**COURSE DESCRIPTION**

**Course Title:** Entomology

**Course Number:** 00315

**Course Prerequisites:** N/A

**Course Description:** Entomology is a one semester elective course open to all students in Grades 9 through 12. The course will explore the fascinating world of insects. Topics covered include insect origins, external and internal anatomy and physiology of insects, insect behavior, insect classification and how insects impact human life and ecosystems. Students will create an insect collection, classifying insects to the family level.

**Suggested Grade Level**: Grades 9-12

**Length of Course:** One Semester

**Units of Credit:** .5

**PDE Certification and Staffing Policies and Guidelines (CSPG) Required Teacher Certifications:**

CSPG 32 Biology; CSPG 30 Agriculture

To find the CSPG information, go to [CSPG](https://www.education.pa.gov/Educators/Certification/Staffing%20Guidelines/Pages/default.aspx)

**Certification verified by the WCSD Human Resources Department:** [x] Yes [ ] No

**WCSD STUDENT DATA SYSTEM INFORMATION**

**Course Level:** Academic

**Mark Types:** Check all that apply.

[x] F – Final Average [x] MP – Marking Period [x] EXM – Final Exam

**GPA Type**: [ ]  GPAEL-GPA Elementary [ ]  GPAML-GPA for Middle Level [x]  NHS-National Honor Society

[x]  UGPA-Non-Weighted Grade Point Average [x]  GPA-Weighted Grade Point Average

**State Course Code**: 03099

To find the State Course Code, go to [State Course Code](https://nces.ed.gov/forum/sced.asp), download the Excel file for *SCED*, click on SCED 6.0 tab, and choose the correct code that corresponds with the course.

**TEXTBOOKS AND SUPPLEMENTAL MATERIALS**

**Board Approved Textbooks, Software, and Materials:**

**Title:**  How to Know the Insects

**Publisher:** WCB/McGraw Hill

**ISBN #:**  0-697-04752-0

**Copyright Date:** 1978

**WCSD Board Approval Date:** 5/14/2018

**Supplemental Materials:** Insect Appreciation, McGraw Hill, 1978

**Curriculum Document**

**WCSD Board Approval:**

**Date Finalized:** 2/19/2025

**Date Approved:**  3/10/2025

**Implementation Year:** 2024-2025

**SPECIAL EDUCATION, 504, and GIFTED REQUIREMENTS**

The teacher shall make appropriate modifications to instruction and assessment based on a student’s Individual Education Plan (IEP), Chapter 15 Section 504 Plan (504), and/or Gifted Individual Education Plan (GIEP).

**SCOPE AND SEQUENCE OF CONTENT AND CONCEPTS**

**Marking Period 1**

* Insect Collection
* Insect Origins
* External Anatomy of Insects

**Marking Period 2**

* External Anatomy of Insects (continued)
* Internal Anatomy of Insects
* Insect Order

**Marking Period 3**

* Insect Collection
* Insect Origins
* External Anatomy of Insects

**Marking Period 4**

* External Anatomy of Insects (continued)
* Internal Anatomy of Insects
* Insect Order

**Standards/Eligible Content and Skills**

| **Performance Indicator** | **PA Core Standard and/or Eligible Content** | **Marking Period Taught**  |
| --- | --- | --- |
| Explain the characteristics common to all organisms. | BIO.A.1.1 | MP1, MP3 |
| Describe relationships between structure and function at biological levels of organization. | BIO.A.1.2 | MP1, MP3 |
| Describe and interpret relationships between structure and function at various levels of biological organization (i.e., organelles, cells, tissues, organs, organ systems, and multicellular organisms). | BIO.A.1.2.2 | MP1, MP3 |
| Explain the mechanisms of evolution. | BIO.B.3.1 | MP1, MP2, MP3, MP4 |
| Explain how natural selection can impact allele frequencies of a population. | BIO.B.3.1.1 | MP1, MP2, MP3, MP4 |
| Describe the factors that can contribute to the development of new species (e.g., isolating mechanisms, genetic drift, founder effect, migration). | BIO.B.3.1.2 | MP1, MP2, MP3, MP4 |
| Analyze the sources of evidence for biological evolution. | BIO.B.3.2 | MP1, MP3 |
| Interpret evidence supporting the theory of evolution (i.e., fossil, anatomical, physiological, embryological, biochemical, and universal genetic code). | BIO.B.3.2.1 | MP1, MP2, MP3, MP4 |
| Apply scientific thinking, processes, tools, and technologies in the study of the theory of evolution. | BIO.B.3.3 | MP1, MP2, MP3, MP4 |
| Describe ecological levels of organization in the biosphere. | BIO.B.4.1 | MP2, MP4 |
| Describe biotic interactions in an ecosystem (e.g., competition, predation, symbiosis). | BIO.B.4.2.2 | MP2, MP4 |
| Describe how ecosystems change in response to natural and human disturbances (e.g., climate changes, introduction of nonnative species, pollution, fires). | BIO.B.4.2.4 | MP2, MP4 |
| Use mathematical representations to support claims for the cycling of matter and flow of energy among organisms in an ecosystem. | SCI.3.1.9-12.H | MP2, MP4 |
| Construct and revise an explanation based on evidence for the cycling of matter and flow of energy in aerobic and anaerobic conditions. | SCI.3.1.9-12.J | MP1, MP2, MP3, MP4 |
| Evaluate the claims, evidence, and reasoning that the complex interactions in ecosystems maintain relatively consistent numbers and types of organisms in stable conditions, but changing conditions may result in a new ecosystem. | SCI.3.1.9-12.M | MP1, MP2, MP3, MP4 |
| Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity. | SCI.3.1.9-12.N | MP2, MP4 |
| Evaluate the evidence for the role of group behavior on individual and species’ chances to survive and reproduce. | SCI.3.1.9-12.O | MP1, MP2, MP3, MP4 |
| Communicate scientific information that common ancestry and biological evolution are supported by multiple lines of empirical evidence. | SCI.3.1.9-12.S | MP1, MP2, MP3, MP4 |
| Analyze and interpret how issues, trends, technologies, and policies impact agricultural, food, and environmental systems and resources.  | SCI.3.4.9-12.A | MP1, MP2, MP3, MP4 |
| Plan and conduct an investigation utilizing environmental data about a local environmental issue. | SCI.3.4.9-12.E | MP1, MP2, MP3, MP4 |
| Evaluate and communicate the effect of integrated pest management practices on indoor and outdoor environments. | SCI.3.4.9-12.F | MP1, MP2, MP3, MP4 |
| Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 9–10 texts and topics. | CC.3.5.9-10.D | MP1,MP2, MP3, MP4 |
| Summarize the flow of energy within an ecosystem with the support of a model (i.e., as it relates to the food web). | ELP.16.4.9-12.4W | MP2, MP4 |

**ASSESSMENTS**

**PDE Academic Standards, Assessment Anchors, and Eligible Content: The** teacher must be knowledgeable of the PDE Academic Standards, Assessment Anchors, and Eligible Content and incorporate them regularly into planned instruction.

**Formative Assessments:** The teacher will utilize a variety of assessment methods to conduct in-process evaluations of student learning.

**Effective formative assessments for this course include:** Exit tickets, projects, labs/dissections, quizzes, reflections, illustrations, diagrams

**Summative Assessments: The** teacher will utilize a variety of assessment methods to evaluate student learning at the end of an instructional task, lesson, and/or unit.

**Effective summative assessments for this course include:** Teacher created quizzes, labs, tests, essays, final projects, final exams