



OUT-OF-SCHOOL SETTINGS | GRADES 3-5

Go Green: Engineering Recycled Racers

Unit Overview

In this unit, India and Jacob; a fictional, world-traveling brother and sister duo; visit Senegal, where they learn about creative reuse and recycling. India and Jacob guide kids through the engineering activities as they consider items that would ordinarily be discarded and use them to engineer their own toy cars. Kids test and improve their designs to get them ready to compete in the Recycled Racer Rally.

Engineering Application/Unit Goals

Kids will use the steps of the Engineering Design Process as they become green engineers and design racers made from recycled materials. Green engineers think about how to solve problems in ways that prevent harm to the environment. In this unit, kids learn about the basic parts of a car, including wheel systems, to send their recycled racers down a multisurfaced track.

Engineering Adventures engages learners in grades 3-5 in fun, creative problem solving. Eleven hands-on units are low-cost and flexible to meet the time and budget constraints of out-of-school settings, including afterschool and summer camp. Each unit centers on meaningful, open-ended problems with a global context. Learners find out more about the role engineering plays in their lives and the world around them as they're introduced to real engineering challenges and asked to design solutions with an engineering design process. Throughout each unit, kids learn to collaborate, communicate, solve problems, and share their solutions with their peers.



Unit Map

Prep Adventure 1: What is Engineering?

Kids engineer a tower and are introduced to the Engineering Design Process as a problem-solving tool.

Prep Adventure 2: What is Technology?

Kids explore the idea that they are engineers who can design and improve technology.

Adventure 1: Let's Get Rolling

Kids build and test two wheel systems and see how well other wheel materials roll.

Adventure 2: Scrap Market Engineering

Kids think about how to use recycled materials as car components and experiment with different wheel designs.

Adventure 3: Recycled Racer Track

Kids make the track for the Recycled Racer Rally.

Adventure 4: Create a Recycled Racer

Groups use what they have learned from testing and from other groups to begin engineering their own racers.

Adventure 4a (Optional): Air Power

Groups are introduced to the idea that they can use air and sails to power their cars.

Adventure 5: Improve a Recycled Racer

Groups improve their racers and make sure they are ready for the Recycled Racer Rally.

Adventure 6: Engineering Showcase

Kids present the racers they engineered and share their knowledge of the Engineering Design Process.

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