

# Green Ninja

A Middle School Science Curriculum



The creators of Green Ninja bring you an NGSS-aligned science curriculum that helps engage students around creating solutions that make the planet cleaner and healthier.

## WHAT IS INCLUDED?

Green Ninja's comprehensive middle school science curriculum helps students use life science, physical science, earth science and engineering design topics to create a cleaner and healthier world. It provides engaging hands-on activities based on the latest academic research regarding student motivation. Student projects build fundamental science and engineering skills that foster the connection between home, school and their community.

The student experience is guided by the Green Ninja character and storyline that includes Green Ninja videos and games. The curriculum also uses storytelling as an important method of communication and guides students towards telling their own stories in writing, through film, and using other digital communication tools.

In each unit, students are given challenges that center around solving an environmental problem that is important and relevant to their community. By working on real-world problems that extend outside the classroom, the curriculum aims to provide a stronger connection to students' lives.

Many of the Green Ninja projects use real-time data and web and video technologies to solve problems and design solutions. The development of data literacy and computational thinking skills leverages student interest in new technology and provides students with insights into future career opportunities.



## TEAM

The Green Ninja team is a collaboration between scientists, educators and artists, and our team strives to create educational materials that help schools improve how they teach science, while also inspiring student agency around environmental topics. Green Ninja partnerships include the National Science Foundation, NASA, the Bay Area Environmental STEM Institute, and local schools.





### PILOT NGSS CURRICULUM IN YOUR CLASS

Our materials are developed using the preferred NGSS integrated model. Embedded throughout each unit are hands on activities, games, and a culminating experience. If you are interested in piloting materials in your class during the school year, we are offering the following units below. Please contact us at [info@greenninja.org](mailto:info@greenninja.org).

## GRADE 6

Grade 6 offers six units designed around the theme of creating sustainable homes for people, plants and animals.

**Unit 1 Energy and Climate** Use energy concepts to understand heat transfer in homes and on Earth

**Unit 2 Home Energy** Use engineering design concepts to create and test a home energy conservation plan

**Unit 3 Weather and Climate** Collect and analyze weather and climate data from three cities

**Unit 4 Protecting Plants and Animals** Protect a plant or animal species from climate change

**Unit 5 Reducing Pollution and Waste** Create an action plan to reduce pollution by tracking the Earth's systems

**Unit 6 Scientific Storytelling** Create a short film on a climate solution and submit to a film festival

## GRADE 7

Grade 7 offers six units designed around the theme of the Earth's resources and developing strategies and experiences to conserve these resources.

**Unit 1 Minerals** Dissect a phone to understand its lifecycle of precious metals and minerals

**Unit 2 Petroleum** Students create a film about their family's transportation conservation

**Unit 3 Food** Students prepare a meal for their family by understanding energy transfer

**Unit 4 Soil** Develop a composting system and learn about the importance of growing food

**Unit 5 Water: Life and Danger** Design solutions to flooding and drought by learning about the water cycle

**Unit 6 Ecosystems** Write a letter to congress sharing plans on how to protect an ecosystem

## GRADE 8

Grade 8 offers six units designed around the theme of imagining and creating sustainable cities for the future.

**Unit 1 Exploring Early Earth** Create a computer animation to simulate how the planet has evolved over time

**Unit 2 Evolving Life on Earth** Develop stories about life on Earth through fossil records

**Unit 3 Earth from Space** Create maps of human influence through satellites observations from space

**Unit 4 Humans and Life** Create case studies on human influence through evolution

**Unit 5 Transportation** Develop new methods of transportation to reduce human impact

**Unit 6 Future Energy** Collaborate to create a physical/electronic model of a sustainable city in the future