



COMMUNITY CLIMATE
COLLABORATIVE

CLASSROOM CLIMATE CHALLENGE 2020

A roadmap for climate action education

Welcome Teachers, Principals, and Parents!

We are so excited to partner with the students of Charlottesville and Albemarle County to bring climate action and conversations into the classroom!

The Community Climate Collaborative is a local nonprofit with a mission of inspiring and supporting climate action among households, businesses, schools, and faith communities. We believe in the collective power of individuals acting together to create positive change in our environment, beginning in our own backyard.

That's why we created the Classroom Climate Challenge guidebook. We want climate action in the classroom to be engaging, student-led, hands-on, and fun. And we want to provide you with resources that support those goals! This Challenge has the ability to facilitate tangible action, taken by the students, to combat climate change. They can learn strategies to implement at school and at home. When students feel empowered, they can build resilience against the reality of climate change.



This Guide outlines 18 teaching concepts paired with actions that provide direct impact to the classroom carbon footprint and include 50 resources. Best of all, these activities are flexible enough to fit into your unique classroom needs. Consider this a one-stop shop for classroom climate action.

We can't wait to see how you take on the Challenge!

In Community,

Andrea Bostrom, C3's Residential Program Manager



How it Works

The Classroom Climate Challenge will be organized by the class teacher, parent, and/or club leader. The paths to implementation are varied and should reflect the needs of your students, time, and primary curriculum. You can take on one action a week for a month; or pick several concepts and knock them out in two weeks; or make climate a recurring conversation throughout the school year and pick up one concept per quarter. Check out the examples at the end of this Guide to spark your creativity!



Why Participate in the Climate Challenge?

Whether you decide to do one project for Earth Day or take the full Classroom Climate Challenge, there are lots of great reasons to take this Challenge. The Challenge will:

- Help students to understand how their choices and behaviors are connected to climate.
- Provide 18 specific actions, with instructions, that students can take to reduce carbon footprints.
- Empower teachers with 50 resources to bring climate action curriculum and activities into the classroom.
- Create a fun competition between classrooms and schools in the City of Charlottesville and Albemarle County.
- Create a foundation for climate action that students can continue on their own, outside of the classroom.
- Bridge curriculum goals with hands-on experience, inquisitive learning, and local partnerships.
- Highlight student success and projects to the greater community

The Actions

In this Classroom Guide, we have identified 18 actions that we believe can be achieved by students of a variety of ages, with or without parent participation.

You can pick and choose actions as they apply to your specific class curriculum and goals. The actions are not listed in a suggested order, with the exception of the first two actions which lay the necessary foundation for understanding climate science.

For some actions, we provide “Power Up” tips that can be used at your discretion. Each action includes instructions for how to document points on our cvillechallenge.org website platform.

Note: Because the platform was designed specifically for homes, in order to take advantage of the information and calculate points as a part of this Classroom Challenge, we have added modifications.

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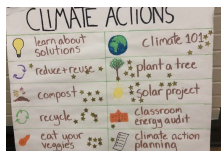
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#1: Climate 101 Discussion

DESCRIPTION:

The beginning of each Challenge should include an interactive discussion about climate science, focused on the following questions:

- What is climate change?
- What does it look like?

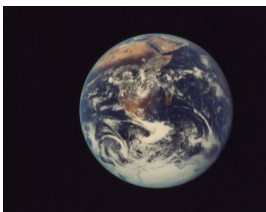
We recommend the following guidelines for discussion:

- Stay rooted in science, not politics.
- Promote a healthy curiosity about the natural world.
- Teach resilience by directing conversation towards solutions.
- Create time and space for inquisitive learning.

RESOURCES WE LIKE:

- [NASA's Earth Minute](#): A series of white-board videos explaining concepts about Earth science, mission, and climate change.
- [Climate Change 101 with Bill Nye](#): This is a concise, 4-minute video produced by National Geographic.
- [Energy Literacy Videos](#): 7 short videos from the Department of Energy, focused on topics ranging from thermodynamics to sociology.
- [The Magic School Bus and the Climate Challenge](#): This book explains climate change and climate action with Ms. Frizzle.
- [How We Know What We Know About Our Changing Climate](#): An award-winning book that tackles the questions with kid scientists.

CONNECT TO THE PLATFORM:



CLIMATE 101 | 500 POINTS

Use the resources provided in this guidebook in combination with your own curriculum to introduce climate science in the classroom. This can be a 10-minute discussion or a series of lessons. Each participating class member can earn 500 points for your team!

#2: Learn About Solutions

DESCRIPTION:


This action is a natural partner to the climate science discussion. The “Big 5” areas we can make a difference include the following:

1. The cars we drive (transportation)
2. Our indoor comfort (heating & cooling)
3. Our devices (appliances & electronics)
4. The stuff we eat (food production & waste)
5. The stuff we buy (goods & services)

RESOURCES WE LIKE:

- [Cooler Smarter: Practical Steps for Low-Carbon Living](#): Expert advice from the Union of Concerned Scientists.
- [Community Climate Collaborative](#): That’s us! Let us do what we do best - we can come talk to your class about local climate action.

CONNECT TO THE PLATFORM:

 <p>COMMUNITY CLIMATE COLLABORATIVE</p>	<p>LEARN ABOUT SOLUTIONS 1,000 POINTS</p> <p>Use the resources provided in this guidebook in combination with your own curriculum to introduce climate action in the classroom. This can be a 10-minute discussion or a series of lessons. Each participating class member can earn 1,000 points for your team!</p>
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#3: Reduce and Reuse

DESCRIPTION:

The stuff we buy accounts for approximately one quarter of our contributions to global warming. Reducing and reusing is far more effective than recycling at saving energy, resources, and money. You can practice these principles in the classroom with a goods trade (classroom thrift store), or create/search for reusable goods.



POWER UP TIP

For students with more control over their spending and consumption habits, have them commit to a week of buying nothing. They can journal about their experiences and present lessons learned to the rest of the class.

Power Up Tips are used throughout this guide to increase the Challenge (and impact!) of each action.

RESOURCES WE LIKE:

- [22 Ways to Reduce Your Classroom Carbon Footprint](#): Focus on reducing waste inside the classroom.
- [The Planet Protectors, Activities for Kids](#): Fun, downloadable activity books produced by the EPA and focused on the 3 R's.
- [The Life Cycle of a T-Shirt](#): A 6-minute TedEd video explaining the energy emissions contributions of a t-shirt through its life.

CONNECT TO THE PLATFORM:



REDUCE AND REUSE | 550 POINTS

Complete this action with the assumption that your classroom project will result in a 10% waste reduction for all students involved. If you “power up”, go ahead and increase the assumption to a 15% waste reduction.

#4: Compost

DESCRIPTION:

Composting reduces food waste and diverts table scraps from the landfill, where it can take a really long time to decompose. The most direct way to teach about compost is by doing. Consider adding a compost bin to your classroom! Alternatively, you can document food waste at your school or volunteer with a local food recovery program.

RESOURCES WE LIKE:

- [Classroom Composting Guide from Share it! Science](#): Start an indoor composting bin, including a children's book list.
- [EPA Food Tracking Log](#): Create a small project for your lunchroom or home to find patterns in food waste.
- [North Country School Composter Prototype](#): Use these instructions to design/build a school-sized rotary composter.

CONNECT TO THE PLATFORM:



COMPOST | 480 POINTS

If you complete this action by creating a food log, go ahead, and assume a 30% reduction in waste. If you bring composting into your classroom, increase that to a 50% reduction for 810 points.

Action #5: Recycling

DESCRIPTION:

Talk about recycling in the context of the other 2 R's: reduce and reuse. Recycling is an action where individuals do not have all of the control and services can vary greatly depending on the current economy. For this action, it will be important to learn what can be recycled locally and how to do it. You can also take a hands-on approach and create an “upcycle” project by turning waste into art or something functional.



POWER UP TIP

Run a recycling drive for your school. If your school already has basic recycling, consider a drive specifically for batteries, old markers, plastic bags, printer cartridges, etc.

RESOURCES WE LIKE:

- [TerraCycle](#): Start a free recycling campaign in your classroom for specific items such as Honest Kids juice boxes.
- [The Adventures of a Plastic Bottle](#): The story of a plastic bottle’s life in relation to the energy consumed at each stage.
- [The Soda Bottle School](#): A true story of upcycling in a small village in Guatemala. The project leaders are the students.
- [Better World Betty](#): Charlottesville’s favorite resource for everything green, including a Recycling 101 brochure.
- [Cville Tomorrow’s Local Recycling Guide](#): A visually appealing guide that gives product-specific instructions.

CONNECT TO THE PLATFORM:



RECYCLING | 550 POINTS

If you complete this action by discussing the business of recycling and/or creating an upcycle project, assume a 20% reduction in waste. If you run a recycling drive, go ahead and up your waste reduction to 40%.

Action #6: Eat Your Veggies

DESCRIPTION:

Different foods have different carbon impacts. On average, beef and lamb have the biggest carbon footprints, and plant-based food have the lowest. Teach students how they can create an entire meal without using meat (or even dairy if you're feeling ambitious). Create a weekly menu, have a recipe swap, and/or a cooking demonstration.

RESOURCES WE LIKE:

- [The Omnivore's Dilemma, Young Readers Edition](#): a thought-provoking look at our food choices, for a younger audience.
- [Your Questions About Food and Climate Change](#): a comprehensive 101 from the New York Times about food choice, waste, and packaging.
- [Meatless Monday for K-12 Schools](#): Includes promotional materials, an implementation guide, and recipes.
- [Vegan Recipes from Kroger](#): A handy recipe and shopping list generator that you can use to plan a cooking demonstration.



POWER UP TIP

Create a Meatless Monday campaign at your school! The resource guide has a link with several tools for explaining and promoting the benefits of a plant-based diet.

CONNECT TO THE PLATFORM:



EAT LOWER DOWN THE CARBON CHAIN | 920 POINTS

If you complete this action with a reading project, cooking demo, or something similar, assume you've eliminated meat from two meals a week for 920 points. If you start a meatless Monday campaign at your school, assuming 5 meals per week for 2,290 points.

Action #7: Plant A Garden

DESCRIPTION:

Buying local and organic is a great way to reduce our carbon footprints with the stuff we consume. For the classroom, this can take the form of a school garden. This is about as local as you can get! Create a new garden, find a way to participate in an existing garden (at school or in the community), or plant some seedlings in the classroom.

RESOURCES WE LIKE:

- [City Schoolyard Garden](#): A local non-profit that manages gardens at Charlottesville City Schools & several urban farm plots.
- [Eartheasy Guide to a School Garden](#): a comprehensive guide to planning, building, and funding a school garden.
- [Miss Maple's Seeds](#): a lovely children's book about a kind soul who nurtures each seed she finds.

CONNECT TO THE PLATFORM:



BUY LOCAL, BUY ORGANIC| 600 POINTS

Find a way to get students gardening - it could be preparing beds, planting seedlings, or creating an entire community plot. Once you've completed your project, earn 600 points.

Action #8: Energy Conservation 101

DESCRIPTION:

This is a great action that every student can implement at home because it can be as simple as turning off lights when you leave the room. Teach about energy conservation by creating reminder labels for lights and thermostats. Find all of your “vampire energy” (devices that use power even when turned off) sources in the classroom.

RESOURCES WE LIKE:

- [We're Going On A Vampire Hunt](#): A fun game for kids from the Union of Concerned Scientists. Borrow a kill-a-watt meter from C3!
- [Why Should I Save Energy?](#): A great book for the elementary crowd to introduce energy conservation concepts.
- [Virginia Energy Sense Curriculum Guide](#): A 65-page guide filled with projects, lessons, and activities about energy conservation.

CONNECT TO THE PLATFORM:



TURN STUFF OFF| 560 POINTS

Introduce energy conservation techniques to your students and earn 560 points!

Action #9: Take the Bus

DESCRIPTION:

Teach your students how to reduce their carbon footprint by thinking about alternative modes of transportation, particularly public transportation. Help them route a bus trip from their home to a friend's house or take a field trip on a bus!



POWER UP TIP

Ask older students to reduce their carbon footprint by taking the bus to school and/or an after-school activity. Encourage them to track the mileage and calculate their emissions reduction.

RESOURCES WE LIKE:

- [Charlottesville Area Transit Rider's Guide](#): This document has all of the information you need for a successful bus trip.

CONNECT TO THE PLATFORM:



TAKE THE BUS | 710 POINTS

Teach students how to use public transportation and earn 710 points by assuming a 15-mile trip that replaces the drive in a 25 mpg vehicle. For the Power Up tip, calculate using real mileage.

Action #10: Renewable Energy 101

DESCRIPTION:

Take a deeper dive into climate solutions by looking at the technology behind renewable energy. Explore real-life projects around the world and increase literacy around green electricity and its impact on our global carbon footprint.

RESOURCES WE LIKE:

- [National Geographic Energy 101 Videos](#): A series of two-minute videos that explain solar, biomass, and wind energy production.
- [Power the Grid](#): A challenging game to design a grid around renewable energy.
- [The Boy Who Harnessed the Wind](#): A picture book, YA book, & movie based on the story of a boy who brings wind energy to Malawi.
- [NEED Project Energy Activity Books](#): Renewable energy activities for elementary through high school students.

CONNECT TO THE PLATFORM:



CHOOSE GREEN ELECTRICITY | 900 POINTS

Learn about renewable energy technology in the classroom and earn 900 points by assuming a purchase of a 10% green electricity plan.

Action #11: Plant A Tree

DESCRIPTION:

This action is a good pairing for the renewable energy 101 action. When green electricity is not available, you can discuss options like renewable energy credits and/or carbon offset purchases. Carbon offsets can include carbon sequestering efforts like tree plantings. You can even plant a tree on your campus!

RESOURCES WE LIKE:

- [VA Department of Forestry Tree Planting Guide](#): This website will help you choose the right tree for the right location.
- [The Great Kapok Tree](#): A children's story about conservation in the Amazon rainforest.
- [The Global Tree Restoration Potential](#): A recent study from Science magazine explores the ability of reforestation to combat climate change.

CONNECT TO THE PLATFORM:



PLANT A TREE | 350 POINTS

Learn about carbon sequestering in trees and give yourself 350 points by assuming you've planted 10 trees. Plant a tree at your school and calculate an additional 5 trees for every tree planted. Ex. If you plant 5 trees, assume 10 trees + (5 trees * 5) = 35 trees total.

Action #12: Solar Projects

DESCRIPTION:

Make the concept of solar energy tangible with an in-class science experiment. You can buy a variety of solar-powered kits (our personal favorite is the solar powered hopping cricket) or keep it simple with just a few common household products.

RESOURCES WE LIKE:

- [The Solar Classroom Lesson Plan](#): This guide from the Department of Energy gives some simple examples for building solar ovens.
- [NASA Education Guide](#): Four detailed solar projects for middle and high school students, related to space travel & research.
- [NEED Solar Project Kits](#): This website offers free teacher guides and ~ \$300 classroom kits for hands-on solar activities.
- [Solar Energy Science Projects](#): A 16-page PDF from the California Energy Commission, includes a solar hot dog cooker!

CONNECT TO THE PLATFORM:



INSTALL SOLAR PANELS | 935 POINTS

Give yourself 935 points after completing your solar project by assuming a purchase of solar panels that produces 10% of your home's energy needs.

Action #13: Classroom Energy Audit

DESCRIPTION:

You will create an energy profile when you sign up on the Home Energy Challenge platform that reflects either the student's home or an example household (depending on student age). But what about your classroom? Take a look at your lightbulbs, appliances, building efficiencies, etc. to determine your classroom's energy consumption.

RESOURCES WE LIKE:

- [School Energy Audit](#): A simple, 2-page audit from Climate Generation to help you review energy use & loss in the classroom.
- [Cool School Challenge Classroom Audit Kit](#): A series of in-depth worksheets to conduct an audit and calculate energy burden.
- [Cool School Challenge \(Elementary Version\)](#): Consider this the “medium porridge”-- in-depth, but accessible for younger students.

CONNECT TO THE PLATFORM:



HOME ENERGY CHECKUP | 1,000 POINTS

Give yourself 1,000 points after completing any of the energy audits listed in the Classroom Climate Challenge Guide.

Action #14: Create A Climate Action Plan

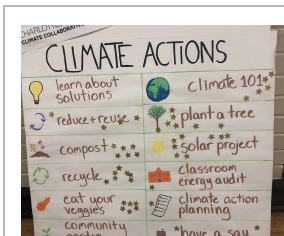
DESCRIPTION:

This is a companion action to the classroom energy audit. Once you've conducted an audit, you'll probably notice some changes that can be made to make your classroom more energy efficient and reduce the energy burden of your campus. Pick one thing you would like to change and create a plan to do it. It could be anything from adding smart power strips to appliances to implementing school-wide recycling.

RESOURCES WE LIKE:

- [Classroom Climate Action Pledge](#): A one-page form to organize thinking and create a living pledge for climate action.
- [Home Energy Challenge Platform](#): The platform can be a great resource, in addition to recording actions & tallying points.
- [Charlottesville Schools Green Initiatives](#): Take a look to see what energy conservation & reduction efforts are included.
- [Albemarle County Schools Environmental Management](#): Take a look to see what energy conservation & reduction efforts are included.

CONNECT TO THE PLATFORM:



TALK ABOUT SOLUTIONS | 1,000 POINTS

Give yourself 1,000 points after identifying an action (or set of actions) and committing them to paper, with a timeline for completion.

Action #15: Have A Say

DESCRIPTION:

You've created a climate action plan, but perhaps it will require support beyond the classroom. Write a blog, an article for the school newspaper, or create a bulletin board in a communal location. Share your photos and experiences with C3, and we can amplify your story through our own social media and communication channels. Share your plan and advocate for action by discussing with your PTO, school principal, or even the school board. The best advocate for climate action is you. Peer-to-peer influence is a great motivator and your unique perspective and voice can create a ripple effect through our community. We encourage you to make this a **“must-do”** action during your Classroom Climate Challenge.

RESOURCES WE LIKE:

- [Project Green Challenge](#): Targeted to high school and college students, this 30-day Challenge takes place in October. Students use social media to win prizes!

CONNECT TO THE PLATFORM:



HAVE A SAY | 1,000 POINTS

Use your voice to advocate for climate action in your school, share your Challenge experiences, and create conversation around climate and energy literacy to earn 1,000 points.

Action #16: Pass the Baton

DESCRIPTION:

Hopefully, you are having a great time during the Classroom Climate Challenge and want to share your experiences with others. Is there another classroom at your school that could participate? Tell them about the Challenge and ask them to participate. Make it an event and invite them to your classroom for some socializing and snacks. You can make a presentation, give a demonstration, or maybe relax with a movie or storytime.

RESOURCES WE LIKE:

- ❑ [Kid-Friendly Movies About Climate Change](#): A guide by common sense media. We highly recommend Tomorrow as it is solution-oriented.
- ❑ [Children's Books About Climate Change](#): This list from Yale Climate Connections ranges from picture books to YA.

CONNECT TO THE PLATFORM:



START A TEAM | 1,000 POINTS

Invite another classroom and/or school club to participate in the Challenge and earn 1,000 points!

Action #17: Volunteer

DESCRIPTION:

There are a lot of organizations and leaders in the City of Charlottesville and Albemarle County community that are focused on climate action. Find a way to use your time, in addition to your voice, to support these efforts. Or, you can volunteer to support efforts already underway in your own school. Think about and discuss how our community can provide an equitable experience for everyone that would like to reduce their energy burden, regardless of economic or social class.

Volunteering opportunities can include, but are not limited to:

- Climate action strikes
- Working in a community garden
- Raising money for community solar panels or energy efficiencies
- Cleaning up our local trails and waterways
- Planting trees
- Advocating for bike lanes and public transportation

CONNECT TO THE PLATFORM:



VOLUNTEER FOR A LOCAL EFFORT | 500 POINTS

Participate in an ongoing project related to climate action and earn 500 points for the Classroom Climate Challenge.

Action #18: A Family Plan

DESCRIPTION:

This action is a great culmination of all of the work you've done over the course of the Challenge. The suggested videos, books, discussions, experiments, and actions are all designed to empower young people to not only understand climate science but also understand their role in combating climate change and reducing their personal carbon footprint.

Ask students to review their work and energy profiles (created if students are over 13 on cvillechallenge.org) to identify steps they can take in their own homes to reduce their household carbon footprint. For younger students, you can review the action on the platform called The Johnson's Plan instead of focusing on individual student households. Students should leave the discussion with tools for having a climate action discussion with their parents, siblings, and any other household members.

CONNECT TO THE PLATFORM:



THE JOHNSON'S PLAN | 500 POINTS

Support the students as they use their newfound knowledge and experience to lead a family discussion. Earn 500 points for each discussion.

EXAMPLES

Mr. Smith's 3rd Grade Class



Mr. Smith heard about the Challenge and received the C3 Guide during a school-wide presentation. He decides to make the Challenge a 4-week event in his classroom and signs up on www.cvillechallenge.org. His students are too young to create their own accounts, so he creates an energy profile based on the energy consumption in his own household.

Mr. Smith prepares for the Challenge by choosing 4 actions, one per week, and creating a scoreboard on the classroom chalkboard. When the students complete an action, he will add points to the class scoreboard in addition to the Challenge platform.

Mr. Smith chooses the following 4 actions: Climate 101 Discussion, Learn About Solutions, Solar Projects, and Have A Say.

Week 1: Watches Climate 101 w/ Bill Nye, reads the Magic School Bus, leads an interactive hike and nature appreciation discussion.

Week 2: Invites C3 to the classroom to discuss climate solutions and how we can all get involved.

Week 3: Builds a solar oven out of basic art & hardware supplies. Discuss solar energy in the classroom.

Week 4: Uses a hallway bulletin board for the Challenge logo, pictures of Challenge activities, and student artwork from the nature hike.

Week 5: Wait, this was a 4-week Challenge! Mr. Smith's class had so much fun they decided to recruit another team by inviting a class to a demonstration of their solar oven.

Ms. Johnson's 6th Grade Science Class



Ms. Johnson learns about the Challenge from another teacher and thinks it can provide opportunity for real-world application of 6th grade Earth Science concepts like scientific observation, data collection, renewable vs. non-renewable energy, atmosphere, and management of Earth's resources.

Week 1: The class takes on 1 energy literacy concept each day by watching a Department of Energy video, followed by interactive discussion.

Week 2: The class collectively develops a household "prototype" to complete the energy profile on the Home Energy Challenge website. They invite C3 to the classroom to share the results and chat about climate solutions.

Week 3: After discussing solutions, the class chooses to focus on energy use in buildings, starting with energy conservation techniques.

They play the energy matching game from Virginia Energy Sense.

Week 4: The class performs a classroom energy audit using their newfound knowledge about energy conservation.

Week 5: The students want to make a plan not just for their classroom, but for the whole school. They do an audit of fluorescent lights in the entire school and create a plan to change them out with LEDs.

Week 6: They give a presentation of their lighting plan to the school principal and PTO and offer to volunteer to implement the action.

Over the course of 6 weeks, Ms. Johnson's class completes 7 actions: Climate 101, Climate Solutions, Energy Conservation 101, Classroom Energy Audit, Climate Action Plan, and Have A Say.

Ms. Quinn's 11th Grade English Class



Ms. Quinn is passionate about climate action and thinks she can incorporate the Challenge into her English class while still covering the English Standards of Learning. On the Home Energy Challenge website, she creates a team account called “Ms. Quinn’s 2019-20 4th period class” and joins the community that already exists for her school.

Week 1: Each student creates their own household account, join’s Ms. Quinn’s team, and completes the energy profile on the platform. They also begin an 8-week reading of *The Omnivore’s Dilemma* (YA version), paying particular attention to how data and statistics are used to make persuasive arguments. (Action: Eat Your Veggies)

Week 2: The class is divided into two groups: research teams for both climate change science and climate action. At the end of the week, they give a presentation on their findings. They also give examples of disinformation found during

their research. (Actions: Climate 101 and Learn About Solutions)

Weeks 3 & 4: The class divides into 4 groups to collect their own data. Each group does one of the following: a classroom energy audit, a classroom food waste log, a classroom transportation log, and a classroom disposables/one-use items inventory. (Actions: Classroom Energy Audit, Compost, Take the Bus, Reduce & Reuse)

Week 5: The groups review their data, identify a call to action, and develop a 2-page proposal using their data and persuasive writing techniques. (Action: Create A Plan)

Week 6: The class has a roundtable discussion to determine what actions they want to incorporate into a classroom pledge. They write an article for the school newsletter announcing the pledge. (Action: Have A Say).

Weeks 7 & 8: The classroom creates a multimedia presentation with findings from

their reading, household energy profiles, and classroom data collection. They identify persuasive narratives and data to incorporate into the presentation to encourage another classroom to take on the Challenge and develop their own pledge. (Action: Pass the Baton)

Over 8-weeks, Ms. Quinn's class completes ten actions. Each student marks an action completed on the household profile they created specifically for the Classroom Climate Challenge. At the end of 8 weeks, they review the team tally. They discuss how incorporating some of the actions on the Home Energy Challenge website could reduce energy

consumption in their own homes. For example, one of the students identifies that transportation is the largest carbon impact for his household. He determines ways to reduce his personal travel, as well as that for his entire family. They reduce their household mileage by 30% a week just by increasing carpooling efforts, combining trips, and taking the bus once a week. The family is so encouraged that they create a family account on the platform, sign up for the Home Energy Challenge, and recruit their own neighborhood team! (Extra Action: A Family Affair)

SUMMARY

Steps for Taking the Classroom Climate Challenge

1. Pick your timeline with start and end date.
2. Contact C3 to schedule a classroom visit.
3. Identify your actions.
4. Set up your individual and classroom accounts on the platform (see Appendix B).
5. Start the Challenge with a discussion of climate science and climate action.
6. Complete your actions on the Home Energy Challenge website and track your point accumulation.
7. Take pictures and share with C3 and other classrooms.
8. Join the party in June with all of the other Classroom Climate Challenge participants!

APPENDIX

Resource List

Action #1: Climate 101

NASA's Earth Minute:

<https://www.jpl.nasa.gov/edu/teach/activity/nasas-earth-minute/>

Climate Change 101 with Bill Nye:

<https://www.youtube.com/watch?v=EtW2rrLHso8>

Energy Literacy Videos:

<https://www.energy.gov/eere/education/downloads/energy-literacy-videos>

The Magic School Bus and the Climate

Challenge:

<https://www.scholastic.com/teachers/books/magic-school-bus-and-the-climate-challenge-the-by-joanna-cole/>

How We Know What We Know About Our Changing Climate:

<https://dawnpub.com/our-books/how-we-know-what-we-know-about-our-changing-climate/>

Action #2: Learn About Solutions

Cooler Smarter: Practical Steps for Low-Carbon

Living:

<https://www.ucsusa.org/resources/cooler-smarter-practical-steps-low-carbon-living>

Community Climate Collaborative:

<https://theclimatcollaborative.org/>

Action #3: Reduce and Reuse

22 Ways to Reduce Your Classroom Carbon

Footprint:

<https://www.weareteachers.com/reduce-classroom-carbon-footprint/>

The Planet Protectors, Activities for Kids:

<https://www.epa.gov/students/planet-protectors-activities-kids>

The Life Cycle of a T-Shirt:

https://www.youtube.com/watch?v=BiSYoeqb_VY

Action #4: Compost

Classroom Composting Guide from Share it!

Science:

<https://www.shareitscience.com/2016/03/composting-with-worms-environmental-activity-home-school.html>

EPA Food Tracking Log:

<https://www.epa.gov/sites/production/files/2015-08/documents/food-waste-log.pdf>

North Country School Composter Prototype:

<https://www.northcountryschool.org/farm-garden/sustainability/composting>

Action #5: Recycle

The Adventures of a Plastic Bottle:

<https://www.simonandschuster.com/books/The-Adventures-of-a-Plastic-Bottle/Alison-Inches/Little-Green-Books/9781416967880>

The Soda Bottle School:

<https://www.rif.org/literacy-central/book/soda-bottle-school-true-story-recycling-teamwork-and-one-crazy-idea>

Better World Betty:

<https://www.betterworldbetty.org/recycling-101/>

Cville Tomorrow Local Recycling Guide:

<https://www.cvilletomorrow.org/articles/local-recycling-now/mini-articles/70861>

TerraCycle:

<https://www.terracycle.com/en-US/brigades>

Action #6: Eat Your Veggies

The Omnivore's Dilemma, Young Readers edition:

<https://michaelpollan.com/books/the-omnivores-dilemma-young-readers-edition/>

Your Questions About Food and Climate Change:

https://www.nytimes.com/interactive/2019/04/30/dining/climate-change-food-eating-habits.html?te=1&nl=climate-fwd:&emc=edit_clim_20191225?campaign_id=54&instance_id=14791&segment_id=19871&user_id=1e9bde47aeb3042b53196eeaae4f5000®i_id=9800199120191225

Meatless Monday for K-12 Schools:

<https://www.meatlessmonday.com/meatless-monday-k-12/>

Vegan Recipes by Kroger:

<https://www.kroger.com/rl/vegan-recipes>

Action #7: Community Garden

City Schoolyard Garden:

<https://www.cityschoolyardgarden.org/>

Eartheasy Guide to a School Garden:

<https://learn.eartheasy.com/guides/how-to-start-a-school-garden-your-complete-guide/>

Miss Maple's Seeds:

<https://www.penguinrandomhouse.com/books/311016/miss-maples-seeds-by-eliza-wheeler-illustrated-by-eliza-wheeler/>

Action #8: Turn Stuff Off

We're Going On A Vampire Hunt:

<https://blog.ucsusa.org/john-rogers/games-earth-day-2014-487>

Why Should I Save Energy?:

<https://www.amazon.com/Why-Should-Save-Energy-Books/dp/0764131567>

Virginia Energy Sense Curriculum Guide:

https://www.virginiaenergysense.org/wp-content/uploads/2019/07/VES_School-Curriculum_10.2019_No-SOL_2.pdf

Action #9: Take the Bus

Charlottesville Area Transit Rider's Guide:

<https://www.charlottesville.org/home/showdocument?id=67382>

Action #10: Renewable Energy 101

National Geographic Energy 101 Videos:

<https://www.nationalgeographic.org/video/edu-wind-turbines/>

Power the Grid:

<https://www.crazygames.com/game/power-the-grid-2020>

The Boy Who Harnessed the Wind:

<https://www.penguinrandomhouse.com/books/307402/the-boy-who-harnessed-the-wind/>

NEED Project Energy Activity Books:

students.https://issuu.com/theneedproject/docs/intermediate_energy_infobook_activities

Action #11: Plant a Tree

VA Department of Forestry Tree Planting Guide:

<http://www.dof.virginia.gov/tree/care/index.htm>

The Great Kapok Tree:

<https://www.scholastic.com/teachers/books/the-great-kapok-tree-by-lynne-cherry/>

The Global Tree Restoration Potential:

<https://www.nationalgeographic.com/environment/2019/07/how-to-erase-100-years-carbon-emissions-plant-trees/>

Action #12: Solar Projects

The Solar Classroom Lesson Plan:

<https://www.energy.gov/articles/solar-classroom-lesson-plan>

NASA Education Guide:

<https://www.jpl.nasa.gov/edu/teach/tag/search/Solar+energy>

NEED Solar Project Kits:

<https://shop.need.org/collections/solar>

Solar Energy Science Projects:

<http://www.makeitsolar.com/images/Solar-Energy-Projects-NREL.pdf>

Action #13: Classroom Energy Audit

School Energy Audit:

https://curriculum.climategen.org/2015/EE_SchoolEnergyAudit.pdf

Cool School Challenge Classroom Audit Kit:

<https://www.nwf.org/-/media/Documents/PDFs/Eco-Schools/Cool-School-Challenge/Cool-School-Challenge-audit-kit.ashx?la=en&hash=816B67BE63987ED9BD7A757D5F63A9FBoE95FAA2>

Cool School Challenge, Elementary Version:

<https://www.nwf.org/-/media/Documents/PDFs/Eco-Schools/Cool-School-Challenge/Cool-School-Challenge-elementary-audits.ashx?la=en&hash=D5069423BBA9662E1F500730D864809B4A59425C>

Action #14: Create a Climate Action Plan

Classroom Climate Action Pledge:

<https://www.nwf.org/-/media/Documents/PDFs/Eco-Schools/Cool-School-Challenge/Cool-School-Challenge-classroom-action-plan-template.ashx?la=en&hash=E79DBDB45F04A3B0136BBE3ABC0410D06023CC00>

Home Energy Challenge Platform:

<https://www.cvillechallenge.org/actions>

Charlottesville Schools Green Initiatives:

<http://charlottesvilleschools.org/green-initiatives/>

Albemarle County Schools Environmental Management:

<https://www.k12albemarle.org/dept/osp/building/environmental/Pages/default.aspx>

Action #15: Have a Say

Project Green Challenge:

<https://projectgreenchallenge.com/>

Action #16: Pass the Baton

Kid-Friendly Movies About Climate Change:

<https://www.common sense media.org/lists/movies-that-teach-kids-about-climate-change>

Children's Books About Climate Change:

<https://www.yaleclimateconnections.org/2018/08/childrens-books-about-climate-change>

Home Energy Challenge - What Is It?

The Home Energy Challenge is an ongoing program, developed and implemented by C3, to engage individual households in the City of Charlottesville and Albemarle County in climate action. The Home Energy Challenge is facilitated through a website (www.cvillechallenge.org) that calculates individual household carbon footprints, identifies actions that households can take to reduce their carbon footprint, and calculates carbon footprint reductions every time an action is completed. Participants are able to measure success in terms of carbon footprint impact, money saved, and natural resources conserved.

The Classroom Climate Challenge can also be facilitated by the Home Energy Challenge website, with a few modifiers for actions and point tallying.

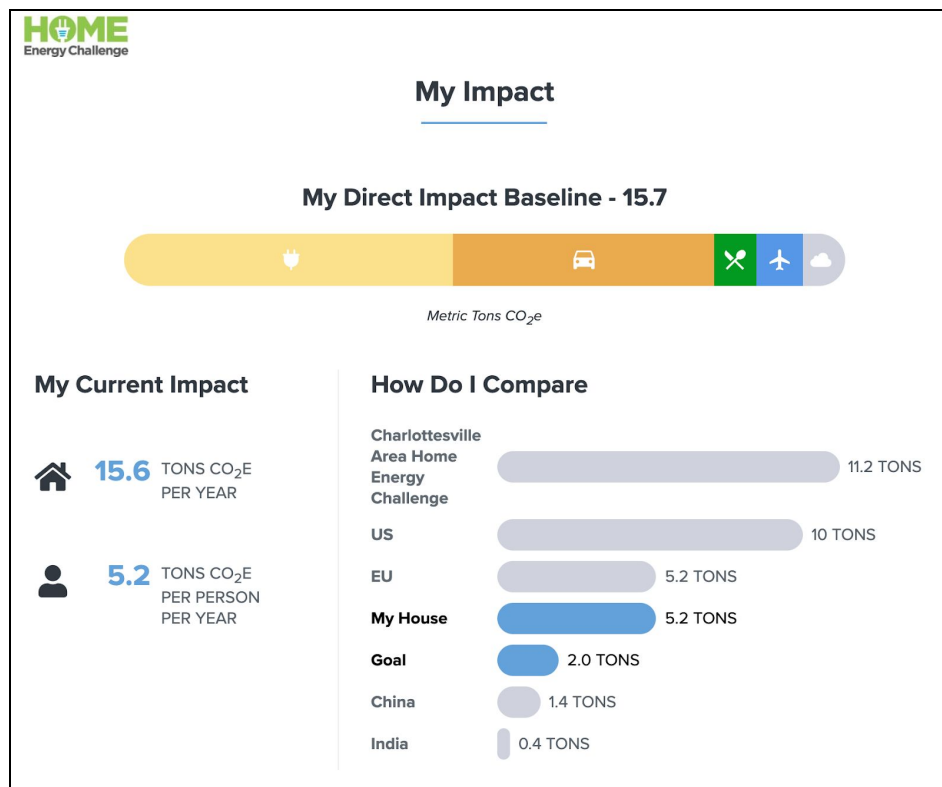


Figure 1: Carbon Impact Calculation, the “Energy Profile”

Although the Home Energy Challenge website was not designed for the classroom, it has several features that can make it a useful teaching tool. Depending on age, each student can create an energy profile that reflects their own household or the class can create a “mock” household based on their collective input. The platform Terms of Use prohibit use by students under 13 without parent permission. The energy profile allows students to see, in numbers, how their choices impact their carbon footprint. Additionally, as they complete actions, they can see how their actions (composting, turning off lights, riding the bus, etc.) can reduce the footprint calculated with their energy profile.

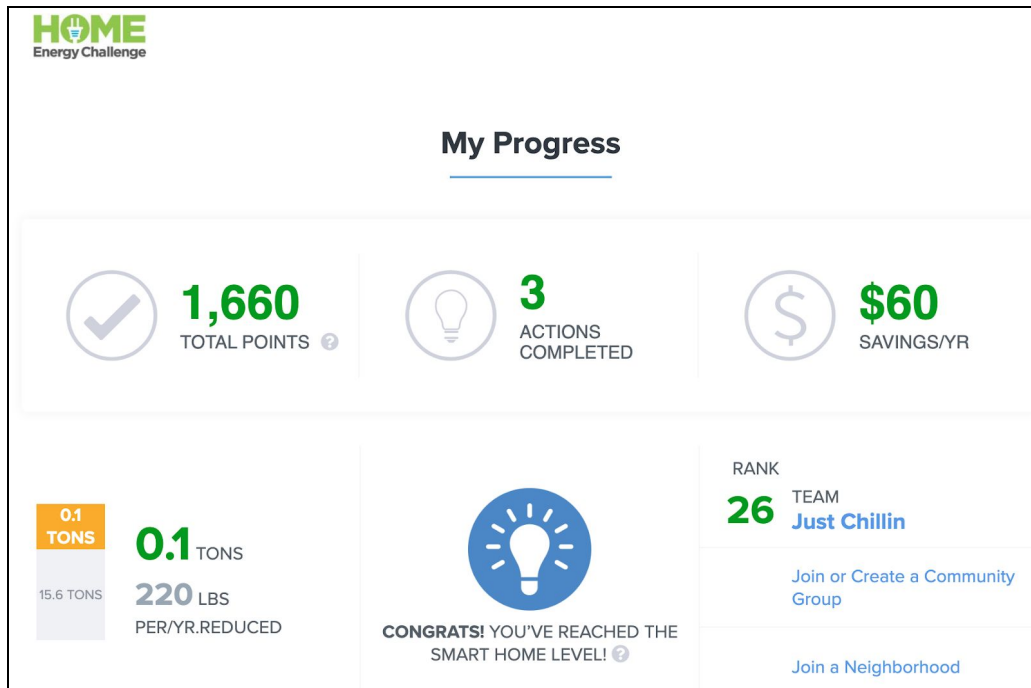


Figure 2: Carbon Reduction Calculations

Step-by-Step: Instructions for Set-Up

FOR TEACHERS OR PARENTS (i.e. Team Leads):

1. Head to the website/platform at cvillechallenge.org
2. Create your individual account.
3. Complete your energy profile.
4. Create a team, with a team name that describes your classroom (e.g. Ms. Jones 2019 4th grade) or club (e.g. CHS Green Team 2020).
5. Join or create a community group for your school.
6. Kick-off the Challenge with an interactive discussion on climate science and introduce students to the platform.

STUDENTS OVER 13:

1. Create your individual account.
2. Complete your energy profile.
3. Join your team.
4. Join your community group.



POWER UP TIP

If the parents in your class are willing participants, then younger students can participate directly on the platform. Parents create the account and review together with the kids. It's a family affair! Just make sure all of your students have access to similar levels of parent engagement.

Instructions for Score-Keeping

FOR TEACHERS OR PARENTS (i.e. Team Leads) AND STUDENTS OVER 13:

1. Log on to your account at www.cvillechallenge.org
2. Identify your action, get started, and set a deadline.
3. Mark complete when you finish an activity. Some actions will require specific input, instructions provided in each action.
4. Review the impact on your account dashboard.
5. Share your progress by clicking the button shown in the figure below.
6. Post a picture on the platform.

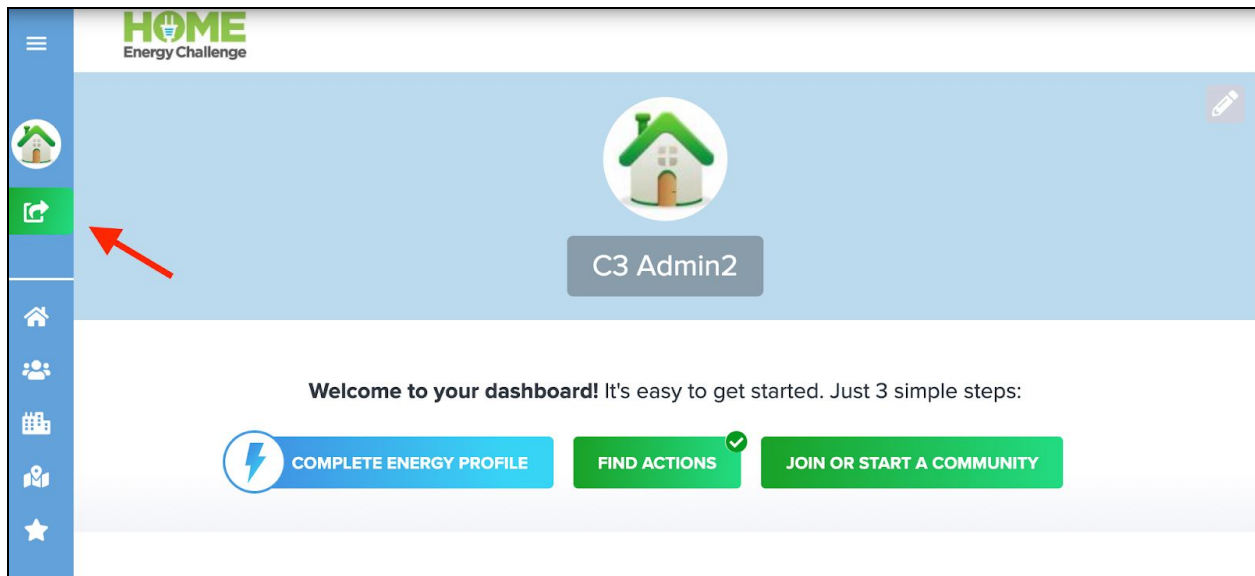


Figure 3: Share Your Progress Button

Suggestions for Students Under 13

- Create an account and energy profile together, using a “mock” household. Tell the energy story of your imaginary family!
- Create an account and energy profile for your own household. Compare against the one you created as a class.
- Keep a scoreboard in a visible location in the classroom and identify when each student has completed an action.
- Inform C3 when you’ve completed the Challenge and we will send you a leaderboard with all participating teams.



Challenge Participants from Community Charter Public School

**“We’ve really loved your initial support, ideas, and positivity towards saving the planet!
We loved partnering with you for this project. Thank you so much for all of your
amazing effort! “**

-Sophie, Student at Community Charter Public School

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**COMMUNITY CLIMATE
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