Sustainability & Systems Thinking Lesson Plan
Designed by Eileen Thorsos (May 2013, revised January 2015)
For Duke University’s Trillium Workshops on Sustainability Across the Curriculum

Learning Objectives
At the end of this session, participants will be able to...
• Define sustainability
• Use this definition to connect environment, economics, and equity to sustainability
• Explain the relationship between systems thinking and the field of sustainability
• Use a systems approach to connect their own field with sustainability

Activity Plan
1. Introduce case study.
   • In small groups, look at one related photo. Discuss:
     o Describe what you see in this photo.
     o What does this photo encourage you to think about?
   • Give each group an additional clip of writing connected to their photo.
     o How does this writing shape how you perceive the photo?

2. Introduce systems thinking. As a large group,
   • Define a system: A whole that cannot be divided into independent parts.
     o Note: Components of the system can be considered alone, but they are not independent.
   • Structure of a system: Components & their relationships.
     o Identify components of the system suggested by the images (Each group share their image. Can post on wall or have each group hold theirs up.)
     o Suggest relationships between these components. (Physically connect the images with string. Can tape it to the wall or run string between groups. Or, post on a white board and physically draw connections between them.)
     o What does looking at all of the photos and their relationships encourage you to think about?
     o What is missing from this system?

3. Introduce sustainability.
   • Define sustainability: “Achieving sustainability: Meeting the needs of the present without compromising the ability of future generations to meet their needs.”
   • Sustainability is frequently considered to include three main elements: environment, economics, and equity.
     o Discuss (small groups): How do these three components derive from the definition?
       ▪ Economic: People need financial income.
       ▪ Environment: Natural resources are necessary to meet the economic & equity needs of present and future generations.
- Equity: Access to resources, safe & healthy environment, etc. Current inequities can hinder meeting needs in the future (durable inequalities).
  - Discuss (small groups): How do we see these three components in the case study?
    - Economic:
    - Environment:
    - Equity:
  - Discuss (large group):
    - How does thinking about the system contribute to economic, environmental, and equity perspectives?
    - How do issues/concerns from these perspectives reveal trouble in the system?
    - How does thinking about the system support achieving sustainability?

4. Connect with disciplinarity.
   - Discuss (small groups):
     - How does your field relate to the system in this case study?
     - How does your field connect with sustainability generally?