**Science Olympiad Information Sheet**

Science Olympiad is a competition in which students participate in a variety of science-themed events. The events range from engineering events in which you will build a structure in advance of the competition, to lab procedures performed on the day of competition, to general knowledge tests. For most events you will compete as a team of 2-3 and depending on the size of our team, you will have 3-4 different events to prepare for. A brief description of this year’s events is below. Please read through them and begin thinking about which ones interest you the most. A more detailed description can be found after Labor Day on the Science Olympiad website: [www.soinc.org](http://www.soinc.org).

We will participate in 2-4 invitational tournaments in the fall/winter, a regional competition in late February, and if we do well enough, the state competition in early April. ☺

An official Science Olympiad Team is limited to 15 students. For any tournament we attend, we will only be taking a 15-member team (or two teams if we have enough interest). In order to allow the greatest number of students to experience competing, we will likely rotate through team members for the various invitational tournaments. The top-performing students in competition and/or at practice days will be selected to represent Pope at the regional tournament in the spring.

***2018-2019 Event Descriptions:***

**Anatomy & Physiology** - This event encompasses the anatomy and physiology of selected body systems, this year limited to cardiovascular, lymphatic, and excretory systems.

**Astronomy** - Teams will demonstrate an understanding of the basic concepts of math and physics relating to stellar evolution and star and planet formation.

**Boomilever** - A pre-build event in which students attach a weight-supporting arm to the wall.

**Chemistry Lab** - Teams will demonstrate chemistry laboratory skills related to acids and bases.

**Circuit Lab** - Teams will complete tasks and take a written test regarding electricity and magnetism.

**Codebusters** - This event will determine a team's ability to decode encrypted messages.

**Designer Genes** - This event will test student knowledge and require data analysis in the areas of genetics and biotechnology.

**Disease Detectives** - Students will use investigative skills in the scientific study of disease, injury, health and disability in populations or groups of people.

**Dynamic Planet** - Teams will use NGSS science and engineering practices to complete tasks related to glaciers and long-term climate change.

**Experimental Design** - Given a set of unknown objects, teams will design, conduct, analyze, and write-up an experiment.

**Fermi Questions** – Students answer a series of science-related estimation questions in which the answer is an order of magnitude (10x).

**Forensics** - Students will identify polymers, solids, fibers, and other materials in a crime scenario.

**Fossils** - Students will identify fossils from a provided list and will answer questions relating to classification and ecology of ancient organisms.

**Geologic Mapping** – Students will analyze topographic and geologic maps, including cross sections.

**Herpetology** – Students will identify and answer questions about selected reptiles and amphibians.

**Mission Possible** – Teams build a Rube-Goldberg device that completes a set of predetermined tasks within a certain time frame.

**Mousetrap Vehicle** – A pre-build event (with impound) in which students build a vehicle powered by one or two snap mousetraps that must push a cup then reverse direction.

**Protein Modeling** – Students will pre-build (and impound) a model of a folded protein (CRISPR-Cas 9). On-site, there will be a second model build (with materials provided at event) and written test.

**Sounds of Music** - Prior to the competition, teams build a musical instrument that will play a major scale (student’s choice). On-site, students will play the instrument and take a test over the physics of sound.

**Thermodynamics** – Teams will pre-build (and impound) an insulating device to contain a 250 mL beaker and test it on site for its insulating ability as well as answer questions about thermodynamic concepts.

**Water Quality** – Students will be tested on their understanding of aquatic environments, including the use of a student-built salinometer to assess water quality.

**Wright Stuff** - Teams will build a rubber band powered monoplane to achieve maximum flight time.

**Write It/Do It** - A technical writing exercise where students write a description of a contraption and other students will attempt to recreate it using only the written description.

**Quick View of Concepts and Skills by Event**:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Life, Personal, and Social Science | Earth and Space Science | Physical Science and Chemistry | Technology and Engineering | Inquiry and Nature of Science | Paper and Pencil Activity/Test | Lab/Field Activity | Building Event |
| Anatomy and Physiology |  |  |  |  |  |  |  |  |
| Astronomy |  |  |  |  |  |  |  |  |
| Boomilever |  |  |  |  |  |  |  |  |
| Chemistry Lab |  |  |  |  |  |  |  |  |
| Circuit Lab |  |  |  |  |  |  |  |  |
| Codebusters |  |  |  |  |  |  |  |  |
| Designer Genes |  |  |  |  |  |  |  |  |
| Disease Detectives |  |  |  |  |  |  |  |  |
| Dynamic Planet |  |  |  |  |  |  |  |  |
| Experimental Design |  |  |  |  |  |  |  |  |
| Fermi Questions |  |  |  |  |  |  |  |  |
| Forensics |  |  |  |  |  |  |  |  |
| Fossils |  |  |  |  |  |  |  |  |
| Geologic Mapping |  |  |  |  |  |  |  |  |
| Herpetology |  |  |  |  |  |  |  |  |
| Mission Possible |  |  |  |  |  |  |  |  |
| Mousetrap Vehicle |  |  |  |  |  |  |  |  |
| Protein Modeling |  |  |  |  |  |  |  |  |
| Sounds of Music |  |  |  |  |  |  |  |  |
| Thermodynamics |  |  |  |  |  |  |  |  |
| Water Quality |  |  |  |  |  |  |  |  |
| Wright Stuff |  |  |  |  |  |  |  |  |
| Write It/Do It |  |  |  |  |  |  |  |  |

**2018-2019 Pope Science Olympiad Team Prospective Student Application**

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Grade: \_\_\_\_\_\_\_\_ Phone #:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

AO Teacher: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ email:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

***Have you participated in Science Olympiad before? \_\_\_\_\_\_\_\_\_\_* elementary middle school high** *(if yes, please circle level[s])*

***High school science classes you have already taken (include any classes that relate to this year’s events):***

Name of Class: Teacher: Letter Grade:

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***Current Class Schedule:***

Name of Class: Teacher:

**1st** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**2nd** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**3rd** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**4th** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**5th** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**6th** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**7th** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

***Please rank the following events in your order of interest. For the event you are MOST interested in, write a “1.” Choose your top 10 events.***

\_\_\_\_\_ Anatomy & Physiology

\_\_\_\_\_ Astronomy

\_\_\_\_\_ Boomilever

\_\_\_\_\_ Chemistry Lab

\_\_\_\_\_ Circuit Lab

\_\_\_\_\_ Codebusters

\_\_\_\_\_ Designer Genes

\_\_\_\_\_ Disease Detectives

\_\_\_\_\_ Dynamic Planet

\_\_\_\_\_ Experimental Design

\_\_\_\_\_ Fermi Questions

\_\_\_\_\_ Forensics

\_\_\_\_\_ Fossils

\_\_\_\_\_ Geologic Mapping

\_\_\_\_\_ Herpetology

\_\_\_\_\_ Mission Possible

\_\_\_\_\_ Mousetrap Vehicle

\_\_\_\_\_ Protein Modeling

\_\_\_\_\_ Sounds of Music

\_\_\_\_\_ Thermodynamics

\_\_\_\_\_ Water Quality

\_\_\_\_\_ Wright Stuff

\_\_\_\_\_ Write It/Do It

***Please continue on the back of this page 🡪***

***For your TOP THREE events, please further explain why you are qualified for those particular events (related internships/volunteer experience, summer programs, experienced family member, etc.)***

1st choice: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2nd choice: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3rd choice: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

***What extracurricular activities do you participate in? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***

***Is there any other relevant information you would like to include regarding your potential membership in the Science Olympiad team?***

***\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***

**Parent/Guardian Information**

Please provide the following information so that we may contact you if the need arises.

Parent Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Parent Phone: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Parent e-mail: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*Parents, please feel free to join our Science Olympiad Remind account to be kept in the loop regarding team communications: text* ***@popescioly*** *to the number* ***81010*** *to receive text alerts.*

Parent volunteers are extremely helpful in helping our team run smoothly! In particular, we will need a few adult volunteers to help transport students to various events. If you are willing to drive students to a competition, please indicate below. We also appreciate donations of snacks/meals, both at competitions and practice sessions, or the expertise of any parent who may be knowledgeable in any of our competition areas.

***Please indicate if you are willing to assist in any of these areas:***

transportation (how many students can you transport?\_\_\_\_\_\_) donate snacks/meals

provide subject area expertise (subject:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_) other: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Please return this completed form to room 119 by FRIDAY, AUGUST 31.**