wetheeconomy
20 SHORT FILMS YOU CAN’T AFFORD TO MISS
CURRICULUM CONNECTIONS

This lesson fits in perfectly with units that address curriculum standards in economics, thinking and reasoning, ecology, business, health, science and technology, history, and biology.

SAMPLE STANDARDS ALIGNMENTS

CCSS.ELA-LITERACY.RI.9-10.6 Determine an author's point of view or purpose in a text and analyze how an author uses rhetoric to advance that point of view or purpose.

CCSS.ELA-LITERACY.W.11-12.2 Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.

CCSS.ELA-LITERACY.RH.9-10.2 Determine the central ideas or information of a primary or secondary source; provide an accurate summary of how key events or ideas develop over the course of the text.

CCSS.MATH.CONTENT.HSS.MD.B.5.B Evaluate and compare strategies on the basis of expected values.

CCSS.MATH.CONTENT.HSS.ID.C.9 Distinguish between correlation and causation.

CCSS.ELA-LITERACY.RH.9-10.4 Determine the meaning of words and phrases as they are used in a text, including vocabulary describing political, social, or economic aspects of history/social science.

CCSS.ELA-LITERACY.SL.11-12.1.B Work with peers to promote civil, democratic discussions and decision-making, set clear goals and deadlines, and establish individual roles as needed.

CCSS.ELA-LITERACY.SL.11-12.1.C Propel conversations by posing and responding to questions that probe reasoning and evidence; ensure a hearing for a full range of positions on a topic or issue; clarify, verify, or challenge ideas and conclusions; and promote divergent and creative perspectives.

CCSS.ELA-LITERACY.SL.11-12.1.D Respond thoughtfully to diverse perspectives; synthesize comments, claims, and evidence made on all sides of an issue; resolve contradictions when possible; and determine what additional information or research is required to deepen the investigation or complete the task.

CCSS.ELA-LITERACY.W.9-10.2 Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.

CCSS.ELA-LITERACY.W.9-10.6 Use technology, including the Internet, to produce, publish, and update individual or shared writing products, taking advantage of technology's capacity to link to other information and to display information flexibly and dynamically.

CCSS.ELA-LITERACY.W.11-12.1.A Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences claim(s), counterclaims, reasons, and evidence.

CCSS.ELA-LITERACY.RST.9-10.7 Translate quantitative or technical information expressed in words in a text into visual form (e.g., a table or chart) and translate information expressed visually or mathematically (e.g., in an equation) into words.

CCSS.ELA-LITERACY.RST.9-10.8 Assess the extent to which the reasoning and evidence in a text support the author's claim or a recommendation for solving a scientific or technical problem.
LESSON PREPARATION

• Prepare a monitor with Internet access to screen “A Bee’s Invoice: The Hidden Value in Nature” at www.wetheeconomy.com/films (TRT 6:51)
• Prepare copies of Student Handouts for distribution (1 handout for each group of 4-5 students)
• Prepare a pile of uncooked beans to represent trees for each group
• Prepare “prize” object for each group’s winner (1 prize for each group of 4-5 students)

KEY WORDS AND PHRASES

Conservation, deforestation, exploitation, regulation, environmental policy, green market, natural capital, climate change, ecosystem, community, competition, tragedy of the commons, sustainability

STUDENT OBJECTIVES

• Students will evaluate some of the potential forces causing natural resource depletion and the tragedy of the commons.
• Students will work silently in small groups to expose the necessity and benefits of open communication.
• Students will analyze the various costs and benefits for individuals who utilize common pool natural resources.
• Students will consider various approaches to regulation and conservation of natural resources.
• Students will learn how metaphors can be used to represent larger ideas and issues.
• Students will consider how natural resources affect the viability of our global economy.

REQUIREMENTS

MATERIALS

• Monitor/ projector, and computer with Internet access
• A quantity of at least two “tree” items per student
• A bowl for each group’s central forest of “trees” (optional)
• A quantity of one prize item per group (4-5 students per group)
• Student Handouts: Does Money Grow on Trees? (one handout per group of 4-5 students)

TIME:

• 1 class period

TECHNIQUES AND SKILLS

Vocabulary building, large group discussion, small group work, problem solving, critical and analytical thinking, literary analysis, weighing pros and cons, listening skills, creating solutions, considering abstract consequences, expository and responsive writing.
PROCEDURES

1. Divide the class into groups of 4-5 students each, and instruct students to sit together in their groups. Once students are sitting in their groups, pass one Student Handout out to each group, and have them elect one student to record their results in the chart as they complete the following activity.

2. Provide each group with a pile/bowl of 12 uncooked beans.

3. Explain to the class that each bean represents a tree and that the bowl represents a forest. Then, explain that each student is the head of their own lumber processing company.

4. Tell the class the following:
   - In order to maintain enough profit to sustain itself, each lumber company must process a minimum of one tree each month.
   - Companies that process less than one tree per month go bankrupt. Companies that process more than one tree expand and enjoy increased profits.
   - Instruct the class not to speak during the activity, as each student represents a company that is competing with the other companies – they are not working together to mutually create a plan.
   - The company that is able to process the most trees in each group will receive a prize at the end of the activity.

5. Explain that at the end of each month, any remaining trees in the forest will reproduce itself, resulting in double the number of trees for the start of the following month.

6. Instruct students to begin the first month of tree and lumber processing. Tell groups to have their chosen recorder raise his or her hand to signify that the group has finished the round and recorded their results in the chart. When a recorder raises his/her hand, walk over and double the remaining beans in the group’s bowl to represent tree reproduction. Once every group’s forest has reproduced, instruct them to repeat the activity again for the next month. Repeat again for a total of three months.

   Optional: Between the second and third round, tell the class that global warming has caused a drought, which has caused one tree in each forest to die. Remove a tree from each group’s forest. Then continue with the activity as described.

7. Once all the groups have completed 3 months and recorded results in their chart, instruct students to stop working and direct their attention to the monitor/screen. Play the film “A Bee’s Invoice: The Hidden Value in Nature” (TRT 6:51).
PROCEEDURES CONTINUED

8. After the film, conduct a whole class discussion reflecting on both the film and the assignment, and how they related to each other. Use the following questions to guide the discussion:

- What is the “tragedy of the commons”? How did the activity you completed before the film relate to this concept?
- How did you decide how many trees to cut down in each round? Based solely on observation, how did the other people in your group decide?
- How does society generally reward those who take more? How does it reward those who take less? How does it harm both?
- How did your strategy change throughout the different rounds of tree cutting? What variables affected your strategy?
- What would have been the best way to maximize the number of trees each company processed (profit) and simultaneously maximize the number of trees remaining in the forest (conservation)?
- How might this activity been easier if you were allowed to talk with one another during the assignment? What does this say about the importance of communication?
- What are some natural resources besides trees that are part of the public pool of resources?
- How do natural resources have hidden economic value?
- How does climate affect our economy? What is the effect of global warming on the marketplace?
- What is the overall relationship between nature and economic production?
- What metaphors does the film use to convey its message? What do the bees represent? The bank account where everyone has a debit card?
- Who has rights to our common resources? Do you think usage of these resources should be regulated? If so, how?
- How do we place an economic value on nature?
- The film refers to nature as a “stock market.” What might result in this stock market crashing? How do we avoid this?
- When have there been times in history in which people have drained a particular natural resource? What were the ramifications of this resource being drained?
- We share our natural resources with a global population. What do you think would be the best way to work together with people in other countries to help conserve our natural resources?

9. For homework, ask students to write an expository essay (1-2 pages) that answers the following question: Why is natural capital important in our economy? How does using up natural capital impose a cost on society, and what are some ways we can encourage sustainability to conserve more of these resources? Provide specific examples to support your hypothesis. Note: Students may watch the film again at home by going to www.wetheeconomy/films/, and can incorporate data or information from other sources including films, books, articles, etc.
**STUDENT HANDOUT DOES MONEY GROW ON TREES?**

**DIRECTIONS:** Fill out the following chart as your group completes the activity. Be ready to share your results with the class after you finish the assignment.

<table>
<thead>
<tr>
<th>MONTH</th>
<th># OF TREES IN FOREST AT BEGINNING OF MONTH</th>
<th># OF TREES CUT DOWN DURING MONTH</th>
<th>TOTAL # OF TREES REMAINING AT END OF MONTH</th>
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<tbody>
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After your group finishes the activity, discuss the following questions:

1. If you finished the third round with no trees left, what caused this to occur? Would there have been a way to finish the activity without depleting your forest?

2. If you finished the third round with at least one tree remaining in your forest, how did you achieve this? How could you have ended up with more trees?

3. How did your group's lack of ability to communicate affect the activity? How might it have gone differently if you had been able to speak during and between the rounds?