

A is for ANATOMY

DESCRIPTION: Students will identify anatomical structures of the human nervous and cardiovascular systems. Only the scientific names of the parts of the brain, a spinal cord cross section, a neuron, a spinal reflex, special senses (ear and eye), the parts of the heart, and major blood vessels associated with the heart will be utilized and accepted as correct.

TEAM SIZE: 1 or 2 students

APPROXIMATE TIME: 30 minutes

THE COMPETITION: Twenty-two stations will be set up around the room. Each station will have models or pictures of anatomical structures. Questions will relate to the identity of those structures.

The teams will move around the room, one team per station, answering the questions at each station as they go. This is a timed exercise. A facilitator will direct the students to move to a new station at one-minute intervals. The answers will be recorded on the provided ZipGrade answer sheet with a #2 pencil. Students should bring pencils.

SCORING: There will be twenty-one stations with four multiple choice questions per station. Each question will be worth one or two points. The team with the highest point total will be the winner.

Ties will be broken by the four questions at station #22. These questions will be open-ended (not multiple choice) and will be recorded on the answer sheet. Only the correct spelling of scientific names of the structures will be accepted!

NERVOUS SYSTEM STUDY GUIDE

<u>Parts of the brain</u>	<u>Spinal cord cross section</u>	<u>Simple spinal reflex (reflex arc)</u>
brain stem - midbrain - pons - medulla oblongata cerebellum cerebrum - frontal lobe - parietal lobe - occipital lobe - temporal lobe diencephalon - thalamus - hypothalamus - pineal gland corpus callosum pituitary gland (hypophysis) ventricles - lateral ventricles - third ventricle - fourth ventricle optic chiasma olfactory bulb *Know primary function for each part.	posterior median sulcus anterior median fissure white matter gray matter ventral roots dorsal roots dorsal root ganglion spinal nerve pia mater arachnoid mater dura mater vertebrae <u>Parts of a neuron:</u> cell body nucleus dendrite axon	receptor afferent or sensory neuron interneuron efferent or motor neuron effector (muscle or gland) *Follow the path of signal transmission.

SPECIAL SENSES STUDY GUIDE

<p><u>Ear</u> outer Ear - pinna (auricle) - external auditory (acoustic) meatus - auditory canal middle ear - tympanic membrane - incus (anvil) - malleus (hammer) - stapes (stirrup) - auditory or Eustachian tube inner ear - semicircular canals - vestibule - cochlea - oval window - round window - vestibular nerve - cochlear nerve</p> <p>*Follow the path of sound waves through the ear.</p>	<p><u>Eye</u> lacrimal gland sclera cornea pupil iris lens retina choroid optic nerve anterior cavity posterior cavity aqueous humor vitreous humor (body)</p> <p>*Follow the path of light through the eye.</p>
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CARDIOVASCULAR SYSTEM STUDY GUIDE

<p><u>Heart</u> right atrium right ventricle left atrium left ventricle aorta (ascending, arch, descending) pulmonary trunk pulmonary arteries (right & left) pulmonary veins (right & left) tricuspid valve bicuspid or mitral valve inferior vena cava superior vena cava aortic semilunar valve pulmonary semilunar valve chordae tendineae papillary muscle coronary arteries cardiac veins</p>	<p><u>Heart tissues and cavity</u> parietal pericardium pericardial cavity visceral pericardium (epicardium) endocardium myocardium</p> <p>* Follow the path that blood takes through the heart.</p>
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If a rule clarification is posted on the Macomb Science Olympiad website, the supervisor will score this event accordingly. Please visit: <https://macombso.org/anatomy>