# Teaching Sustainability Science with Flash Fiction

**Key Questions**
- Based on current trends, what will the world be like in 2050?
- Are we likely to experience a desirable, sustainable future?
- What changes in behavior, possible actions, or public policies are needed to achieve sustainability?

**Overview**
This activity first introduces students to scientific data regarding current trends in environment, society, and/or economics. Students then extrapolate these trends into the future, through the development of short stories set in 2050. These stories should convey more than just an extension of the data, but also communicate the students’ values, desires, and concerns for the possible future the data and their experiences suggest.

**Objectives**
Students will be able to:
- Interpret scientific data, and extrapolate current trends to explore possible future scenarios
- Identify and articulate their values, desires, and concerns for the future
- Explore and exchange ideas about the future with other students

**Materials**
Per working group
- Flash Fiction Story Preamble

**Technology**
- Computer, projector, and screen
- Flash Fiction Current State Slides

**Teacher Preparation**
This lesson should be used with one of the accompanying packets of supporting materials. Each packet addresses a different theme in sustainability science (climate change, energy resources, transportation systems, water resources, technology, environmental degradation, food systems, and urban development), and should be reviewed and selected by the instructor in advance.

### Topics Covered
- Sustainability
- Scenario Planning

### Grades
- 6-8

### Duration
- 55 Minutes

### Sustainability Competencies
- Values Thinking
- Normative Thinking
- Future Thinking
- Systems Thinking
- Collaborative Thinking

### Online Resources
- [EPA Climate Change](https://www.epa.gov/climate-change)
Organize student groups (2-3 students), distribute materials, and prepare Flash Fiction Current State Slides.

**Background Information**
Flash Fiction are short stories of only a few hundred words in length. Despite their extreme brevity, these snapshot stories often convey a profound storyline.

**Recommended Procedures**

1. **Engagement: This activity will focus students on the topic**
Project the Flash Fiction Current State Slides. Introduce flash fiction (slide 2). Allow students to share their ideas about what would make a compelling work of Flash Fiction.

   Encourage students to think about the importance of
   • Setting—Where is the story happening?
   • Character—Who is the story about?
   • Plot—What is happening?
   • Backstory—What happened before to create and inform this situation?
   • Detail—Which specific things should the audience notice?

2. **Exploration: A student-led activity with guidance**
Project slides 3-7. Each slide presents a single figure representing scientific data related to the respective topic. Allow students some time to think about and discuss the data presented on each slide. Alternatively, print out the individual slides and assign one to each student working group with the respective story preamble.

   Provide each group with a different Flash Fiction Story Preamble related to the respective topic. Each Preamble will present a short backstory on which the students will elaborate.

   Instruct student groups to read their assigned Preamble, and develop a short fictional story about the characters and events it describes.

   Allow students 20 to 25 minutes to complete their Flash Fiction story.

3. **Explanation: Students discuss their understanding of the concept**
Once students have finished working, ask for volunteers to share their stories and discuss what their work of Flash Fiction conveys about their vision of the world in 2050.

4. **Elaboration: Students apply the idea in a new context**
Open the discussion to the class, and allow students to compare and contrast the stories they have shared. What are common themes? What are major differences? What do these similarities and differences convey about their values, desires, and concerns for the future?

5. **Evaluation: Students assess their knowledge, skills, abilities**
Students should be evaluated based on participation in this activity.
<table>
<thead>
<tr>
<th>Science and Engineering Practices</th>
<th>Disciplinary Core Ideas</th>
<th>Crosscutting Concepts</th>
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<tbody>
<tr>
<td>Asking questions (for science) and defining problems (for engineering)</td>
<td>ESS3.A Natural resources</td>
<td>Cause and effect: Mechanism and explanation</td>
</tr>
<tr>
<td>Analyzing and interpreting data</td>
<td>ESS3.C Human impacts on Earth systems</td>
<td></td>
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<tr>
<td>Obtaining, evaluating, and communicating information</td>
<td>ESS3.D Global climate change</td>
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**Common Core English Language Arts**

<table>
<thead>
<tr>
<th>Reading: Informational Text</th>
<th>Writing</th>
<th>Speaking &amp; Listening</th>
<th>Language</th>
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**Common Core Mathematics**

<table>
<thead>
<tr>
<th>6 through 8</th>
<th>9 and 10</th>
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<tbody>
<tr>
<td>N/A</td>
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**Other Common Core**

<table>
<thead>
<tr>
<th>Science</th>
<th>History/Social Studies</th>
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<tbody>
<tr>
<td>CCSS.ELA-LITERACY.RST.6-8.4, CCSS.ELA-LITERACY.RST.6-8.7</td>
<td>CCSS.ELA-LITERACY.RH.6-8.4, CCSS.ELA-LITERACY.RH.6-8.7</td>
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