Community Designers

Primary Curriculum	Grade 5
Supplemental Curriculum	Grades 4–5+
Notes	Standard unit/refill kit comes with enough materials for 30 students.

Description

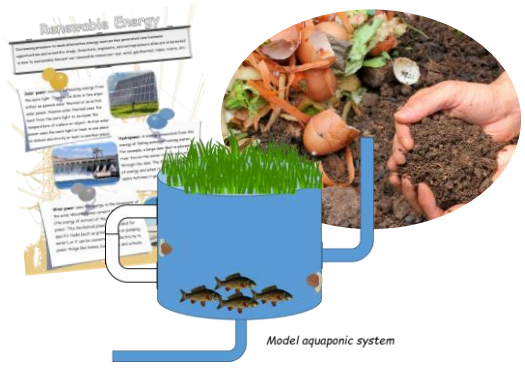
How is my community part of the living ecosystem?

What does your community need for everyone to thrive? Homes? Parks? Food? Technology? Explore ways to balance community, technology, and sustainability as through the stories of Sean, Scott, Stacy, and others.

Using the overarching phenomenon of designing communities that benefit all living organisms, students will explore the different connections that exist between the living organisms and non-living components in local and global ecosystems as they ask themselves: *"How can we create equitable communities that provide opportunities for everyone and use technology in a way that benefits humans and the planet?"*

Main Investigations

What Do I Need?
Exploring Ecosystems



Model aquaponic system

Design Your Community

Number of Lessons*

Full unit – 25 lessons
Supplemental program – minimum 5 lessons

**Lesson = 30–40 min. block, 50% of full unit lessons can be delivered in non-science classes*

Best Suited For

- Classroom science instruction

Overarching Enduring Understanding

How can we create equitable communities that provide opportunities for everyone and use technology in a way that benefit humans and the planet?

Number of Lessons*

Full unit – 25 lessons

Supplemental program – minimum 5 lessons (composting investigation occurs over 3 weeks)

**Lesson = 30 – 40 min block, 50% of full unit lessons can be delivered in non-science classes*

FLOW OF INSTRUCTION

Introductory Investigation: How Far Away Is It? (research investigation, occurs during week 1)

Note: This introductory investigation serves two purposes—it generates student excitement and student wonderings for the unit ahead and also enables the teacher to assess student foundational knowledge and understanding around mapping and other related skills.

In this investigation students must determine the distance of various supplies (food, water, energy, etc.) and services (schools, hospitals, stores, etc.) from a given location (either school or home). After students have had a chance to assess their neighborhood, and watch a few of the suggested videos, the class will have a group discussion/brainstorming around what they believe goes into designing a neighborhood that provides everything necessary for the community that lives there.

Investigation: What Do I need? (hands-on and mini research project (concurrent), occurs during weeks 2-5)

In this four-part investigation students explore what and why they need various things to develop a just and sustainable neighborhood. This work will serve as preparation for the final design project.

A: Food for Thought (hands-on investigation, occurs during weeks 3–5)

In this hands-on investigation students explore some of the details of the food production cycle through agricultural entrepreneur stories and a hands-on composting investigation.

B: Water Wheel (research project, occurs during weeks 3 and 4)

Students develop an overall model for the movement of water throughout Earth's zones and compare water availability between their region and a region with a different climate.

C and D: I Need More Power & Can I Get Some Service Here? (group discussions, occur during week 4 or 5)

For this part of the investigation students participate in a series of guided discussions, supported by suggested readings and videos, to examine what a community might need in terms of energy supply and

Design Project: Design Your Community (summative challenge, occurs during weeks 6–8+)

Building off the knowledge they have amassed during the unit students must complete the following summative challenge.

In small groups students will design their neighborhood with the following goals:

- Spend as much of their budget without going over.
- Balance available food, water and population
- Facilitate strong community connections.

At the end of the project students will present their neighborhood design, discuss the specific features, and compare trade-offs made by other groups.

Overarching Enduring Understanding

How can we create equitable communities that provide opportunities for everyone and use technology in a way that benefit humans and the planet?

Number of Lessons*

Full unit – 25 lessons

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FLOW OF INSTRUCTION

5-LS1-1

Support an argument that plants get the materials they need for growth chiefly from air and water.

5-PS3-1

Use models to describe that energy in animals' food (used for body repair, growth, motion, and to maintain body warmth) was once energy from the sun.

5-LS2-1

Develop a model to describe the movement of matter among plants (producers), animals (consumers), decomposers, and the environment.

5-ESS2-2

Describe and graph the amounts of saltwater and fresh water in various reservoirs to provide evidence about the distribution of water on Earth.

5-ESS2-1

Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact**.**

5-ESS3-1

Obtain and combine information about ways individual communities use science ideas to protect Earth's resources and environment.

3-5-ETS1-1

Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.

3-5-ETS1-2 Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.

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Design Project: Design Your Community (summative challenge, occurs during weeks 6–8+) (5-ESS3-1, 3-5-ETS1-1, 3-5-ETS1-2)

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