

Chapter 1 : Comprehensive Event Listing - Science Olympiad Student Center Wiki

The information below should not be interpreted as an extension of the rules. The official rules in the current Rules Manual take precedence. This event has been generously supported by NASA's Universe of Learning Astrophysics STEM Learning and Literacy Network.

Knowledge of microorganisms , diseases, and skills pertaining to the identification and analysis of microorganisms. Mission Possible C Teams will design and test a machine to perform a specific task. Mousetrap Vehicle C Teams will design, build and test a vehicle using one mousetrap as the sole means of propulsion to reach a target as quickly, accurately and in as little time as possible. Mystery Architecture B Teams will be given materials with which they will build a structure. Competitors may be asked to build towers, bridges, and cantilevers. Common materials include drinking straws, bamboo skewers, index cards, string, tape, rubber bands, and craft sticks. Teams will also take a written test about Optical Science. Remote Sensing C Application of remote sensing in the study of global warming. Road Scholar B Teams will demonstrate their knowledge of the use of maps and satellite images. Solar System B Teams will demonstrate their understanding of terrestrial bodies. Teams must also complete a written test on thermodynamic concepts. Wright Stuff B Teams will build, test, and fly a monoplane. The team with the device closest to the original will win.

Distinction Between Trial and Pilot Events[edit] The terms "trial event" and "pilot event" also called "exploratory event" are sometimes interchangeable, both pertaining to an event that is not an official, national event for the year. However, at the National Tournament, there are often two differences. First, in , it was announced that medals would only be awarded to the top 3 in the Trial events, but not at all in the Pilot events. Also, the Trial event are often much closer to becoming official events for following years than pilot events. Almost all of the Trial events from recent National tournaments have become official events within a few years of the tournament, while the same is not true for almost any of the pilot events.

Team Structure[edit] Teams are hosted by the school from which the participants attend. Science Olympiad is most often run as an after-school extracurricular activity , but some schools offer Science Olympiad classes that allow students to receive academic credit for participation. A teacher , parent , or student usually a volunteer coordinates the team in practice and preparation for the competition. Often there are others who coach individual events as well. A team can consist of up to 15 students and any number of alternates; some states allow more students per team. At the middle school level at nationals, only five ninth graders are allowed to compete on one team; at the high school level, only seven twelfth graders are allowed per team. However, state organizations occasionally amend these rules. This is specifically aimed at building events. It is illegal for teams to have their alternates as "builders" and their formal team members as "thinkers". Judges at the event are allowed to ask any question of the machine or contraption in an effort to keep the scenario above from occurring. Nonetheless, competitors, coaches, and entire teams are expected to have integrity and to abide by this rule. For each type of event, the ranking differs. Knowledge events are scored by the correct number of answers; the team with the highest score will receive 1st place, the second highest will receive 2nd place, and so on. If two teams are tied, there are usually tiebreaker questions that apply only to those teams that are tied. The non-testing events are scored based off the individual requirements listed in the Science Olympiad rule book, released each year to reflect new events, requirements, and clarifications. However others may use the lowest score. The team with the lowest overall score is declared the winner. However, it should be noted that some state competitions choose to score the competition by awarding more points per place e. There are several ways to break a tie draw: One method for tie-breaking is based on medals where the team with more first place medals wins. If both teams have the same amount of first places, it moves to second place medals and so on. This is the method that the National Tournament uses. Before a competition, the event organizer decides on several events to be used as tie-breakers. If two teams get the same score overall, the team that rates highest in that one event will take the lead. The team with the best combined score in trial events would win the competition when this method is used. In some competitions, there also may questions added into event, labeled as tie-breakers. If needed, these questions can be used as tie breakers, although this type of tie-breaker

is generally for only the event and not the overall rank. Competition Levels[edit] Science Olympiad competitions occur at the regional , state and national level. Normally, the top few teams advance from the regional level to state competition, the exact number depending on how many regions there are and how many teams compete. For example, in Ohio, the number of teams qualifying for the state tournament from each regional depends solely on the number of teams participating at that regional, [26] whereas in New York the allocation system involved determining whether or not the winning team in a regional tournament had won the previous year this method has since been discontinued. In most states, the top team advances from the state to the national competition. Some states with a larger number of teams are allotted a second spot at the national competition to represent their larger participation. Currently, teams compete at the national level each year 60 from Division B and 60 from Division C ; the number has changed over the years to accommodate growing participation. Many states also hold invitational tournaments. At some invitationals, only a few events are held. However, many invitational tournaments mimic regional and state competitions in their competitive intensity. For example, MIT hosts an invitational tournament each year with around 70 teams from over a dozen states, including 20 or more past national qualifiers. In this way, teams can gain extra practice before competing in regional, state, or national tournaments. In , Yale University [36] became one of the first institutions of higher education to host a tournament run by Science Olympiad alumni, with several more following over the next few years. Teams compete at the state competition with the top two schools in Division B and Division C each earning a spot at the national competition. Some states are given a second slot, based on the membership within the division. The total number of invited teams in each division is equal to 60 and the national tournament hosts teams. Although they competed in several events, their scores were not tallied against the state teams. The competition officially begins with opening ceremonies on Friday night that usually include a notable speaker, such as a Nobel Laureate. A traditional Swap Meet follows the opening ceremonies which is an opportunity for teams to meet and greet. They bring state memorabilia to trade with other teams. The most popular items include hats, license plates, T-shirts, and key chains. Saturday includes several time blocks. Each block includes a minute section for each study event, plus a minute break time for competitors to get from one event to another. That night, a formal Awards Ceremony is held. It opens with a short speech followed by awarding medals for the top six teams in each event. Points for all the events are added together to determine an overall national team winner. The trial events are not included in this tally. The top ten teams in each division are recognized with trophies and plaques. In some national tournaments, scholarships are awarded to the top teams in each event. For the and competitions, held at the University of Illinois at Urbana-Champaign , first-place event winners received full four-year tuition waivers to the university. Additional awards may also provided by sponsors and industry leaders for specific events. National Locations and Champions[edit] This is a list of past national champions and locations.

Chapter 2 : Missouri Science Olympiad: Events-Division C

Event Supervisors may remove from competition any student(s) whose personal or ethical behavior does not adhere to the Science Olympiad Code of Ethics. This action will disqualify the affected student(s) from participation and scoring in that event only.

Lateral- away from middle, to the side Superficial- near the surface Deep- towards the interior of the body Ipsilateral-same side of the median Contralateral-opposite side of the median Body Regions A more complex diagram: Cells Your body is made up of trillions of cells. Cells are the tiniest functional part of any living organism. They are made up of elements, and so are much larger than atoms. Cells have organelles, which carry out important jobs inside the cell. Each type of cell has different functions. The cell membrane contains the contents of the cell, kind of like a plastic bag. It lets some things go in and out through the processes of active and passive transport. One form of passive transport is known as diffusion. Diffusion is when particles of high concentration move to areas of low concentration. This can be seen when you spray air freshener in a room. The scent does not only stay where you sprayed it, it spreads out around the room. Just like the brain is the main command center for the body, the nucleus is the main command center of the cell. It stores DNA, which is used when a cell multiplies mitosis. Organelles in the Human Body The mitochondria are the powerhouse of the cell. The process of making cellular energy is known as cellular respiration. Vesicles transport substances throughout the cells. Ribosomes are involved in protein synthesis, or the making of protein. They are located along the rough endoplasmic reticulum. Lysosomes break down material that are no longer in use. The material can then be recycled in to other things. Vacuoles store substances in the cell. They are bigger than vesicles. It is involved in shipping and receiving substances. Microtubules provide structural support and make up part of the cytoskeleton, as well as being part of cilia and flagella. Centrosomes serve as the microtubule organizing center of the cell. There is only one in each animal cell. Types of Cells There are more than different types of cells in the human body. However, they can be grouped into a few simple categories. Here are just a few. Nerve Cells, or neurons, are located throughout the brain. They help us with the five senses taste, touch, smell, sight, sound , memory, and autonomous activities like breathing. Muscle Cells help move the body. Check the Muscular System page for more information on muscle cells. Epithelial Cells help protect the body and provide a covering. Glandular Cells secrete helpful chemicals into various parts of the body. One example is the type of cell located in the armpits to secrete sweat, which relieves the body of harmful chemicals. Epithelium Epithelial tissue is found throughout the body. It covers both internal and external surfaces, as well as forming most glands. Epithelium are be classified by the number of cell layers and the shape of the epithelial cells. Stratified- more than one layer Pseudostratified- appearing to be stratified, but actually simple Shape: Columnar- column-like tall and thin Squamous- flat Simple Squamous- lung alveoli, the site of gas exchange Simple Cuboidal- kidneys Simple Columnar- stomach and intestines, secrete and absorbs Pseudostratified Columnar- nasal cavity, sinuses, pharynx, trachea Stratified Squamous- skin Tips for the event Make a binder! Even though binders are not allowed during competition, it remains a great way to store, organize and memorize all information for the event. The binder should include information on all topics mentioned in the rule book. Flash cards can be a useful resource for studying any of the human body systems. Put pictures of parts of the system, their name or their function on the cards. Online flashcards can be made on quizlet. Remember the charts and diagrams. They often account for a majority of the questions on the test. Simple diagrams often help with studying more than the complicated ones do. A high school, college, or high-level middle school textbook would also assist you in preparing for this event. Small amounts of studying really add up. Take multiple practice tests, because the type of questions and level of complexity can vary widely from test to test. A model would often be used for questions about labeling a system. Be sure to study the location of each part of the system. Many anatomical systems overlap, so it may be beneficial to at least glance over topics from previous rotations, especially if you are repeatedly running into questions that relate to other systems. For example, any system that has to do with muscles Muscular , Cardiovascular requires knowledge of the action potential, which is connected to the Nervous System. Making

the Note Sheet Source-check before doing anything. Putting incorrect information on the notes can be devastating. Color code the information by system or subdivision of a system. This makes finding information easier during competition. Also color-code diagrams for maximum efficiency as seen in the picture below. Keep the coding consistent so that by the end of the season you automatically associate a color to a type of information ex: Make sure the partner is also familiar with the note sheet, for better cooperation during the competition. The example below was made by aubrey An example muscle diagrams Use as small of a font as possible, but keep it readable. Serif fonts are considered easier to read in print than sans-serif fonts. Type the sheet, then hand-write extra notes in the margins where the printer might not be able to print. Pencils are easier to erase, while pens do not smudge. A two-sided page can fit a lot of information. Use laser printers to improve the readability of the notes when the font is very small. Prioritize information to put on. Include the information you have the most trouble remembering first, then add additional information. Include charts, like the Hormones and Muscle Lists. The act of making a chart can also be greatly beneficial. Include diagrams often to maximize your note sheet. Try to find ones with big font, so you can minimize it while keeping the text readable. Colored diagrams are generally easier to use. Some tests will have calculations about the dead space in lungs, lung volume, blood pressure, and other anatomical formulas. For the respiratory system, consider listing the steps of gas exchange because this type of problem has been very common. Similarly, for the digestive system, consider including the route food goes through from the mouth to the large intestine. Below are some additional exercises:

Chapter 3 : Resources :: Science Olympiad Astronomy Event () - Part 1 | Smithsonian Learning Lab

a measure of the size of the event horizon of a black hole Reissner-Nordstrom metric In physics and astronomy, the Reissner-Nordström metric is a static solution to the Einstein-Maxwell field equations, which corresponds to the gravitational field of a charged, non-rotating, spherically symmetric body of mass.

Please share your thoughts here or email us cxcpub@cfa.harvard.edu. Thank you Posted by Michelle Park on Friday, Posted by Hannah Quirk on Friday, Posted by Harley Zanon on Saturday, Any help is appreciated. Thanks Posted by Venkat on Sunday, Are there any links to rules for Solar systems event? Posted by Venkat on Monday, The student wiki does not contain useful info to help the students prepare their sheets to take into the event since ice in the solar system is such a new event. Any suggestions on an outline for the material It is scattered through so many web sites. They are only allowed 2 sheets double sided. Posted by Ellen Finelli on Wednesday, There is a test posted for for Planetary Sciences scroll down http://www.astro.umd.edu/~hogg/teaching/planetary_sciences/ Any chance of seeing that? Thank you so much! Posted by Conrad Schnakenberg on Sunday, You do not need to create anything. The answer keys are included. The years were focused on stellar evolution. The events are all constructed in a similar fashion. This of course only pertains to the Astronomy Event. It sounds like you are more involved than with just this one event - almost impossible to do if you have never even seen a Science Olympiad competition. Posted by Donna L Young on Wednesday, You need to see that entry for "Astronomy: Type IA Supernova" and write a test strictly based on those event details. Posted by Conrad Schnakenberg on Monday, I have never participated in the SO nor observed the event. I have listened to the 11 part presentation here, but I am still not sure exactly what I need to create for the students. Any suggestions would be welcome. Posted by Scott Miller on Friday,

Chapter 4 : Scoring Guidelines | Science Olympiad

Science Olympiad Astronomy Webinar () This presentation is an overview of the content and resources for the National Science Olympiad (NSO) Division C Astronomy Event.

Chapter 5 : Anatomy and Physiology - Science Olympiad Student Center Wiki

This presentation is an overview of the content and resources for the National Science Olympiad (NSO) Division C Astronomy Event.

Chapter 6 : Astronomy | Virginia Science Olympiad

Science Olympiad is a competition consisting of study and building events covering various science and engineering topics. Students work with a partner or group and will compete in at least one event.

Chapter 7 : Science Olympiad - Wikipedia

The information on pages may be removed during the event. Sheet protectors and laminated sheets are allowed. Each team may bring two stand-alone calculators of any type to use during the event.

Chapter 8 : Astronomy Science Olympiad Help? | Yahoo Answers

Learn science olympiad astronomy with free interactive flashcards. Choose from different sets of science olympiad astronomy flashcards on Quizlet.

Chapter 9 : Astronomy | Science Olympiad

© Science Olympiad Event Logistics Manual - 4 Estimated Hours of Prep Time (including set-up): this is an estimate of the amount of time required of an event supervisor to prepare the needed event materials and set up the event space prior to the arrival of.