

Student Learning Objective (SLO) Template

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

Teacher Name: _____ Content Area and Course(s): Science Grade Level(s): 6th Grade Academic Year: 2012-2013

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?

This baseline data is based on results from a district-created, cumulative pre-assessment, covering the district’s yearly 6th grade science curriculum, which is aligned to Ohio’s Learning Standards. The pre-assessment consists of 39 multiple-choice questions and 6 extended response questions to show students’ background knowledge of concepts covered in the 6th grade science course. Pre-test scores ranged from 21% to 93% accuracy. Mastery level for an individual standard is 75%. 68% of the students tested showed mastery in the scientific ways of knowing standard, while 15% showed mastery in life science. Trend data from prior years’ pre and post assessments indicate that 6th grade students consistently struggle with life science and do well in scientific ways of knowing. This particular cohort exhibited the same trend of strengths and weaknesses.

Pre-Assessment data:

Pre-Test Results (Score Ranges)	# of students & contextual factors
20 – 30%	6 (4 IEP, 1 504, 1 ADHD)
31 – 50%	7 (1 IEP, 1 ADHD)
51 – 70%	17 (1 IEP, 1 504)
71 – 85%	15 (1 IEP, 1 Gifted)
86 – 100%	12 (6 Gifted, 1 ADHD) 8 students above 90%

Student Population

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

The SLO covers all 57 of my 6th grade students, which I teach 1st and 2nd periods. 7 of these students are identified as special needs students (IEP) and 2 students are on a 504 plan for a variety of reasons, including ADHD, hearing impairment, and anxiety disorder. The 7 IEP students include 6 students who are identified in reading. They specifically struggle with reading comprehension, which directly impacts their progress in science. One IEP student is identified in math. I will provide these students with all instructional and assessment accommodations and modifications contained in their Individual Education Plans. Additionally, 3 students in this group have a documented diagnosis of ADHD and require intervention strategies on assessment and homework assignments, such as read aloud testing and extra time on tests and homework assignments. 7 of my students are identified as gifted in the area of science and I work closely with the Gifted Intervention Specialist to modify homework and assessments to enrich learning experiences. Our district has a 58% deprivation rate (students on free and reduced lunch) and a 19% homeless population and our city has a 64% mobility rate. Students who have missed 45 or more days of instruction have been excluded from the SLO final rating; however, the pre and post assessment data has been collected and analyzed.

Interval of Instruction

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

This class is a yearlong course taught in a one period class, or 41 minutes, attended daily by students. This SLO covers an interval of instruction beginning August 27, 2012 and ending on April 15, 2013. The interval of instruction takes into account the May 1 deadline established by the OTES timeline.

Standards and Content

To what related standards is the SLO aligned?

This non-targeted SLO focuses on the entire yearlong course content as established within the guidelines of Ohio's Learning Standards for grade 6 Science. The grade band theme is *Order and Organization*. This theme focuses on helping students use scientific inquiry to discover patterns, trends, structures, and relationships that may be described by simple principles. These principles are related to the properties or interactions within and between systems. Scientific Inquiry and Application is always a focus for 6th grade science.

Specifically, this course will focus on:

- Identifying question that can be answered through scientific investigations
- Designing and conducting a scientific investigation
- Using appropriate mathematics, tools, and techniques to gather data and information
- Analyzing and interpreting data
- Developing descriptions, models, explanations and predictions

The focused strand connection is: *All matter is made of small particles called atoms. The properties of matter are based on the order and organization of atoms and molecules. Cells, minerals, rocks, and soil are all examples of matter.*

This SLO will cover these topics and content statements:

- Earth and Space Science (ESS) Topic: Rocks, Minerals, and Soil
 - Focuses on the study of rocks, minerals, and soil which make up the lithosphere. Classifying and identifying different types of rocks, minerals, and soil can decode the past environment in which they formed.
 - Minerals have specific, quantifiable properties.
 - Igneous, metamorphic, and sedimentary rocks have unique characteristics that can be used for identification and/or classification.
 - Soil is unconsolidated material that contains nutrient matter and weathered rock.

- Physical Science (PS) Topic: Matter and Motion
 - Focuses on the study of foundational concepts of the particulate nature of matter, linear motion and kinetic and potential energy.
 - All matter is made of small particles called atoms.
 - Changes of state are explained by a model of matter composed of atoms and/or molecules that are in motion.
 - There are two categories of energy: kinetic and potential

- Life Science (LS) Cellular to Multicellular
 - Focuses on the study of the basics of Modern Cell Theory. All organisms are composed of cells, which are the fundamental unit of life. Cells carry on the many processes that sustain life. All cells come from pre-existing cells.
 - Cells are the fundamental unit of life.
 - Cells carry on specific functions that sustain life.

More instructional time will be devoted to Life Science due to the low preassessment scores. This and past cohorts struggle with cellular to multicellular understanding and this topic requires more time. Physical Science and Earth and Space Science are also topics that are essential in order for students to gain the necessary base knowledge for success in grade 7 science. Students should have been introduced to soil in grade 3, but due to the revised standards, this will have to be reviewed. Physical Science in grade six focuses on matter and motion, specifically the foundational concepts of the particulate nature of matter, linear motion and kinetic and potential energy are covered. Because these foundational skills are introduced at this level, it is essential that students know and understand the concepts of this topic. Earth and Space Science will require the least amount of instructional time but still must be included for success in future courses. The focus will be on the lithosphere make up and classification of different types of rocks, minerals, and soil.

Details for instruction are provided in Ohio's Learning Standards and Model Curriculum for Science, specifically grade 6.

Overarching concepts: Ohio's Cognitive Demands for Science

Ohio Department of Education, March 2011

Assessment(s)

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

I will assess students using a district approved cumulative postassessment, which covers the content of Ohio's Learning Standards for

grade 6 Science. Science content-specialists collaboratively developed and authored the postassessment, which will mirror the content tested in the pre-assessment. Accommodations for students on an IEP or 504 will include: 5 students will receive extended time for the assessments, 1 will receive a scribe, 5 will be tested in small groups, and 6 students will have the exam read aloud to them. To further measure student growth for advanced students, students scoring 90% or higher on the pre-test will be assigned an end-of-course capstone project in addition to the end-of-course exam. Each project will be evaluated using a district-created and approved rubric that assesses the course content using higher levels of Bloom's taxonomy.

For students who are assigned an end-of-course capstone project, post assessment data will be collected as a portfolio assessment out of 100 points. Their project will account for 30% of their growth target, and the postassessment will account for 70% of their growth target. Students must score a 90 on their capstone project to meet their growth target. Students who were not assigned the capstone project, their post assessment data will be comprised entirely of their end-of-course exam score.

Pre and post assessment data will be compared to measure student growth.

Growth Target(s)

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

Students will increase their knowledge of 6th grade Science principles and will be measured by comparing the results of the pre-assessment and the post-assessment and possible capstone project. I have set tiered growth targets for my students. All students will be expected to achieve at least a target score of 60, which is the passing score for my district. Students' score on the pre assessment determine their growth target for the post-assessment.

Baseline Score Range (based on pre assessment)	Target Score
20 – 30	60
31 – 50	70
51 – 70	80
71 – 85	95
86 – 100	100 (includes a capstone project for students scoring 90% or higher on the pre-test; students must score a 90 or higher on the capstone project)

Rationale for Growth Target(s)

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

I set tiered targets to help ensure that all students will be able to demonstrate developmentally appropriate growth. Because the 6th grade science concepts serve as prerequisites for future science courses, it is essential that students grasp the basic concepts set forth in Ohio's Learning Standards for 6th grade science. More instructional time will be devoted to life science due to the low preassessment scores observed. This and past cohorts struggle with cellular to multicellular understanding and this topic requires more time. As observed through the preassessment analysis and trend data, they specifically struggle with the cell functions. Emphasis will be placed on the function and coordination of cell components, as well as on their roles in overall cell function. Physical Science and Earth and Space Science are also topics that are essential in order for students to gain the necessary base knowledge for success in grade 7 science. Students should have been introduced to soil in grade 3, but due to the revised standards, this will have to be reviewed. Physical Science in grade six focuses on matter and motion, specifically the foundational concepts of the particulate nature of matter, linear motion and kinetic and potential energy are covered-because these foundational skills are introduced at this level, it is essential that students know and understand the concepts of this topic. Earth and Space Science will require the least amount of instructional time but still must be included for success in future courses. The focus will be on the lithosphere make up and classification of different types of rocks, minerals, and soil.

Students who scored lower on the pre-assessment will be expected to demonstrate more growth in order to meet grade-level expectations. In addition, to assure enough stretch for my highest performing students, I will include the results of their capstone project in their growth target. They will be required to score a 90 or higher on their capstone project in addition to scoring a 100 on the postassessment.

The growth targets are representative of district and building goals. Our OIP goals state 80 % of students 6-8, will score proficient or higher as measured by quarterly assessments or OAA results. The lowest target score of 60% was chosen based previous Science OAA cut scores averages of 55%.