

Program Contents

In addition to the actual dissection of each organ, there are interactive activities and formative assessments sprinkled throughout the program, for each organ, to help review and solidify student learning. Each organ dissection is a stand-alone experience and can be performed in any order. Time estimates and the highlights for each section are provided below.

Introduction

Running Time: 9 minutes

- Wendy's welcome
- Controls/Functionality

Human Heart

Running Time: 25 minutes

- External Features (left/right atria, left/right ventricles, interventricular sulcus, aorta, pulmonary trunk, superior/inferior vena cava)
- Internal Aspects (interventricular septum, tricuspid valve, chordae tendineae, pulmonary valve, mitral valve, trabeculae carneae, aortic valve)

Cow Eye

Running Time: 25 minutes

- External Features (occipital lobe, optic nerve, sclera, cornea)
- Internal Aspects (vitreous humor, retina, choroid, lens, pupil)

Pig Kidney

Running Time: 25 minutes

- External Features (renal capsule, renal fascia, adipose capsule, hilus, renal artery, renal vein)
- Internal Aspects (cortex, medulla, nephrons, renal tubule, renal pyramids, renal papillae, renal column, renal lobe, minor calyx, major calyx, renal pelvis, ureter, bladder)

Sheep Brain

Running Time: 40 minutes

- External Features (meninges, cerebrum, median longitudinal fissures, gyri, sulci, 4 lobes, rhinal sulcus, cerebellum, vermis, pituitary gland, cranial nerves, optic nerve, oculomotor nerve, trochlear nerve, trigeminal nerve, abducens nerve, facial nerve, auditory nerve, glossopharyngeal nerve, vagus nerve, spinal accessory nerve)
- Internal Aspects (CSF, cerebral aqueduct, septum pellucidum, corpus callosum, hypothalamus, thalamus, epithalamus, pineal body, arbor vitae, midbrain, pons, medulla oblongata, superior and inferior colliculi, grey matter, hippocampus)

TOTAL RUNNING TIME: 120 MINUTES

The Importance Of Dissection

Dissection labs excite students and motivate them to ask probing questions about anatomical structures and processes, to identify patterns across species, and to relate structure to function. When students reach high school, dissections can be used as evidence for model building and as empirical evidence to support theories. Dissection of a small mammal is a hands-on approach for students to gather information on organs and organ systems necessary to develop a model of interacting systems that is also applicable to larger mammals, such as humans.

NGSS: Next Gen Science Standards

DISCIPLINARY CORE IDEA

LS 1.A: STRUCTURE AND FUNCTION: Multicellular organisms have a hierarchical structural organization, in which any one system is made up of numerous parts and is itself a component of the next level.

PERFORMANCE EXPECTATION

HS-LS1-2: Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.

