

# Tragedy of the Commons

Developed by: Jill Queen, Wilkes Elementary & Diane Bedel, Blakely Elementary, *Bainbridge Island School District*

Grades or Range: 3-6

This is lesson 2 of 7 of the educators' [Renewable City Unit](#)

| Lesson 2: Tragedy of the Commons |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Key Questions                    | What is sustainability? How can we help the environment by making sustainable choices?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Length of Lesson                 | 50 minutes x one lesson                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Lesson Summary Description       | In order to help students understand sustainability, students engage in a Tragedy of the Commons activity. During the game, students discuss their ideas about sustainability. In order to track their growing metacognitive ideas about sustainability and climate change, students begin a personal mind map.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Learning Goals                   | <p>Based on National Science Standards, National Core Arts Standards and 4<sup>th</sup> grade Common Core Writing Goals, Students will...</p> <p>Understand:</p> <ul style="list-style-type: none"> <li>The interconnections and interdependency of ecological, social, and economic systems. Demonstrate understanding of how the health of these systems determines natural and human sustainability of local, regional, national, tribal, and global communities. (Washington State ESE Standard 1)</li> <li>The knowledge, perspective, vision, skills, and habits of mind necessary to make personal and collective decisions and take actions that promote sustainability. (Washington State ESE Standard 3)</li> </ul> <p>Be able to:</p> <ul style="list-style-type: none"> <li>Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks. CCSS.ELA-LITERACY.W.4.10</li> </ul> |
| Objective                        | <p>Students will:</p> <p>Participate in a Tragedy of the Commons activity in order to learn more about how their actions can help keep the environment sustainable.</p> <p>Discuss their ideas about the Tragedy of the Commons and sustainability.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                            | Begin a personal Mind Map about Sustainability and/or Climate Change to track their growing understanding of the issues and potential solutions.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Resources & Materials:     | <p><a href="#">Tragedy of the Commons Go Fish! Activity</a></p> <p>Materials:<br/>goldfish Crackers for “fish”<br/>chopsticks for “fishing poles” (one set for each person)<br/>bowls or tin foil dishes (one for each group of four people)<br/>data sheets to track results</p> <p>Resource to view after Tragedy of the Commons Activity:<br/><a href="#">What is the tragedy of the commons? - Nicholas Amendolare</a></p> <p><a href="#">Mind Mapping Activity</a></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Subject Matter Integration | <p>English Language Arts: Written Communication skills. Students use writing to metacognitively reflect on their ideas about sustainable systems.</p> <p>21st Century Communication Skills/Social Studies/Science: The Tragedy of the Commons discussion helps students communicate their ideas and analyze real world issues. Understanding the need for limits as we interact with our environment is critical for helping to sustain our natural populations.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Questions                  | <p><b>Topic questions:</b></p> <ul style="list-style-type: none"> <li>• What is sustainability?</li> <li>• How can we help the environment by making sustainable choices?</li> </ul> <p><b>Association questions:</b></p> <ul style="list-style-type: none"> <li>• Why do changes like the Tragedy of the Commons happen?</li> <li>• How do they happen?</li> <li>• When we notice these changes, why don't human societies stop their behavior?</li> <li>• Does our society reward those with the “most”?</li> </ul> <p><b>Visualization questions:</b></p> <ul style="list-style-type: none"> <li>• Did anyone in your group take too many fish? What was the consequence? Did everyone in your group try to take as many as possible? Why or why not?</li> </ul> <p><b>Transition questions:</b></p> <ul style="list-style-type: none"> <li>• Is it possible to maximize the number of fish caught per person AND the number of fish remaining in the lake?</li> <li>• What are some global commons?</li> <li>• What can people do to use these global commons more wisely?</li> </ul> |
| Procedure                  | Investigation: Students use a <a href="#">Tragedy of the Commons</a> activity to gain a greater understanding of sustainability. The teacher sets up the activity and groups of four students “fish” using chopsticks for goldfish and track the number they catch in a bowl (“pond”) over three years. The teacher helps maintain a silent                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

|            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|            | <p>fishing period and adds goldfish (one fish for each fish which still remains at the end of the year) to their “ponds”. Students track their data (catches) using their data sheet, and then discuss what has occurred after the first three years. They do the activity a second time and even a third (if needed). The teacher allows students to overfish and to investigate ways to keep the pond sustainable. After the activity, students view the video</p> <p>▶ What is the tragedy of the commons? - Nicholas Amendolare and further discuss what we might do to protect the environment.</p> <p>Distribution: The teacher pre-sets tables with materials for the activity before students arrive.</p> <p>Closure: Students begin creating a personal mind map about sustainability and/or climate Change to track their growing understanding of the issues and potential solutions.</p> |
| Assessment | <p>Teacher Checklist (assessed formatively during class):</p> <p>Did each student...</p> <ul style="list-style-type: none"> <li>• Participate in a Tragedy of the Commons activity in order to learn more about how their actions can help keep the environment sustainable?</li> <li>• Discuss their ideas about the Tragedy of the Commons and sustainability?</li> <li>• Begin a personal mind map about Sustainability and/or climate change to track their growing understanding of the issues and potential solutions?</li> </ul>                                                                                                                                                                                                                                                                                                                                                              |