Project Yellow Bus

Elementary School Lesson Plans

Mission

Project Yellow Bus seeks to educate the private and public sector about renewable energy. It aims at educating elementary school students about the basics behind traditional renewable energy resources, and introduces Biodiesel as a renewable and valuable resource for a sustainable future. The project targets the promotion of critical thinking about substituting traditional nonrenewable resources for renewable ones.

Objectives

- Provide outlined and detailed lesson plans and activities centered around specific renewable energy resources
- Introduce students to the basic concepts behind traditional renewable energy resources.
- Introduce the concepts behind Biodiesel, and allow students to accept Biodiesel as a feasible renewable fuel source.
- Promote University of Colorado at Boulder Education Department and student involvement in the implementation of the program.
- Invite schools in the Boulder Valley School District and other communities to implement the program.

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Instructors Handbook

The Instructors Handbook is a comprehensive guide to introduce the instructors to the basic renewable and nonrenewable energy sources discussed in the curriculum. It introduces the concepts of:

- Energy
- Fuel
- Nonrenewable resources
- Fossil fuels
- Oil
- Petroleum
- Coal
- Natural gas
- Renewable resources
- Wind power
- Hydroelectric power
- Solar energy
- Biomass
- Biodiesel

The handbook provides definitions and explanations to how each source generates energy as well as a mention of related issues and suggested topics for further reading.

Student Activities

Project Yellow Bus is five-week, or more appropriately, a five-session curriculum plan for grades 1st to 5th, and a two-week, or two session, plan for Kindergarten where each activity is designed for a one hour a week class session.

The two-week lesson plan for Kindergarten is focused on teaching students about types of renewable energy and energy uses though the implementation of images and art.

The five-week curriculum for grades 1st to 5th are partitioned in the same way. The first week focuses on an introduction to renewable and nonrenewable energy resources. The following three weeks focus on solar, wind/water, and biodiesel respectively, and the last week revolves around critical thinking and a review of the concepts learned throughout the unit. The activities involve scientific investigation, writing and reading and the use creative and critical thinking. These are different for each grade, and the level of complexity among grades increases.

The document is structured by grade level, and the lesson plans are divided by weekly topic. Each weekly lesson plans includes a classroom curriculum, which are the topics that should be addressed by the instructor, and a supporting activity. Each lesson plan also includes the Colorado State Standards that have been considered appropriate to fit the activity.

Activity Chart

The following is a chart that illustrates the distribution of student activities by theme and grade level.

	Intro	Solar	Wind/Water	Biodiesel	Closing
K	Energy Mobile; Identification of energy uses (2 sessions)				
1st	Picture Booklet	Drying fruit	What is wind?	Chain of events	Trivia Game
2nd	Renewable energy banners	Color absorption and solar energy; global warming	Wind Farm	How do you get to school?	Picture Trivia Game
3rd	Bumper Stickers	Water purifier	Sound like water, move like wind	Plant Study	Energy Lists
4th	Comparison of Energy sources poster	Creation of a solar water heater	Can water pressure influence water flow?	Grease List	Editorial Cartoon
5th	Comparison of energy sources flyer	Creation of a solar oven	See the wind	Around the US with biodiesel	Ideal Town