

PETERS TOWNSHIP SCHOOL DISTRICT

CORE BODY OF KNOWLEDGE (CBK)

KEYSTONE BIOLOGY GRADES 11 AND 12

For each of the sections that follow, students may be required to understand, apply, analyze, evaluate, or create the particular concepts being taught.

COURSE DESCRIPTION:

Keystone Biology is a remedial course in which students are given a refresher in biological concepts and test taking skills relevant to the Keystone Biology Exam. Concepts for study include biological processes and biochemistry principles, bioenergetics, ecology, evolution, cellular biology and genetics. Students will use this course to prepare to retake the Keystone Biology Exam, or to fulfill the Peters Township School District graduation requirements.

STUDY SKILLS:

- Organize class materials.
- Prepare for quizzes, tests, and state exams through the development of study skills and test taking strategies.

1. BASIC BIOLOGICAL PRINCIPLES

- Characteristics of living things
- Cell theory
- Cell membrane and cell parts
- Levels of organization

2. CHEMICAL BASIS OF LIFE

- Atoms and bonds
- Properties of water
- Solutions and pH scale
- Biological molecules (carbohydrates, lipids, proteins, nucleic acids)
- Biochemical reactions
- Enzymes

3. BIOENERGETICS

- ATP
- Photosynthesis
- Cellular Respiration

4. HOMEOSTASIS AND TRANSPORT

- Homeostatic mechanism
- Passive transport
- Active transport
- Bulk transport
- Structure of the cell membrane

5. CELL GROWTH AND REPRODUCTION

- Mitosis
- Meiosis
- Regulation of the cell cycle
- Problems with the cell cycle

6. GENETICS

- Mendel's experiments and Punnett squares
- Meiosis
- DNA and chromosomes
- Replication
- RNA and protein synthesis
- Genetic engineering
- Human genetics

7. THEORY OF EVOLUTION

- Evolutionary scientists and their theories
- Natural selection
- Evolution of populations
- Evolution and genetics
- Modern evolutionary theory
- Speciation
- Taxonomy

8. ECOLOGY

- Levels of organization
- Energy flow through an ecosystem
- Matter cycles
- Abiotic/biotic factors
- Biodiversity
- Biomes
- Populations
- Human interactions with the environment

MATERIALS AND SUPPLEMENTALS:

www.studyisland.com

www.pdesas.org

www.khanacademy.org

www.bozemanscience.com

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