

RGV Regional Science Olympiad- Feb. 26, 2022

Division B events (16 events)

- **Anatomy & Physiology (*Nervous, Sense Organs, Endocrine*)**- In this event, participants will be assessed on their understanding of the anatomy and physiology for the human Nervous, Sense Organs, and Endocrine systems.
- **Bridge**- In this event, teams will design and build a Bridge (Structure) meeting requirement specified in these rules to achieve the highest structural efficiency.
- **Code busters**- In this event, teams will cryptanalyze and decode encrypted messages using cryptanalysis techniques for historical and modern advanced ciphers.
- **Crime Busters**- In this event, given a scenario, a collection of evidence, and possible suspects, students will perform a series of tests. The test results along with other evidence will be used to solve a crime.
- **Dynamic Planet (*Hydrology*)**- In this event, students will use process skills to complete tasks related to Earth's fresh waters.
- **Electric Wright Stuff**- In this event, prior to the tournament teams design, construct, and test free flight electric-powered monoplanes to achieve maximum time aloft.
- **Experimental Design**- This event will determine the participant's ability to design, conduct, and report the findings of an experiment entirely on-site.
- **Food Science**- In this event, participants will answer questions on food chemistry with a focus on sugars. In addition, participants will build a hydrometer capable of measuring sugar solutions between 1-10% (mass/ volume).
- **Meteorology (*Climate*)**- In this event, participants will use scientific process skills and quantitative analysis to demonstrate an understanding of the factors that influence world climate and climate change through the interpretation of climatological data, graphs, charts and images.
- **Mousetrap Vehicle**- In this event, teams design, build, and test one Vehicle using one or two mousetrap(s) as its sole means of propulsion to reach a target point as accurately as possible.

- **Ornithology-** In this event, participants will be assessed on their knowledge of North American birds.
- **Road Scholar-** In this event, participants will answer interpretive questions that may use one or more state highway maps, USGS topographic maps, Internet-generated maps, a road atlas, or satellite/aerial images.
- **Rocks and Minerals-** In this event, participants will demonstrate their knowledge of rocks and minerals.
- **Sounds of Music-** In this event, teams must construct and tune one device prior to the tournament based on a one-octave 12-tone equal tempered scale and complete a written test on the physics of sound and music concepts.
- **Storm the Castle-** In this event, prior to the competition, teams will design, construct, and calibrate a single device capable of launching projectiles onto a target and collect data regarding device parameters and performance.
- **Write It, Do It-** In this event, 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.

Division C Events -(17 events- Disease Detectives is tentative)

- **Anatomy & Physiology (*Skeletal, Muscular, Integumentary*)-** In this event, participants will be assessed on their understanding of the anatomy and physiology for the human Nervous, Sense Organs, and Endocrine systems.
- **Bridge-** In this event, teams will design and build a Bridge (Structure) meeting requirement specified in these rules to achieve the highest structural efficiency.
- **Cell Biology-** This event integrates content knowledge and process skills in the areas of cell biology and cellular biochemistry.
- **Chem Lab-** In this event, teams will complete one or more tasks and answer a series of questions involving the science processes of chemistry focused in the areas of Aqueous Solutions and Oxidation/Reduction.

- **Code busters-** In this event, teams will cryptanalyze and decode encrypted messages using cryptanalysis techniques for historical and modern advanced ciphers.
- **Disease Detectives-** In this event, participants will use their investigative skills in the scientific study of disease, injury, health, and disability in populations or groups of people.
- **Dynamic Planet (*Hydrology*)-** In this event, students will use process skills to complete tasks related to Earth's fresh waters.
- **Environmental Chemistry-** This event will focus on fresh water (e.g., residential, industrial or natural), The Clean Water Act (1972 & 1977 – certain pages specified at the end), wastewater operator's certification manual (Indiana March 2018 revision) and its applications, and various testing of particular analytes using standardized curves (either interpreted or created).
- **Experimental Design-** This event will determine the participant's ability to design, conduct, and report the findings of an experiment entirely on-site.
- **Forensics-** In this event, 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.
- **Gravity Vehicle-** In this event, teams design, build and test one Vehicle and Ramp that uses the Vehicle's gravitational potential energy as its sole means of propulsion to reach a target as quickly and accurately as possible.
- **Ornithology-** In this event, participants will be assessed on their knowledge of North American birds.
- **Rocks and Minerals-** In this event, participants will demonstrate their knowledge of rocks and minerals.
- **Trajectory-** In this event, prior to the competition, teams will design, construct, and calibrate a single device capable of launching projectiles onto a target and collect data regarding device parameters and performance.
- **Wright Stuff-** In this event, prior to the competition teams design, construct and test free flight rubber-powered monoplanes to achieve maximum time aloft.

- **Write It, Do It-** In this event, 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.
- **Science Word-** Texas event- Team members will take turns giving verbal clues that are related to the selected scientific term from across all science disciplines while the other team member attempts to identify the term.