

Open Space for Everyone

by Richard Hoonakker

Students will be...

Recently an abandoned set of industrial buildings, in the vicinity of your school, has been torn down. Redesign the space that these buildings occupied so that it considers the needs of the city, its citizens and the environment. Students will be redesigning the open space to meet the needs of the city and its citizens while remaining ecofriendly.

Through engaging in this challenge, students will learn...

Utah Biology Standards

Students will understand that living organisms interact with one another and their environment.

Objective 1: Summarize how energy flows through an ecosystem.

Objective 3: Describe how interactions among organisms and their environment help shape ecosystems. (Standard 1)

Next Generation Science Standards

Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem. (MS-LS2-1)

Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems. (MS-LS2-2)

Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations. (MS-LS2-4)

Evaluate competing design solutions for maintaining biodiversity and ecosystem services. (MS-LS2-5)

Common Core Standards

Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims. (CCSS.ELA-Literacy.WHST.9-10.1.c)

Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the usefulness of each source in answering the research question; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and following a standard format for citation. (CCSS.ELA-Literacy.WHST.9-10.8)

Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grades 9-10 topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively. (CCSS.ELA-Literacy.SL.9-10.1)

Evaluate a speaker's point of view, reasoning, and use of evidence and rhetoric, identifying any fallacious reasoning or exaggerated or distorted evidence. (CCSS.ELA-Literacy.SL.9-10.3)

Lesson 1

In this lesson, students will be asked to think and write about the things they would like to have if they had complete control over designing a blue print for an open space. Students will use what they wrote to create a diagram of their personal open space. Students will work together in small groups to examine pictures of various outdoor spaces. They will consider the requirements of maintaining each space. Finally, they will examine a picture of the open space they will be designing and identify items from the previous outdoor space pictures they might like to include in the new space. (115 minutes)

Lesson 2

In this lesson, students will work in small groups to interview one of the three users (City Developer, Neighborhood Resident, and Environmental Conservationist) and create an empathy map. Students will use their empathy map to generate a Point-of-View (POV) statement. (120 minutes)

Lesson 3

In this lesson, new student groups will be created so that there is a representative from each of the invested individuals (City, Resident, and Environmental Conservationist). Students will brainstorm ideas for a solution while considering the information on their empathy map and POV statement.

Lesson 4

In this lesson, students will join new groups. Each group will consist of a three members, each member representing a different user. Student groups will design an open space layout that considers the needs of each of the three users.