

# Destination 2018: Sustainability Lesson Plan

NAME: WENDY WISH

CAMPUS: WEST

DISCIPLINE: ENGLISH FOR ACADEMIC PURPOSES

The goal of this lesson plan is to help you decide why and where you will infuse sustainability to improve student learning. Remember that sustainability is not an "add-on" content area; rather, sustainability can be integrated into already existing lessons as in-class examples of concepts and as a context for activities and problem sets that promote critical thinking.

## Week 1: Needs Assessment

This week you will write a needs assessment for your lesson, learn about SDG goals, and identify 3 goals that could align with your course and topic.

### Needs Assessment

1. Write your Needs Assessment:  
([examples](#))

Topics that my second-language students struggle with are many, considering the knowledge they must have in order to succeed in their mainstream college courses. Students struggle with reading about and discussing events of current importance and significance due to limited knowledge and/or limited vocabulary.

2. Explain why you think infusing sustainability will help this need:  
([examples](#))

Using sustainability as a topic of reading will most importantly allow students to learn about climate change and sustainability, acquire vocabulary about issues of sustainability in order to discuss the topic, and develop knowledge about issues or topics under the umbrella of sustainability.

3. State where (course or area) you are infusing sustainability and the topic:  
([examples](#))

EAP 1586C- High Intermediate Integrated Reading, Speaking, & Listening for English Language Learners

### Research SDGs

Visit the [Sustainable Development Knowledge Platform](#) to research the Sustainable Development Goals.

4. Choose at least 3 of the SDGs of interest that could align with your topic and share why:  
([examples](#))

[The United Nations- Sustainable Development Goals: 17 Goals to Transform Our World](#)

1. **Goal 12: Responsible Consumption and Production- Ensure sustainable consumption and production patterns**

Students can investigate through reading and discussion how responsible consumption of resources could create a world that is more sustainable in the future.

“Sustainable consumption and production is about promoting resource and energy efficiency, sustainable infrastructure, and providing access to basic services, green and decent jobs and a better quality of life for all.

Its implementation helps to achieve overall development plans, reduce future economic, environmental and social costs, strengthen economic competitiveness and reduce poverty.

Sustainable consumption and production aims at “doing more and better with less,” increasing net welfare gains from economic activities by reducing resource use, degradation and pollution along the whole lifecycle, while increasing quality of life. It involves different stakeholders, including business, consumers, policy makers, researchers, scientists, retailers, media, and development cooperation agencies, among others. It also requires a systemic approach and cooperation among actors operating in the supply chain, from producer to final consumer. It involves engaging consumers through awareness-raising and education on sustainable consumption and lifestyles, providing consumers with adequate information through standards and labels and engaging in sustainable public procurement, among others.”

## 2. **Goal 13: Climate Action- Urgent action to combat climate change and its impacts**

Students can read and answer questions about and discuss the effects of and possible solutions to climate change.

“Climate change is now affecting every country on every continent. It is disrupting national economies and affecting lives, costing people, communities and countries dearly today and even more tomorrow.

People are experiencing the significant impacts of climate change, which include changing weather patterns, rising sea level, and more extreme weather events. The greenhouse gas emissions from human activities are driving climate change and continue to rise. They are now at their highest levels in history. Without action, the world’s average surface temperature is projected to rise over the 21st century and is likely to surpass 3 degrees Celsius this century—with some areas of the world expected to warm even more. The poorest and most vulnerable people are being affected the most.

Affordable, scalable solutions are now available to enable countries to leapfrog to cleaner, more resilient economies. The pace of change is quickening as more people are turning to renewable energy and a range of other measures that will reduce emissions and increase adaptation efforts.

But climate change is a global challenge that does not respect national borders. Emissions anywhere affect people everywhere. It is an issue that requires solutions that need to be coordinated at the international level and it requires international cooperation to help developing countries move toward a low-carbon economy.

To address climate change, countries adopted the **Paris Agreement** at the COP21 in Paris on 12 December 2015. The Agreement entered into force shortly thereafter, on 4 November 2016. In the agreement, all countries agreed to work to limit global temperature rise to well below 2 degrees Celsius, and given the grave risks, to strive for 1.5 degrees Celsius. You can [learn more about the agreement here.](#)”

## 3. **Goal 14: Life Below Water- Conserve and sustainably use the oceans, seas, and marine resources**

Students can read and answer questions about and discuss the effects of climate change on the planet’s seas and oceans and the importance of managing these bodies of water in order to sustain life.

“The world’s oceans – their temperature, chemistry, currents and life – drive global systems that make the Earth habitable for humankind.

Our rainwater, drinking water, weather, climate, coastlines, much of our food, and even the oxygen in the air we breathe, are all ultimately provided and regulated by the sea. Throughout history, oceans and seas have been vital conduits for trade and transportation.

Careful management of this essential global resource is a key feature of a sustainable future.”

## 4. **Goal 15: Life on Land- Sustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity loss**

Students can read and answer questions about and discuss the consequences of the loss of forests and biodiversity and the importance of managing these to combat climate change.

“Forests cover 30 per cent of the Earth’s surface and in addition to providing food security and shelter, forests are key to combating climate change, protecting biodiversity and the homes of the indigenous population. Thirteen million hectares of forests are being lost every year while the persistent degradation of drylands has led to the desertification of 3.6 billion hectares.

Deforestation and desertification – caused by human activities and climate change – pose major challenges to sustainable development and have affected the lives and livelihoods of millions of people in the fight against poverty. Efforts are being made to manage forests and combat desertification.”

## Week 1 Reflection

5. Now that you have completed this week’s portion of the template, reflect on the following:

- a. I’m excited about creating a lesson for students to learn about the effects of climate change and the efforts humans can make to combat it.
- b. I have questions about... I don’t have any questions currently. (Please note that I have included the descriptions of the goals above from The United Nations Sustainable Development Goals for my future reference.)

## Week 2: Learning Outcomes/Research

This week you will write the student learning outcome for your lesson, explore lesson plan examples, look at a variety of classroom assessment techniques, and consider how you could incorporate the 3 Pillars of sustainability with a learning activity.

### Student Learning Outcome(s)

The Student Learning Outcome is a statement of what the student will learn or be able to do because of this lesson. For more information on how to write a measurable learning outcome, review the following resources:

[How to write a Student Learning Outcome \(Slides 1 to 5\)](#) | Bloom’s Taxonomy Resources - [Bloom’s Taxonomy Action Verbs](#), [Bloom’s Interactive Graphic](#), [Bloom’s Taxonomy of Learning Domains](#)

6. Write your Learning Outcome:  
([examples](#))

Students will be able to recognize main ideas and supporting details in texts using active reading strategies and group discussion.

## Sustainability Lesson Plan Samples

Explore the following resources for lesson plan ideas:

- [Sustainability teaching activities across the disciplines](#) (Repository developed by Carleton College)
- Lesson plans organized according to conceptual Sustainability Systems: [Water](#), [Energy](#), [Food](#), [Waste](#), [Landscape & Ecosystem](#), [Supply Chain](#), and [Quality of Life](#) (Developed by ASU faculty)
- [AASHE Curriculum Resources Hub](#) (requires login)

7. Of the lesson plans you've explored, pick 3 and share why you selected those:  
(examples)

1. Introduction to Quality of Life & Sustainability- <https://sustainability.asu.edu/sustainableschools/learn-more/quality-of-life/>  
I selected this lesson plan as it introduces what sustainability is and how living in a sustainable fashion will improve quality of life.
2. Break the Cycle: Water bottle life cycle- <https://sustainability.asu.edu/sustainableschools/learn-more/water/>  
I selected this lesson plan because it focuses on how one seemingly simple item, a water bottle, has a significant impact on the environment.
3. Compost in a Bottle- <https://sustainability.asu.edu/sustainableschools/learn-more/waste/>  
I selected this lesson plan because it considers the content of what people eat and how food waste can be diverted.

## Classroom Assessment Techniques

Explore the following resource for Classroom Assessment Techniques:

- [101 Strategies to Demonstrate the Essential Competencies](#) – a college of classroom assessment techniques aligned to the essential competencies of a Valencia educator prepared by Valencia faculty Donna Colwell and Kevin Colwell
- [50 CATs by Angelo and Cross](#)
- [Classroom Assessment Techniques](#) by Northwest Evaluation Association

8. Of the CATs you've explored, pick 3 and share why you selected those:  
(examples)

1. **Background Knowledge Probe:** short, simple questionnaires prepared by instructors for use at the beginning of a course or at the start of new units or topics; can serve as a pretest  
[https://vcsa.ucsd.edu/\\_files/assessment/resources/50\\_cats.pdf](https://vcsa.ucsd.edu/_files/assessment/resources/50_cats.pdf)  
I selected this CAT as the instructor can assess students' prior knowledge of and build schema around a topic prior to working on that topic.
2. **Jigsaw Group Projects**  
In jigsaw projects, each member of a group is asked to complete some discrete part of an assignment. When every member has completed his or her assigned task, the pieces can be joined together to form a finished project. This can be done in class or online.  
<http://www.ryerson.ca/content/dam/lt/resources/handouts/activelearning.pdf>  
I selected this CAT as students are assigned a specific article of several to read, answer questions about their assigned article, discuss their answers to the questions with the other students assigned the same article and therefore become an "expert" on the content of their assigned article, and then present information to the students who have read the other articles. This activity integrates all language skills of reading, writing, and speaking/listening.
3. **Engaging Secondary Sources**  
After lecturing for 10-12 minutes with material and information brought by the instructor from sources beyond the class assigned readings, pause for 3-5 minutes. Students, working in pairs, share what they have understood from the lecture, and prepare a two-three statement summary to share with the class.  
[https://www.ydae.purdue.edu/lct/HBCU/documents/Active\\_Learning\\_Creating\\_Excitement\\_in\\_the\\_Classroom.pdf](https://www.ydae.purdue.edu/lct/HBCU/documents/Active_Learning_Creating_Excitement_in_the_Classroom.pdf)  
I selected this CAT as students may summarize information learned outside of the textbook and present a summary to the class. This activity integrates language skills of reading, writing, and speaking/listening.
4. **Empty Outlines**  
in a limited amount of time students complete an empty or partially completed outline of an in-class presentation or homework assignment  
[https://vcsa.ucsd.edu/\\_files/assessment/resources/50\\_cats.pdf](https://vcsa.ucsd.edu/_files/assessment/resources/50_cats.pdf)

I selected this CAT as students outlining a reading allows them to demonstrate their understanding of main idea and supporting detail, their ability to identify those in a reading, and the ability to organize that material into a cohesive whole in the form of an outline, a skill necessary for success in learning.

## 3 Pillars Activity Idea

Review the 3 Pillars Worksheet.

9. Describe an activity that incorporates the 3 pillars:  
([examples](#))

After completing a jigsaw reading and discussion, as a reflection exercise, students will answer questions that I have carefully selected from the 3 Pillars related to the articles that they have read.

Possible questions:

1. Environmental- Were ecosystems/natural areas harmed or destroyed? Are animal and plant populations harmed or displaced?
2. Social- Were people displaced? Are certain populations being disproportionately affected? How does this improve or diminish quality of life in the community or for the individual?
3. Economic- What is the short-term economic cost? What is the long-term economic cost? Were jobs created or lost?

## Week 2 Reflection

10. Now that you have completed this week's portion of the template, reflect on the following:

- a. I'm excited about putting together my lesson plan on the topic of sustainability.
- b. I have questions about nothing at this point.

## Week 3: Putting it All Together

The goal for this week is to create an activity that incorporates the SDG, CAT, and connection to the 3 Pillars of sustainability.

## SDG Selection

11. Choose the SDG that aligns best with your Needs Assessment/Student Learning outcome and explain why:  
([examples](#))

**Goal 15: Life on Land- Sustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity loss**

Students will read and answer questions about and discuss the consequences of the loss of land and biodiversity created by climate change.

“Forests cover 30 per cent of the Earth's surface and in addition to providing food security and shelter, forests are key to combating climate change, protecting biodiversity and the homes of the indigenous population. Thirteen million hectares of forests are being lost every year while the persistent degradation of drylands has led to the desertification of 3.6 billion hectares.

Deforestation and desertification – caused by human activities and climate change – pose major challenges to sustainable development and have affected the lives and livelihoods of millions of people in the fight against poverty. Efforts are being made to manage forests and combat desertification.”

## CAT Selection

12. Choose the CAT that aligns best with your Needs Assessment/Student Learning out come and explain why:  
([examples](#))

1. **Background knowledge probe**

This CAT will serve to activate students’ prior knowledge of the topic of climate change prior to more in-depth reading and discussion of the topic.

2. **Jigsaw project**

This CAT aligns with the needs assessment as students may read and answer questions about one assigned article on climate change, discuss the article and answers in “expert” groups, and then present information to the students who have read the other articles. This activity integrates all language skills of reading, writing, and speaking/listening.

## 3 Pillars Activity

13. Describe how you will incorporate the 3 Pillars into your activity:  
([examples](#))

3 Pillars will be incorporated into the activity as while reading their assigned article, students will answer questions on the environmental, social, and economic impacts of climate change (all articles to be used in the activity address these questions).

## Activity Draft

14. Create a draft of the activity using the SDG, CAT, and 3 Pillars:  
([examples](#))

This activity is adapted from Rust, Sara, and Michael Gonchar. “A Lesson Plan About Climate Change and the People Already Harmed by It.” The New York Times, 25 May 2018.

[https://www.nytimes.com/2017/03/22/learning/lesson-plans/a-lesson-plan-about-climate-change-and-the-people-already-harmed-by-it.html?rref=collection%2Fsectioncollection%2Flearning&action=click&contentCollection=learning@ion=stream&module=stream\\_unit&versi](https://www.nytimes.com/2017/03/22/learning/lesson-plans/a-lesson-plan-about-climate-change-and-the-people-already-harmed-by-it.html?rref=collection%2Fsectioncollection%2Flearning&action=click&contentCollection=learning@ion=stream&module=stream_unit&versi)

1. **Background knowledge probe**

- a. To activate students’ relevant prior knowledge, they will free write for five minutes about the term “climate change.” Students will write about what they know, what they think they know, what they have heard, what you are confused about or unsure of, and what they want to know.
- b. After students have finished the free writing, they will read it to a partner and then work together to write a collaborative summary in which they combine their ideas.
- c. The class will discuss what students noticed as they went through this process. What did they know? What did they learn from their peers? What was it like to engage in this process? What questions do they have? Were there any disagreements?
- d. Students who require more information about climate change may review the following resources during or after class:  
The New York Times | [Short Answers to Hard Questions About Climate Change](#)  
NASA | [Global Climate Change](#)
- e. After reviewing one or more of these resources, students will work in groups to

- create a working definition of climate change
- describe the causes of climate change
- describe the potential effects of climate change

## 2. Jigsaw project

- A. As homework, students will first read, answer questions about, and write down their answers about their assigned article on climate change.

Questions:

- a. Environmental:
    - i. How has global climate change affected the local climate and geography of the region discussed in your article?
    - ii. Were ecosystems/natural areas harmed or destroyed?
    - iii. Are animal and plant populations harmed or displaced?
  - b. Social:
    - i. How have the changes in climate and geography affected the people living in the region discussed in your article?
    - ii. How have the people tried to adapt to the effects of climate change?
    - iii. Were people displaced?
    - iv. Are certain populations being disproportionately affected?
    - v. How does this improve or diminish quality of life in the community or for the individual?
  - c. Economic:
    - i. How have the people tried to adapt to the effects of climate change?
    - ii. What is the short-term economic cost?
    - iii. What is the long-term economic cost?
  - d. Additional questions:
    - i. All of the articles include images which were selected to have an impact on the reader. What do these images show? Which image is the most powerful? Describe it and discuss what makes it an effective image.
    - ii. Why is the story important for the world to know?
- B. In class, students will discuss the article and their answers with students assigned the same article in “expert” groups.
- C. In their “expert” groups, students will create a summary of the environmental, social, and economic consequences discussed in their article.
- D. Students will move to a group with students who have read the other articles and report their summary.
- E. After students have presented what they learned, students can respond to the following questions either in writing or verbally:
- What are some links or connections that you heard between the various articles in terms of the impact of climate change?
  - What do you know now about climate change that you didn’t know before?

15. Explain how the activity aligns with your Needs Assessment/Student Learning Outcome  
([examples](#))

This activity aligns with the needs assessment as students will read and answer questions about, write about, and discuss the topic of climate change, a topic of current importance and significance.

## Week 3 Reflection

16. Now that you have completed this week’s portion of the template, reflect on the following:

- a. I’m excited about including this activity in my EAP 1585C course in the H2 semester of Summer 2018.

- b. I have questions about... None at this time.

## Week 4: Lesson Plan Draft

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This week you will finalize your activity and create directions for students.

17. Prepare a set of instructions on how to facilitate this activity.  
([examples](#))

### *Answer the following questions:*

What prior knowledge will students need to be successful with this activity?

Students will

- require some prior knowledge on climate change
- have to identify define the meaning of unknown words in the articles they each receive
- have to know how to read for supporting details
- have to understand what the 3 Pillars are

What needs to be setup prior to delivering the lesson?

1. determine the same number of groups as there are articles (up to eight articles and groups)
2. photocopy the articles
3. word process and photocopy the questions on a handout to distribute to students
4. word process a step-by-step instructions sheet

What resources and materials will you need?

1. photocopied articles
2. photocopied questions
3. photocopied instructions for students

How do you plan to introduce the topic?

I will introduce the topic of climate change by

1. students free writing on the topic of climate change
2. showing students a video on how people's lives and how the land are being affected by climate change.  
Cape Town, South Africa, water crisis: <https://www.youtube.com/watch?v=DJOTpogYmjg>  
OR  
California drought: <https://www.youtube.com/watch?v=rHWHuP91c7Y>

How will you keep students engaged?

Students will remain engaged by

1. free writing on the topic of climate change
2. reading and answering questions about their assigned article
3. discussing their answers in their "expert" groups and creating a summary of their article
4. discussing their summaries in groups consisting of students each of whom have read a different article

Step-by-step run of the activity

1. **Background knowledge probe**

- a. To activate students' relevant prior knowledge, they will free write for five minutes about the term "climate change." Students will write about what they know, what they think they know, what they've heard, what they're confused about or unsure of, and what they want to know.
- b. After students have finished the free writing, they will read it to a partner and then work together to write a collaborative summary in which they combine their ideas.
- c. The class will discuss what students noticed as they went through this process. What did they know? What did they learn from their peers? What was it like to engage in this process? What questions do they have? Were there any disagreements?
- d. Show video on climate change:
  - (1) Cape Town, South Africa, water crisis, <https://www.youtube.com/watch?v=DJOTpogYmjg>; OR
  - (2) California drought, <https://www.youtube.com/watch?v=rHWHuP91c7Y>
- e. Students who require more information about climate change may review the following resources before or during class:
 

*The New York Times* | [Short Answers to Hard Questions About Climate Change](#)  
 NASA | [Global Climate Change](#)
- f. After reviewing one or more of these resources, students will work in groups to
  - create a working definition of climate change
  - describe the causes of climate change
  - describe the potential effects of climate change
- g. Students will present their group's definition of climate change to the class.
- h. Introduce what the 3 Pillars of sustainable solutions are

## 2. Jigsaw project

- A. As homework, students will first read, answer questions about, and write down their answers about their assigned article on climate change.

Questions:

- a. Environmental:
    - i. How has global climate change affected the local climate and geography of the region discussed in your article?
    - ii. Were ecosystems/natural areas harmed or destroyed?
    - iii. Are animal and plant populations harmed or displaced?
  - b. Social:
    - i. How have the changes in climate and geography affected the people living in the region discussed in your article?
    - ii. How have the people tried to adapt to the effects of climate change?
    - iii. Were people displaced?
    - iv. Are certain populations being disproportionately affected?
    - v. How does this improve or diminish quality of life in the community or for the individual?
  - c. Economic:
    - i. How have the people tried to adapt to the effects of climate change?
    - ii. What is the short-term economic cost?
    - iii. What is the long-term economic cost?
  - d. Additional questions:
    - i. All of the articles include images which were selected to have an impact on the reader. What do these images show? Which image is the most powerful? Describe it and discuss what makes it an effective image.
    - ii. Why is the story important for the world to know?
- B. In class, students will discuss the article and their answers with students assigned the same article in "expert" groups.
  - C. In their "expert" groups, students will create a summary of the environmental, social, and economic consequences discussed in their article.
  - D. Students will move to a group with students who have read the other articles and report their summary.
  - E. After students have presented what they learned, students can respond to the following questions either in writing or verbally:

- What are some links or connections that you heard between the various articles in terms of the impact of climate change?
- What do you know now about climate change that you didn't know before?

*Now that you have addressed the questions above, include directions in the draft of your activity.*

#### In-class:

##### Instructions:

1. Free write for five minutes about the term "climate change." Write about what you know, what you think you know, what you have heard, what you are confused about or unsure of, and what you want to know.
2. Read your free writing to a partner and then work together to write a collaborative summary in which you combine your ideas.
3. Whole-class discussion: What did you notice as you went through this process? What did you know? What did you learn from your peers? What was it like to engage in this process? What questions do you have? Were there any disagreements?
4. If you require more information about climate change, you may review the following resources during or after class:  
The New York Times | [Short Answers to Hard Questions About Climate Change](#)  
NASA | [Global Climate Change](#)
5. After reviewing one or more of these resources, work in groups to
  - create a working definition of climate change
  - describe the causes of climate change
  - describe the potential effects of climate change

#### Out-of-Class Assignment:

Read your assigned article and answer the following questions about your article. Write down your answers on a separate sheet of paper to hand in for assignment credit. Also, be sure to use context clues or to look up any unknown vocabulary words in your article.

##### Questions:

- a. Environmental:
  - i. How has global climate change affected the local climate and geography of the region discussed in your article?
  - ii. Were ecosystems/natural areas harmed or destroyed?
  - iii. Are animal and plant populations harmed or displaced?
- b. Social:
  - i. How have the changes in climate and geography affected the people living in the region discussed in your article?
  - ii. How have the people tried to adapt to the effects of climate change?
  - iii. Were people displaced?
  - iv. Are certain populations being disproportionately affected?
  - v. How does this improve or diminish quality of life in the community or for the individual?
- c. Economic:
  - i. How have the people tried to adapt to the effects of climate change?
  - ii. What is the short-term economic cost?
  - iii. What is the long-term economic cost?
- d. Additional questions:
  - i. All of the articles include images which were selected to have an impact on the reader. What do these images show? Which image is the most powerful? Describe it and discuss what makes it an effective image.
  - ii. Why is the story important for the world to know?

## In-class:

### Instructions:

1. Discuss the article and your answers with other students assigned the same article in your “expert” groups.
2. In your “expert” groups, create a summary of the environmental, social, and economic consequences discussed in your article.
3. Move to a group with students who have read the other articles and report your summary to the group.
4. After you have presented what you learned, respond to the following questions (either in writing or verbally):
  - What are some links or connections that you heard between the various articles in terms of the impact of climate change?
  - What do you know now about climate change that you didn’t know before?

## Week 4 Reflection

18. Now that you have completed this week’s portion of the template, reflect on the following:

- a. I’m excited about the same as above. Including this activity in my course in the Summer semester.
- b. I have no questions.