

7. Organismal Physiology

Content Area: **Science**
Course(s): **Generic Course**
Time Period: **Marking Period 4**
Length: **4 weeks**
Status: **Published**

Standards

AP Biology Essential Knowledge Standards:

1B.1, 1C.3, 1D.2,

2A.1, 2A.2, 2A.3, 2C.1, 2C.2, 2D.1, 2D.2, 2D.3, 2D.4, 2E.2,

3B.2, 3C.2, 3D.1, 3D.2, 3D.3, 3D.4, 3E.1, 3E.2,

4A.3, 4A.4, 4B.1, 4B.2, 4C.1,

Goals/Objectives

Learning Objectives:

LO 3.34 The student is able to construct explanations of cell communication through cell-to-cell direct contact or through chemical signaling. [See SP 6.2]

LO 3.35 The student is able to create representation(s) that depict how cell-to-cell communication occurs by direct contact or from a distance through chemical signaling. [See SP 1.1]

LO 3.36 The student is able to describe a model that expresses the key elements of signal transduction pathways by which a signal is converted to a cellular response. [See SP 1.5]

LO 3.37 The student is able to justify claims based on scientific evidence that changes in signal transduction pathways can alter cellular response. [See SP 6.1]

LO 3.38 The student is able to describe a model that expresses key elements to show how change in signal transduction can alter cellular response. [See SP 1.5]

LO 3.39 The student is able to construct an explanation of how certain drugs affect signal reception and, consequently, signal transduction pathways. [See SP 6.2]

LO 3.43 The student is able to construct an explanation, based on scientific theories and models, about how nervous systems detect external and internal signals, transmit and integrate information, and produce responses. [See SP 6.2, 7.1]

LO 3.44 The student is able to describe how nervous systems detect external and internal signals. [See SP 1.2]

LO 3.45 The student is able to describe how nervous systems transmit information. [See SP 1.2]

LO 3.46 The student is able to describe how the vertebrate brain integrates information to produce a response. [See SP 1.2]

LO 3.47 The student is able to create a visual representation of complex nervous systems to describe/explain how these systems detect external and internal signals, transmit and integrate information, and produce responses. [See SP 1.1]

LO 3.48 The student is able to create a visual representation to describe how nervous systems detect external and internal signals. [See SP 1.1]

LO 3.49 The student is able to create a visual representation to describe how nervous systems transmit information. [See SP 1.1]

LO 3.50 The student is able to create a visual representation to describe how the vertebrate brain integrates information to produce a response. [See SP 1.1]

Content

Environmental Constraints on Physiological Adaptations Nutrition: A comparative approach
Transport: A comparative approach
Defenses: A comparative approach

Immunity: A comparative approach Thermoregulation: A comparative approach

Osmoregulation: A comparative approach Hormonal Control

Nervous Systems

Reproduction: A comparative approach Development: A comparative approach

Skills

Science Skills Practices for AP Biology

- use representatives and models to communicate scientific phenomena and solve problems

- use mathematics appropriately
- engage in scientific questioning to extend thinking or to guide investigations
- plan and implement data collection
- perform data analysis and evaluation
- work with scientific explanations and theories
- connect and relate knowledge across various scales, concepts, and representations in and across domains.