**SOUTHERN LEHIGH SCHOOL DISTRICT**
**5775 Main Street**
**Center Valley, PA 18034**

# Planned Course for Science

**Course:** Environmental Science

**Standards:**
This course is aligned to standards within the following categories of the Pennsylvania Academic Standards for Science and Technology and Engineering Education and the Pennsylvania Academic Standards for Environment and Ecology:

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| 3.1 | Biological Sciences |
| 4.1 | Ecology |
| 4.2 | Watersheds and Wetlands |
| 4.3 | Natural Resources |
| 4.4 | Agriculture and Society |
| 4.5 | Humans and the Environment |

**Course Description:**
The K-12 science program within Southern Lehigh School District will foster the development of scientific thinking and logical reasoning. A rigorous curriculum will provide opportunities for students to learn how to ask questions and define problems in order to plan and carry out investigations. Students will be challenged to construct explanations and design solutions through collaborative experiences where they engage in arguments that are based on evidence. Teachers will provide students with hands-on and authentic experiences aligned to a coherent progression of learning.

This course examines the environment and human impact on it. Students who take ENVIRONMENTAL SCIENCE will develop an understanding of what an ecosystem is and the elements that determine the types and numbers of organisms that live there. Students will look at the atmosphere (air), the hydrosphere (water) and the lithosphere (soil) and how they sustain the biosphere (life). Students will also explore the role humans have in changing each of these spheres and the impact these changes have had on the world. The students will be asked to define different problems facing the world today. They will research the problems and propose possible solutions and potential obstacles to the implementation of these solutions. Topics may change due to current events. Students should be prepared to engage in the in-depth research of current ecological topics and design long-term projects related to these topics. Students will also create projects to improve awareness of relevant ecological issues and implement lifestyle changes related to this awareness. These activities and projects will be oriented towards collecting data, implementing action, analyzing the information and drawing conclusions that are supported by the data to create their solutions.

**Prerequisite(s):**

- Successful completion of a Biology course; AND
- Successful completion of a Chemistry course

**Measurable objectives to be attained by students:**

Specific objectives for this course are aligned to the Next Generation Science Standards, the Pennsylvania Academic Standards for Science and Technology and Engineering Education, the Pennsylvania Standards for Environment and Ecology, and the Pennsylvania Core Standards for Reading and Writing in Science and the Technical Subjects as outlined in the Scope and Sequence for Environmental Science.

**Instructional Strategies:**

A science program demands the use of a variety of instructional strategies to foster scientific thinking. Below is a list of suggested strategies for high-quality instruction:

- Instructional components outlined in the *Framework for Teaching* by Charlotte Danielson
- Hands-on learning
- Posing questions for investigation
- Cooperative learning and collaboration
- Inquiry, engineering, and design

**Estimated Instructional Time:**

77 minutes per day on an alternating A/B block schedule for one school year

**Forms of Assessment to Measure Attainment of Course Objectives:**

- Curriculum-based measures
- Benchmark Assessments
- Formative Assessments
- Summative Assessments
- Performance-Based Assessments

## Resources:

**Student Text Resources:**

Heithaus, Michael R., and Karen Arms. *Environmental Science*. Houghton Mifflin Harcourt, 2013.

- Student Edition Printed Version
- Student Edition Online Version
- Study Guide Book

**Teacher Resources:**

Heithaus, Michael R., and Karen Arms. *Environmental Science*. Houghton Mifflin Harcourt, 2013.

- Teacher Edition Printed Version with Online Access

**Technology:**

District approved supplemental technology

**Other Resources:**

Teacher created resources
District approved supplemental resources and labs