



Stage 1- Desired Results

Established Goal(s) (National and/or NY State and/or District goal):

- NYS Standard 4/Key Idea 5: Organisms maintain a dynamic equilibrium that sustains life.
- NYS Standard 4/Key Idea 6: Plants and animals depend on each other and their physical environment.
- NYS Standard 4/Key Idea 7: Human decisions and activities have had a profound impact on the physical and living environment.

Enduring Understandings:

Students will understand that...

- The essential needs required by all living things include: water, air, living space, food, and energy.
- Living things interact and compete for these needs.
- All ecosystems require a balance to support and sustain life.
- The way that humans use resources, interact with the environment and dispose of waste has an impact on all living things.
- The survival of the planet depends on the conservation and protection of Earth's resources.

Essential Questions:

- How do humans and all living things rely on their ecosystem to meet their needs?
- What are the effects of environmental changes on humans and living organisms?
- How does increased human population and lifestyle changes affect natural resources?
- How do organisms obtain their energy and what percentage of energy is lost?
- How organisms interact with one another and in what ways are they dependent upon their physical environment?
- How do changes in the environment alter an organism's ability to maintain homeostasis?

Students will know...

- How to look at the world's problems and create a focus question that can drive the unit.
- How to evaluate the essential needs for a fulfilling life.
- Their own ecological footprint.

Students will be able to...

- Brainstorm a list of problems in our world.
- Identify those needs that are essential for a fulfilling life.
- Compare their own ecological footprint to that of individuals in other parts of the world.

<ul style="list-style-type: none"> • How energy is transferred and lost in systems. • The essential needs required by a community and how to have those needs met. • The steps in the life cycle of a manufactured product. 	<ul style="list-style-type: none"> • Evaluate how energy is transferred and lost in communities. • Compare the life cycle of a potato in three different scenarios. • Reflect upon learned knowledge through a series of journal reflections.
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Stage 2 – Assessment Evidence

<p>Performance Task(s):</p> <ul style="list-style-type: none"> • Fulfilling life • Meeting needs in our community • Life Cycle of a potato activity • Ecological footprint 	<p>Other evidence:</p> <ul style="list-style-type: none"> • Reflection from learning activities (Journal). • Class discussions and students involvement • Unit test
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Stage 3 – Learning Plan

Learning Activities:

- **What do you need for a fulfilling life?**
 Prior to beginning the Needs and Characteristics of Living Things unit, we will begin to look at how the human race accesses its own needs. In the past when I have asked students to discuss their needs, I have been astonished to learn the list that middle school students brainstorm as a group.

Activity 1 (1 class period): Students will be asked to generate their own personal list answering the questions “What are your essential needs for life?” Next, the question will be changed to “What are your needs for a fulfilling life?” As a group we will explore the five essential needs required by all living things (water, air, living space, food, and energy).

Students will then be placed into learning groups and will be directed to complete the Brainstorming web completing the physical/material, intellectual, social/emotional, and spiritual needs required to live a fulfilling life. (www.CreativeChange.net)

Activity 2 (1 class period): Commons Cards-What Supports Our Well-being? Students will work in groups to review the commons cards list and will decide which are necessary for a fulfilling life.

Activity 3 (1 class period): Next students will begin to think about and explore how we get these needs. Students will complete a checklist that asks them to assess their understanding as to where these essential needs for a fulfilling life comes from. (www.CreativeChange.com)
 As a culmination of this activity, students will be asked to respond to two of the following reflection questions in their journal.

1. What is the difference between a need and a want?
2. How can we live a fulfilled life where we are getting our needs met, but also maintain a balance with our wants and desires?

- **Meeting Needs in our Community:**

Last year IMS began an initiative to grow a community garden on the school property. Mainly 7th and 8th grade students were involved in the project. Being that I teach 7th grade, this would be a great opportunity to help introduce the garden to the former 6th grade, now 7th grade students. The goal will be to help improve the students' comprehension and understanding as to why a garden was planted in the first place. Some students in the past have expressed that they don't have a "green thumb" and this activity will help them to understand that every community member can play a part in helping to increase sustainability.

Activity 1: (1 ½ class period): In small cooperative groups, students will read through the Case Study A, Case Study B, and Case Study C. Students will respond to the questions that follow with their group members. The following day we will hold a class debate centered on the question: Do you think it is possible to live better on less money? Why or why not?

Activity 2: (1 class period): Identifying Assets in our community. Students will freely walk about the room interviewing their fellow classmates. They are looking to see how many boxes can be filled in during a 20-minute period. Students will be asked to write in the journals for homework. Specifically they will be asked to respond to the reflection questions.

- **Life Cycle Analysis (4 Class Periods):**

Activity 1:(1 class period) Students will be asked to read the article titled "French Fries." At the completion of the reading, they will be asked to complete an analysis of the entire process of turning potatoes into French fries. To help ensure the students understand the assignment, they will work on this in a group setting. This will include the production, manufacturing, transportation, use of the material, and disposal of the waste. Students will work in cooperative groups to review their analysis. The following record sheet will be provided for students to use during the reading of the article.

Stage of the Life Cycle of the potato	Resources used	Wastes Produced
Growth		
Transportation		
Processing/Storage		
Preparation/Consumption		
Disposal		

Activity 2: (1 Class Period) Mini Lesson: Inputs vs. Outputs: What is meant by inputs and outputs? If you practice your foul shot 100 times a day, what would be the possible inputs and what could be the possible outputs? If you bring a brown paper bag to school each day, what are the possible inputs and possible outputs. Students will work in groups of three to analyze three different products supplied by the teacher. These products include: a sheet of paper, a can of soda, and an individual size container of applesauce. As a group, they need to brainstorm the possible inputs and possible outputs to develop these different products. They will use the cart below to help them work through their analysis. A chart for each product will be supplied.

Stage of the soda can	Resources used	Wastes Produced
Growth		
Transportation		
Processing/Storage		
Preparation/Consumption		
Disposal		

When students have finished their analysis, they will be asked to brainstorm ways of conserving resources in order to make these products.

Activity 3: (1 Class Period) Student will then read Potato Story 2: Traditional Peruvian-grown potato and Potato Story 3: Locally Grown Potato. At the culmination of the reading, they will use the Graphic Organizer (Creativechange.net) to organize their thoughts and understanding from the articles. Students will be asked to compare and contrast the differences between the three different potato stories.

- **Ecological Footprint**

Activity :1 (1 class period) Students will take the on-line quiz in order to analyze their own individual footprint. (Creativechange.net) This will be assigned as a homework assignment the previous night and students will be asked to elicit help from their parents. The next day in class students will be asked to compare their ecological footprint to that of their peers. Next we will do an analysis of the entire amount of land available (biocapacity). As a class we will add up the entire class' land usage footprint. Students' will respond in their journal to the following question:

What are your personal reflections on how much land usage we would use as a class?

Activity 2: Regeneration Simulation (2 class periods) Students will begin with Scenario 1. The students will understand that they represent a renewable member of a larger ecological community. Students will record the data in their journals. Next students will play out Scenario 2 and then Scenario 3. Each time they will keep track of their data. On day two the students will graph the data and analyze their findings from the three scenarios.

- **Culmination Project**

Students will have choice in how they choose to represent their finding from the unit. The choices include:

- Become a politician running for a local governmental office. Create a TV advertisement to present your ideas on how to increase sustainability practices in your community.
- Make a unit collage using magazine clippings, drawings, and other crafts to represent the idea of sustainability.
- Write a two-page paper that outlines what you have learned from the sustainability unit and how you intend to contribute to this movement.
- Write a proposal for the school board on ways that we can increase sustainability practices on our own school property/community.