ability to function normally in school?



CLIMATE CRISIS = MENTAL/PHYSICAL HEALTH CRISIS



MAKING THE CONNECTION:

Climate Changes Mental Health



The burning of fossil fuels causes the release of carbon dioxide, which builds up in the atmosphere and causes Earth's temperature to rise—this is climate change. Upstream burning of fossil fuels produces heat-trapping toxins that are released into the air, harming our health downstream. The Earth's average temperature has increased by nearly 1.5 degrees Celsius in the last century, with recent years being the warmest on record. However, climate change refers to the lasting disruption of our weather patterns, not just temperature increases. Some of these weather-related changes include increased frequency of droughts, wildfires, intense storms, heat waves, and rising sea levels. These conditions have far-reaching environmental, social, agricultural, and economic effects and are ultimately harmful to our health and well-being. Climate change not only affects our physical health but can also harm our mental health and wellness.

FAST FACTS

- More than 40 million adults in the U.S. suffer from a mental illness.
- Victims of natural disasters are at an increased risk of anxiety, depression, PTSD, and suicide.
- 25-50% of people exposed to an extreme weather disaster are at risk of adverse mental health effects.
- Up to 54% of adults and 45% of children experience mental health issues.

BACKGROUND ON MENTAL HEALTH

Mental health encompasses emotional, psychological, and social well-being. It determines how people cope with the normal stress of life and function within their community. Mental illness, on the other hand, adversely affects thinking, feelings, and/or behaviors. As a result, it can lead to difficulties in functioning. Climate change can cause and intensify stress and anxiety, adversely affecting mental health. For example, events such as extreme storms or extreme heat can lead to depression, anger, and even violence. Everyone is at risk, but not everyone is affected equally. Groups that are especially vulnerable to the mental health impacts of climate change include children, the elderly, and women. Also at risk are disadvantaged groups, those with existing mental illness, and those who rely on the land, including farmers and tribal communities.

CASE STUDY: THE MENTAL WEIGHT OF BROKEN LEVEES



Observer > 2017 > February > Global Warming and Violent Behavior



Global Warming and Violent Behavior

Courtney Plante and Craig A. Anderson

TAGS: AGGRESSION|BEHAVIORAL SCIENCE|ENVIRONMENT|INTERGROUP RELATIONS|SOCIOCULTURAL FACTORS|VIOLENCE

Environmental scientists from multiple disciplines have overwhelmingly acknowledged human-driven climate change as fact. Similarly indisputable is the fact that the effects of rising temperatures will be global in scope and resoundingly negative: droughts, coastal city flooding, decreased food production, and extreme weather, to name just a few. What you may not have considered, however, are some of the subtler psychological and social consequences of rapid climate change—including aggression and violent conflict. A growing body of evidence shows that rapid global warming can (and is) increasing violent behavior in three different ways.

Immediate Effect of Heat Stress on Aggression and Violence

When people get uncomfortably hot, their tempers, irritability, and likelihood of physical aggression and violence increase. This is perhaps best demonstrated in a series of laboratory studies conducted by APS Fellow Craig A. Anderson and his colleagues (Anderson, 1989, 2001; Anderson & Anderson, 1984, 1996, 1998).

Curr Psychiatry Rep. 2018 Apr 11;20(5):35. doi: 10.1007/s11920-018-0896-9.

The Psychological Effects of Climate Change on Children.

SEL¹, Sanson AV², Van Hoom J³.

Author information

Abstract

OBJECTIVE OF REVIEW: We review recent evidence on the psychological effects of climate change on children, covering both direct and indirect impacts, and discuss children's psychological adaptation to climate change.

KEY FINDINGS: Both the direct and flow-on effects of climate change place children at risk of mental health consequences including depression, anxiety, phobias, sleep disorders, attachment disorders, and substance abuse. These in turn can lead to problems with emotion regulation, cognition, learning, behavior, language development, and academic performance. Together, these create predispositions for adverse adult mental health outcomes. Children also exhibit high levels of concern over climate change. Meaning-focused coping strategies promote well-being and environmental engagement. Both direct and indirect climate change impacts affect children's psychological well-being. Children in the developing world will suffer the worst impacts. Mental health professionals have important roles in helping mitigate climate change, and researching and implementing approaches to helping children cope with its impacts.

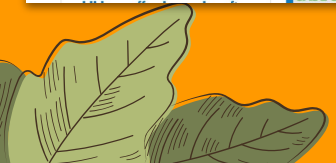
KEYWORDS: Adolescents; Children; Climate change; Coping; Environmental engagement; Mental health; Psychological effects

9637319 DOI: 10.1007/s11920-018-0896-9

Check for updates



>45% 16–25 yr. olds across 10 countries (including the US) report that their feelings about climate change negatively affected their daily life and functioning (The Lancet)



Core obligation of educators



Prepare our students to thrive:

- ◎ INTELLECTUALLY
- ◎ FINANCIALLY
- ◎ EMOTIONALLY

Climate change increasingly disrupts the world we are preparing them to thrive in:

Does this demand that we revise how we prepare young people in school?



Climate Change:

The ultimate curricular & school mission opportunity



“It’s a magnificent thing to be alive in a moment that matters as much as this one.”

—Katherine Wilkinson, Project Drawdown



AUTHENTIC
EDUCATION

REAL WORLD ENGAGEMENT

EMPOWERMENT AND
LEADERSHIP

BUILD A COMMON MISSION

STUDENTS AT THE
CENTER

MENTAL HEALTH



EDUCATIONAL OPPORTUNITIES THAT CLIMATE CHANGE PRESENTS:
CULTIVATING SKILLS AND RESILIENCE TO GRADUATE GREEN

EQUITY / INCLUSION

CLIMATE JUSTICE=RACIAL
JUSTICE

PROJECT-BASED,
INTERDISCIPLINARY

COLLABORATE TO SURVIVE

OUTDOOR EDUCATION

CULTIVATE STEWARDSHIP,
ENHANCE S.E.L.

CLIMATE CRISIS = RACIAL JUSTICE & EQUITY CRISIS

People of color disproportionately bear climate impacts, from storms to heat waves to pollution. Fossil-fueled power plants and refineries are disproportionately located in black neighborhoods, leading to poor air quality...So, to white people who care about maintaining a habitable planet, I need you to become actively anti-racist. I need you to understand that our racial inequality crisis is intertwined with our climate crisis. If we don't work on both, we will succeed at neither. I need you to step up."

— Ayana Johnson, Marine Biologist ([Washington Post 6/3/20](#))



CLIMATE CRISIS = RACIAL JUSTICE & EQUITY CRISIS

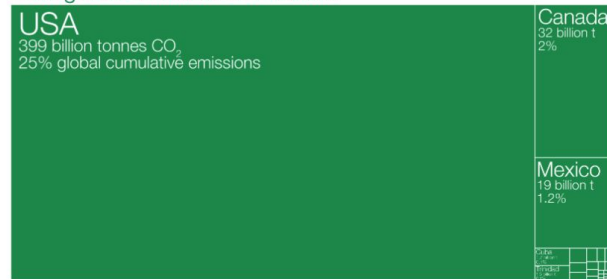
Who has contributed most to global CO₂ emissions?

Cumulative carbon dioxide (CO₂) emissions over the period from 1751 to 2017. Figures are based on production-based emissions which measure CO₂ produced domestically from fossil fuel combustion and cement, and do not correct for emissions embedded in trade (i.e. consumption-based). Emissions from international travel are not included.



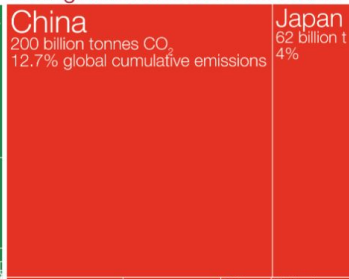
North America

457 billion tonnes CO₂
29% global cumulative emissions



Asia

457 billion tonnes CO₂
29% global cumulative emissions



EU-28
353 billion tonnes CO₂
22% global cumulative emissions



Europe
514 billion tonnes CO₂
33% global cumulative emissions

India
48 billion t
3%



Africa
43 billion tonnes CO₂
3% global emissions

South America
40 billion tonnes CO₂
3% global emissions

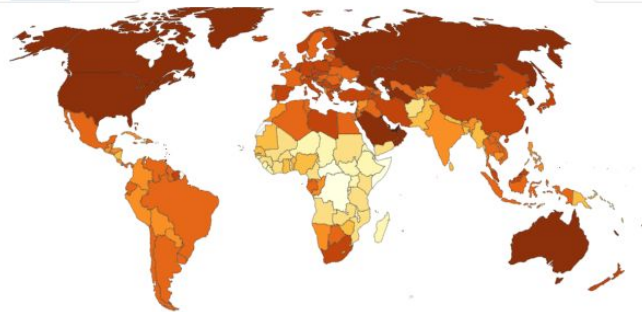
Oceania
20 billion tonnes CO₂
1.2% global emissions

Per capita CO₂ emissions, 2022

Carbon dioxide (CO₂) emissions from fossil fuels and industry. Land-use change is not included.

Table Map Chart

World



No data 0 t 0.1 t 0.2 t 0.5 t 1 t 2 t 5 t 10 t 20 t

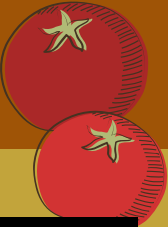
1750

2022

Data source: Global Carbon Budget (2023); Population based on various sources (2023) - [Learn more about this data](#)


OurWorldInData.org/co2-and-greenhouse-gas-emissions | CC BY

Engaging youth in sustainability work and learning: Authentic / Empowered / Student-centered / Equity focused...



Student-run plant sale

Questions Responses 12 Settings



Section 1 of 4

Green Up BHS and send a Valentine plant!

We are no longer accepting gift purchases.

Buy a plant for a BHS staff person or student to live in their office, classroom or Climate and Food Justice Club's work to build a green and sustainable environment.

Each plant purchase creates an opportunity for students to experience working in a social-emotional boost. After we've received your order, students will propagate, nurture it until it's time to deliver later. We'll email a Valentine note on February 14th, and the plant is growing for them.

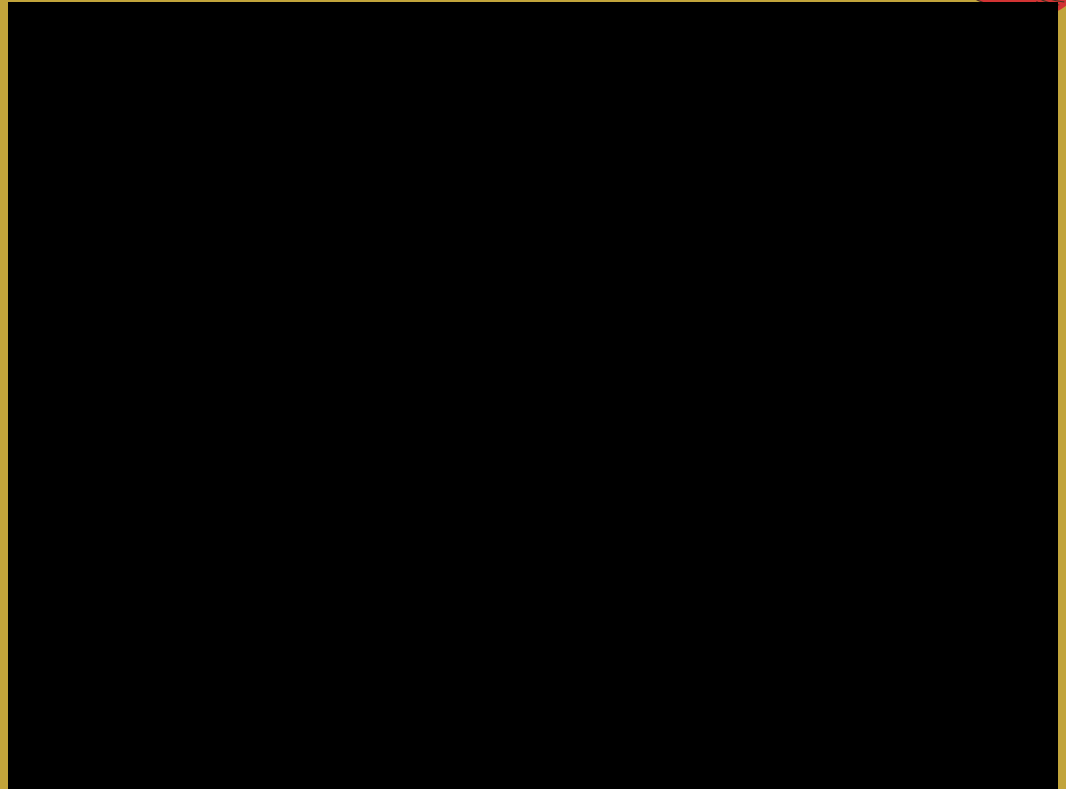
Please complete the form for each recipient (Venmo one time for all plants purchased).

Step 1: Identify a recipient
Step 2: Select the plant
Step 3: Add a note that we will email on Valentine's Day
Step 4: Wait a few weeks and we'll let you know when the plant is ready. We will email you when it's ready.

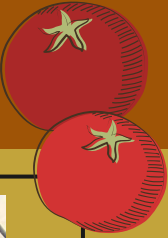
1 plant for \$8, 2 for \$15, 3 for \$22. Orders are accepted until February 13, 11:59 PM.

First Name (buyer) *

Short answer text



Engaging youth in sustainability work and learning: Authentic / Empowered / Student-centered / Equity focused...



Brookline High Sustainability Corps: Compost Crew and Garden Crew



**Climate & Food Justice
Club: Waste Audit**

Engaging youth in sustainability work and learning: Authentic / Empowered / Student-centered / Equity focused...



Student-led TAP campaign

Home Our Mission Sister City Get Involved Water Facts Daily blasts

TAP Challenge

Reduce ocean plastic waste. Learn about water security. Raise \$5,000 for clean TAP water. Help us reach our goal, Together Against Plastics.

DONATE TO TAP & SUPPORT WATER SECURITY

SIGN UP FOR THIS YEAR'S TWO WEEK CAMPAIGN

What is the TAP Challenge?

The TAP challenge (Together Against Plastic) is a student-run campaign that aims to reduce unnecessary plastic bottles where tap water is secure and improve access to clean tap water where it is needed.

The TAP Challenge is a student-run campaign, a collaboration between the Brookline High School Global Leadership class and the BHS Climate and Food Justice club. Pledge to refrain from single use plastic water bottles (or any drink) for two weeks and receive a short email blast each morning with info about ocean plastics, water security and more. [Your optional donation](#) will go directly to improve access to clean water in Quezalguaque, Nicaragua, Brookline's sister city.

Advocated for District Sustainability policy

Graduate Green Petition

Please read over the petition below and sign accordingly:

We can no more afford to ignore the climate emergency now than we could last month, or last year. It is here, now, and its impacts will only worsen the longer we go without taking collective action. As the Covid-19 pandemic reminds us, we ignore scientific expertise and the rising toll of a crisis at our own peril. Human driven climate change increasingly threatens our physical and mental health, our food system, our democracy,

PUBLIC SCHOOLS OF BROOKLINE POLICY MANUAL SECTION A FOUNDATIONS AND BASIC COMMITMENTS 11. Sustainability Policy (Voted 10/27/22, #22-87)

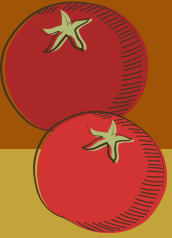
The Public Schools of Brookline (PSB) values sustainability and is committed to practices that support a healthy environment for present and future generations, and inspire students to be good stewards of the Earth and its people. The District will prioritize conservation of resources, carbon neutrality, and environmental education in concert with fiscal responsibility, health, and safety including:

Education and Engagement: The District will cultivate an understanding of environmentally sustainable practices and their urgency (i.e. environmental literacy) through incorporation of climate-focused sustainability into our core curricular values. Climate science and climate action will be addressed in a combination of units of study and courses, pedagogies, and through extracurricular organizations, clubs, teams, or parent/caregiver engagement. The PSB will support opportunities for civic engagement and student leadership within our schools to address climate change and its intersectionality with race, gender, geography, nutrition, economy, and well-being.

Energy and High Performance School Buildings: Energy is a significant expenditure for schools. Districts that target energy efficiency in their building operations and maintenance can typically

Engaging youth in sustainability work and learning:

Authentic / Empowered / Student-centered / Equity focused...



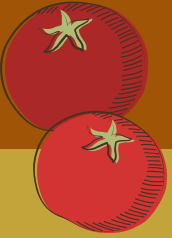
Growing Empowerment: youthgrowingempowerment.org

Summer youth growing and learning opportunity

- Manage school gardens
- Earn \$ and school credit
- Indoor/outdoor learning about food system
- Visit food justice sites

The screenshot shows the homepage of the Growing Empowerment website. At the top left is the logo, which features a red tomato with a green stem and leaves, next to the text "GROWING EMPOWERMENT". To the right of the logo are navigation links: "HOME", "ABOUT", "TEAM / CONTACT", and "FOLLOW OUR WORK". The main content area features a large, stylized graphic of the words "Growing" and "EMPOWERMENT". "Growing" is in a green, leafy font with a vine arching over it, and "EMPOWERMENT" is in a white, blocky font with brown roots extending downwards. To the right of this graphic is a green box containing the text: "Growing Empowerment is a Food Justice Summer program for 15-19 year olds who go to school or live in Brookline, MA". Below this text is a dark green button with the text "Learn more and apply to program" in yellow. At the bottom of the page is a dark brown banner with white text that reads: "GROWING EMPOWERMENT TRAINS YOUNG PEOPLE TO GROW HEALTHY AND SUSTAINABLE FOOD, EXAMINE THE FOOD WE CONSUME THROUGH THE LENS OF RACE AND HERITAGE, AND CULTIVATE A SOCIAL JUSTICE VISION TO TAKE GREATER CONTROL OF OUR FOOD SYSTEM."

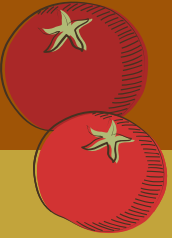
Student Voices: Growing Empowerment



For a long time I've seen my passion for social justice work as an important part of my identity....However, one realm of social justice that I didn't know much of anything about was food and the food system. Despite food being such an obvious thing in all our lives I've always taken it for granted and overlooked the many injustices that occur in the industry....The work we've done in the school gardens has been a special experience. Connecting with what I eat by weeding, planting, taking care of the beds, and witnessing the process from start to finish has given me a sense of satisfaction that doesn't come from buying food... I want to incorporate food justice into my daily life....By understanding the different places my food comes from I can feel more in control.



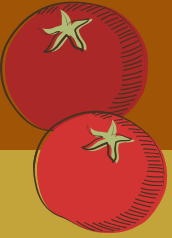
Student Voices: Growing Empowerment



One could argue people of diasporas need our cultural food like we need oxygen....This program has reminded me of the joy I feel from gardening. In the depths of my depression, spirals of my anxiety, and stress of life, I lose sight of what actually makes me happy. People say joy is an act of resistance...Certain demographics are allowed more joy than others. So yes, for me, finding joy again through gardening or eating my culture's food...is an act of resistance and resilience that I'm clawing my way back to.



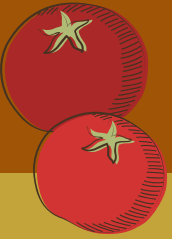
Student Voices: Growing Empowerment



In the last 4 weeks we have been learning about the growing environment and how it affects the world for people who don't have access to these healthy crops. One week that stood out to me was when we learned about the Food Project at a greenhouse at Nubian Square. When I was little I grew up around people who did bad things and didn't care about the food system, but when I found people who actually cared about the food system I felt glad....This is important because it shows people the value of the food system and how it is important to the world.



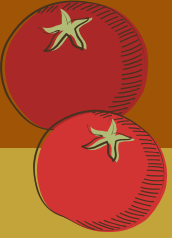
Growing Empowerment trains young people to grow healthy and sustainable food, examine the food we consume through the lens of race and heritage, and cultivate a social justice vision to take greater control of our food system



Growing Empowerment addresses five areas:

- Provide **social emotional support** in a learning environment by utilizing the proven mental health benefits that comes from planting, growing, and harvesting food and other plants.
- Narrow the **opportunity gap** that frequently excludes low income youth and youth of color from active engagement in natural settings.
- Provide an **authentic learning experience** of learning by creating value in the real world (producing food and serving it to others).
- Foster **climate stewardship** by connecting youth to our natural systems.
- **Empowering young people** by cultivating a racial justice examination of the food system and creating the opportunity for them to connect that to their lives, then find and amplify their voices as they share what they know with others.

Classroom instruction



- Social studies
- Cafeteria – our largest classroom
- Climate Science and Social Change (senior elective)



Engaging youth in sustainability work and learning:
Authentic / Empowered / Student-centered / Equity focused...



Empowerment
is the antidote
to despair

