

Activity- The Energy Choices Game - Group

Purpose

Energy is a critical resource that is used in all aspects of our daily lives. The world's supply of nonrenewable resources is limited and our continued use of fossil fuels is negatively affecting our environment. We need to help in any way we can. When we make personal decisions we affect the future of energy in our world. Making smart energy decisions today will prove beneficial later.

GOALS: Get to the end of the board in the fastest time, saving the most energy, by making the smartest choices.

This is a **TEAM EFFORT** where groups are competing against each other, not the individuals within the game.

Equipment (for each game)

- “The Energy Choices Game” Board
- Game Pieces/ Pawns
- Game Cards
- Energy Use Tally Sheets
- Calculator
- Money

Set-Up

Break up into groups of 4-5 students each. Each group will play a separate *Energy Choices Game*.

Choose a banker: One student will be assigned the role of the banker. The banker is responsible for accepting/distributing money and gas cards. A calculator will be necessary. The banker plays a critical role in the game as he/she ensures the fairness of competition as well as keeps track of all monetary and energy resources.

Choose your Game Pieces: Each player should choose a game piece and put their piece on the start square.

Hand out the money:

Each player or team should begin the game with \$50,000. The banker should hand out packets of money to each player consisting of the following bills:

- 3 \$10,000 bills
- 2 \$5000 bills
- 6 \$1000 bills
- 7 \$500 bills
- 2 \$100 bills
- 4 \$50 bills
- 5 \$20 bills

Pick your System and Transportation Cards: Each player should pick an “Energy System” and “Transportation” Card.

Your **Energy System Card** tells you the size of your house, source of electricity, source of heat, type of cooling system, type of insulation, set-up cost (TO BE PAID AT THE START OF YOUR FIRST TURN) and starting annual energy use (TO BE WRITTEN IN THE COLUMN TITLED STARTING ENERGY USE ON YOUR ENERGY USE TALLY SHEET).

Your **Transportation Card** tells you the vehicle that you will use throughout the game (unless you have a choice or reason to pick a new one). Your Transportation Card gives you information on your vehicle such as: average miles per gallon (city and highway) and the number of gasoline cards it takes to fill up your tank.

Roll the die to determine who will go first.

The Play

1. Green Zone: Roll the 8 sided dice to represent driving your car while you are in the green zone and move the number of spaces indicated.
2. Blue and yellow zones: Choose whether you want to drive a car or ride a bike. If you choose to ride your bike, roll a 4 sided die. If you choose to drive your car, roll the 8 sided die. (You MUST choose your mode of transportation before rolling.)
3. Draw the card for the type of square that you land on.
4. Follow the instructions on the card.
5. When you pass a gasoline station:
 - a) If you are driving a car, pay for gasoline and take gasoline cards.
 - b) If you are riding a bike, continue as if there was no gasoline station.
6. Pay for your Energy Use as you pass the energy bill spaces that you come to on this turn.
7. Update your tally sheet if the card you get changes your energy use.

At the end of the game:

1. The game concludes after all players reach the end of the board game OR the supply of gasoline cards runs out OR class time runs out.
2. Pay the carbon tax for fossil fuel energy consumed (\$100 for each gasoline card and 1/3 of the final energy bill)
3. Each player should count their remaining funds and complete the tally sheet. The banker should fill out the group banker tally sheet.
4. Certificates will be awarded to teams for various accomplishments.

Description of Game Cards:

“System” Cards:

These cards describe different housing situations. The card you draw from this pile will determine the size of your house, where your power and heating come from, the type of insulation in your home, your annual home energy bill, and your carbon tax. Write the amount of your energy bill in the TOP LINE OF THE CURRENT BILL COLUMN ON YOUR HOME ENERGY BILL TALLY SHEET

“Transportation” Cards:

The card you draw from this deck will determine the type of vehicle you drive. The card will have information about the vehicle’s gasoline average miles per gallon and the number of gas cards you will have to buy each time you pass a gas station.

“Situation” Cards:

When you land on a ‘**situation**’ square you will draw a card from this deck and you **MUST** follow the instructions. In many cases, the situations that come up apply to all players. If so, all players must follow the direction on the card as it applies to them.

“Choice” Cards:

When you land on a “**choice**” square you will draw a card from this deck and you **MUST** choose one of the options listed on the card. There are two types of choices on the cards. Some choice cards give you a choice between two or three options (i.e. which type of grill do you want to buy?). Others give you the choice to either do something or not (i.e. do you want to add a solar water heater to your home or not?). Follow the directions on the card.

Gasoline Cards:

When you pass a gasoline station you must buy and take the number of gasoline cards as indicated on the bottom of your “Transportation” Card. The price of the gasoline cards is different in each zone of the board. The prices are written on the game board in their zones. At the end of the game you will pay a carbon tax

for each gasoline card in your possession. The game is over if the supply of gasoline cards runs out before players have reached the end of the game board.

Energy Bills:

When you pass an Energy Bill gate you need to pay for your energy at the current price as indicated on the board for each zone. The starting amount of your energy bill (in zaps) is written on your “system” card. Some “situation” and “choice” cards will affect your energy use. You will pay for energy per zap. For example, if your energy use is 1,000 zaps and the cost of energy is \$1 per zap, you will pay \$1,000. If your energy use is 1,000 zaps and the cost of energy is \$2 per zap, then you will pay \$2,000. There is a possibility to have negative energy use, in which case you will be paid (by the bank) when you pass an Energy Bill gate.

Home Energy Use Tally Sheet:

Each player or team needs to keep a tally sheet. On this sheet of paper you will record any changes to your home energy use resulting from a “situation” or “choice” card that you pick up. If a card indicates an increase in your energy use, write the amount the card says your use will increase in the “ADD” column and then ADD that amount to the amount your “CURRENT USE” column. If the card indicates a decrease in your energy use, write the amount in the “SUBTRACT” column and SUBTRACT that amount from your “CURRENT USE” column. When you pay your energy bill always pay the amount at the bottom of your “CURRENT USE” column, multiplied by the cost per zap as indicated in the board.

Discussion Questions

1. What was your group strategy throughout the game?

2. Did all players make it the end of the board?

3. How would you change your strategy if you were to play again?

4. What did you learn about the energy problem?

Banker Tally Sheet

Team Name:					
	Name	Final Energy Bill	Total Money	Number of Gas Cards	Ending Space
Player 1:					
Player 2:					
Player 3:					
Player 4:					
Total:					