

# Lesson Plan - Renewable and Non-renewable Sources of Energy

**Subject:** Science (7)     **Chapter:** Work and Energy     **Topic:** Renewable and non-renewable sources of energy

## **Extended Lesson Plan 2:** Problem-Solving

(This Problem is an extended part of the project work that students have already done on Energy)

Once students have explored about different types of energy, units of measurement, have analyzed the pros and cons of renewable and non-renewable energy and have worked on the reducing school electric bill, then students will be given some set of problems to choose from:

### **Problem 1:** Street Light

Most street lights are still lighting during day time which results in wastage of electricity. So create a plan, a prototype/device to solve this problem.

Students can use Arduino UNO & mBlock programming and use different sensors to create the solution for the given problem.

Also, prepare a presentation on how the entire solution can be actualized with minimum changes in the current infrastructure.

### **Problem 2:** Transportation

As per IPCC 2014, greenhouse gas emissions from the transportation sector primarily involve fossil fuels burned for road, rail, air, and marine transportation which amounts to 14% of the global greenhouse gas emissions of 2010. Almost all (95%) of the world's transportation energy comes from petroleum-based fuels, largely petrol, gasoline and diesel.

We all know that energy can neither be created nor destroyed but only changed from one form to another, this principle is also known as the law of conservation of energy. Using this principle design a solution model/prototype which will help to reduce the emissions of greenhouse gas from the transportation sector from your place.

You can create a simulation/prototype to demonstrate how your solution model will help in reducing emissions in your area. You can use any application and tools of your choice however a few are suggested like Arduino, mBlock, Scratch, Python, Spreadsheet, etc.