

2019 Science Olympiad Event Descriptions – Division C

Anatomy & Physiology

Participants will be assessed on their understanding of the anatomy and physiology for the human Cardiovascular, Lymphatic, and Excretory systems.

Astronomy

Teams will demonstrate an understanding of stellar evolution in normal & starburst galaxies.

Booilever

Teams will design and build a Booilever meeting requirements specified in these rules to support a minimum load and achieve the highest structural efficiency.

Chemistry Lab

Teams will complete one or more tasks and answer a series of questions involving the science processes of chemistry focused in the areas of Physical Properties and Acids & Bases.

Circuit Lab

Participants must complete tasks and answer questions about electricity and magnetism.

Codebusters

Teams will cryptanalyze (decode) encrypted messages using cryptanalysis techniques and show skill with advanced ciphers by encrypting or decrypting a message.

Designer Genes

Participants will solve problems and analyze data or diagrams using their knowledge of the basic principles of genetics, molecular genetics, and biotechnology.

Disease Detectives

Participants will use their investigative skills in the scientific study of disease, injury, health, and disability in populations or groups of people.

Dynamic Planet

Students will use process skills to complete tasks related to glaciers, glaciation, and long-term climate change.

Experimental Design

This event will determine the participant's ability to design, conduct, and report the findings of an experiment and conduct entirely on site.

Fermi Questions

Teams provide answers to a series of "Fermi Questions", science related questions that seek fast, rough estimates of a quantity, which is either difficult or impossible to measure directly.

Forensics

Given a scenario and some possible suspects, students will perform a series of tests. These tests, along with other evidence or test results, will be used to solve a crime.

Fossils

Teams use fossils to date and correlate rock units as well as demonstrate their knowledge of ancient life by completing tasks related to fossil identification and classification.

Geologic Mapping

Teams will demonstrate understanding in the construction and use of topographic maps, geologic maps, and cross sections, and their use in forming interpretations regarding subsurface structures and geohazard risks especially with respect to subduction zones.

Herpetology

Participants will be assessed on their knowledge of amphibians and reptiles.

Mission Possible

Participants design, build, test, and document Rube Goldberg-like device that completes a required action through an optional series of specific actions.

Mousetrap Vehicle

Teams design, build, and test a vehicle using one or two snap mousetraps as its sole means of propulsion to push a paper cup forward, reverse direction, and stop as close as possible to a Vehicle Target Point.

Protein Modeling

Students will use computer visualization and online resources to construct physical models of CRISPR Cas9 protein, that is being engineered to edit plant and animal cell genomes, and answer a series of questions about the chemistry of protein folding and the interaction of structure and function for model proteins.

Sounds of Music

Teams must construct and tune one device prior to the tournament based on a 12-tone equal tempered scale and complete a written test on the physics of sound.

Thermodynamics

Teams must construct an insulating device prior to the tournament that is designed to retain heat and complete a written test on thermodynamic concepts.

Water Quality

Participants will be assessed on their understanding and evaluation of aquatic environments.

Wright Stuff

Prior to the tournament teams design, construct, and test free flight rubber-powered monoplanes to achieve maximum time aloft.

Write It Do It

One participant will write a description of an object and how to build it. The other participant will attempt to construct the object from this description.