

## Sample 2—Advanced Placement Environmental Science, Grade 12

*This template should be completed while referring to the SLO Template Checklist Document.*

Teacher Name: Ms. Reed Content Area and Course: Advanced Placement Environmental Science Grade Level(s): 12 Academic Year: 2012–13  
 Please use the guidance provided in addition to this template to develop components of the student learning objective and populate each component in the space below.

### Baseline and Trend Data

*What information is being used to inform the creation of the SLO and establish the amount of growth that should take place?*

Looking at the AP Instructional Planning reports from 2010–11 and 2011–12 school years shows that AP Environmental Science students have difficulty interpreting, synthesizing, and articulating the written response concepts related to land and water use, energy resources and consumption, pollution, and global change. When using prior course tests, my students have trouble conveying this knowledge and skills in the free response questions, particularly if the questions ask them to interpret, synthesize, and respond to data sets. The following tables show the rating distributions of my AP Environmental Science classes over the past two years:

Overall Score on AP Exam	2010–11 Academic Year	2011–12 Academic Year
1	12%	9%
2	44%	35%
3	38%	50%
4	6%	6%
5	0%	0%

	Distribution of Student Scores for the Multiple-Choice Section (compared to national sample)		Distribution of Student Scores for the Free-Response Section (compared to national sample)	
	2010–11 Academic Year	2011–12 Academic Year	2010–11 Academic Year	2011–12 Academic Year
Lowest Fourth	0%	4%	25%	24%
Second Fourth	54%	43%	48%	50%
Third Fourth	40%	46%	27%	24%
Highest Fourth	6%	7%	0%	2%

Preassessment Results (2012–13)			
Multiple Choice Point Distribution (out of 50)	Number of Students	Free Response Point Distribution (out of 12)	Number of Students
25–26 points	12	3 points	30
27–29 points	14	4 points	3
30–31 points	8	5 points	1

At the end of spring 2012, all of my students in my current 2012–13 Advanced Placement Environmental Science class received an 89 or higher on the prerequisite biology end-of-course exam. In addition to last year’s data, I distributed a district-created pretest that is similar to past AP exams in early September 2012. The assessment included 25 multiple-choice questions and 2 free-response questions (similar to the AP free-response questions). The multiple-choice questions were worth 2 points each and the free response questions were worth 12 points each. The district AP science team graded the assessment. The results of this preassessment will be used to help me develop growth targets for the end of the year. Because the distribution of student scores was very narrow, with all students earning between 25 and 31 points on the multiple-choice section and all students receiving an average score of between 3 and 5 points out of 12 on the free-response section, I was able to set growth targets that I feel are appropriate for the entire class.

**Student Population**

*Which students will be included in this SLO? Include course, grade level, and number of students.*

This SLO covers 34 twelfth-grade students in AP Environmental Science. The 34 students are divided into two sections of 18 and 16 students each.

**Interval of Instruction**

*What is the duration of the course that the SLO will cover? Include beginning and end dates.*

The SLO will cover the 2012–13 school year—from August 2012 through June 2013.

**Standards and Content**

*What content will the SLO target? To what related standards is the SLO aligned?*

The SLO will cover the key concepts in the AP course curriculum: the scientific process, energy conversations underlying ecological processes, the earth as an interconnected system, human alteration of natural systems, environmental problems having a cultural and social context, and human survival dependent on achieving sustainable systems. The SLO focuses in more depth on the content and skills covered in the second half of the course (post-December) which builds on earlier course concepts. The content focuses on land and water use, energy resources and consumption, pollution, and global change and the skills require students to synthesize what they have learned which is important for the free-response writing.

The content is also aligned to the College and Career Ready (Ohio Revised) Standards in Science, under the Earth's Resources and Global Environmental Problems and Issues content area. The SLO also meets the state standards for scientific inquiry for Grades 9–12, which states students must be able to: (1) identify questions and concepts that guide scientific investigations; (2) design and conduct scientific investigations; (3) use technology and mathematics to improve investigations and communications; (4) formulate and revise explanations and models using logic and evidence (critical thinking); (5) recognize and analyze explanations and models; (6) communicate and support a scientific argument.

#### **Assessment(s)**

*What assessment(s) will be used to measure student growth for this objective?*

The assessment used to measure student growth is the district-developed, end-of-course exam that matches the rigor and the format of the AP exam. It has 50 multiple-choice questions and 4 free-response questions. A district science team will score the assessment using the scoring guidelines created by the AP science team and science district coordinator. The guidelines are similar to the AP Environmental Science guidelines. Each free response will be judged by three readers using a scoring guide. Scores will be averaged for a final score. If readers disagree on the score, the district coordinator will determine the final score.

#### **Growth Target(s)**

*Considering all available data and content requirements, what growth target(s) can students be expected to reach?*

All students will be expected to demonstrate improved understanding of the key concepts covered in the AP Environmental Studies curriculum and to improve the skills needed to accurately and completely answer free response questions.

All students will be expected to achieve the following growth targets:

- Increase the number of correct multiple-choice questions by 15 points between the pre and post in-class assessments.
- Increase the average score (out of 12) on free response questions by 6 points between the pre and post in-class assessments.

#### **Rationale for Targeted Student Growth within the Interval of Instruction**

*What is your rationale for setting the above target(s) for student growth within the interval of instruction?*

I created separate growth targets for the multiple-choice questions and the free-response questions to show the increased focus on free-response questions. Free-response questions require students to demonstrate a deeper understanding of course content and require students to synthesize and apply scientific content and inquiry to the questions.

The growth targets will allow all students to demonstrate developmentally appropriate growth. Student performances in biology last year and performance on the course pretest were similar enough that one growth target is appropriate for all students. On the pretest, students demonstrated some content knowledge and scientific inquiry skills that they learned in previous courses.

Since the end-of-course exam is structured similarly to the AP exam and covers the same material, it will help students prepare for the exam. The assessment and SLO are aligned with the AP Environmental Science curriculum and Ohio Content Standards for Grades 9–12.