ozobot

CLEAN ENERGY CRUISE

Essential Question/Summary
Help Ozobot collect all of the clean energy types while avoiding the "dirty" energy types.

Information
It may be helpful to give the students an introduction, explaining what energy is and how we define clean and dirty (or non-renewable energy). It could also be presented as a research project. Students can be given the handout and then have to look up which energy sources are good and which are bad.

Prerequisites
Students should be familiar with directional OzoCodes

Grouping
The activity can be done individually or in groups of two

Materials
- Markers for drawing OzoCodes
- Handouts (map and solution are provided below)
- Ozobot Bit

Age/Grade Level
Grades K - 12

Duration
Approximately 30-45 minutes.

Topics
Computer Science, Earth Science

Academic Standards
CCSS.MATH.PRACTICE.MP1 Make sense of problems and persevere in solving them.
ISTE 4.c Develop, test and refine prototypes as a part of a cyclical design process

Vocabulary

- *Clean energy:* renewable resources, which are naturally replenished on a human timescale
- *Dirty energy:* non-renewable resources that emit CO_2, which negatively impacts climate. They also create co-pollutants which seriously threaten public health.

Overview

This Earth Day activity allows students to learn about different forms of energy, while brushing up on their Ozobot programming skills! Students should travel to the clean energy stops while avoiding the "dirty" energy. They may start and finish on any of the top line-ends, as long as they do not pass through a "dirty" energy intersection.

Related Activities

Other holiday activities can be found in the Activities section on the Ozobot lesson library portal.ozobot.com/lessons/type/activity.

ACTIVITY PLAN

This activity will allow students to think critically to create a correct path for visiting each clean energy station, while avoiding the dirty energy sources.

Instructions:

1. Hand out the printouts to the students (one per pair or student)
2. Explain that they will fill in the OzoCodes into the white slots on the map to guide Ozobot to each clean energy stop, exactly once, in any order; however, they may not move through any dirty energy intersections.
3. They can start and finish anywhere on the top of the map, as long as they start/end on one of the line ends.
4. Instructor can explain to students which energy sources are clean or dirty, or they can have the students research the information on their own.
5. Hand out the Ozobots and let students test their solutions.

Notes:

It may be helpful to give each student/pair a sheet of OzoCodes (files.ozobot.com/stem-education/ozobot-ozocodes-reference.pdf) and an extra handout so they can find a second solution.

SOLAR

GEO THERMAL

WIND

OIL

NATURAL GAS

COAL

HYDRO

ozobot CLEAN ENERGY CRUISE

End Start

Geo
Thermal Wind Oil

Solar

Natural
Gas Coal Hydro

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Clean Energy Cruise – Suggested Solution