



2017 Coaches Manual

Division A

Delaware Science Olympiad 2017

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Introduction

Elementary students are natural scientists. They question everything, they experiment just to see what will happen. They are not afraid to explore and try new things. This is what Science Olympiad is all about.

The goal of *Delaware Science Olympiad*: is not to take away teaching time from the basics or any other subject, but instead enrich and enhance the opportunities in STEM education for elementary school students. The elementary years are important for influencing young students' perceptions about science and math. It is during these years that students, if taught science in a hands-on, problem-based manner, begin to develop important lifelong science literacy skills, such as problem solving, critical thinking, self-regulated learning and team work. With the added pressure of testing and future occupations moving rapidly in the direction of STEM, it is important that students and educators benefit from every opportunity they are given to further their science education. The program improves STEM learning for all students and celebrates their efforts.

Starting A Team

Delaware Science Olympiad is reorganizing its Elementary school program this year and will host an open invitational state tournament at Wilmington University with a limited amount of teams. (20 teams). Only one team from a school may participate this year. Schools or groups interested in participating in a tournament can click on "Division A" at <http://www.delawarescienceolympiad.com> to register and learn more about the elementary tournament at Wilmington University.

Delaware Science Olympiad will provide all of the materials and tools needed to run and practice all ten events. We are going to distribute science kits for each event the schools at no cost.

Elementary Tournament Big Picture

It can be difficult to describe what a DSO tournament to someone who has not seen one before. One hint: It looks a lot more like a track meet than a science fair.

During an elementary Science Olympiad tournament at Wilmington University this year, this is what the scheduled will look like.

Proposed 2017 Elementary Tournament Schedule

Name of Event	# of students	Room #	8:30-9:30	9:40-10:40	10:50-11:50
Anatomy	1 or 2		1-10	11-20	
Can race	1 or 2			1-10	11-20
Density	1 or 2			11-20	1-10
Chopper challenge	1 or 2			1-10	11-20
Fossil find	1 or 2		1-10	11-20	
Large Number Estimation	1 or 2		11-20	1-10	
Pasta Bridge	1 or 2			11-20	1-10
Starry night	1 or 2		11-20	1-10	
Straw egg drop	1 or 2		1-10	11-20	
Write it do it	1 or 2		11-20	1-10	

Teams of up to 12 students prepare throughout the year to compete in an elementary tournament. Any given team may have only one entry per event. An entry is a team of up to 2 (sometimes 3 or 4) out of 12 students competing in any one event as the representatives of their team. Teams are encouraged to participate in all of the events.

Each team member could compete in up to 3 events, but not more than 3. As stated above, the events take place during 3 separate time periods. During each time period, many different events are taking place at the same time. For example, in the proposed tournament schedule, there are 4 events in the first time period (in blue). Any given team member can compete in ONLY one event per time period since a person cannot be in two places at once.

One may wish to visualize an elementary tournament like a track meet. Team members specialize and become experts in two or three events (out of the 10 events) and compete in these events at the tournament individually and as the representatives for their team.

During a track meet, a team member may compete in the Javelin Throw and the High Jump and has worked in practice to improve at both of these events. The team member may win a medal individually for each event and his/her performance will also contribute to overall team standings. Similarly, in Science Olympiad, team members compete in events such as Describe It, Build It and Pasta Tower and work throughout the year to improve and get better at these events. On the day of the tournament, team members compete in these events to win individual medals and to help bring home a TEAM win.

Put simply, each team member chooses 2 or 3 events to become “experts” in during the year, works with a partner, and then competes in chosen events at the tournament with his/her partner to medal individually and to post a high rank for the team.

Scoring

Each pair of students will be ranked. If there are 20 teams competing at a tournament, the rank will be from 1st place to 20th place. Teams finishing 1st place receive 1 point for their team; teams finishing in 20th place receive 20 points for their team. If a team decides NOT to compete in an event, that team gets an NS (No Show). In this case, the team would get last place + 1, where last place = 20 and thus the team would get a 21 for not competing in the event. The ranks for all nineteen events are added together to get a "team score" which determines 1st, 2nd, and 3rd place teams for each tournament. Low score wins! In addition, 1st, 2nd, and 3rd place medals are given out for each event. In many tournaments more than 3 places are awarded based on the number of registered teams. As a result, each team member is competing for an individual medal as well as a team trophy.

Team Composition

Each team is comprised of up to eighteen students in grades K-5. Teams should strive to have a balanced representation of grades, gender, and ethnic background reflected by the school or group. In all cases, a coach must supervise each team. **A maximum of five 6th graders** are allowed on any one team. Teams wanting to use students younger than 3rd grade may do so as there is no minimum age or grade, only a maximum grade. Many events involve reading that will be difficult for students younger than 3rd grade. Coaches are advised to take care in putting students in events where they can succeed (e.g. pairing a younger student with an older one who can read the questions to them will help them be more successful). A team may have up to 5 alternates but only 12 students may compete at the tournament.

Elementary teams are not restricted by school affiliation or enrollment. This means that a coach can recruit and organize any eligible students regardless of their association with an education institution (public, private, charter, home school). Students may only compete on one team within the elementary division, so if a student's elementary school and girl scout troop both have teams, the student must decide which they are going to compete on. As a means for ensuring that a team is representative of the local area, Delaware Science Olympiad will require that a team's head coach declare an official central team address at the beginning of each year. Student participation on that team will require that the student have a permanent address which is within a 60 minute driving time (radius) of the team's central address OR be within the same geographic county. Coaches will be responsible for ensuring that this requirement is observed by using GPS database information as the standard measure of driving time.

Coach

An elementary team must have a head coach. A head coach registers and manages the school or organization's teams via the DSO website (www.delawarescienceolympiad.com) and serves as the point of contact for tournament organizers. The head coach may be a parent, teacher, principal, business person, community organizer, or any other caring adult. Successful teams are organized and supported by a head coach that is willing to make decisions and provide leadership.

The head coach must be aware of all the rules, manage the coaching resources, recruit students and assistant coaches, involve the parents, and provide a clear reason for the team to prepare and compete. Coaches should have the following qualities:

- Anyone who has a genuine interest in young people
- Anyone who is willing to stick with the team and see the job done
- Anyone who is willing to take the responsibility for the team at events
- Anyone who loves science, math, engineering and competition
- Anyone who has zeal and passion for authentic learning
- Anyone who wants to make a real difference in the lives of students

DSO also highly recommends that coaches have all people helping with their team register with their school as a volunteer and complete the school district's background check procedure.

Training

DSO staff and representatives present sessions at the coaches workshops to be held November 21th at Wilmington University.

Coaches Training Workshop (Highly Suggested)

Saturday, November 19, 2016, 8:00am to 12:00 pm at Wilmington University New Castle Campus.

The fee of \$25 covers training for one Head Coach and one Assistant Coach per team and **automatically covers the cost for one team registration.** (Eligible for Title II funding, is considered to be Professional Development.) Rules will be distributed electronically or at this training workshop if this registration has been received by November 20th, 2016 and one or both coaches attend.

Email to: delawareelementaryso@gmail.com

Goggles and Safety Glasses

Safety glasses look similar to regular glasses. For events that require safety glasses, teams must use safety glasses that are impacted rated ANSI Z87 or higher. This is printed somewhere on the glasses, usually on the arm. They must also wrap around the sides of the face or have side shields. Side shields are pieces on the sides of the glasses that protect the eyes from the side as well as the front. Safety glasses may never be used for events that require goggles.

Safety goggles are the type of eyewear that holds suction to the face. Events that require safety goggles must be “splash” goggles with indirect vents. Not all safety goggles have an impact rating, nor is it required. Goggles that do have an impact rating of ANSI Z87+ or higher may also be used in place of safety glasses in events that require them. To see a full explanation about the kinds of goggles and glasses, see our webpage (www.sciencenc.com/event-help/Eye-Protection/eyeprotection.php).

These are an example of goggles from Carolina Biological. They have indirect vents and suction to your face to prevent chemicals from getting to your eyes:



This is an example of safety glasses from Carolina Biological. These are impacted rated to at least Z87+ to prevent anything from flying in to your eye during testing in engineering events.



Cost

There will be a small cost for registering a Team this year Thanks to the generosity of Wilmington University who is the sponsor of this year tournament. Delaware Science Olympiad will provided all of the materials you will need to run your team. Science kits will be passed out to each registering team and will have all of the materials for each event. A kit will also include reference materials, study guides.

How do coaches schedule activities during the year?

The following is an example schedule to help you think about how you might design your own. The timeline may shift depending on what time of year your regional tournament is and your school calendar. **If you start later in the year than this, don't worry! The first year is a learning year, do the best you can and bring the team to a tournament and celebrate all that they learned!**

October/November	<ul style="list-style-type: none">*Register team(s) online and pay fees*Download Coaches Manual*Recruit students, parents, coaches*Get support of Administration*Study Coaches Manual*Continue to recruit event coaches
November	<ul style="list-style-type: none">*Coaches attend Science Olympiad Coaches Workshop – Nov.21st
October – December	<ul style="list-style-type: none">*Hold several interest meetings that showcase some of the events that students are able to compete in*Students fill out interest form for what events they want to compete in*Head Coach decides who will participate in each event and notifies students before winter break
April 16th – Competition	<ul style="list-style-type: none">*Prepare for Regional Competition. This looks very different for various teams. Some have 1 set meeting day each week, some meet with their individual event coaches outside of school, some practice on Saturdays. Do whatever works for you and your team.*Order or make team t-shirts*Organize, study, and build unity with partner and team members*Fill out paperwork and check regional webpage often
After the competition	<ul style="list-style-type: none">*Evaluate Results from Regional Competition, have a team celebration, make plans for what you will change for next year

Forms

There are 2 forms that every coach must bring to the tournament with them and turn in at registration:

- A completed roster for each team
- A photo consent form for each student
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The Roster and Photo Consent forms also available on the www.delawarescienceolympiad.com website.