



Planet Activities August-November 2016

Help the Planet

Invention and innovation have been—and continue to be—an important part of the American experience. Today many inventors are working on ideas that will help make our planet a healthier place to live. They are inventing new ways to power our homes, fuel our cars, recycle waste, and conserve water. What is a problem our planet is facing? What type of invention would you make to help solve it? Sketch your invention idea.

Build a Planet-Friendly Building

The building you are standing in was constructed in the 1960s. At that time people did not usually think about the ways a building would impact the environment. In the 1990s the U.S. Green Building Council introduced Leadership in Energy and Environmental Design (LEED). The program encourages the design and construction of planet-friendly buildings. New renovations to this museum are LEED certified, which means the museum is becoming a more “green” building. What type of building do you want to build? What materials will you use to construct it? Test how the different construction materials available here impact the environment.

Help Clean Up the Ocean

Americans throw away more than 30 million tons of plastic each year. While some plastic is recycled, much of it ends up in landfills and in the ocean. Today there is a patch of plastic about

the size of Texas floating in the Pacific Ocean. Using the materials available, how would you create an invention that could remove plastic from the ocean?

Let's Move Water

Water meters (like the one on display in *Spark!Lab*) measure the flow of water through pipes into our homes and businesses. Not all areas of the world have such easy access to water. In many places large quantities of water have to be transported by hand over long distances, often through dangerous areas and over rough terrain. Imagine that this water jug contains many gallons of water and is very heavy to carry. How can you use the materials available to move the jug more easily?

Test Renewable Energy

The promise of clean and renewable energy has driven Americans to tap natural resources to power our homes and cars. Some of today's most promising renewable energy sources capture power from wind, water, and the sun. As energy consumption continues to increase, the need for sustainable or "green" energy production facilities becomes more important. How can you tweak the terrain and layout of this "green" energy farm to produce as much energy as possible?

Power Up a Solar Tree

Edward Weston received the first patent for the solar cell in 1888. In the years since Weston's patent, solar cells have appeared on everything from calculators to rooftops to satellites. (Look for solar cells on display in *Spark!Lab*.) Inventors continue to improve on the efficiency of solar cells while also working to make them more flexible and attractive. Test out the solar leaves on the tree. What happens? How can you arrange the solar leaves on the tree to power different devices, while still making sure the tree looks good in a yard or a park?

Upcycle e-Waste

Around 60% of all electronic devices end up in landfills, both in the U.S. and in other parts of the world. Here in *Spark!Lab* we try to use salvaged electronic waste, or e-waste, in our activities. Things we can't reuse are recycled. Can you combine parts of old office equipment with the building toys provided to create a prototype or model of an invention? What problem will your invention solve?