STUDENT CLIMATE CHALLENGE

TEACHER GUIDE

Table of Contents

1. New Jersey Student Climate Challenge Overview
2. Tips for Getting Started
3. Climate Challenge Eligible Student Projects
4. Overview of the Teacher's Role for the Climate Challenge
5. Resources to Support Integrating Climate Change Topics
6. Resources to Support Action Project Planning and Implementation
7. Resources to Support Digital Story Video Production
8. Submission Requirements and Form
9. Submission Review Process
10. Challenge Awards
11. Questions?

1. New Jersey Student Climate Challenge Overview

The New Jersey Student Climate Challenge highlights the role youth can play in addressing the climate crisis. The initiative builds on New Jersey's work to increase climate literacy in young people across the state, including its first-in-the-nation effort to incorporate climate change education across all K-12 state academic standards. It will provide support and recognition to New Jersey public school students in grade 6 through 12 as they implement local projects to address the climate crisis. The Challenge is administered by Sustainable Jersey and the Drumthwacket Foundation.

The Challenge is designed for students to participate through their school with a teacher or club advisor as a mentor so their projects can be linked to their school learning experiences. Students are encouraged to team up and complete a school or community project to address a cause or impact of climate change. The team then creates a short digital story video to highlight what they have accomplished. To support and inspire student action, educational sessions will be offered during January and February 2022. The sessions will spotlight local impacts of climate change and strategies to address them, as well as success stories about what students are already accomplishing. All teachers registered to participate in the Challenge will be emailed information when the sessions are announced. Recordings of the sessions will be posted on the Sustainable Jersey for Schools website a few days after the live event.

While the Challenge is intended to be a student-led action project, the role of the teacher is to influence, scaffold, and guide the students throughout the process. The Challenge was created to be flexible in its climate change focus to allow teachers to customize and integrate it into current curriculum and instruction or into afterschool programs as best fits the unique school situation. The Challenge provides students and teachers alike the opportunity to deepen their understanding of the climate crisis and to use a variety of multidisciplinary skills as students engage, investigate, and enact their climate action projects. Teachers should provide time, space, and access to climate change resources to support student groups as they develop an action plan, implement their projects, and document the results.

Suggestions for instructional integration and practical digital story making tips are provided in this guide, as well as resources for teachers and students on topics such as action project brainstorming, video techniques, and completing the Challenge application. Supplemental instructional resources, recommended websites, sample lesson plans can be found on the continually updated *Frequently Asked Questions and Additional Resources* Google document.

Student teams should brainstorm and research a climate action project that is meaningful to them and their community. Starting with the planning stage, moving to implementation, and through the evaluation phases of the climate action project, all actions should be documented to potentially be included in their digital story.

The process of creating a digital story about their action project empowers students to tell their own stories of climate action: their perceived successes, challenges, and agency throughout the project. Digital storytelling is a research backed method to enhance students' knowledge of climate change as an interdisciplinary problem and to facilitate students' critical reflections on their own lived experiences of climate change.

The Challenge is intended to provide hands-on engaging learning opportunities to not only build an understanding of climate change, but also to encourage students to address their concerns through a commitment to collaborative action. In addition, the goal is to combat the typical despair and concerns associated with the negative prospects from the climate crisis by inspiring student agency. Youth can find their path forward for a more socially and environmentally responsible world.

By the end of their project, students should be able to communicate to others ***why*** this is an important issue to them and, more critically, ***what*** they are doing to take action with their peers. Learning about climate issues and actions that are locally relevant and personally meaningful have been shown to have a long-lasting positive impact on students' hopefulness towards their future and the future of our planet.

2. Tips for Getting Started

- Register for the Climate Challenge early to take full advantage of the support and guidance available to you and your students as they move through the project. Additional resources will be shared with registered teachers throughout the year to assist with project design, digital story video development, and facilitation. **The specific student teams, project topics, or digital story submissions are NOT due at registration.** Registration just indicates your interest in the Challenge and will keep you connected with the latest information.

- Review the Climate Challenge scoring rubric found later in this guide. Through their participation in the Challenge, students will engage with their team in a project-based learning experience to brainstorm, research, design, and implement a climate action project of their choosing. Students will need to document their progress through these activities to create a video story to share more information about their chosen climate action project and how that action will help in combating climate change. An additional resource is the Climate Challenge Student Guide which can be shared with your students to assist them through the action project and digital story processes. The Student Guide is available as a PDF or a WORD document if you would like to modify sections to share with your students.

- Read and become familiar with the different types of projects that qualify for the Challenge and the submission requirements. How you plan to teach about or discuss climate change, how you intend to integrate climate connections into your instruction or club learning

activities, and how much class or afterschool time you dedicate to these tasks are up to you but ensure that you allow enough time for students to complete their action projects and digital stories with your support well in advance of the **April 20, 2022** entry due date.

- Climate Challenge entries must be submitted online via a Google Submission Form. View a PDF copy of the form here**.** The form requires students to provide a project summary and describe how the project is linked to climate change solutions. Digital stories should include video clips or pictures of team members participating in the action project to document its completion. Please see the Challenge Official Rules for additional details on the Challenge.

- Teachers are encouraged to dedicate some class or club time to have discussions around the topics of protecting the local environment and taking civic action on causes that are important to the students, especially those related to climate change. Brainstorm ways to take action that are safe and socially distanced as necessitated by local health conditions.

3. Climate Challenge Eligible Student Projects and Student Teams

The goal of the Challenge is to inspire students to take action on climate change. Each student team is expected to complete a specific project that addresses a cause or impact of climate change. The projects can be school or community based. As students select their projects, they should limit the scale and scope to the time they have available to complete them. The selection committee will judge each submission on its own merits and will not be comparing projects' impacts. In other words, a smaller-scale project will be judged on its own application quality and will not be negatively compared against a larger-scale project, which may have more direct or broader impacts.

All student projects must culminate in a tangible outcome. To help you guide student brainstorming and decision-making, the list below outlines examples of tangible outcomes for possible student projects.

- A physical change to the environment (e.g., tree planting project, rain garden, dune restoration)
- A reduction in a factor that contributes to climate change (e.g., any effort to reduce greenhouse gases such as anti-idling efforts or efforts to increase walking/biking instead of driving)
- Increased awareness of the climate crisis among a target audience (e.g., education campaign, green challenge)
- Civic engagement in local or state policy making related to climate change (e.g., following current policy making efforts and submitting comments at a public hearing or orchestrating a letter writing campaign on an issue)

- Presentation of research findings on a local climate related issue that informs decision makers (e.g., identifying a step the school district, municipality, or county should take and presenting recommendations at a public meeting)
- Develop a proposal and apply for a grant to complete a community or school project (i.e., research grants available for electric vehicle (EV) charging infrastructure or to complete a Sustainable Jersey action, identify a project idea, promote the idea to the municipality or school, and spearhead the grant application)

More ideas for instructional integration with sample relevant NJSLS as well as example climate change related Sustainable Jersey for Schools action projects can be found in the following sections. Questions regarding eligible student projects are welcomed and can be emailed to:

njstudentclimatechallenge@sustainablejersey.com

Student Teams

Each student team must have a Climate Challenge registered teacher mentor from an eligible school. To take full advantage of opportunities for coaching and guidance teachers should register for the Climate Challenge as soon as possible. **The specific student teams, project topics, or digital story submissions are NOT due at registration.** Registration for the Climate Challenge indicates teacher and student team interest in participating in the Climate Challenge.

Classroom teachers and club leaders can have more than one team per class section. Team size should be determined by the teacher to allow for participation by all team members. It is strongly recommended no more than 12 students per team, with the ideal number of students being around 5-6 per team. Teams from the same club or class section can work on similar projects but each team must produce a unique outcome. For example, if two teams are interested in doing tree planting projects, the plantings must take place at two separate locations. Or if two teams want to do an education and outreach campaign, they should focus on two different target audiences.

The Challenge entries must be submitted online using the Challenge Submission Form by April 20, 2022 at 11:59 pm. See the Submission Form section of this document for more information. To view a PDF version on the Challenge Submission Form click here.

4. Overview of the Teacher's Role for the Climate Challenge

The Climate Challenge is intentionally flexible to allow for student teams to pursue their own interests in relevant climate change solutions. Students can be creative problem solvers, express their own voice as civic minded community members, and develop agency to inform themselves and seek solutions to grand challenges.

While teachers have a template for planning climate action with this guide, they should avoid providing step by step directions to solve a climate problem and allow students to lead in their climate action projects. Teachers should guide, scaffold, and support student teams, as needed, to locate resources or guidelines. They should not prescribe specific action. Teachers are encouraged to step back and allow the students to take ownership of their own projects – be an ally for youth driven action projects.

The instructional resources that are provided in this guide are not mandatory for student teams. There is a wide array of methods to integrate climate change topics, plan and implement an action project, and create a digital story with your classroom and/or club. Resources to support these three areas – **Integrating Climate Change Topics**; **Action Project Planning and Implementation**; and **Digital Story Video Production** – can be found in the following sections of this teacher's guide.

5. Resources to Supporting Integrating Climate Change Topics

Climate change is bigger than science alone. Teachers are encouraged to approach teaching climate change as an interdisciplinary topic – across science disciplines and other content areas.

The specific standards that are supported and curricular connections made will vary depending on how you, the teacher, integrate climate change topics and on what type of project your students develop. Teachers should explore their curricula for potential links to climate change as a human-driven environmental issue for society to manage. Supplemental instructional resources, recommended websites, and sample lesson plans can be found in the continually updated *Frequently Ask Questions and Additional Resources* Google document. One especially useful collection of education resources can be found on the Climate Literacy and Energy Awareness Network's website (often called the CLEAN network).

For example, a middle school interdisciplinary unit could be centered around the essential questions of: ***What natural resources do we use and how does it impact our environment? And what can we do about the impacts?*** As with many interdisciplinary units, it is recommended that New Jersey Student Learning Standards (NJSLS) be bundled together as opposed to be addressed separately in different contexts. For the above middle school unit essential questions, the following interdisciplinary NJSLS could be addressed:

Life Science	• MS-LS2-5: Evaluate competing design solutions for maintaining biodiversity and protecting ecosystem stability.
Earth & Space Science	• MS-ESS3-3: Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment • MS-ESS3-5: Ask questions to clarify evidence of the factors that have caused the rise in global temperatures over the past century.

Engineering, Technology, and the Application of Science	• MS-ETS1-1: Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.
Social Studies	• 6.2.8.GeoPP.3.b: Explain how geography and the availability of natural resources led to both the development of classical civilizations and to their decline. • 6.3.8.CivicsPD.2: Propose and defend a position regarding a public policy issue at the appropriate local, state, or national level. • 6.3.5.GeoGI.1: Use technology to collaborate with others who have different perspectives to examine global issues, including climate change, and propose possible solutions.
English Language Arts	• RST.6-8.8: Distinguish among facts, reasoned judgment based on research findings, and speculation in a text • WHST.6-8.1: Write arguments focused on discipline-specific content • WHST.6-8.7: Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration. • SL.8.5: Integrate multimedia and visual displays into presentations to clarify information, strengthen claims and evidence, and add interest.
Mathematics	• MP.2: Reason abstractly and quantitatively • 7.EE.B.4: Use variables to represent quantities in a real-world or mathematical problem and construct simple equations and inequalities to solve problems by reasoning about the quantities.
Computer Science & Design Thinking	• 8.2.5ETW.5: Identify the impact of a specific technology on the environment and determine what can be done to increase positive effects and to reduce any negative effects, such as climate change
Career Readiness, Life Literacies, and Key Skills	• 9.4.8.DC.8: Explain how communities use data and technology to develop measures to respond to the effects of climate change (e.g., smart cities).

In a high school setting, similar essential questions could be posed as shared above. Additional essential questions to focus upon could include: ***How will climate change affect my community and by how much? What local action can be taken to mitigate and adapt to these impacts?*** Once again, bundling of interdisciplinary standards is recommended to provide a rationale for including climate change topics in your curriculum. Consider how the various aspects of climate change as a socioscientific issue already connect to topics in your required curriculum. For these sample high school unit essential questions, the following interdisciplinary NJSLS could be addressed:

Life Science	• HS-LS2-7: Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity.
Earth & Space Science	• HS-ESS3-1: Construct an explanation based on evidence for how the availability of natural resources, occurrence of natural hazards, and climate change have influenced human activity.

	• HS-ESS3-4: Evaluate or refine a technological solution that reduces impacts of human activities on climate change and other natural systems.
Engineering, Technology, and the Application of Science	• HS-ETS1-1: Analyze a major global challenge to specify qualitative and quantitative criteria and constraints for solutions that account for societal needs and wants. • HS-ETS1-3: Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics, as well as possible social, cultural, and environmental impacts.
Social Studies – Geography, Civics and Government, History	• 6.1.12.GeoHE.14.a: Evaluate the impact of individual, business, and government decisions and actions on the environment and climate change and assess the efficacy of government policies and agencies in New Jersey and the United States in addressing these decisions. • 6.1.12.GeoHE16.a: Explain why natural resources (i.e., fossil fuels, food, and water) continue to be a source of conflict and analyze how the United States and other nations have addressed issues concerning the distribution and sustainability of natural resources and climate change. • 6.2.12.CivicsPI.6.a: Use historic case studies or a current event to assess the effectiveness of multinational organizations in attempting to solve global issues.
English Language Arts	• RST.11-12.1: Accurately cite strong and thorough evidence from the text to support analysis of science and technical texts, attending to precise details for explanations or descriptions. • RST.11-12.9: Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible • SL.11-12.5: Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest
Mathematics	• MP.2: Reason abstractly and quantitatively. • MP.4: Model with mathematics. • HSS-IC.B.6: Evaluate reports based on data
Computer Science & Design Thinking	• 8.2.12.ETW.3: Identify a complex global environmental or climate change issue, develop a systemic plan of investigation, and propose an innovative sustainable solution.
Career Readiness, Life Literacies, and Key Skills	• 9.4.12.IML.5: Evaluate, synthesize, and apply information on climate change from various sources appropriately.

6. Resources to Support Action Project Planning and Implementation

There is a wide range of resources to help students decide on a specific project to pursue. A simple google search of a topic will return a wealth of resources. Part of the fun of completing the project is doing the internet search and tracking down exactly what the team needs based on student interest in tackling a specific aspect of climate change.

Once the group has an idea of which dimension of climate change it wants to address, it might be helpful for students to reach out to local organizations such as the municipal or school green team, environmental commission, shade tree commission, watershed association, League of Women Voters, Pinelands Preservation Alliance, Rutgers Cooperative Extension, etc. for ideas. These groups may have a need for volunteers to complete projects that students would be interested in. Rutgers University Extension Services and a diversity of nonprofits publish how-to-guides or have outreach coordinators that often are willing to coach students through their projects. Students are encouraged to explore community partnerships.

The Sustainable Jersey and Sustainable Jersey for Schools certification programs have identified specific actions that will address climate change and provide guidance on what to do and how to do it. The student team may not need to complete all the action requirements but rather select a component of the action to work on.

Your school **does not** have to be participating in the Sustainable Jersey for Schools program to participate in the Challenge or access the resources. However, if your school or the municipality is participating, the student project could help earn them points in the program. Teams selecting Sustainable Jersey actions for their projects should reach out to the local contacts. To learn how to find out if you school or municipality is certified or participating in Sustainable Jersey and obtain contact information, click on the links below to a short instructional video:

Sustainable Jersey for Schools

Sustainable Jersey Municipal Program

Climate-Related Sustainable Jersey for Schools Actions

The following table is a collection of Sustainable Jersey for Schools actions that link to climate change. These actions could serve as inspiration for student team projects. More information about each action can be found at the links provided.

Action	Description and/or Goal of Action
Climate Mitigation & Renewable Energy	
School Carbon Footprint	A School Carbon Footprint measures the amount of greenhouse gas (GHG) emissions produced by a school in a given year. Completing a School Carbon Footprint requires an accounting-like inventory of all the sources of GHG in your school buildings, fleet, and operations.
Energy Efficiency	
Behavior-Based Energy Conservation Programs	The goal of this action is to spur activity among students – and the wider school community – that promotes energy savings. Behavior-based conservation programs have been shown to impact school culture through an increased awareness of energy use, and to provide significant and long-term energy savings.

Food & Nutrition	
Promote Locally Grown Foods	The goal of this action is to support the farm to school movement by encouraging schools to source more foods locally and provide complementary educational activities to students that emphasize food, farming, and nutrition.
School Gardens	School gardens serve as living classrooms that teach lessons as simple as "where our food comes from" to complex lessons on ecology, resource management, nutrition, and healthy lifestyles. The goal of this action is to encourage and support the creation and maintenance of sustainable food-producing school gardens.
Healthy School Environments	
Anti-Idling Education & Enforcement	A motor vehicle is idling when the engine is turned on, but the vehicle is not in motion. A great deal of idling occurs at schools, where buses and cars line up to drop off and pick up children. Stopping unnecessary vehicle idling is a simple way to contribute to improved air quality around schools.
School Grounds	
Green Infrastructure Assessment & Plan	Stormwater runoff, if not controlled properly, has a major negative impact on water quality in local waterways and can contribute to flooding. There are often opportunities to reduce these impacts on-site by retrofitting school facilities with green infrastructure (such as rain gardens, bioswales and rain barrels) to capture and treat stormwater runoff.
Green Infrastructure Installation	School campuses contain many impervious surfaces, including buildings, parking, access roads, and paved playgrounds which can lead to flooding from stormwater runoff. With this action, schools can install green infrastructure on their grounds to capture and treat stormwater.
Student & Community Outreach	
Community Education & Outreach	Schools take action to educate the community about sustainability issues and about specific programs that encourage sustainable practices.
Civic & Stewardship Volunteer Initiatives	Civic and Stewardship Initiatives directly connect the school with its surrounding environment by providing opportunities for students to participate in projects with community-based organizations, thereby gaining real-world learning experience with a broad realm of sustainability issues, from land and water stewardship to socio-economic stewardship.
Green Challenges	The green challenge action involves asking people to pledge to make a specific change in their lives or in their behavior towards greater sustainability. The program educates participants on the sustainability issues addressed by the challenge and instructs them on how to participate; it documents participation and offers resources for success.

Green Fair	A green fair is a community-wide event that educates and encourages people of all ages to adopt a more sustainable lifestyle. Green fairs allow participants to visualize how their seemingly small individual efforts can make a huge difference in their community.
'Green' Your Green Fair or School Event	Schools incorporate sustainable or "green' features to the ***running*** of their Green Fairs or other larger school events such as athletic events, dances, multiple classroom parties, or commencement.
Student Safety	
School Travel Plan for Walking and Biking	A Safe Routes to School Travel Plan maps out how to improve pedestrian and bicycle travel to and from school to increase the number of students who walk and bike to school and to improve safety. It identifies: (1) where students currently walk and bike; (2) where students would walk and bike if they could; and (3) what changes need to be made so that students can and will walk and bike to school.
Waste Management & Recycling	
Waste Audit	This action requires that the school or district complete a waste audit: an assessment of the school's waste in terms of quantity and origin.
Document Recycling Rates	The recycling rate is a measure of how much of the school's waste is being recycled and will require at least one year of waste disposal and recycling data.
Food Waste Management	A school may choose to add the recycling of cafeteria and lunchroom food waste to its recycling program. Recycling of food waste in a school can serve as a valuable lesson for students on making compost, improving soil nutrients for plant growth, and diverting food waste from landfills.
Materials Reuse	A Materials Reuse Program connects those wishing to discard unnecessary or unwanted items within their school with others who are looking for used items in good condition. Materials Reuse Programs are valuable to the environment as they keep many materials from being disposed of in landfills and incinerators.
Recycling Non-Mandated Materials	This action implements recycling initiatives that target materials that are not designated as mandatory recyclable items. School initiatives to collect non-mandated materials can include but are not limited to: Recycling milk cartons; Recycling/reusing old toys; Recycling crayons/markers; Plastic bag/film collection; Battery/ink toner recycling.

Climate-Related Sustainable Jersey Municipal Actions

Much like the climate-related Sustainable Jersey for Schools actions listed above, there are also many municipal or community-based actions that could be great climate action projects for student teams. Investigate the links in the table below for more information about additional

Sustainable Jersey actions. The student team may not need to complete all the action requirements but rather select a component of the action to work on.

Action Category	Links to Sustainable Jersey Actions	
Animals in the Community	Wildlife Interaction Plan	
Community Partnership & Outreach	Community Education & Outreach	Green Challenges & Community Programs
Emergency Management & Resiliency	Community Wildfire Protection Plans	Heat Island Assessment
	Vulnerable Populations Identification for Emergencies	
Energy	Commercial Energy Efficiency Outreach	Residential Energy Efficiency Outreach
	Make Your Town Solar Friendly	Make Your Town EV Friendly
	Municipally Supported Community Solar	Purchase Alternative Fuel Vehicles
	Transportation Fleet Inventory	Public EV Charging Station
	Wind Ordinance	
Food	Community Gardens	Buy Fresh, Buy Local Programs
	Farmers Markets	Making Farmers Markets Accessible
Green Design	Green Building Education	
Health & Wellness	Anti-Idling Education & Enforcement Program	Safe Routes to School
Land Use & Transportation	Bicycle and Pedestrian Audits	Bicycle and/or Pedestrian Plan
	Bicycle and/or Pedestrian Improvement Projects	Green Infrastructure Planning
	Green Infrastructure Implementation	Smart Workplaces
	Sustainable Land Use Pledge	
Local Economies	Green Business Recognition Program	Buy Local Campaign
Natural Resources	Tree Hazard Inventory	Tree Protection Ordinance
	Tree Planting Programs	Water Conservation Education Program
	Water Conservation Ordinance	
Operations & Maintenance	Adopt a Green Purchasing Program by Ordinance or Resolution	Efficient Landscape Design

	Minimize Water Consumption	Recycled Materials and Composting
Sustainability and Climate Planning	Municipal Carbon Footprint	Community Carbon Footprint
	Climate Action Plan	Community Asset Mapping
Waste Management	Recycling and Waste Reduction Education and Compliance	Recycling Food Waste
	Recycling Household Hazardous Waste	Non-Mandated Materials Recycling
	Backyard Composting Program	Grass - Cut It and Leave It Program
	Materials Reuse Program	Waste Audit of Municipal Buildings and Schools

Additional Project Resources

Below is one possible Action Plan template. The A.C.T.I.O.N plan from Young Voices for the Planet provides a framework for students to design and implement their own projects.

A	**ASSESS** and **ANALYZE** what local issues most concern them (Find your passion)
C	**COLLABORATE** with fellow students, friends, families, teachers, school administrators, and community members to brainstorm with them about how to address the issue (Find your team)
T	Create a **TIMETABLE** to plan out steps towards their goal
I	**IDENTIFY** who they can talk to for assistance and enlist as mentors
O	**ORGANIZE** their thoughts. Organize meetings. Make a list of goals and action steps necessary to achieve their vision (Find your power)
N	Share the **NEW**S with school media, social media, and local and national news outlets. Celebrate success by sharing and engaging others in their project

Additional instructional resources and Young Voices for the Planet films series can be found at the following links:

https://pbslearningmedia.org/collection/young-voices-for-the-planet-film-series/

https://www.youngvoicesfortheplanet.com/

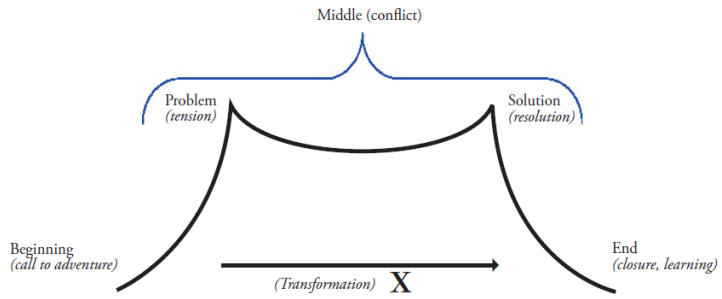
7. Resources to Support Digital Story Video Production

Teachers and students alike are familiar with creating and viewing videos in our technology-dependent world of education. What sets a digital story apart from other videos is the personal storytelling aspect that shares with the viewer the narrative behind the video topic.

Understanding these differences is important and additional guidance can be found in the Digital Storytelling Guide. The Guide lays out the three C's of digital storytelling:

> "*New technology tools allow us to **connect**, **communicate**, and **collaborate** easily with others around the world. Stories are all about these three C's and lend themselves naturally to create a bridge between teaching and integrating technology. Digital Storytelling is a tool that can support teaching and learning in any subject area.*
>
> 1. *We **connect** on an emotional level with people and events in stories and we **connect** them to experiences in our own lives.*
> 2. *Stories let us **communicate** our perspective and perception.*
> 3. *Stories are usually a **collaborative** effort of stories' characters, their actions and points of view.*"

An expansive website from the University of Houston on the educational uses of digital storytelling, including example stories, educational materials, and more can be found here. Key components of any digital story are the storytelling elements and the plot consisting of a beginning, a problem, a conflict, a solution/resolution, and an ending. It is often helpful to think about a digital story visually:



This graphic is online at: http://www.jasonohler.com/pdfs/VPS.pdf

Thinking about digital stories in this way lends itself directly to the creation of a digital story around a climate action project for the Climate Challenge. Students can share information about the climate change impact/issue chosen and why it was problematic for their community. This leads into a discussion of the action project design and implementation, along with any challenges that were experienced by the student teams. The completion of the project correlates to the resolution and closure of the digital story where students can share additional insights they learned through this process.

In 8 Steps to Great Digital Storytelling, Samantha Morra provides a great overview of the digital storytelling process, as shown in the graphic below. Each of the steps is described in

more detail in the article which should be helpful to both those just starting to explore digital storytelling and those who are teaching the process to others.

The resources shared in this guide as well as additional links to support bringing digital storytelling into your classroom can be found in the *Frequently Ask Questions and Additional Resources* Google document.

For the Climate Challenge, the digital story video should be 3 to 5 minutes in length. Keep in mind that longer is not necessarily better. The video should highlight the action project completed and reflect on climate change and its impacts through the team members' eyes. Students are encouraged to "show" rather than "tell" as much as possible—it is more exciting to see visual representations of your work rather than someone just talking into the camera.

VIDEO REQUIREMENTS:

- **Save as .mp4, .mov, or .avi file**
- **Do not include copyrighted music.** Free music at is available https://www.bensound.com.

A signed Climate Challenge Digital Story Video Student Consent Form and Release from each student team member is required. **The completed forms from each student team member should be combined into a single file and uploaded into the Challenge Submission Form.**

EASY WAYS TO MAKE A VIDEO:

- Use your cellphone and keep it casual (please use landscape/horizontal recording format)
- Create an online meeting and record the "meeting"
- Create a PowerPoint presentation with narration and export it as a video

FREE VIDEO EDITING SOFTWARE:

- Lightworks (more advanced), VideoPad (great for beginners) and Movie Maker Online (use in browser)
- iMovie (Video: iMovie Tutorial for Beginners 11 minutes)
- Animoto is a way to create videos without the use of editing software.

Edutopia has put together a curated list of video tutorials to help teachers and students get started with filmmaking. There are tons of great tips on everything from no budget filmmaking gear to editing video, from storyboarding to planning camera angles.

Additionally, while many students have the capacity to record on their phones, not all students have the necessary technology to accomplish this for a variety of reasons. Capturing live-action video on phones or tablets is encouraged, but students can also draw pictures or diagrams, or use animation tools to share their story. Online tools to assist with video creation abound, with new platforms being introduced frequently, but here is an annotated list describing (mostly all free) resources to help create and use video. Some examples of student-created digital stories using these alternative online tools include:

- Speed drawings - https://youtu.be/U01jDsg2mLY
- Drawings - https://youtu.be/70u1w5kGbYg
- Animation using an online tool - https://youtu.be/5e4uKbXUGkM
- Stop motion with Legos - https://youtu.be/K0RvbAWU8PM

The student digital stories shared above come from the Green Ninja Film Festival project, which offers a collection of lesson plans around scientific storytelling. The full lesson plans and resources needed to get started on story development and filmmaking can be freely accessed here. Green Ninja project hosts an annual student film festival around student made videos about their environmental action projects. Additional sample student created videos can be found on this YouTube playlist.

Young Voices for the Planet and Lens on Climate Change are two more organizations that offer educational resources for teachers and students around climate and environmental

filmmaking. The Young Voices for the Planet films show how youth voices can be heard to spearhead meaningful action. Seeing what others have accomplished can inspire and empower your students to take their own action. Young Voices for the Planet also offers a civic engagement curriculum to assist students to design, plan, and implement a climate action project (free download with signup). The Lens on Climate Change program guides students through creating documentary films to assist with understanding the science behind climate change. A video library of sample student videos and curricular resources can be found at their website. They also offer a free e-book for teachers entitled, *Sharing Science with Film: A Guide to Student Productions*, which includes tips for video production and a collection of video tutorials on technical aspects of filmmaking.

8. Submission Requirements and Form

To enter the Climate Challenge, each student team must complete a Submission Form by 11:59pm on **Friday, April 20, 2022**. Please see the Official Challenge Rules document for additional details on the Challenge. To view a PDF copy of the Submission Form click here. **The student completing the submission form will need to sign into a Google account to complete the required file uploads. Google accounts are free, so one can be easily made for the purposes of completing the form.**

The form requests the following information:

Section 1 – Contact Information

- Teacher or Club Advisor Name
- Teacher or Club Advisor Email
- School District Name
- School Name
- School Social Media (Facebook Account, Twitter Handle, Instagram Account Name)
- Local News Outlets (TapInto, etc.)
- Student Team Name
- Number of Team Members
- Grade Level of Student Team Members (Middle or High School)
- Student Team Members' Name, Grade, and Student and Parent Email Addresses. Please provide this information using the Team Roster template.

Section 2 – Project Summary Information

- Project Summary – Provide a project title and a brief project summary. The summary should provide a concise synopsis of the action project your team completed. This description may be used in program reports and communication materials. **(50-word limit)**

- Science Explanation – Describe how the action project is linked to climate change solutions. Include the causes or impacts of climate change the project is addressing and the tangible outcome of the project. Teams will be encouraged to do background research to make sure the science is clear and correct for the intended project. **(250-word limit)**
- Key Project Components – Summarize the following **(500-word limit)**
  - Project goals
  - Inspiration for the chosen project
  - The steps taken to complete the project
  - How the project will positively impact your school or community
  - Challenges encountered in completing the project and how those obstacles were overcome, or why they persist
  - Involvement of community partners

Section 3 – Video Details and File Upload

- Digital Story Title **(10-word limit)**
- Running time (min, sec)
- Signed Climate Challenge Digital Story Video Student Consent Form and Release forms (one form per student combined into a single file).
- Video File Upload – The video file can be uploaded into the submission form or a link to the video can be provided. THE LINK MUST ALLOW THE FILE TO BE DOWNLOADED BY ANYONE.

Note: The student completing the submission form will need to sign into a Google account to upload the video. Google accounts are free, so one can be easily made for the purposes of completing the video upload.

9. Submission Review Process

Each entry will be reviewed and evaluated by a panel of judges that includes educators and representatives from non-profits, state agencies, and the partner organizations. Entries will be placed in either a Middle School or High School category. Please see the Official Challenge Rules for additional Challenge details. All entries will be independently scored by the judges using the following scoring rubric.

Climate Challenge Scoring Rubric

Points	4	3	2	1	Total
Video Content					/12
Storytelling: Creative Elements	The video communicates to the audience in a creative way. It is interesting and engaging, and its purpose is clear.	The story is creative and has several interesting and engaging elements with a set purpose.	The story is generic and has few interesting or engaging elements related to the purpose of the video.	The story is difficult to follow or boring. The purpose of the video is unclear.	/4
Core Science Ideas and Crosscutting Concept	The project clearly addresses a human impact on the environment; the cause-and-effect relationship (CCC-2) between human activity and climate change (ESS3.C) is accurately described and supported by evidence.	The project clearly addresses a human impact on the environment (ESS3.C); the cause-and-effect relationship (CCC-2) between human activity and climate change is described but not fully supported by evidence.	The project addresses a human impact on the environment but fails to describe the cause-and-effect relationship between human activity and climate change.	The tie to human impact is inadequate or missing entirely from the project.	/4
Solutions	The action project focuses on solutions that are innovative, practical, and may be implemented easily.	The action project includes solutions that are mostly practical and may be innovative.	The solutions suggested by the action project are impractical or difficult to implement.	There are no solutions given in the video, nor through the action project.	/4
Application					/8
Written Science Explanation	Climate science written descriptions—the cause-and-effect relationship between human activity and climate change—are accurate, well described, and clearly communicated. The science is closely related to the video.	Most climate science descriptions are accurate, well described, and clearly communicated. The science is related to the video.	Most climate science descriptions are vague or contain inaccuracies and explanations are confusing. The science may be only tangentially related to the video.	Climate science descriptions are missing or inaccurate. The science may be unrelated to the video.	/4
Written Project Components	The written project components section is descriptive and includes insightful, well described, and thoroughly detailed information about the design and completion of the action project.	The project components section is well described and has detailed information about the action project.	The project components section is included, but minimally addressed and/or without sufficient detail to fully describe the action project.	The project components section is incomplete or missing. Limited, or no additional information about the action project was provided.	/4
Total					/20

10. Challenge Awards

Winners will be notified in May 2022. The student teams and their teachers will be recognized at an awards ceremony hosted by the Drumthwacket Foundation with New Jersey Governor and First Lady in June 2020.

Schools with winning submissions will receive a grant to support their climate education initiatives.

1st Place: $2,500 school grant
2nd Place: $1,000 school grant
3rd Place: $500 school grant

Students will receive an awards certificate and a commemorative gift.

11. Questions?

Email questions related to the Climate Challenge including the Challenge rules, submission requirements, deadlines, project eligibility requirements, local organizations that could be a resource for a specific student project, or teacher resources addressing a specific topic to:

njstudentclimatechallenge@sustainablejersey.com.

The *Frequently Ask Questions and Additional Resources* Google document will be updated regularly. If you would like to speak to someone about the Climate Challenge call Renee Haider on 609-771-2307.

New Jersey Student Climate Challenge Program Partners

About Drumthwacket Foundation:
The Drumthwacket Foundation is a 501c3 non-profit, non-partisan organization. Its mission is to inspire pride and enhance civic awareness for all New Jerseyans by restoring Drumthwacket, a nationally landmarked historic site and the official residence of NJ Governors, and by educational and cultural activities that recognize the rich diversity and ongoing contributions of New Jersey's communities and its residents.

About Sustainable Jersey for Schools
Sustainable Jersey for Schools is a certification program for public schools in New Jersey. It provides tools, training, and financial incentives to support and reward schools as they pursue sustainability programs. To date, 374 school districts and 1,031 schools are participating in the program. Sustainable Jersey for Schools has awarded over $2.7 million in grants to schools and school districts. Follow Sustainable Jersey for Schools on Twitter @SJ_schools.

About Atlantic City Electric:
Atlantic City Electric is a unit of Exelon Corporation (Nasdaq: EXC), the nation's leading energy provider, with approximately 10 million customers. Atlantic City Electric provides safe and reliable energy service to approximately 560,000 customers in southern New Jersey.

About the Exelon Foundation:
The Exelon Foundation is an independent, nonprofit organization funded solely by Exelon Corporation through shareholder dollars. The mission of the Foundation is to encourage respect for the environment, support innovative STEM education programs and strengthen the social and economic fabric of the community by providing a match to Exelon employee contributions.