GREEN REVOLUTION

NSF

About the Series

Coming up with better ways to get where we need to go and power the lives we live requires development of new technologies, along with research to help us minimize the impact of these technologies on our environment. The overall goal of this series is to encourage people to ask questions and look beyond fossil fuels for innovative solutions to our ever-growing energy needs. Interest in science and technology provides the necessary foundation for our future in a world powered by clean energy. The series also provides insight into what careers in science, engineering and other topics related to clean energy technologies are really like.

In this Episode

Lisa Van Pay of the National Science Foundation meets Will Lark, an MIT graduate student working on the CityCar project. The two discuss the technologies that make this vehicle unique and explore the relationship between art, science and design. The CityCar team hopes that their ideas will someday be part of the solution to problems common to many cities: pollution, traffic and lack of green space. This story effectively illustrates the engineering design process, allowing the viewer to see how researchers identify problems, brainstorm to come up with new ideas, build models to represent a possible solution and test them to see if they will really work, and repeat this process until the original goal is attained or a new way of thinking emerges. Will also describes how he became interested in design and the path he took to become an engineer.

Concepts

- Materials, tools and machines help us invent and construct things to solve problems
- Design is an iterative process that involves modeling and optimizing
- Transportation technologies move goods and people from one place to another

Content Standards

Technology/Engineering
Grades 6-8*

2.1 Identify and explain the steps of the engineering design process
2.3 Describe and explain the purpose of a given prototype
6.2 Given a transportation problem, explain a possible solution using the universal systems model

Smart Cities Research Group at MIT

The research of Bill Mitchell, head of the Smart Cities group, focuses on intelligent, sustainable buildings, mobility systems, and cities. It explores the application of new technologies in enabling urban energy efficiency and sustainability, enhanced opportunity and equity, and cultural creativity.

The group is housed at the MIT Media Lab where unorthodox research approaches allow lab members to envision the impact of emerging technologies on everyday life—technologies that promise to fundamentally transform our most basic notions of human capabilities. Lab designers, engineers, artists and scientists in close to 30 research groups work together on more than 400 projects that range from neuroengineering to how children learn to developing the city car of the future.

*Based on Massachusetts Science and Technology/Engineering Curriculum Framework, October 2006