**MAKE ENERGY BOARD GAMES**

**Lesson Description:**
Students will create a Candyland style board game to show their knowledge about energy use. They should include renewable and nonrenewable energy sources, energy saving tips, and energy wasting habits.

Eco-fact: the energy output of 1 kilowatt of solar energy unit is roughly equivalent to the burning of 170 pounds of coal, which releases 300 pounds of carbon dioxide into the atmosphere.

Before creating board games:

* Some background information on sources of renewable and nonrenewable energy will be needed to create board game.

Energy sources can be divided into two groups: renewable and non-renewable. Non-renewable energy sources, such as fossil fuels, are rapidly being consumed and are causing considerable harm to the environment. Coal, oil and natural gas are non-renewable energy sources. However, renewable energy sources are environmentally friendly and replenishable. Renewable energy sources naturally renew their energy supply. They will never run out of energy. Renewable energy sources consist of wind energy, solar energy, geothermal energy, biomass (from plants), and hydropower from water. Both renewable and non-renewable energy sources can produce electricity and hydrogen, which are secondary energy sources.

* Class will develop a T-chart. Columns will be titled: energy saving tips and energy wasting habits.
* Class will develop a T-chart. Columns will be titled: renewable energy and nonrenewable energy.

Procedure for creating board games:

* Students should be given an energy related quest, journey or scenario to develop as the premise for their game. For example, players could be travelling along a path starting at a dirty, polluted city called Smogville and ending at a clean, healthy city called Greenville. On the path players encounter spaces with environmental do’s and don’ts.
* It should be a game where players can roll dice to progress down a path around the board. (Note: a game where cards are drawn generates more paper use).
* Players can use recycled materials as playing pieces such as caps from milk jugs or old buttons.
* Students will draw a path of spaces large enough to hold playing pieces. To keep the game design and play manageable teacher should determine approximately how many spaces the game should contain. 20- 30 spaces.
* Students should identify the start of the path and mark it and end of path and mark it. For example, the start could be surrounded by the dirty city of Smogville and the end can be in the pristine city of Greenville. As players move down the path making green choices, the environment on the board can be getting increasingly clean.
* Spaces along the path should contain positive and negative prompts relating to energy use and the theme of the game:
* positive prompt samples:
* Shut off lights when leaving room. Move ahead 2 spaces.
* Remind mom to turn down thermostat at bedtime. Take an extra turn.
* Use rechargeable batteries. Go ahead 1 space.
* Negative prompt samples:
* Leave television on when leaving room. Lose next turn.
* Don’t shut off water while brushing your teeth. Go back 2 spaces.
* Keep refrigerator door open for a long time. Go back 3 spaces.
* Students will make a rough draft of game and test out the design by playing with classmates to determine if the spacing works.
* Make final draft of game.

After creating board games:

* Students can enjoy playing their own board games with classmates.
* Students can swap board games with each other.

Students will be grades on

Neatness- 20

Energy Vocabulary- 40

Creativity- 20

Spelling- 20