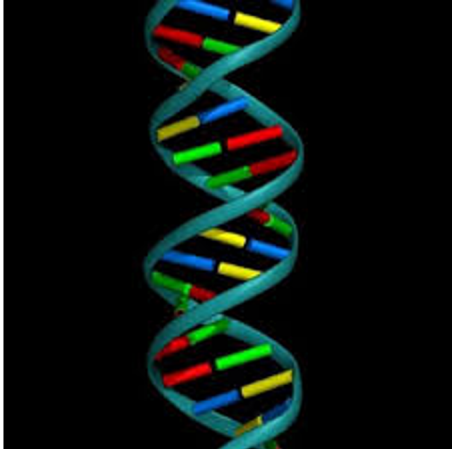


# Biology PLC Essential Outcomes



Jeff Coyne  
Amber Hiris  
Chay Lor  
Nicole Perez  
Mary Yamuni



# 13 Essential Outcomes– Available on the Website



Stockton Unified School District

**EDISON HIGH SCHOOL**

Home of the Vikings



## Essential Outcomes Chart: What is it we expect students to learn?

GRADE:	9-12	SUBJECT:	Biology	SEMESTER:	1 & 2	TEAM MEMBERS:	Coyne, Hiris, Lor, Perez, Yamuni
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STANDARD DESCRIPTION	EXAMPLE RIGOR	PREREQUISITE SKILLS	COMMON ASSESSMENT	WHEN TAUGHT?	EXTENSION STANDARDS
<p>What is the essential standard to be learned? Describe in student-friendly vocabulary.</p>	<p>What does proficient student work look like? Provide an example and/or description.</p>	<p>What prior knowledge, skills, and/or vocabulary is/are needed for a student to master this standard?</p>	<p>What assessment(s) will be used to measure student mastery?</p>	<p>When will this standard be taught?</p>	<p>What will we do when students have learned the essential standard(s)?</p>
<p>1- SEP 1, SEP 4, SEP 5, SEP 6 Students will carry out the Steps of the Scientific Method including: designing experiments, creating hypotheses, collecting and</p>	<p>Plan &amp; conduct an investigation individually &amp; collaboratively to produce data to serve as the basis for evidence, and in the design: decide on types, how much, and accuracy of data needed to produce reliable measurements and consider limitations on the precision of the</p>	<p>Common Content Key Terms or Vocabulary for each standard:</p> <ul style="list-style-type: none"> <li>Variable: Independent &amp; dependent</li> <li>Hypothesis</li> <li>Data</li> <li>Observation</li> <li>Analysis</li> </ul> <p>Academic Vocabulary</p> <ul style="list-style-type: none"> <li>Describe</li> <li>Compare</li> </ul>	<p>Informal &amp; Formal Assessments</p> <ul style="list-style-type: none"> <li>Student Portfolios &amp; or Interactive Notebooks</li> <li>Process activities</li> <li>Summary Paragraphs</li> <li>Inquiry Labs &amp; Virtual Labs</li> <li>Lab Reports</li> </ul>	<p>Quarter 1</p>	<p>Extension Activities / HONOR'S</p> <ul style="list-style-type: none"> <li>Projects that are standard specific</li> <li>Project presentations</li> <li>Enrichment process activities</li> <li>Additional Critical Reading / literature readings related to the standard &amp; extension activities</li> </ul>

# Essential Outcome 1– Scientific Method

- **Students will carry out the Steps of the Scientific Method including:** designing experiments, creating hypotheses, collecting and analyzing data, and developing conclusions based on the data.
- **Standards:** SEP 1, SEP 4, SEP 5, SEP 6

**ESSENTIAL** 

# Essential Outcome 1– Scientific Method

- **Plan & conduct** an investigation individually & collaboratively to **produce** data to serve as the basis for evidence, and in the design: **decide** on types, how much, and accuracy of data needed to **produce** reliable measurements and **evaluate** limitations on the precision of the data (e.g., number of trials, time), and **refine** the design accordingly.





# Measures of Proficiency

- Interactive Notebooks or Student Portfolios
- AVID Process activities (Graphic Organizers, LENSES, R&R, EGO, CER, NEWS, and others!)
- Summary paragraphs (for their notes)
- Graphical analysis activities
- Inquiry and virtual labs
- Lab evaluation
- Common formative assessments
- Common summative assessments



# Extension Activities

- Critical reading (marking/ charting/ RAFTS/ summarizing the text)
- Designing and testing an experiment



**Critical  
Reading**



# How it relates to the other essential outcomes

- The ability to manipulate the **Scientific Method** is necessary for ALL other science essential outcomes
- Graphing is a key component to represent and analyze data in many labs
- Critical thinking/ problem solving is an essential skill to all standards



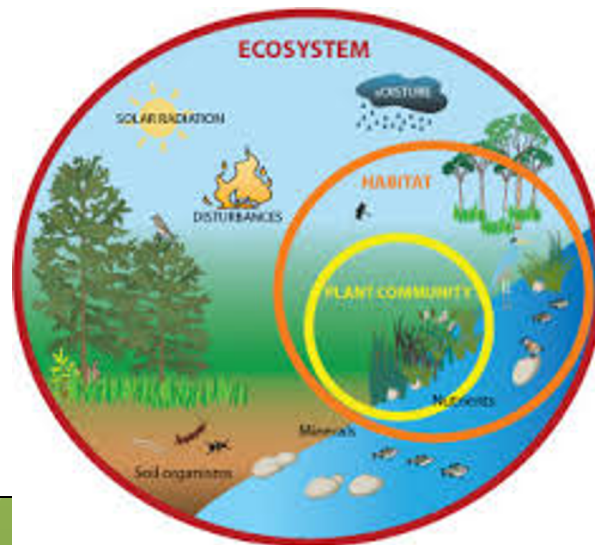
# How it relates to the other content

- Use of the scientific method– all future science classes (Chemistry, Anatomy, Physics, AP and college courses)
- Graphing– Math
- Critical Reading Strategies– English/ Social Studies
- Problem solving– all subjects/ careers/ life skills



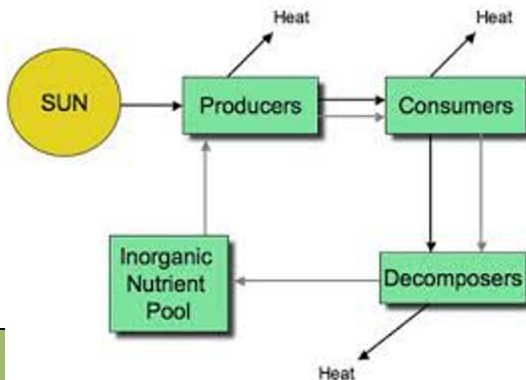
# Essential Outcome 6– Ecosystem Stability & Response to Climate Change

- Students will design, evaluate, and refine, a solution for reducing the impacts of human activities on the environment and biodiversity.
- **Standards:** HS-LS2-7, HS-LS4-6, HS-LS2-4



# Essential Outcome 6– Ecosystem Stability & Response to Climate Change

- Describe the flow of matter through an ecosystem.
- Explain how human activity impacts the cycles of matter & biodiversity.
- Evaluate and refine solutions to human impacts



# Measures of Proficiency

- Interactive Notebooks or Student Portfolios
- AVID Process activities (Graphic Organizers, LENSES, R&R, EGO, CER, NEWS, and others!)
- Summary paragraphs (for their notes)
- Graphical analysis activities
- Inquiry and virtual labs
- Lab evaluation
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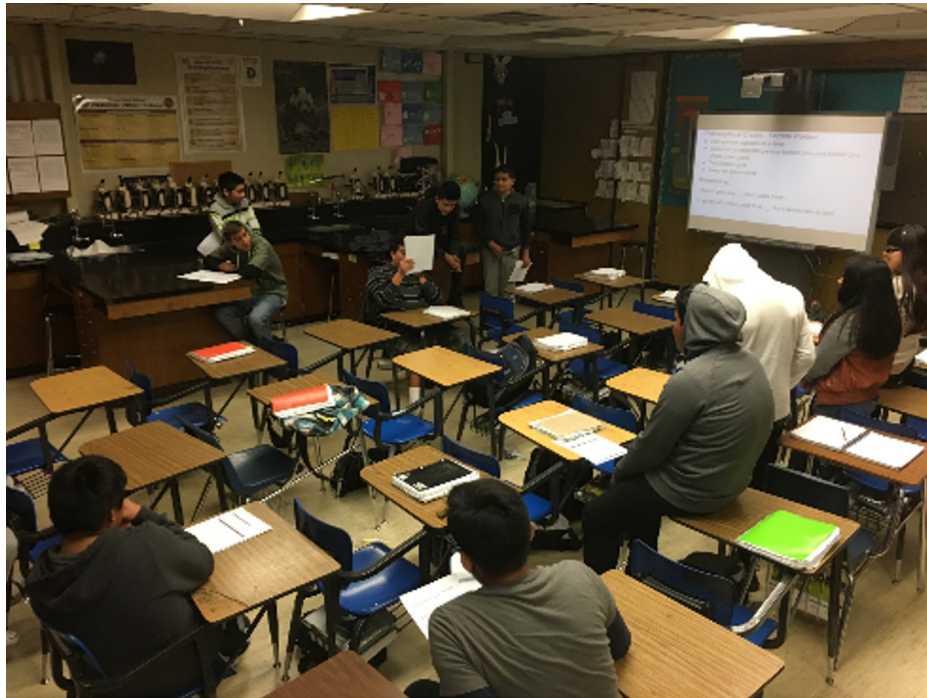
A yellow measuring tape is coiled on a white surface. The word "Success" is written in large, bold, black letters across the tape. The tape has black markings and numbers, and the word "Success" is positioned diagonally across the coiled tape.

Success



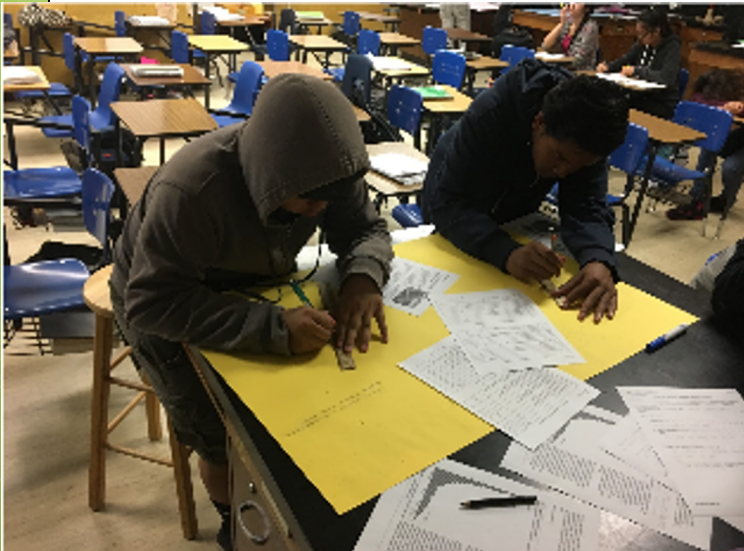
# Extension Activities

- Critical reading (marking/charting the text)
- Philosophical chairs (Central Statement: All cities should switch to using solar power.)



## Extension Activities

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- Project/ Presentation (Research, evaluate, and refine an existing renewable resource)



# Extension Activities



- Critical reading (marking/charting the text)
- Philosophical chairs (Central Statement: All cities should switch to using solar power.)
- Project/ Presentation (Research, evaluate, and refine an existing renewable resource)

Presentation Rubric: Renewable Resource Investigation

Task	Points
Introduce the name of the resource	/2
Definition of the renewable resource in a complete sentence	/5
Explanation of why the resource is considered renewable	/5
How the resource works (First, __. Then, __. Next, __)	/5
Advantages of the resource (at least three) (This resource is good because __)	/5
Disadvantages of the resource (at least three) (Some of the disadvantages are...)	/5
Does your group think this resource is a good alternative to nonrenewable resources? (This resource is/is not a good alternative, because...)	/5
Explain your revised version of the resource. What needs to be changed and why? (To improve this resource, we should __, because...)	/5

Total= \_\_\_\_\_ / 37



# How it relates to the other essential outcomes

- Apply information from previous essential outcomes
  - Scientific method during labs
  - Vocabulary from chemistry unit (essential outcome 3), biochemistry unit (essential outcome 4), and ecological interactions unit (essential outcome 5)



# How it relates to other content

- Critical Reading Strategies– English/ Social Studies/ Math (word problems)
- Refining an existing design– Engineering
- Understanding current human behaviors– Social Studies
- Self-evaluation through rubrics– all subjects and careers
- Research/ presentation skills– many careers and subjects
- Problem solving– all subjects/ careers

