

SAP1

Students will analyze anatomical structures in relationship to their physiological functions.

Element: SAP1.a

Apply correct terminology when explaining the orientation of body parts and regions.

Element: SAP1.b

Investigate the interdependence of the various body systems to each other and to the body as a whole.

Element: SAP1.c

Explain the role of homeostasis and its mechanisms as these relate to the body as a whole and predict the consequences of the failure to maintain homeostasis.

Element: SAP1.d

Relate cellular metabolism and transport to homeostasis and cellular reproduction.

Element: SAP1.e

Describe how structure and function are related in terms of cell and tissue types.

SAP2

Students will analyze the interdependence of the integumentary, skeletal, and muscular systems as these relate to the protection, support and movement of the human body.

Element: SAP2.a

Relate the structures of the integumentary system to its functional role in protecting the body and maintaining homeostasis.

Element: SAP2.b

Explain how the skeletal structures provide support and protection for tissues, and function together with the muscular system to make movements possible.

SAP3

Students will assess the integration and coordination of body functions and their dependence on the endocrine and nervous systems to regulate physiological activities.

Element: SAP3.a

Interpret interactions among hormones, senses, and nerves, which make possible the coordination of functions of the body.

Element: SAP3.b

Investigate the physiology of electrochemical impulses and neural integration and trace the pathway of an impulse, relating biochemical changes involved in the conduction of the impulse.

Element: SAP3.c

Describe how the body perceives internal and external stimuli and responds to maintain a stable internal environment.

SAP4

Students will analyze the physical, chemical, and biological properties of process systems as these relate to transportation, absorption and excretion, including the cardiovascular, respiratory, digestive, excretory and immune systems.

Element: SAP4.a

Describe the chemical and physical mechanisms of digestion, elimination, transportation, and absorption within the body to change food and derive energy.

Element: SAP4.b

Analyze the relationships between the respiratory and cardiovascular systems as they obtain oxygen needed for the oxidation of nutrients and removal of carbon dioxide.

Element: SAP4.c

Explain how the cardiovascular system and blood provide a link between the cells by transporting nutrients and oxygen and removing carbon dioxide.

Element: SAP4.d

Relate the role of the urinary system to regulation of body wastes (i.e. water-electrolyte balance, volume of body fluids).

Element: SAP4.e

Examine various conditions that change normal body functions (e.g. tissue rejection, allergies, injury, disease and disorders) and how the body responds.

SAP5

Students will analyze the role of the reproductive system as it pertains to the growth and development of humans.

Element: SAP5.a

Identify the structures and functions of the male and female reproductive systems and disorders commonly associated with each.

Element: SAP5.b

Explain how the functions of the reproductive organs are regulated by hormonal interactions.

Element: SAP5.c

Describe the stages of human embryology and gestation including investigation of gestational and congenital disorders (e.g. ectopic pregnancy, miscarriage, cleft palate, hydrocephaly, fetal alcohol syndrome).

Element: SAP5.d

Describe the stages of development from birth to adulthood (i.e. neonatal period, infancy, childhood, adolescence and puberty, and maturity).

Element: SAP5.e

Describe effects of aging on all body systems.