Stop the Spread Teacher's Guide

The Rock by Rock Changemaker projects are a great addition to instruction either as a whole class or small group interdisciplinary unit or as a self-directed learning opportunity. Each project includes character growth, reading, writing, science, social studies and the arts.

At Rock by Rock, we believe that children learn best when they are having fun and are deeply engaged in rigorous, hands-on learning that has real-world applications. We also believe that habits and character education are a core part of instruction. By infusing habits with academics we can better prepare children to thrive in our ever-changing world and to help make the world a better place.

The Hybrid Learning Series is ideal for students in 3rd-5th grade..

Classroom Application and Module Structure:



Each module in the Hybrid Learning Series can be done together as a class, in small groups or individually as a self-directed project. Each project centers around one mission that is focused on how we can take small actions to address environmental or social challenges.

Each Project has a real-world mission that empowers students to take action. Each project follows an inquiry arc:

- 1. Invest: Invest students in the Mission / Project.
- 2. Reflect: Reflect on the life habit focus: Learner, Creativity, Curiosity, Empathy, Courage, Kinship, Impact Awareness.
- 3. **Explore**: Understand the problem and real-world needs through reading, video and activities that enable students to connect personally to the issue or problem through writing and art.
- 4. Take Action: Engage in a take action project that involves taking action through writing, art and making (crafts, performance, etc).
- 5. Share: Enlist others to work towards or rally around a cause.
- 6. **Reflect**: Reflect on what students learned about themselves as leaders and how they grew in their life habits.

At Rock by Rock, we believe in creating flexible tools teachers can adapt based on student needs. Each project is a teacher-designed, interdisciplinary unit that can be flexibly customized. Teachers can follow our recommended lesson flow, or tailor activities to cater to specific student needs.

Use Case	Integrated as part of ELA instructional time.	Specific Science or Social Studies Learning Time	Self Directed Learning
Grouping	Whole Class , Sma	ll Group or Individual	Individual
Purpose	 Authentic Application- Reading is a means to learning - I want kids to see real world applications of reading. 21st century literacies - I need my kids to be developing reading and writing skills in modern day multimedia formats (i.e. podcast, videos, dramatic play etc). Word and world Knowledge - My kids need to continue to develop their vocabulary and word and world knowledge to aid in literacy development. 	 Hands-on Learning: I want students to use multiple modes of learning from literacy to hands-on experiments to the arts. Real-world Relevance: My kids need to see how what they are learning is relevant to their lives today. Global Citizenship/ Science Citizenship: Foster global citizens that are engaged in taking action and developing the life habits that they need. 	 Enrichment: more advanced students can do projects independently to enhance learning. Remediation: teacher uses projects with small groups to provide high engagement opportunities for learning.
Time Period	Used during a language art or interdisciplinary/ humanities block.	Used to replace Science or Social Studies time and/or a specific project based learning time during the week.	Used as a learning center during traditional guided reading or small group rotations. Some kids engage independently while teachers pull groups to support as needed.
Structure	Whole Group Reading Lessons - Pre/During/Post Reading Close Reading or Read A-loud	Science and Social Studies Lessons	Guided Reading or Centers Time Independent Learning.

Materials and Technology:

Materials:

- Student Mission Log: You have the choice between a print Mission Log where students can write and take notes by hand or a digital Mission Log you can share with students in a variety of ways. Mission Logs have editable text to enable teacher customization.
- **Project Materials:** In the first lesson of the online module we outline all of the materials that students will need for the project and activities. Most materials are things that can be found in a classroom and/or purchased easily through amazon and/or teacher stores (i.e. discount school supplies).

Materials List:			
 Glitter Water Soap Modeling clay (or other preferred materials) Paper or labels 	 Writing tools Tagboard or construction paper Scissors Markers or coloring tools Poster board 		

Technology: All technology requirements include technology found in most classrooms.

- If doing this as a self directed project we recommend every student have access to a laptop/computer, wifi, Chrome browser and headphones.
- For teachers who are interested in whole group instruction we recommend additional technology such as a projector or smartboard and speakers.

Standards Alignment:

Each project is aligned to national and state standards for reading, writing, science, social studies and the arts. Each module was designed to help students progress towards standards holistically. There is not a 1-1 correspondence between each standard and each lesson. Research shows that reading and writing standards develop holistically and more effectively when approached as a whole rather than teaching standards and skills in isolation. Our modules build NGSS aligned science content and practices, CCSS aligned reading, writing, listening and speaking skills, and 21st Century SEL competencies. While many lessons address all clusters of standards, one standard cluster often leads over others.

This modules specifically supports:

Reading	Writing	Listening and Speaking	Science	SEL
CCSS	CCSS	CCSS	NGSS	21st Century Skills/Arts
Key Ideas and Details: 1-3 Craft and Structure: 4-6 Integration of Knowledge 7-9 Text Complexity 10	Text Types and Purposes 1 Production and Distribution of Writing 4-6 Research and Build to Present Knowledge 7-9	.Comprehension and Collaboration 1,2 Presentation of Knowledge and ideas 4	Performance Expectations (PE): • 3-ESS2-1. • 3-ESS2-2 • 4-ESS3-1 Science and Engineering Practices (SEP): • Represent data in tables and various graphical displays (bar graphs and	Life Habit: Curiosity CASEL: Responsible Decision-Making • Demonstrating curiosity and open-mindedness Self Awareness • Developing interests and a sense of purpose

	 pictographs) to reveal patterns that indicate relationships. Obtain and combine information from books and other reliable media to explain phenomena. Ask questions based on observations to find more information about the natural and/or designed world(s). Develop and use models. 	
	Disciplinary Core Ideas (DCI): • ESS2.D • ESS3.A	
	 Crosscutting Concepts (CC): Patterns of change can be used to make predictions Cause and effect relationships are routinely identified and used to explain change. 	

This Project's Focus: Stop the Spread: How can we help slow the spread of global disease by fighting climate change?

Real-World Mission	Real-World Project	Character Focus
Slow the spread of disease by educating others or compelling them to take action to fight climate change.	Write a song that teaches others about the impact of climate change on disease spread or compels them to take action.	Curiosity. How can we use curiosity to ask questions and come up with ways to approach complex problems?

Types of Lessons within a module:

Туре	Description	Student Output.
Informational Text Based Lessons	 Lessons that develop informational text skills (reading, graphic organizers, charts, graphs, science concepts, social studies concepts). All lessons follow a similar flow: Pre-reading: Intro/hook During Reading: Interactive Questions Post Reading: Application activity - many times the post activity can lead to a discussion or supplemental activity aligned with particular class or student needs. 	 Student mission log Group discussion.
Hands-on Activities	 Experiential learning opportunities that are hands-on and require kids to go offline to learn by doing and making. Focused on leveraging different learning modalities to engage kids and increase motivation, support internalization of content and aid retention. 	 Student mission log Activity products.
Habit Focus and Reflections	 Integrated life-habit lessons that develop a 21st century skill/habit. Each project starts and ends with a habit reflection to show growth. 	Activity products.Student reflections
Take Action Project	 Short texts/videos/lessons that develop foundational project content (i.e. what is a song) and project skills (i.e. how do I create effective songs). Short and quick application of the lesson as a guided practice before applying it to the project to ensure kids have internalized the concepts. Creation of a take action project that leads to genuine impact. Projects use a modern day multimedia form of communication. An opportunity to share with an authentic audience where kids present what they have learned. 	 Student mission log Take action project Share/ presentation

Unit Overview: (Whole Class or Small Group)

When Lyme disease was first discovered in the 1970s, it was a disease that was found predominantly in the northeast and Midwest United States. But now it is found in all 50 states. Lyme disease is not the only disease that is spreading. All over the world, infectious diseases like Malaria and Dengue Fever are spreading to more people and places. Why is this happening? Would you believe that the spread of disease is one of, of many, negative effects that climate change is having on our environment.

In this project, students will learn the difference between weather and climate and how our climate is changing due to human activities that release greenhouse gasses into the atmosphere. They'll learn how our warming world impacts the spread of disease. Students will explore how, as the world warms, disease-carrying vectors can thrive in more areas, for longer periods of time, infecting more people. Students will learn ways they can fight climate change and, as a result, help slow the spread of global disease. Finally, students will take action by creating and performing an original song that will teach others about the impact of climate change on disease spread or compel them to change their behavior.



Virtual Field Trips



Professor Mora

In this module, students meet Professor Mora, a scientist and professor who studies the impact of human activities on the natural world. Professor Mora will teach students how climate change is impacting disease spread and will share some real world examples.



Songwriters: JuanMa Sanchez and Kelsey Rodriguez

In their take action project, students meet musicians and songwriters JuanMa and Kelsey. They own Soul Flow House, a music education program in Brooklyn, New York. They'll share professional strategies and tips to help students write original songs..

Sample Unit Goal: Stop the Spread

- 1. Explain what causes disease and how they spread.
- 2. Differentiate between weather and climate and articulate why diseases thrive in certain places.
- 3. Summarize the impact of climate change on the spread of disease.

4. Use data to create a display that shows changes in weather conditions in one particular climate where disease lives.

Key Vocabulary

bacteria	climate	disease	fungi	greenhouse gas	vector
n. Tiny living organisms with only one cell.	n. The usual weather conditions in a place over time.	n. A condition that causes harm to a living thing. A sickness.	n. A plant-like living thing that cannot make its own food.	n. Any gas in the earth's atmosphere that traps heat.	n. An organism that carries disease.

Pro Tip Before you begin your planning, we suggest you read this teacher's guide, the student Mission Log and that you skim the online course to become familiar with the content. If you want to build your own background knowledge on the impact of climate change on disease spread, you can complete the online module as a student.

At-A-Glance

The table below provides an overview of how you could implement this project. Students can either work with a partner and complete this project at their own pace or teachers can lead students through the content as a class. Our hope is that all of these materials provide additional opportunities for kids to explore the content, answer the driving question and apply it to the take action project at the end. Of the unit

Module	Description	Activities
1: Your Mission 1-2 Days	Students are introduced to their "Stop the Spread" mission and are introduced to the idea that climate change has many harmful effects. One of the lesser known effects being increased disease spread.	 Online: Mission introduction. Take a look at the story of one patient impacted by Lyme Disease. Explore some of the harmful effects of climate change and start to think about how it is connected to disease spread.
2: Curiosity 1-2 Days	Students define curiosity and practice generating curiosity questions. To further practice curiosity, students engage in a curiosity challenge. They conclude the model by reflecting on how they demonstrate curiosity through the creation of a curiosity self-portrait.	 Online: Students learn the meaning of curiosity and generate curiosity questions. Students engage in the "Glitter Challenge," as a way to practice exercising curiosity.

		• Students reflect on their own curiosity and create a curiosity self-portrait
3A: What are Different Types of Diseases and How Do They Spread? 2-5 Days	Students dive into learning about diseases including what they are, how they spread and where they live. They learn about pathogens and vectors, and will also explore different types of diseases found around the world. Students will learn about the difference between weather and climate and how different diseases thrive in certain climates. To better understand these concepts, students will take a virtual field trip to meet Professor Camilo Mora, who will guide students through thinking about disease spread and how a changing climate can impact disease.	 Online: Engage in interactive activities and reading to explore what diseases are, how they spread, and why they favor certain climates. Virtual field trip to meet Professor Mora, scientist and disease expert. Hands on: Make a Model Vector: Students create a model of one disease-carrying vector, the tick, using self-selected materials. Students label the parts of the tick's body. Disease Personality Cards: Students will create "Disease Personality Cards" that include an illustration, along with essential information related to disease.
3B: What is Climate Change and How Does it Impact the Spread of Disease? 2-4 Days	Students learn how human activities, like burning fossil fuels are trapping greenhouse gasses in the atmosphere and causing climate change. They learn about the effects of climate change, and further explore how climate change is influencing disease spread. They return to virtually visit Professor Mora and hear some real world examples of how climate change is impacting disease spread.	 Online: Examine climate change; what it is, why it is happening, and how it is impacting the spread of disease. Virtual Field Trip to hear from Professor Mora some real world examples for how climate change is impacting disease spread. Hands on: Then and Now Weather Report: Students explore historical weather data for one region in which one of the diseases they have learned about, Lyme disease, thrives. Students create both a historical weather report, and a current weather report, along with a graph that illustrates how the weather has changed over time.
3C: What can be Done to Help? 2-4 Days	To begin, students explore the question of whether or not climate change is possible. They'll consider people's willingness to make changes to their daily lives, learn about some examples of countries that have had great success, and navigate some of the reasons why shifting away from fossil fuels is challenging. Students will learn what individuals and groups are doing to help with the problem. Students will create a Stop the Spread game in which they'll challenge themselves to take individual actions to help fight climate change. Then, they engage in a debate over whether it is better to spend resources and energy to fight climate change,	 Online: Students learn about the many individual and collective actions people are taking to fight climate change. Prepare a case and engage in a debate. Select a topic for the Take Action Project. Hands on: Create a Stop the Spread Game: Students will generate a list of individual actions they can take to fight climate change. Then, they'll use these actions to create a game as a fun way to track their actions.

	or rather focus on developing new treatments for disease. Students conclude this module by picking the focus of their take action project.	
4A+4B: Take Action Project: Write a Song 3-6 Days	Students will write an original song that will either teach others about the impact of climate change on disease spread or compel them to take action. They'll use tools from professional songwriters to create their original songs. Virtual Field Trip: Students will meet music educators and songwriters, JuanMa Sanchez and Kelsey Rodrigues from New York. Kelsey and JuanMa teach students all about songwriting. Students learn how to come up with a great song idea, craft verses and a chorus, and write catchy lyrics.	 Online: Virtual Field Trip: Meet JuanMa Sanchez and Kelsey Rodriguez and learn key songwriting strategies to use in their final project. Hands on: Write a Song: Students write their original songs
4C: Share & Reflect 1 Day	Students present their original song live to an authentic audience to teach the audience about the impact of climate change on disease spread or compel them to take action Finally, students will reflect on what they've learned about curiosity and how they can extend those skills to other areas of school and life.	 Hands on: Share: Students share their song with an audience. Reflect: Engage in personal reflection (1-1, small group, whole group) to reflect on ways to use curiosity beyond the scope of this project.

Sample Lesson Flow

This project could be done in as little as 1-2 weeks with several full days devoted to project-based learning or as many as 4 weeks depending on how much time each day teachers allot to the project and how much depth they choose to explore with each activity. The below lesson sequence is designed to be a flexible jumping-off point for teacher planning and should be modified based on student need and teacher discretion.

Category	Objective and Description	Materials Needed	Standards Alignment	
Invest				
Module 1: What's the Problem: Introduction to "Stop the Spread" (1-2 Days)				
1-1	Your Mission: Slow the Spread of Disease by Fighting Climate Change.	Project Module	Preparation for:	

	 Objectives: Build investment in the Stop the Spread project. Explain that the mission of the Stop the Spread project is to educate others about how climate change impacts the spread of disease, or compel them to take action. Explain how the problem of climate change is connected to the spread of disease. Methods: Intro Video: Watch the intro to the project video to build investment about the problem. Songwriting: Preview the songwriting take action project through a short intro video. Mission Log: Explain that students will use their Mission Log to write down important information that will help them with their project. 	 Video Mission Log 	3-ESS2-2. Obtain and combine information to describe climates in different regions of the world. <i>Preparation for:</i> 4-ESS3-1. Obtain and combine information to describe that energy and fuels are derived from natural resources and that their uses affect the environment
1-2	 The Impact of Disease Objectives: Identify the cause of Lyme disease. Describe the impact that a serious disease, like Lyme disease, can have on the life of a patient. Methods: Did you Know: Read the "did you know" fact together. Activate prior knowledge by asking students to share what they know about different diseases. Video: In advance of the video, prepare students to make observations about how Lyme Disease is spread and what some of the effects of Lyme disease are. 	 Project Module Video Mission Log 	(CC) Cause and effect relationships are routinely identified and used to explain change. <i>Preparation for:</i> 4-ESS3-1. Obtain and combine information to describe that energy and fuels are derived from natural resources and that their uses affect the environment
1-3	 How is Disease Spread Connected to Climate Change? Objectives: Make observations about the global temperature over the past 140 years. Describe multiple effects of rising global temperatures on the earth. 	 Project Module Video Mission Log 	 (CC) Cause and effect relationships are routinely identified and used to explain change. (cc) Patterns of change can be used to make predictions

End of Preview

If you want to see the rest of the teacher's guide, sign-up for a free-trial.

