



## The Real Game of Life Lesson Plan

Sustainability problems include social, economic and environmental aspects, so there are usually no easy solutions, but rather a diverse set of tradeoffs that we have to understand when we try to solve a problem sustainably. Identifying the factors and conditions that affect people's decision making is an important step toward sustainable solutions.

This 50-minute lesson will allow students to explore several different concepts related to decision-making: tradeoffs, unintended consequences, uncertainty, payback periods, and equity. This game relies on close reading and critical thinking skills.

In this lesson, students begin by addressing the question: "What kind of burger would you choose to eat and why?" This engagement introduces the notion of decision-making about food, energy and transportation in the game. Students are assigned an income and time budget. Then, they make decisions to allocate these in each round. They will find the rules for how to spend their money and time by reading the informational texts provided. There are four rounds to the game and an unexpected "Reality" card follows every round, which adds a new circumstance to the game. Additionally, in each round a discussion question and relevant concept is provided.



**Before beginning:** you may wish to do the lesson, "Saving Green by Going Green" found at <http://sustainableschools.asu.edu>, which focuses on the concept of payback periods using linear equations and graphing.

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**Essential Question: *How do we make decisions, and why does it matter?***

*The objective of this lesson is to introduce concepts related to sustainability decision making*

*At the end of the lesson, students will be able to:*

1. *describe sustainability examples of the terms “unintended consequence”, “payback period”, “tradeoff”, and “uncertainty”.*
2. *explain why there are no perfect solutions to sustainability problems.*
3. *discuss how available resources impact decision making.*
4. *propose solutions that result in a more sustainable outcome for the game.*
5. *compare and contrast the proposed solutions.*

**Standards Addressed:** *Reading Strand 3: Comprehending informational text. Economics Strand 5, Concept: applying economic concepts and decision-making skills & Concept 5: fostering decision making skills*

**Themes:** Systems thinking, tradeoffs, cascading effects, scale

**Skills:** Evidence based thinking, oral communication, research skills, quantitative skills, problem solving skills

### Key Vocabulary

**Tradeoffs:** *a balancing among advantageous and disadvantageous factors; a compromise.*

**Unintended Consequence:** *outcomes that are not the intended outcomes. May be positive or negative.*

**Payback Period:** *the length of time required to recover its initial cost of an investment in terms of profits or savings.*

**Uncertainty:** *not known for sure, subject to change, or unclear.*

**Equity:** *the state, quality or ideal of being fair and impartial.*

**Antibiotic Resistance:** *The ability of bacteria and other microorganisms to resist the effects of an antibiotic to which they were once sensitive. Antibiotic resistance is a major concern from overuse of antibiotics. Also known as drug resistance.*

### Materials Needed

- The Real Game of Life Decision Sheets pdf
- The Real Game of Life Student Worksheet pdf
- The Real Game of Life PowerPoint Slide Presentation pdf (notes embedded)

### Teaching Instructions

#### Advanced Preparation

Before class, review the PowerPoint presentation and print enough handouts and worksheets for the class. The PowerPoint presentation is a guide to teaching this lesson as outlined below. Students should read and complete the *Decision Sheets* as homework, and bring them to class. Alternatively, students could be arranged in groups of three, each assigned to read one Decision Sheet, describe the pros and cons of each decision and help the other classmates fill in the blanks. (Allow 10-15 minutes)

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**Engagement**

Tell students they will be playing a game about decision-making. Using the PowerPoint as a guide, engage students in an initial question about what type of hamburger they usually choose and why. Is their choice based on money, convenience, health, the environment, and/or social reasons?

Share the vocabulary terms. Have them write or say aloud what they think they mean, and why they might be important for decision-making. Did they use these ideas when selecting a hamburger type?

**Exploration and Explanation**

Provide the handouts and worksheets (unless already given as homework) and walk through the rules using the PowerPoint as a guide. If not provided as homework, have the students read the Game of Life Decision Sheets and fill in the blanks however you feel is appropriate for your class. This can be time intensive if students have to read all 3 pages individually.

Play the game, using the Power Point as the guide, pausing on each round to have a discussion about some of the concepts that are highlighted.

Reality Cards:

Card one: changing gas prices due to a natural event — provides uncertainty

Card two: SNAP benefits — wealth distribution in the U.S. provides an example of how society might deal with poverty, also an example of limitations on time, some students will not have the time required to fill out the forms, so won't have access to the extra money

Card three: health consequences to individual — an example of unintended consequences both positive and negative

Card four: health consequences to society — an example of how individual choices may affect the larger population

**Explanation and Evaluation**

Tally the results of individual Eco-Scores, and Savings on their worksheet and record the class scores. Share the EcoScore slide and the last reality card. Have students answer Questions 1-4 on the worksheet. Lead a discussion about the concepts and the game using the final PowerPoint slide questions as a guide.

- Were you satisfied with your choices? Why or why not?
- Would you say you had an acceptable standard of living? Why or why not?
- Were your choices good for your health? For the environment? Why does it matter?
- Is it possible to make the best choice for your standard of living and your health and the environment under many constraints? No; This is the nature of tradeoffs!
- Are you satisfied with the choices you made?

**Elaboration and Evaluation:**

Ask the students for ideas to make up their own Reality Card and a rule that is intended to improve the outcomes on their worksheet. This is question 5 on the Student Worksheet. Are

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their ideas realistic? Discuss ideas and ask students:

- How could rules be changed so **everyone** has a better outcome? Are these ideas possible in real life?

Suggestions: Allow students to 'loan' money to each other (they could even charge interest!), OR offer to use their spare time to run errands – for a fee!

- Offer 'luxury' items, or experiences for the rich – but at a large environmental cost

Optional: Play additional rounds with their new rules!

**Evaluation:**

Have students turn in completed worksheet.

**Homework:** None

**Additional Resources:**

Saving Green by Going Green – Payback period math based activity, found at: <http://SustainableSchools.asu.edu/learn-more/toolkit/supply-chain>

Ecological Footprint explanation video and activity: <http://vimeo.com/71758528>

References for unintended consequences of bike helmet law:

<http://www.sciencedirect.com/science/article/pii/S00145759490006X>

<http://cyclehelmets.org/1241.html>

[http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1368064](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1368064)

References for air quality-related deaths in China:

<http://www.npr.org/blogs/health/2013/04/02/176017887/chinas-air-pollution-linked-to-millions-of-early-deaths>

[http://www.nytimes.com/2013/04/02/world/asia/air-pollution-linked-to-1-2-million-deaths-in-china.html?\\_r=0](http://www.nytimes.com/2013/04/02/world/asia/air-pollution-linked-to-1-2-million-deaths-in-china.html?_r=0)

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