

Coaches Training Manual

**NORTHERN CALIFORNIA
(NORCAL)**



Divisions B and C

A Division of the California Science League

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Some information in this manual has been excerpted from the State Directors training manual, and is available on the Science Olympiad web site at www.soinc.org. Any information found in State Directors manual and/or on web site that is in this manual is copyrighted to Science Olympiad, Inc. All other information is copyrighted to the NorCal Science Olympiad, an official state chapter of the Science Olympiad, Inc. NorCal Science Olympiad is a division of the California Science League.

Philosophy

The California Science League (CSL) is a national nonprofit organization devoted to improving the quality of science education, creating a passion for learning science and providing recognition for outstanding achievement in science education for both students and teachers. These goals are accomplished through classroom activities, research, professional development workshops and the encouragement of intramural, district, regional, state, national and international academic interscholastic tournaments.

The CSL facilitates the Northern California (NorCal) Science Olympiad program throughout Northern California and is associated with Science Olympiad, Incorporated. Tournaments are a celebration of your team's accomplishments in demonstrating understanding and mastery of science, mathematics, and technology content that requires not only knowledge and problem solving skills, but also the ability to work together as a team. Your team is a tribute to your school district, your state, your community and indeed the whole country.

NorCal Science Olympiad taps into this large network designed to encourage students to learn science, the process of science and also to have fun.

How to Participate

NorCal Science Olympiad is an official state chapter of the Science Olympiad, Inc. Science Olympiad is devoted to improving the quality of science education by engaging students in inquiry based events and competitions and acknowledging their academic accomplishments in a style similar to athletic events.

First, some basic definitions:

- **Coach** – this is the person who is in charge of a team. It is usually a teacher, but can also be a parent or other adult who is cleared by the individual school district to supervise students.
- **Team** – this is a set of students, of up to 15, who compete in a Science Olympiad tournament
- **Events** – Science Olympiad has 23 different competitions that cross the science spectrum. Each event has a set of rules that define the competition.
- **Impound** – many events that require a device to be built prior to the competition must be turned in to the event supervisors on the morning of the competition to ensure that no further modifications are made once the competition begins. This is done to ensure that a student doesn't use ideas from other teams to improve their device.
- **Device** – an object that is built or brought to one of the events, for example, the Storm the Castle or Tower device.
- **Event supervisor** – the judge for the individual event.

Three divisions of competition: Division A – Elementary (Grades 4-6), Division B – Middle School (Grades 6-9), Division C – High School (Grades 9-12). Division B and Division C competitions are conducted at the regional, state and national levels. In general, the Elementary competition is designed for local or school based competitions. While a few regional events exist for elementary students to participate to compete against other schools, they do not compete on a state or national level.

Three basic levels of competition in the Science Olympiad organization: Regional, State, and Nationals. In the state of California, all teams must participate in a regional tournament. There is a registration fee for each team. At the regional tournament, up to two teams are permitted from a single school. The regional and state tournament lasts one day and runs for about 6 hours, with an awards ceremony at the end of the competition. Awards are given to each set of students who compete in each of

the 23 individual events. For example, if two students from a team compete in the Disease Detective event and are in an awarded place, both students receive a medal or ribbon to represent their outstanding performance. In addition, teams are awarded overall points based on their performance on the individual events. Out of all teams competing at each regional event, the four top scoring teams in each division progress to the state competition. However, only one team from a school is permitted to progress to the state competition.

At the state competition, qualifying teams vie for a spot at the National competition. The top team in each division (B and C) advances to the National competition, so the state competition is intense!

At the Nationals, teams compete against each other for top honors in the Nation out of 14,000 schools who registered.

Because students DO science rather than just report on science, conducting the Science Olympiad tournaments requires a large number of resources and volunteers. The initial registration cost for a regional tournament includes membership to the National Science Olympiad, and for those teams who progress to the Nationals, this fee includes the National tournament registration. There is a registration fee for teams who progress to the state finals. Teams are asked to assist with securing volunteers to supervise and assist with the individual events at the regional and state level.

To register a team: After determining the region of participation the coach completes a registration form and submits it to the Regional Director by the date specified on the form. Once the registration form has been received, an official Rules Manual will be sent. Each year the events and rules change, so LOOK OVER THE RULES MANUAL CAREFULLY to avoid disqualification. The rules can be copied and distributed to students as they prepare for the competition.

In preparing teams for the individual events, practice, practice, and more practice is the key. If students are constructing a bridge or a tower, they should actually test it at school, determine what works and what doesn't, and then reconstruct after they have analyzed the results. If students are competing in a lab based event, they should be familiar with all the concepts and should have spent a great deal of time in the lab conducting the experiment. Although many events do not give a specific lab to complete, the rules will specify the general topics that will be tested.

The national Science Olympiad organization meets in May, after the national tournament, to create the new events and rules. In general, about 25% of the events are completely eliminated and replaced with new events. These new events are developed through trial and pilot events to ensure their feasibility as a competitive event. About 25% of the events undergo major revisions, wherein sizes of constructed devices are changed, or concepts in lab events are altered. Another 25% of the events undergo minor changes, usually to correct rules that are unclear. The final 25% of the events have no changes.

Again, to avoid disqualification make sure students follow the rules carefully and have all safety equipment on the day of the competition.

The top four teams in each division will be invited to compete in the state competition.

Rules Manual: The same manual is used for regional, state and national competitions. Often a rule change or clarification is needed. It is important to check all three websites (regional, state, and national) to stay up to date on the clarifications or changes. In addition, the rules may need to be modified based on logistics and/or the level of competition. For example, an event may specify a drop height or distance traveled of 5 meters at regional, 10 meters at state and 15 meters at nationals. A host site may not have the facility to accommodate the specified heights and will need to modify the drop height. To request a

clarification of a rule for the state event, go to the NorCal website (www.norcalscienceolympiad.com). There you will find a link to Request A Clarification. The questions and results will be posted on the site. A similar process is followed for the regional and national competition.

Registering and Participating

To participate in NorCal Science Olympiad, the coach must preregister with one of the regional directors below. Specific directions for registering and deadlines can be found at www.norcalscienceolympiad.com.

All teams must compete in a regional competition. Teams who progress to the state tournament are those teams who place in first, second, third, or fourth place at one of the regionals.

Since the ultimate goal of Science Olympiad is to improve the quality of science education, it is best to register as early in the year as possible. This will give students time to learn their event and learn the concepts that will be taught to the students. The rationale to early registration is to encourage deeper learning and not just focus on the competition aspect of Science Olympiad.

The following regions currently exist in Northern California. To determine which region your team is in, please contact the regional director who is closest to your school location. Each region has varying policies with regards to permitting teams from outside their area to compete in a regional event (i.e. limitations on room size at the host site.)

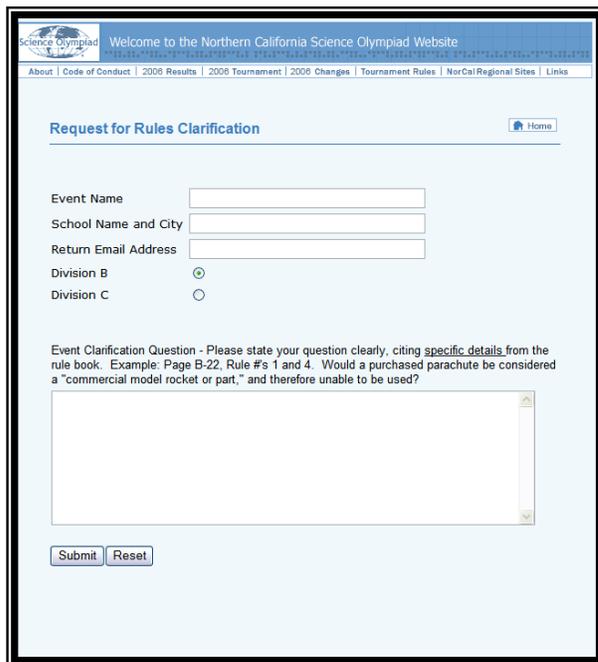


1. Bay Area	www.bayareascioly.com Contact: Barbara Little bayareaso@outlook.com
2. Fresno	Contact: Jennifer Weibert jweibert@fcoe.org
3. Sacramento	Contact: James Hill jdhill@sanjuan.edu www.sacramentoscienceolympiad.com
4. San Joaquin	http://www.sjcoe.org/sae/olympiad.aspx Contact: Annie Cunial acunial@sjcoe.net
5. Santa Clara County	www.santaclarascioly.com Contact: Barbara Little bayareaso@outlook.com
6. Stanislaus County	http://www.scoestudentevents.org Contact: Cheryl Goulart cgoulart@stanceo.org
7. Tulare	http://www.tcoe.org/scienceolympiad/ Contact: Jared Marr jaredm@ers.tcoe.org

Clarification of the Rules

Many of the rules in the events are complex. If rules need to be clarified, go to www.norcalscienceolympiad.com for state tournament clarifications. For other regions, contact the regional director. You can also contact a National Science Olympiad Event Supervisor through the official clarifications page at www.soinc.org.

As students prepare for an event, keep up to date on all clarifications. Visit the clarification websites frequently. Prior to the regional tournaments, the event judges will receive a copy of the national and regional clarifications, but not state clarifications. At the state tournament, the judges will receive a copy of the clarifications from the national and state clarifications pages only. When there is a conflict between the state and national sites, the state clarification takes precedence in most cases. This is done because modifications are sometimes needed based on local situations. If a team progresses onto the national competition, they will need to be aware of and informed of all national clarifications and therefore national clarifications will take precedence.



The screenshot shows a web browser window with the URL www.norcalscienceolympiad.com. The page title is "Request for Rules Clarification". The form includes the following fields and options:

- Event Name:
- School Name and City:
- Return Email Address:
- Division B:
- Division C:
- Event Clarification Question:

Below the question field are "Submit" and "Reset" buttons. The page also features a navigation menu with links for "About", "Code of Conduct", "2006 Results", "2006 Tournament", "2006 Changes", "Tournament Rules", "NorCal Regional Sites", and "Links".

Curriculum Potential

In addition to the need to publicize and recognize our young people, there is also a need to take a longer look at our curriculum guides in science and our daily lesson plans.

- Have we really included process skills in a meaningful way in our courses?
- Do we engage students in the own learning so that they construct their own meaning of concepts?
- Are the students problem solvers and thoughtful thinkers?
- Do we have students complete their work in a laboratory situation weekly?
- Do we perform demonstrations to illustrate the concepts and facts that we want our students to understand?

A student cannot become proficient in the manipulation and use of laboratory equipment overnight. A planned sequence of experiences throughout their school experience would allow the students to feel confident as they attempt to meet the challenges of the Olympiad's laboratory competitions. The same would be true for construction projects. Students need to be assigned low-risk, high-interest, well-defined, designed-for-success projects. Once they reach success in these simpler projects, something more complex will not unnerve them.

Finally, look at each of our science classes. Could we make them a little more interesting by using the gaming techniques of the Olympiad? Occasionally, we could introduce or review a concept or chapter by a different technique by playing Write-It, Do-It, password, periodic table quiz, etc. Teachers often tell students "school is hard work". We agree, but it doesn't have to be dull and boring also! It can be fun, exciting and challenging!



Official NorCal State Tournament Rules Updated August 1, 2015 – Changes in Bold

NorCal Science Olympiad Regional & State Tournament Rules

Second Teams: Regional and State Rule - A second team from the same school can compete at the regional level. The decision to allow more than two teams from a school site to participate in a regional event is up to the discretion of the Regional Director. Each team is considered a separate team of up to 15 students and no more than 5 alternates. National rules state that "each team must have a separate coach and a separate paid membership." The four top scoring teams from different schools in each division (B & C) at a Regional event advance to the State Finals. Only one team per school advances to the state event.

Code of Conduct Violations or Disqualifications: Regional and State Rule – Following are steps to be taken for violations or disqualifications:

- Inform the Coach and student(s) of the violation or disqualification
- Talk to the student and the Event Coordinator to determine the facts
- Verify that the violation occurred
- Arbitration Board to decide immediate consequences: - DQ from event - DQ from any event in which student was involved - Team prevented from further participation in Regional and/or State competition
- Arbitration Board can also recommend long-term consequences (for a time to be determined by the Regional/State Director and the Arbitration Board) : - Individual(s) DQ from future events - Team put on provisional status - Team disqualified from future Regional and State competitions

Team structure and advancing to State Finals: State Rule - Each registered team submits the NorCal Official Team List of up to 15 team members (see National rules) and no more than five alternate team members to their Regional Director prior to the start of the regional event. The list must include signatures from the coach, school principal and Regional Director. A copy of the original team list for winning teams will be included in the State Finals registration packet. A maximum of five 9th grade (DIV B) & seven 12th grade (DIV C) students on a team is permitted (see National rules). Regular team members may compete on one team only and cannot be listed as an alternate team member on any team list. Only team members from the winning schools Official NorCal Team List (including alternate team members) may participate in the NorCal State Finals. If a school has more than one team, the coach may choose students from all of the schools Official NorCal Team Lists to participate. However, teams are encouraged to send participants from the winning Regional team whenever possible. If a regular team member is unable to attend the state finals, then an alternate team member listed on the winning team's list can replace the student for the ENTIRE day. Alternate team members can be listed on both team lists but only as an alternate. It is not a requirement for alternate team members to have participated in the regional event.

In an effort to support and expand the Science Olympiad program, the NorCal Regional Directors made the decision to welcome schools from outside the Regional areas that do not have an established program, providing them the same opportunity to participate in the program. Regional Directors have the option to ensure that an "invited" team does not displace a local team from advancing to the state finals event (open to middle, Division B, and high school, Division C, level only). The Regional Director has the option to invite an additional team to the state event if an

"invited" team places in the top four spots thereby avoiding displacing local teams. Regions also have the opportunity to decide if invited teams participate equally with local teams in regard to medals and overall team awards, or if they are eligible for individual awards and not overall team awards.

Device Impound: State AND REGIONAL Rule - Only regular team members and registered alternate team members may impound a device. The team member(s) impounding a device does NOT need to be the student participating in the individual event. **Adults, including parents and coaches, are NOT allowed to impound or be present at the impound site.**

Pre-register Events: State Rule – Teams advancing to the State Finals will use the Event Sign Up System (ESUS) for "team number/building" events.

Team Numbers: State Rule - At the annual Regional Directors meeting, Directors will be assigned eight team numbers for their regional teams advancing to the State Finals. Immediately following the regional awards ceremony winning team coaches will receive their State Final team number from their Regional Director.

Scoring Procedures: State Rule, recommended for Regional – The lowest scoring team in each division at the NorCal State Finals advances to the National Science Olympiad. The scoring formula used at the National Science Olympiad Event will be used at the NorCal State Finals Event and is as follows: 1st place = 1 point, 2nd place = 2 points, etc. A team that is a "no-show" will receive N+1 point (where N = the number of participating teams), and a disqualification (DQ) for cheating or excessive use of vulgar language will receive N + 2 points. Where National rules do not indicate what to do if a team makes an honest attempt but cannot be scored due to time, mechanical failure, etc., the rule will be that the team receives N points for PARTICIPATION. The team can participate in the event if the Event Supervisor and/or an arbitrator determine it safe to do so. If an event is cancelled due to an error while testing/scoring it is up to the arbitration team to decide if individual awards are given for the event. Team points will not be given for an event that has been cancelled. If there is no tiebreaker, or teams are still tied with a tiebreaker, then the teams receive the same score and award if applicable for that event. If teams are tied for overall points, then the number of gold medals won (then silver, and then bronze) determines who advances to the National Finals. Example: Two teams score the same in an event with or without a tiebreaker and are in first place in that event. Both teams receive one point and are given gold medals. The next highest scoring team is in third place with a bronze medal and three points. There would be no second place team in that event.

It is recommended that the scoring procedures mentioned above are adopted at regional level. Awards at the state event will remain as follows: gold, silver, and bronze medals for first, second, and third place. Medals are awarded for fourth and fifth place.

Posting Scores: State Rule - No scores or best times will be posted.

Final Score Appeal Process: Regional and State Rule - The final team scores will be available to each team coach at the upon completion of the awards ceremony. Team coaches will be given thirty minutes after completion of the Awards Ceremony to appeal their team's scores. Event Supervisor judgment calls are not subject to review. Individual event tests will NOT be reviewed and will NOT be returned under any circumstances.

Arbitration: State Rule - An Arbitration Board, made up of one or more of the following: the State Director, Regional Directors and others as approved by the State Director. The Arbitration Board will be available throughout the day to assist with issues that may arise. Individual event appeal forms will be available at the scoring room. A team coach or assistant coach of record must complete and sign the form and submit it to an arbitration board member or deliver it to the scoring room. No one except the coach or the assistant coach of record may file an appeal. Please keep in mind that the Science Olympiad tournament is designed to "turn kids on" to science not turn them away, yet respect the needs of the Event Supervisor to provide a fair experience and a quality event.

Volunteer: State Rule - Each region will be assigned events and must provide an event supervisor and all assistants for each assigned event. The number of events assigned to each region is dependent upon location in relation to the host site. If a region is unable to provide supervisors and assistants, then the event will be *cancelled*. Regional Directors requesting a specific event assignment or changes to event assignments must consult with the State Director.

Device Authentication: Regional and State Rule - All devices to be used in the **current year** Science Olympiad competitions must have been newly constructed by one or more team members listed on the team list. The devices must NOT have been used in past Science Olympiad events. Note: see NorCal Official Team List for additional information. Also, see "Constructed Devices" under "Rules" on the NorCal Science Olympiad website. Team fees for NorCal State Finals: Current year **team fees are \$250 and payable to the**

California Science League. Beginning with the 2017 State Finals tournament team fees are \$275.

Small Schools, Home Schools, Magnet Schools

Small Schools Policy

Smaller states may combine into one team if total enrollment of the combined schools would not be greater than 300 students.

Rationale for this includes:

1. In rural states there are many schools with small enrollments. Even though individual students may be outstanding, there is not the base available to form a team with depth. This would enable the students to feel they have a chance of equal competition to achieve national recognition.
2. In a smaller school where a single teacher is in charge of the entire science program it is more difficult to be involved with all the enhancement activities, such as Junior Academy of Science, Science Fair, and Science Olympiad. By combining schools, a teacher could divide the responsibility and give the student greater flexibility. This would also allow communication between schools to encourage academic cooperation.

Adopted at State Director's meeting in Delaware, 1987

Home School Policy

(adopted July, 2006)

The NorCal Regional Directors extend an invitation to the home school community to participate in the NorCal Science Olympiad competition. Home-school students are eligible to participate if they follow the guidelines below:

1. Science Olympiad is a team activity, not an individual one, therefore a student must be a member of only one team. A team consists of up to 15 students. Home School students may participate in either B Division (grades 6-9) or C Division (grades 9-12). All students on the same team must be composed of students who work together on a regular basis prior to and independent of Science Olympiad.
2. If a home-schooled student is also affiliated with any public or nonpublic school, the student may ONLY participate on one team and must choose between the home-schooled team and the public or nonpublic team. Public or nonpublic schools may have rules eliminating the participation of part-time students.

3. A child's grade level equivalency will be determined by birth date. The child's grade level will be considered the same as the majority of other children of the same age level. Hence, a child who will be eleven years old on September 1 will be considered to be a sixth grader and so forth. The child's age will determine whether the child is eligible for either B or C Division. A middle school (grades 6-9) aged child may compete on a C Division team but a C Division (grades 9-12) aged child may not compete on a B Division team.
4. The geographic area determines where a home-school team will compete. For example, if a team of home-school students from the Sacramento area were to compete, they would register for the Sacramento regional tournament.
5. It is presumed that a home-school team will be composed of students who have a pre-existing relationship of working together on a regular basis. We will require a statement from the coach as to the nature of that relationship. An "all-star" team assembled by student abilities rather than by their pre-existing regular study relationship would not be allowed. Since this is a new aspect of the NorCal Science Olympiad, we may establish additional criteria as the home school activity materializes and unforeseen problems become known. Our desire is to provide this opportunity to as many students as possible while, at the same time, keeping the playing field level.
6. Membership is open to all schools and is in no way affected by race, religion, sex, or ethnic origin.

Magnet School Policy

The Science Olympiad is designed to recognize excellence in science education in private and public schools across the country. It is difficult for these schools to compete against district wide, (e.g. schools of science and mathematics) countywide or statewide magnet schools. Because the Science Olympiad is designed to improve the interest of all students within a regular school boundary, the recruiting of students from multiple schools is contrary to this basic Science Olympiad principle. An example of such a contradiction is a science museum organizing a Science Olympiad team made up of students from all over the city. Therefore, the magnet school policy is as follows: Those schools that accept all levels of students and/or do not have a restrictive academic admissions policy (e.g. Parochial schools) are eligible for the Science Olympiad. District, city, regional, magnet, state or governors school (e.g. Bronx school of science or the North Carolina School of Science and Math) may not be allowed to compete as teams if a state Science Olympiad policy regarding magnet schools has been adopted. Those students not attending regular schools within their normal attendance boundaries have two options for competing in the Science Olympiad as follows: 1) participate in what had been their "home school" (regular attendance area) or 2) compete in accordance to the state policy, and only advance to the National Science Olympiad tournament if an invitation is extended, and compete for tournament medals only, not team trophies. Each state director/program is encouraged to adopt this policy or one of its own.

Tournament Invitation Policy

A unique and strong component of the Science Olympiad program is that it offers students, through team membership, an advancing tournament format. It is noted that most participants of the program are never eligible to advance beyond the initial tournament event. We know that the experience of competing at an advanced level, regardless of the personal outcome, is beneficial to the development of young people's character and personal vision of success.

While these are beneficial experiences, it is important to remember that the design for the Science Olympiad is improve the interest of all students in science education.

In an effort to allow such a significant life experience to be enjoyed by more students across the nation, a limitation on schools invited to advance to the National competition is recommended. Effective for 1994, schools winning top honors at the National Science Olympiad Tournament for the previous two consecutive years will not be eligible for competition at the national level in their next year of Science Olympiad membership.

It is hoped that students who belong to successful teams, while perhaps disappointed at the prospect of competing only for experience, will continue to be challenged by the new events offered by the Science Olympiad each year. We know that winning events in the Science Olympiad is a bonus, but it should not be the primary focus of any level of competition. An element of continued growth for the Science Olympiad program nationwide could be demonstrating that the experiences gained in the Science Olympiad are dynamic and evolving. Repeating powerhouses are counterproductive; students who have advanced to the National competition two years have proven their ability to succeed. It is the mission of Science Olympiad to let others see the mark and strive for their own highest level of success. State directors/organizations may choose to implement such a policy at the regional and state level, and are encouraged to do so.

School teams VS. All Stars

Currently each Science Olympiad member school can enter up to 15 students as a team at each tournament. The school teams with the lowest overall scores advance to the next level.

There has been some interest from the inception of the Science Olympiad about the possibility of an “All-Star” team whereby the gold medal winners from one level advance to the next level. After much discussion and debate, the National Executive Board and the national captains and coaches at a meeting unanimously voted to support the existing school team approach in favor of an All-Star team for the following reasons:

1. The team concept philosophically is more acceptable to most educators rather than emphasizing individual competition which has negative connotations to many of them. The team concept emphasizes cooperation, teamwork, and the development of team spirit. The other over-emphasizes the individual and certain events.
2. The Science Olympiad Constitution states that one of the purposes of the Science Olympiad is to improve the quality of science education. Having a balance between content, process, and technology and all of the science disciplines promotes the development of a quality K-12 balanced science curriculum. If a school were allowed (encouraged) to bring only the best airplane thrower, egg dropper, or rock hound, it would encourage the fragmented and limited instruction of isolated skills to the neglect of the whole science curriculum. And, furthermore, it would be difficult to rally school and community support to fund the advancement of one paper airplane thrower versus the support for the overall state champion. But, worse, it would damage one of the major purposes of the Olympiad and it could detract from the regional and state team’s efforts and possibly be an embarrassment if individuals and not teams won all gold medals.
3. Finally, the management of an all-star team would be far more difficult and costly. Conceivably the worst case situation would result in 44 students from 24 schools from each state advancing to the national’s which would mean 1,760 students from 960 schools for each division rather than 600 students from 40 schools.

This would not only present nightmares for tournament organizers but also for local school supporters attempting to make plans for all these students not to mention the increased cost of

medals, material, and travel expense.

Still the All-Star team concept has merit because it recognizes the best from each state and it provides an opportunity for more students and more schools to be represented and receive awards. If a state would volunteer to attempt a modified all-star team contest, philosophical, and curriculum objections would be softened or eliminated. If gold medal winners only from those teams not advancing to a state or national tournament were invited, the numbers should be reduced and soften the management argument.

Before the National Board could consider such a radical change, however, we need to have demonstrated evidence at the state level that the concept is valid and can work.

Setting up a team

1. Teams consist of 15 students per team, with a coach (teacher or other adult) in charge. A maximum of 7 seniors are permitted on the Division C team. A maximum of 5 freshmen are allowed on the Division B event. A school is considered to be a separate school if it has a separate administrator. Students must be from the membership school. Recruiting from neighborhood schools is not permitted. However, middle schools may invite five of the last year's eighth grade students to be part of the team. These students are not allowed to be part of the middle school AND the high school team at the same time.
2. Each school can have up to 2 teams, as long as each team registers separately, with a different coach for each team. Only one team from a school is permitted to attend the state tournament. In addition, it is not possible to create a super team from the two school based teams if a team progresses to the state. This is the purpose of submitting the Official Team List and encourages the team to work together as a cohesive unit. (See sample on page following this section.) Please refer to the NorCal Science Olympiad website and the "Letter to Coaches Regarding Team Structure" for more information.
3. For the events, a team may enter no more than one set of competitors in any one event. A team cannot have two sets of students from a team build two separate planes and enter them as part of a team. For team events, a school team may enter no more than one sub-team. If a second individual or team from the same team is entered the second score will be disqualified regardless of how they placed. Aside from these limitations, teams may enter as many or as few events of the 23 events as they wish.
4. All teams must pre-register to compete in a regional competition. Please refer to the NorCal website for details on how to register with a regional director that is closest to your team's home site. The name of the teacher/coach must be provided by that time. It is not necessary to name the students who will compete in each event as these names can be changed and listed up to the day of the event.
5. Schools will receive a schedule at least four weeks prior to the competition so that students can plan their day. A sample schedule is found in this manual. Please note that the schedules for the events will vary region to region, and as teams progress from the region to state to national. More information on the specifics of how this process occurs can be obtained from a regional director.
6. Olympiad events are designed to use a variety of intellectual and practical skills. Some events require a quick recall of specific facts, while others require concept development, a process skill, or an application of a specific concept. Some events require general knowledge while others require a specific skill. Others may require a student to build an apparatus.

It may be advantageous to load the team with seniors who presumably have taken biology, earth science, chemistry, and physics or other advanced classes. However, it is more likely better to load the team with more juniors and sophomores since they have a more recent knowledge of the various science classes than the seniors. In preparing for the team, academic diversity is stressed. In other words, a student that is very specific in their studies may not be the best person for the team. In some areas, a student that has a wide field of study, while lacking some depth, may be a better person to choose for the team.

For Division B, a team can have no more than five 9th grade students. For Division C, a team can have no more than seven 12th grade students.

7. Check the schedule carefully. Do not over commit any one student. In some schools a single teacher/coach arbitrarily chooses the makeup of the team and this is permissible. In other schools, the science department chooses the team members. In other schools an intramural competition is used to select certain team members.
8. Schools can use the rules of the Olympiad to run practice activities or mini-competitions if there are multiple students that want to compete in specific events. Consider having several preliminary heats culminating in an assembly format for the entire school to arrive at the best students for the event. These preliminary rounds build interest and suspense for the actual Olympiad.
9. Last minute problems such as bad weather for any event scheduled outside may make it necessary for the coach to move the students into a different event. Be sure to coach students so they can be flexible enough and adventuresome enough to accept this challenge. Out of your team of 15 students, each one should be ready to step into an event at the last minute or have the schedule rearranged based on these unexpected challenges.
10. Extra students can be designated as alternate participants. The alternate participants may be placed on the official roster as a regular team member up to the day of the tournament. (Note: Once the official team list has been turned in on the morning of the tournament, only the regular team of up to 15 students may participate in the day's scheduled events.) Do not despair because the alternates are not the "same quality" as the first fifteen students on the team. Every coach has the same difficulty. For example, kids get sick, kid's parents won't let them participate, or the date of the Olympiad conflicts with another activity. The important thing is that the coach conveys a sense of fun, excitement, good sportsmanship and science learning. The competition is not the most important goal of the Science Olympiad.
11. For those schools who send two teams, the same alternates can appear on both Team 1 and Team 2. However, a student can not be assigned to one team and then appear as an alternate on the second team. This is related to the rule above on forming a super team if one team progresses to the state competition.

Sample Team List and Device Authentication Form



Barbara L. Little, Northern California State Director
1100 H Street, Modesto, CA 95354 (209) 525-5178 Fax (209) 525-6691

NorCal STATE SCIENCE OLYMPIAD Official Team List and Device Authentication Statement

Please list below up to fifteen (15) regular team members and up to five (5) alternate team members who will participate in the Regional Science Olympiad event. This list will be included in the NorCal Science Olympiad State Finals registration packet for teams advancing to the Finals. Please refer to the NorCal Regional and State Tournament Rules at the following website: <http://www.stancoe.org/nso>

School: _____ Coach: _____

Region: _____ Regional Director: _____

Code of Conduct: By signing below, we pledge to put forth our best effort in the Science Olympiad and to uphold the principles of honest competition. In our events, we will compete with integrity, respect, and sportsmanship towards our fellow competitors. We will display courtesy towards event supervisors, coaches, parents, and tournament officials. Our actions will exemplify the proud spirit of our school, team, region and state.

Event Device Authentication Statement: We, the undersigned, attest to the authenticity of all devices being used at the Regional and State Science Olympiad events. All devices to be used in the 2007 Science Olympiad competitions have been newly constructed by one or more team members listed below. The devices have **NOT** been used in past Science Olympiad events.

Print Regular Team Member Name:	Grade:	Regular Team Member Signature:
1. _____	_____	1. _____
2. _____	_____	2. _____
3. _____	_____	3. _____
4. _____	_____	4. _____
5. _____	_____	5. _____
6. _____	_____	6. _____
7. _____	_____	7. _____
8. _____	_____	8. _____
9. _____	_____	9. _____
10. _____	_____	10. _____
11. _____	_____	11. _____
12. _____	_____	12. _____
13. _____	_____	13. _____
14. _____	_____	14. _____
15. _____	_____	15. _____

Print Alternate Team Member Name:	Grade:	Alternate Team Member Signature:
1. _____	_____	1. _____
2. _____	_____	2. _____
3. _____	_____	3. _____
4. _____	_____	4. _____
5. _____	_____	5. _____

Note: An alternate team member may take the place of a regular team member for the entire day should a regular team member be unable to attend the State Finals. Complete this form and exchange it for a registration packet at the event.

Coach's Signature: _____ Date: _____ Principal's Signature: _____

Regional Director's Signature: _____ Date: _____

Conduct of Participants

The goal of Science Olympiad is to build character, teamwork, increase the interest of students in science and promote an overall good attitude. Unsportsmanlike conduct will not be tolerated on the part of students, parents, coaches, or guests.

Science Olympiad Code of Conduct

Student participants are expected to compete in tournament events with an honest effort to follow the rules and the spirit of the competition. The goal of competition is to give one's best effort while displaying honesty, integrity, and sportsmanship. Students, coaches, parents and guests are expected to display courtesy and respect toward Olympiad officials, other teams and guests of the Olympiad. Failure to show honesty and/or courtesy by a participant, coach, or guest of the team may result in the disqualification of the team from that event, the entire tournament or future tournaments.

Science Olympiad Pledges

Coach

I pledge to put forth my best effort in the Science Olympiad tournament and to uphold the principles of honest competition. In my events, I will compete with integrity, respect and sportsmanship towards my fellow competitors. I will display courtesy towards Event Supervisors and tournament personnel. My actions will exemplify the proud spirit of my school, team and state.

On behalf of the coaches, assistants and parents that are accompanying my team, I pledge to encourage honesty and respect for tournament personnel, our fellow coaches and other team members. We want our efforts to bring honor to our community and school.

Event Supervisor

On behalf of my fellow supervisors and tournament personnel, I pledge to run my event with fairness and respect for the participants and their coaches. Our actions will reflect the principles of the Science Olympiad program and display the pride we feel as representatives of our colleges, universities, companies, states or organizations.

Role of Parents

One of the most important goals of Science Olympiad is that students must be part of team to engage in science and science learning. While it is encouraged that parents and adults help students with their projects and preparation of their events, it is important to stress that parents do not do it all! They should merely be a guide on the side. Having parents construct a structure such as Mission Possible or Bridge Building will expose and embarrass the student when they are not capable of answering questions asked of them by the judge. Further, even if the student were to successfully compete, the emphasis of Science Olympiad is NOT to have the student win a medal, but rather to get them involved in the process of science.

During the competition, as much as parents and adults would like to do, it is important that coaches and parents not get involved in specific events. They are to remain away from all events, out of all rooms, and not interact with any judge. To do so could endanger the entire team for disqualification. If there is a dispute issue in a specific event, the student is to discuss the problem with the judge. If the judge and the student can not come to a resolution on the problem, the coach should get involved but in the following manner: The coach is NOT to go to the judge. The coach must go to the arbitration room. There, the coach will fill out a form indicating the dispute. This must be done within one hour after the completion of the event. The Arbitration Board will then make a decision on the dispute. The decision of the Arbitration Board is final. **A copy of the form is attached at the end of this manual.**

While it may seem like an unwieldy and legal-like process, the arbitration process is important because we want the judges to be focused on the event at hand. We also want the students to try to resolve the conflict on their own. This is also part of the learning process. But mistakes happen. The State Director has informed all judges that if they make a mistake early in the day, they are to continue the mistake for all other teams, if it cannot be corrected.

Scheduling Tips

With 23 events and only 15 team members, scheduling a team to cover every competition can be a difficult task. There are several things to keep in mind when scheduling, which may make your job a little easier.

1. Students with a wider background in a variety of science areas are easier to schedule.
2. The first effort is to schedule a student into his/her “strong” event if this is possible.
3. Note the times and places of events so students will not be covering too much physical ground. If the events are in the same building and back-to-back, the same team members can probably participate.
4. Schedule “back-up” team members to be present in case an event was late in starting or ending and an originally scheduled team member(s) can’t make it. This is not always possible but the coach can ask team members who are “free” to check events during that “free” time to make sure they are covered. This contingency plan is often used.
5. Certain events, such as Bridge Building or Tower Building, do not require the person building the entry to be present. The entry is considered a team effort so any team member can cover the event. This can “free up” members for another event which requires their specific talent or time (if an event runs late).

A student should be encouraged to seek additional sources of information from libraries, college professors or community resource personnel. However, **adults doing the actual physical work involved (i.e., building a trajectory device, rocket, etc.) are strictly forbidden. Commercially finished or purchased products, unless otherwise permitted in the rules, and those completed by adults will be disqualified.**

No teacher or school can buy the positive “PR” gained by placing in one or more of the Science Olympiad events. There is a renaissance of interest in excellence by public schools. All communities are looking at their schools critically. They want to know how to make them better. Placing in an Olympiad event would help schools confirm that quality instruction is taking place in the science classrooms. Several teachers have been commended by their Boards of Education because of their excellent showing in an Olympiad and at least one Delaware teacher received a commendation from the legislature for the first place win of his team.

SAMPLE

NorCal Science Olympiad State Finals

Schedule of the Day

7:00 AM	Registration – Event Supervisors & Assistants Coach Registers Team	Faculty Center Room 113/114
7:00 – 1:30 PM	Hospitality – Breakfast Snack & Lunch Coaches, Event Supes & Assistants	Faculty Center Quad Area
7:30 – 7:45 AM	Self-scheduled Event Poster Signups Three Students per Team	Gym
7:45 – 8:15 AM	Coaches, Event Supes & Assistants Meeting	Faculty Center Room 118
8:20 – 8:35 AM	General Assembly – Everyone Welcome	Gym
8:45 – 2:45 PM	Scheduled Events – See Schedule for Times & Locations Events Open to Spectators: Bottle Rockets Bridge & Tower Building Mission Possible (limited viewing) Robot Ramble Scrambler Wheeled Vehicles Wright Stuff	
2:30 – 3:15 PM	Entertainment – Everyone Welcome Team Demonstrations	Gym
3:15 PM	Awards Ceremony – Everyone Welcome Team Seating: Chairs on Floor & Lower Section of Bleachers Spectators: Upper Section of Bleachers	Gym

Enjoy A Day of Science!

NorCal State Competition Sample Schedule

<u>Event</u>	<u>Impound</u>	<u>Time</u>	<u>Time</u>	<u>Location</u>	<u>Status</u>
Anatomy - B		1:10 - 2:10	2:20 - 3:20	Sc 221	Closed
Anatomy & Physiology - C		10:50 - 11:50	12:00 - 1:00	Sc 221	Closed
Astronomy - C		1:10 - 2:10	2:20 - 3:20	Sc 127	Closed
Awesome Aquifer - B		8:30 - 11:50		Sc 205	Closed
Bottle Rockets - B		9:40 - 2:10		Gym	Spectator
Chemistry Lab - C		10:50 - 11:50	12:00 - 1:00	Sc 125	Closed
Compute This - B		1:10 - 2:10	2:20 - 3:20	Computer Lab	Closed
Crime Busters - B		10:50 - 11:50	12:00 - 1:00	Sc 123	Closed
Disease Detective - B		8:30 - 9:30	9:40 - 10:40	Sc 201	Closed
Disease Detective - C		1:10 - 2:10	2:20 - 3:20	Sc 201	Closed
Dynamic Planet - B		8:30 - 9:30	9:40 - 10:40	Sc 134	Closed
Dynamic Planet - C		10:50 - 11:50	12:00 - 1:00	Sc 134	Closed
Experimental Design - B		10:50 - 11:50	12:00 - 1:00	Sc 223	Closed
Experimental Design - C		8:30 - 9:30	9:40 - 10:40	Sc 223	Closed
Fermi Questions - C		1:10 - 2:10	2:20 - 3:20	Sc 226	Closed
Food Science - B		1:10 - 2:10	2:20 - 3:20	Sc 106	Closed
Forensics - C		8:30 - 9:30	9:40 - 10:40	Sc 123	Closed
Forestry - B		8:30 - 9:30	9:40 - 10:40	Sc 226	Closed
Forestry - C		10:50 - 11:50	12:00 - 1:00	Sc 226	Closed
Gravity Vehicle - C	10:00	10:50 - 2:10		Gym	Spectator
Helicopter - C		8:30 - 11:50		Gym	Spectator
Keep the Heat - B	8:00 - 8:30	8:30 - 9:30	9:40 - 10:40	Sc 101	Closed
Meteorology - B		10:50 - 11:50	12:00 - 1:00	Ag 124	Closed
Microbe Mission - B		1:10 - 2:10	2:20 - 3:20	Sc 233	Closed
Microbe Mission - C		8:30 - 9:30	9:40 - 10:40	Sc 233	Closed
Mission Possible - B	9:40	10:50 - 2:10		Ag 125	TBD
Mousetrap Vehicle - B	10:0	10:50 - 2:10		Gym	Spectator
Optics - B		10:50 - 11:50	12:00 - 1:00	Sc 105	Closed
Optics - C		1:10 - 2:10	2:20 - 3:20	Sc 105	Closed
Protein Modeling - C	8:00 - 8:30	8:30 - 9:30	9:40 - 10:40	Computer Lab	Closed
Reach for the Stars - B		10:50 - 11:50	12:00 - 1:00	Sc 127	Closed
Remote Sensing - C		8:30 - 9:30	9:40 - 10:40	Sc 124	Closed
Road Scholar - B		1:10 - 2:10	2:20 - 3:20	Sc 205	Closed
Robot Arm - C		12:00 - 3:20		Ag 131/132	Spectator
Rocks & Minerals - B		8:30 - 9:30	9:40 - 10:40	Sc 132	Closed
Rocks & Minerals - C		10:50 - 11:50	12:00 - 1:00	Sc 132	Closed
Sounds of Music - C		8:30 - 1:00		Ag 126/128	Closed
Storm the Castle - B	11:20	12:00 - 3:20		South of Sc	Spectator
Tech Problem Solving - C		10:50 - 11:50	12:00 - 1:00	Sc 101	Closed
Thermodynamics - C	12:30	1:10 - 2:10	2:20 - 3:20	Sc 219	Closed
Tower Building - B		9:40 - 1:00		Sc 213	Spectator
Tower Building - C		8:30 - 11:50		Sc 213	Spectator
Water Quality - B		10:50 - 11:50	12:00 - 1:00	Sc 206	Closed
Water Quality - C		8:30 - 9:30	9:40 - 10:40	Sc 206	Closed
Write It Do It - B		8:30 - 9:30	9:40 - 10:40	Ag 131/132	Closed
Write It Do It - C		8:30 - 9:30	9:40 - 10:40	Sc 219/221	Closed
Schedule for the day:					
Registration		7:00 - 10:00		Sc 115	
Coach/Event Supe					
Meeting		7:45 - 8:15 AM		Sc 115	
Hospitality-Coaches/Volunteers		7:00 - 1:30 PM		Sc 115	
Entertainment		3:00 - 4:00 PM		Gym	
Awards Ceremony		4:00 PM		Gym	

Hints and Suggestions for New Coaches

Many schools have had pep rallies to send off their Science Olympiad teams. They have team hats, warm-ups, flags, banners and cheers. Some teams have had a parade and police escort out of town on their way to the National Science Olympiad Tournament.

Local papers have run articles on preparation for events. The team may be able to get a “good luck” letter from a mayor, city council, local congressman or other local celebrity. Be sure to get publicity from the team’s local school district’s newsletter.

A coach or appointed assistant may wish to develop a slide show or video tape on their participation in the Olympiad. Start with the work done in getting ready.

1. Goals:

- a. Science is Fun
- b. Develop Teamwork

2. Objectives:

- a. Prepare all team members for each event
- b. Get to the Tournament
- c. Set Team Performance Objective(s)

3. Recruiting Coaches:

- a. Hold parent meeting
- b. Suggest events to parents based upon parent background
- c. Provide school facilities/supplies
- d. Seek help from all staff members, not just teachers
- e. Recruit former students - High School for Middle School, College for High School
- f. Recruit professionals from the community as health department, rock and mineral clubs, engineers, etc.
- g. Is a Criminal Record Screening Required?

4. Communicating:

- a. Message Board
- b. E-mail
- c. Memos
- d. Submit articles to each edition of the school newspaper
- e. Submit articles to local newspapers with all teams and coaches names along with photos showing training /competition activities

5. Organizing Team:

- a. Accept all who apply for the team
- b. Identify 15 competing members and alternates as the competition approaches
- c. Provide and enforce written team rules

6. Equipping:

- a. Team identity first, T-shirts/lab coats
- b. Develop unique Science Olympiad logo with good taste
- c. Buy all materials offered by National Science Olympiad and local Olympiad organizations
- d. Provide materials, safety equipment and supplies needed for each event

- e. Provide resource manuals as field guides where needed

7. Training:

- a. Coordinate schedule
- b. Use weekends as well as after school
- c. Do *off-site* training
- d. Make permission slip specific as to off-site training
- e. Make goodies an element of most sessions
- f. Get coaches to all offer training sessions and take enough coaches to cover all sessions.
- g. Get students to Regional Training Sessions, if offered.
- h. Cross train with other schools
- i. Take advantage of internet resources
- j. Take advantage of resources made available by state and regional directors
- k. Take advantage of resources made available by national (www.soinc.org), state (www.stancoe.org/nso), and regional event supervisors
- l. Combine younger team members with upper classman when training for an event

8. Competing:

- a. Enter all events, even if students have not trained
- b. Remind students of the SO code of conduct and pledge
- c. Remind students to thank the event supervisors and volunteers for each event
- d. Bring parent/staff volunteers to supervise/encourage/comfort students
- e. Supply Volunteers to help Event Supervisors to learn about how events are run
- f. Have adults/event coaches take students to events
- g. Carry every student who trains to the competition. Enter them in trial events, use them as a cheering section, have them observe other events and keep records/comments
- h. Debrief students about each event as soon as possible and keep records for the future
- i. Make sure parents come to events where observers are allowed and to awards ceremonies
- j. Take advantage of team rooms or base camps to focus the team throughout the day
- k. Bring extra trash bags to clean up areas used for building, eating and recreation.
- l. Don't forget extra supplies for last minute fix-ups: Glue guns, tape, paper, extra goggles.

9. Financing:

- a. Have administration set up an account for the team
- b. Estimate between \$500 - \$1000 for the year
- c. Seek donations from parents and companies/organizations in the community
- d. Encourage donations of equipment and supplies such as team attire, equipment, tools and supplies, parts for construction events, protective glasses/goggles, resource videos or manuals, calculators, food/snacks

NorCal Science Olympiad Scoring Format

1. All teams who participate and compete according to the rules must be scored and ranked. Test results will be put in order from 1st place to Nth place (N = number of teams competing).
2. Teams who were scored and had a raw score placed on the answer sheet are to be awarded points for each place as follows: 1st place = 1 point, 2nd place = 2 points, up to Nth place.
3. **Ties:** Every effort should be made to break ties following the guidelines under the scoring section of the event rules where applicable. In the rare event that a tie can't be broken, award points according to the place tied and then skip the next place (e.g., all teams that tied for 3rd place get 3 points).
4. Teams/devices that **do not meet the requirements in the event rules** will be allowed to compete if possible and are to be scored and ranked below those who met all of the specifications. They will be awarded event points in relation to their rank. Event Supervisors may, at their discretion, allow students to modify any device before the expiration of the impound period. Supervisors and Officials may NOT provide assistance regarding the type of modifications or how to accomplish them prior to, or at any time during the tournament day.
5. Teams making an honest attempt to participate that **CANNOT** be assigned a raw score because of time, mechanical failure, wrong dimensions, etc., will be listed as a "P" for Participation for the raw score on the score sheet and will be awarded N points (N is equal to the number of teams registered to compete).
6. **No Shows:** If a team does not show up or does not make an honest attempt to participate, the team will be listed as a "No Show" or "NS" for the raw score on the score sheet and awarded N + 1 point. This includes teams who may be present but display no preparation for the competition.
7. **Disqualified:** Teams should be DISQUALIFIED or "DQ" only for misbehavior (to include excessive use of improper or vulgar language) or cheating. Put "DQ" as a raw score and award N + 2 points on the score sheet. Also note on the score sheet the reason why teams were disqualified. 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. The Event Supervisor MUST inform the student and remind the student to inform their coach as soon as a problem occurs.
8. Teams considered as PARTICIPATION, NO SHOW, OR DISQUALIFIED will be ranked and assigned points as follows:

<u>Rank</u>	<u>Points</u>
PARTICIPATION (P)	= N points = 20 points
NO SHOW (NS)	= N + 1 point = 21 points
DISQUALIFIED (DQ)	= N + 2 points = 22 points

(Note: N = number of teams registered to compete for each division of the tournament, not the number of teams that actually enter the event. The example used above assumes N = 20, or 20 teams registered to compete in the division.)

9. After all event points have been so-awarded, they are added and the team with the LOWEST number of event points is the first-place winner, the team with the second LOWEST number of event points is the second-place overall winner and so fourth. In the event of a tie in the overall event points score, the team with the greatest number of first place event scores (one point/a gold medal winner) is deemed to have a higher overall standing. If both teams have the same

number of first place scores, then the number of second place scores will be used. The process is continued until the tie is broken.

To discourage frivolous appeals and make the awards ceremony meaningful and dramatic, scores are not posted prior to the ceremony. Posting scores rarely reveals errors. To insure accuracy, all scores are subject to a triple score check process: reviewed by co-coordinators of the event, reviewed by scoring staff and a final review of scores entered into the computer against the final event summary score sheet. Even with checking, errors could occur, so coaches will be given 20 minutes after receipt of scores to appeal any recording error. Coordinators' judgment calls are not subject to review. In case of an error, the policy is to not take away any medals or trophies, but to provide additional awards where appropriate.

POLICY FOR CODE OF CONDUCT VIOLATIONS OR DISQUALIFICATION

- Make sure the student and the coach have been informed
- Talk to the student and Event Coordinator to determine the facts.
- Verify that the violation occurred.
- Use an Arbitration Board to decide immediate consequences.
 - DQ from event
 - DQ from any event in which student was involved.
 - Team prevented from further participation
- Arbitration Board can also recommend long-term consequences:
 - Individual(s) DQ from future events
 - Team put on provisional status
 - Team disqualified from future competitions

Appeals

1. Make an attempt to resolve the problem with the event supervisor before submitting a written appeal.
2. The sample form attached on the next page must be turned in to tournament headquarters within 1 hour after the completion of the event. If circumstances prevent filing within this time limit, the appeals committee may, at their discretion, accept a late appeal.
3. Please be specific in the team's appeal. Be sure to identify the exact rule/procedure that the team feels was not followed. The appeals committee may reject appeals that are general in nature. The official coach of the team must sign this form.
4. The event supervisor must sign this form before it is submitted to the appeals committee. If time permits he / she may enter their response on this form, or enter the time notified and respond to the appeals committee before the final scoring for the event is completed.
5. The decision of the appeals committee is final

REMEMBER: Event supervisors are extremely busy during the competition. Please do not interfere with an event while it is progress.

NorCal Science Olympiad Appeal Form
ONLY COACH OR ASSISTANT COACH OF RECORD MAY INITIATE AN APPEAL

Event _____ Division _____ Team Number _____
Coach _____ School _____ Coach CELL No. _____

What rule/procedure do you feel was violated? (Cite specific page # and paragraph from rule book)

How was the rule/procedure not followed? (Attach additional sheets if necessary.)

Provide a **suggested resolution** or fix that is equitable to your team and all others competing:

Appealing Coach/Assistant Coach of Record Signature w/ Cell Phone #

DO NOT WRITE BELOW THIS LINE

Event Supervisor's Opinion: (Arbitration Committee Meets w/Event Supe)

Event Supervisor's Signature

Arbitrator's Resolution: (The decision of the arbitrators is final)

Arbitrator's Signature

RETURN FORM TO SCORING ROOM. DECISION POSTED 1 HOUR AFTER RECEIVED.

Post-Competition Overview

On the first day back to school after the competition, gather all the students that competed and discuss how they felt they did. Have them record information on the events, the way they were run, and what they could have done differently. Have them discuss their preparations for the events, and how they could have changed their planning to do better. Keep in mind that the goal of Science Olympiad is not solely to win the events. It is to engage in the process of science and become proficient in the methodologies of science. However, the evaluation of performance is an essential part of learning. Students must focus on what they did, why they did it and how they can improve it.

Here are some things to consider as the students evaluate their performance.

- What events did I do?
- Was I prepared for it?
- Did I have the proper resource if they were allowed?
- Did I spend enough time preparing for it?
- Did I work smart, not just hard?
- If there was a problem, did I communicate it clearly with the judges?
- Did I work well with my team member?
- Did I clearly understand the rules and follow them?
- Were there any rules that were unclear that need to be changed or clarified?
- Was it easy to find the location?
- Did I plan my day well?
- What did I do well and succeed in?
- What positive things occurred during the day?

There are some issues that are beyond the control of the students. As the team discusses the successes during the day, please record any problems that may have existed that can be forwarded to the State Director. **Please record any problems that may have occurred and forward it to your regional or state director.**

Science Olympiad and the National Science Education Standards

Since the release of the *National Science Education Standards*, teachers have been looking for curriculum resources that incorporate these new standards. Numerous Science Olympiad events have been used by the *National Science Education Standards* to illustrate standards in action.

Science Olympiad illustrates the close relationship between teaching and assessment. The assessment tasks are developmentally appropriate for young children, including recognition of students' physical skills and cognitive abilities. As students move from station to station displaying their understanding and ability in science, members of the community (leaders from government, business and industry, professors, scientist, educators, etc.) evaluate the students' science achievement and can observe that the students have had an opportunity to learn science. Science Olympiad highlights many of the elements of the Teaching Standards, Assessment Standards, Program Standards and Science Education System Standards. The letters below refer to the specific standards that apply to Science Olympiad.

Science Teaching Standards

- A: Teachers of science plan an inquiry-based science program for their students.
- C: Teachers of science engage in ongoing assessment of their teaching and of student learning.
- D: Teachers of science design and manage learning environments that provide students with the time, space and resources needed for learning science.

Assessment of Science Education

- A: Assessments must be consistent with the decisions they are designed to inform.
- B: Achievement and opportunity to learn science must be stressed.
- C: The technical quality of the data collected is well matched to the decisions and actions taken on the basis of their interpretation.
- E: The inferences made from assessments about student achievement and opportunity to learn must be sound.

Science Education Program Standards

- D: The K-12 science education program must give students access to appropriate and sufficient resources, including quality teachers, time, materials and equipment, adequate and safe space and the community.
- F: Schools must work as communities that encourage, support and sustain teachers as they implement and effective science program.

Science Education System Standards

D: Policies must be supported with resources.

G: Responsible individuals must take the opportunity afforded by the standards-based reform movement to achieve the new vision of science education portrayed in the Standards.

	NATIONAL SCIENCE EDUCATION STANDARDS						
	National Research Council						
	CONCEPTS	INQUIRY	PHYSICAL	LIFE	EARTH	TECH	PER/SOC HIST/NAT
Anatomy	■	■		■			■
Astronomy	■	■	■	■	■	■	■
Awesome Aquifer	■	■		■		■	■
Balloon Launch Glider	■	■	■			■	
Boo-milever	■	■	■			■	
Chem Lab	■	●	■			▲	●
Circuit Lab	■	■	■				
Designer Genes	■	■		■			●
Disease Detectives	■	■		■		■	■
Don't Bug Me	■	■		■		■	■
Dynamic Planet	■	■		■	■		■
Ecology	■	■		■			■
Experimental Design	■	■	●				■
Fermi Questions	■	■	■			■	
Five Star Science	■		■	■	■		
Food Science	■	●	■			▲	●
Forensics	■	■	■				●
Health Science	■	■		■			■
Heredity	■	■		■			■
Meteorology	■	■		■	■		■
Metric Mastery	■	■	▲			■	
Mission Possible	■	■	■			■	
Oceanography	■	■	■	■	■	■	■
Physics Lab	■	■	■				
Remote Sensing	■	■		■	■		■
Road Scholar	■	▲			■		
Robot Ramble	■	■	■			■	■
Rocks and Minerals	■	■			■		■
Science Crime Busters	■	■	■	■			●
Science Word	■		■	■	■	■	
Scrambler	■	■	■			■	■
Simple Machines	■	■	■			■	
Solar System	■	■	■		■	■	■
Sounds of Music	■	■	■			■	
Storm the Castle	■	■	■			■	
Tower Building	■	■	■			■	
Wheeled Vehicle	■	■	■			■	
Wright Stuff	■	■	■			■	
Write It/Do It	■	■					■

Coverage Key: ■=In-depth, ●=Moderate, ▲=Introductory

Science Olympiad Web Site and Other Related Resources on the Internet

Many resources sites are available on the Internet. A list of resources is available in this section of the manual. Many of these sites will contain links to several other sites. There is also a list of resources available through the state (www.norcalscienceolympiad.com) and the national (www.soinc.org) websites.

Student and coaches training sessions are another valuable tool that can be used to enhance the skills of the student team members as well as the coaches. A valuable asset to teachers in curriculum development can be found at these workshops.

Science Olympiad Web sites

The Official Science Olympiad Web Site with connections to Science Olympiad web sites for many states.

<http://www.soinc.org>

The Official NorCal Science Olympiad web site:

www.norcalscienceolympiad.com

General Resources (Sites covering multiple topics)

California State University, Northridge — Web Sites & Resources for Teachers

<http://www.sitesforteachers.com>

Chicago Museum of Science & Industry

<http://msichicago.org>

Columbia University-Lesson Plan Gold mine

<http://www.eskimo.com/~billb/amateur/coolsci.html>

Discover Magazine Guide

<http://www.discover.com/>

Discovery Channel Resources

<http://www.discovery.com>

Eisenhower Clearinghouse (ENC)

<http://www.enc.org>

EnviroLink

<http://www.envirolink.org>

Environmental Protection Agency (EPA)

<http://www.epa.gov>

Exploratorium Index

<http://www.exploratorium.edu/>

Frank Potter's Science Gems, Science and Mathematics Resources

<http://www.martindalecenter.com/>

Hands-on Science Centers Worldwide

<http://www.cs.cmu.edu/afs/cs/usr/mwm/www/sci.html>

Mad Scientist Network —Washington University of Medicine

<http://www.madsci.org/>

Inquiry Institute – Professional Development and Science Olympiad Training

<http://www.inquiryinstitute.org>

NASA K-12 Internet Interactive at Spacelink

<http://spacelink.nasa.gov>

National Science Foundation

<http://www.nsf.gov>

National Science Teachers Association (NSTA)

<http://www.nsta.org/>

Oakridge National Laboratory

<http://www.ornl.gov/>

Pacific Bell-Blue Web'n Lesson Plans

<http://www.kn.pacbell.com/>

Science Learning Network

<http://www.sln.org>

Science Resources Search Engine

<http://www.learner.org>

Teacher Net Lesson Bank

<http://www.teachers.net/lessons/posts/posts.html>

The Global Schoolhouse

<http://www.gsh.org>

US Department of Education

<http://www.ed.gov>

Univ. of Tenn. Computing & Academic Service

<http://oit.utk.edu/>

Yahoo Science-links to each scientific discipline

<http://www.yahoo.com/science>

Biology Resources

Access Excellence by Gentect, Inc.

<http://www.gene.com>

Bio-Sciences On-Line

<http://mcb.harvard.edu/BioLinks.html>

Cell & Molecular Biology Online

<http://cellbio.com>

CELLS Alive!

<http://www.cellsalive.net/>

Center for Disease Control

<http://www.cdc.gov/excite/>

Cytogenetics Gallery

<http://www.pathology.washington.edu/>

Human Anatomy Outline

<http://www.meddean.luc.edu/>

Human Genome

<http://www.nhgri.nih.gov/>

National Association of Biology Teachers (NABT)

<http://www.nabt.org>

USGS Biological Resources

<http://biology.usgs.gov/>

Chemistry Resources

About Temperature

<http://www.unidata.ucar.edu/staff/blynds/tmp.html>

Catalyst — links to HS chem resources

<http://www.thecatalyst.org/>

Chemfinder

<http://chemfinder.camsoft.com/>

Exploring ChemCom

<http://www.whfreeman.com/chemcom/>

Interactive Guide to Chemistry

<http://library.thinkquest.org/3659/>

Mad Scientist Network
<http://www.madsci.org/>

Microworlds
<http://www.lbl.gov/MicroWorlds/>

MSDS -Material Safety Data Sheets & Univ. of Kentucky Resources
<http://www.chem.uky.edu/resources>

Periodic Table Information
<http://www.cs.ubc.ca/cgi-bin/nph-pertab>

Water Quality
<http://www.wqa.org>

Water Science for Schools
<http://www.ga.usgs.gov/edu/helptopics.html>

Physics & Physical Science Resources

American Association of Physics Teachers
<http://www.aapt.org/>

Physics Around
<http://www.physics.mcgill.ca/>

Physics Classroom
<http://www.physicsclassroom.com>

Physics Web
<http://physicsweb.org/>

Earth and Space Science Resources

Comet Website
<http://www.comet.ucar.edu/>

EE Link (Environmental Resources Link)
<http://eelink.net>

Finding Your Way
<http://mapping.usgs.gov>

Geophysics
<http://denali.gsfc.nasa.gov>

NASA

<http://www.nasa.gov/>

NSCSS Soil Science Links

<http://www.nscss.org/soil.html>

Project Atmosphere

http://www.ametsoc.org/amsedu/project_atmosphere.html

U.S. Geological Survey — The Learning Web

<http://www.usgs.gov/education>

Volcanoes Page (Michigan Technological University)

<http://www.geo.mtu.edu/volcanoes/>

Water Resources & other science resources

<http://www.ncsu.edu/sciencejunction>

WeatherPlus University

<http://www.weatherplus.com>

Weather Prediction

<http://www.weather.gov>

Weather Net

<http://cirrus.sprl.umich.edu/wxnet/>

Weather Underground

<http://www.wunderground.com/>

Weather World 2010 Project

[http://ww2010.atmos.uiuc.edu/\(Gh\)/home.xml](http://ww2010.atmos.uiuc.edu/(Gh)/home.xml)

Additional Resources

For more information or help on specific events, video tapes, and books, Science Olympiad has a wide array of materials available to assist with these events. Contact Science Olympiad at www.soinc.org or order directly from their catalog.

Contact Information

NorCal Science Olympiad

State Director:

Barbara Little
c/o SCOE
1100 H St.
Modesto, CA 95354
Work - (209) 238-1710
Fax - (209) 238-4277
blittle@stancoe.org
www.norcalscienceolympiad.com

Regional Directors:

1. Bay Area	www.bayareascioly.com Contact: Barbara Little blittle@stancoe.org
2. Fresno	Contact: Jennifer Weibert jweibert@fcoe.org
3. Sacramento	Contact: James Hill jdhill@sanjuan.edu www.sacramentoscienceolympiad.com
4. San Joaquin	http://www.sjcoe.org/sae/olympiad.aspx Contact: Annie Cunial acunial@sjcoe.net
5. Santa Clara County	Contact: Barbara Little blittle@stancoe.org
6. Stanislaus County	http://www.scoestudentevents.org Contact: Barbara Little blittle@stancoe.org
7. Tulare	http://www.tcoe.org/scienceolympiad/ Contact: Jared Marr jaredm@ers.tcoe.org

National Science Olympiad Web Site:

www.soinc.org