

Destination 2017: Education for Sustainability Lesson Plan

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Campus: Winter Park

Discipline: Mathematics

Week 1

1. MAT 0022C Developmental Math Combined

2. Needs Assessment

a. What is the CIM [course outcome](#) that you plan on teaching during your sustainability-focused lesson?

Perform conversions involving percents, decimals, fractions, and units of measurement.

b. What is a particular lesson, activity, or unit you already use that you wish to incorporate sustainability? Or, if you will be creating a new lesson, which concepts might align with sustainability?

Incorporating sustainability facts that provide numerical data. Then using the numerical data attached to those facts to perform conversions to better understand how important of a topic sustainability is. For instance taking a percentage used in a fact and converting it to a fraction. Investigate the hard truth by identifying the units of measurement, ie per person or per student to make it applicable to the Valencia student.

c. What [sustainability topic](#) might it cover?

Because this lesson is purely factual most, if not all sustainability topics can be covered.

However, I would choose facts that link with hard hitting topics such as hunger, clean water, and responsible consumption.

For more resources see,

- Sample Valencia lesson plans ([English](#), [New Student Experience](#), [Mathematics](#)),
- [Tips on integrating sustainability into existing courses](#)
- [Arizona State University's archive of sustainability lesson plans](#)

Week 2

3. Student Learning Outcomes

What is your end learning goal with the lesson? What should the [students be able to do/understand/care about](#)?

a. Students will be able to apply the mathematical concepts of conversion to any data presented in the sustainability example.

- b. Students will describe how the specific sustainability topic influences or could influence their current life.

Week 3

- 4. Lesson Title: Alarming Mathematical Data, Sustainability #truthmatters
- 5. Lesson Summary: Within the lesson students will form groups and within the groups they will each get an article on a hot button sustainable topic that is flooding with different mathematical factual data. Their job is to pluck the numbers out of the article, perform conversions, and apply this article and data to their everyday life.
- 6. Lesson Overview/Background:
 - a. How will your lesson connect to the [3 pillars of sustainability](#): environmental, social, and economic issues? All of the math data will cover environmental numbers, social influence through comparisons and ratios, as well as economic trends.
 - b. How will your lesson address at least one of the [5 key concepts](#)? The most commonly used key concept that will be addressed is scale. Through conversions of percentages to fractions, fractions to decimals, and decimals to percentages students will understand the impact sustainability has on the world. Because of this data analysis students will understand how sustainability impacts their daily lives and outwards.
- 7. Assessment
 - a. Identify the [type\(s\) of assessment](#) (*experiential, inquiry-based, project-based, place-based*) strategies you will use to assess content mastery ([summative](#)) and write out the instructions that will be given to students. Because of data analysis of real-life situations regarding sustainability my assessment will be mainly inquiry-based.
 - 1. Students form groups.
 - 2. Students are given a sustainable article with environmental, social, and economical data to convert.
 - 3. Students will extract this data.
 - 4. Once data is extract they will convert all numbers to a decimal, percentage, and fraction.
 - 5. Relate the article to their daily lives, provide a significance to their article.
 - b. Identify the strategy or strategies you will use to assess student learning and provide ongoing feedback ([formative](#)) and write out the instructions that will be given to students.
- 8. Lesson Activities
 - a. What will students need to know or do prior to the lesson activity or activities (readings, items to be prepared, prior knowledge)?

- b. Describe the activity or activities students will be doing.
 - i. Write out the instructions that will be given to students.
 - ii. How will you keep students engaged throughout this activity.

9. Materials and Resources

For the questions below, include links to resources you plan to use with a summary of how you plan to use the resource.

- a. What content do you already have?
- b. What new materials will you need to create?

Week 4

10. Reflection

- a. Explain how your outcome(s), learning activities, and assessments are aligned and connected.
- b. How will you [evaluate the effectiveness of your lesson?](#)