

**New Coach  
Handbook  
Division A**

**2019-2020**



**NORTH CAROLINA  
SCIENCE OLYMPIAD**

Welcome to Science Olympiad! Whether you are starting a new team at your school or inheriting an already established program, you are probably concerned about all of the details that go along with the job. This document is intended to provide tools and guidelines for you as you enter into your first year as a coach.

## ***Team Composition***

### **Division A (Elementary, K-5):**

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 team they are going to compete on.

Schools, organizations, and groups may have as many teams as they like competing in an NCSO tournament. To help accommodate as many teams as possible at a tournament, teams may only compete in one tournament during the tournament season. For example, a team that competes in one of the Wake County tournaments may not also register for and compete in a Cumberland County tournament. Tournament organizers may restrict team participation in any way they see fit (i.e. only elementary schools from "X" county, only 2 teams per school maximum, etc.) to better serve their tournament.

At a traditional school, these are often sponsored by the PTA. The head coach may be a teacher, a parent, or a community member. **If you are representing a school, you must first obtain the principal's permission before forming a team.**

Division A teams may also form as an independent group or homeschool group. A parent or community volunteer can register the team with whatever name the group chooses and act as the point of contact. Students can only participate on 1 Division A team each season. As a means for ensuring that a team is representative of the local area, NCSO 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.

Technically up to five sixth-grade students can still compete on the elementary school team they attended after they moved to their middle school. While this is allowed, it is encouraged for these students to compete in the school they are currently attending. If the school the students are attending does not have an Olympiad team we encourage them to start one! 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).

**In NC only** – 6<sup>th</sup> graders who compete with a Division B team ARE allowed to also participate as one of the 5 in a Division A team.

## ***Varsity and Junior Varsity (JV) Teams***

The first team from any school or organization is considered the Varsity team, and any additional teams after that are Junior Varsity (JV) teams, simply numbered JV1, JV2, and so on for however many teams the school has. All students compete in the same room at the same time, however the designation difference comes with distribution of medals and trophies. Varsity teams compete against the other varsity teams for one set of medals and trophies, and JV teams compete against all other JV teams for a second set of medals and trophies. Therefore, it is not possible for a school or organization to earn more than 1 varsity medal. This is to help ensure that one school or organization with a large number of teams cannot “sweep” the competition and earn all the medals. There must be at least 3 JV teams at a competition for a set of JV medals to be issued; otherwise the JV results will be combined with varsity results for purposes of awarding medals and trophies. **Varsity and JV teams cannot “mix and match” their students.** The varsity team member must compete with the other varsity team member in an event, JV1 with JV1, JV2 with JV2, etc. Likewise, Varsity and JV cannot share devices or resources in events; for example, the Varsity and JV team from the same school cannot share a guidebook or use the same bottle rocket.

## ***Tournament Big Picture***

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

Teams of up to 18 students (only NC allows 18 students on the team) prepare throughout the year to compete in a 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 18 students competing in any one event as the representatives of their team. Teams may compete in as many or as few events as they wish at the tournament.

Each team member could compete in one event per time period. During each time period, many different events are taking place at the same time. For example, in the proposed tournament schedule, there are 7 events in the first time period. Any given team member can compete in only one event per time period since a person cannot be in two places at once. So, a team member competing in *Describe It, Build It* could not also compete in *Backyard Biologist* because they both take place during the same time period (Period 1). The same is true for event periods 2 and 3.

Visualize a tournament like a track meet. Team members specialize and become experts in two or three 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 Ecology Experts 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.

## Tournament Schedule

You may choose a tournament based on location and date. The full list of tournaments can be found here: <https://www.sciencenc.com/tournaments/>

Several events run in a period. Division A tournaments usually have 3 periods. Students can only compete in 1 event each period.

A **sample** tournament schedule is given below. Your tournament may look slightly different. **Be sure to check your tournament webpage for your exact schedule.**

**Sample Elementary Tournament Schedule**

| Times                          | Events  |
|--------------------------------|---|
| 7:45 – 8:25 am                 | Registration                                      |
| Period 1 (9:00 - 10:10 am)     | 3,2,1 Blast Off! (self-schedule, choose 1 period) |
|                                | Backyard Biologist                                |
|                                | Body Builders                                     |
|                                | Describe It, Build It                             |
|                                | Duct Tape Challenge                               |
|                                | Metric Mania                                      |
|                                | Weather Permitting                                |
| Period 2 (10:20 am - 11:30 am) | 3,2,1 Blast Off! (self-schedule, choose 1 period) |
|                                | Pasta Tower (self-schedule, choose 1 period)      |
|                                | Planet Protectors                                 |
| Impound by 8:30                | Ramp and Roll                                     |
|                                | Sky Quest   |
|                                | Science Headbands                                 |
|                                | Super Sleuths                                     |
| Period 3 (11:40 am - 12:50 pm) | Pasta Tower (self-schedule, choose 1 period)      |
|                                | Data Crunchers                                    |
|                                | Ecology Experts                                   |
|                                | Energy Matters                                    |
|                                | Fossil Frenzy                                     |
|                                | Codebusters (trial in some regions)               |
|                                | ProGamers   |
| 1:00 - 1:45 pm                 | Lunch   |
| 1:45 – 2:15 pm                 | Closing/Awards Ceremony                           |

## **Scoring**

Each team 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  $N + 1$ , where  $N = 20$  and thus the team would get a 21 for not competing in the event. The ranks for all events are added together to get a team score which determines how teams place for each tournament. Low score wins! In addition, medals are given out for each event. The number of medals is proportionate to the number of teams competing in each division. As a result, each team member is competing for an individual medal as well as a team trophy.

## **Coach**

A team must have a head coach. A head coach registers and manages the school or organization's teams via the NCSO website ([www.sciencenc.com](http://www.sciencenc.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

NCSO follows a "Never Alone" policy (<http://www.sciencenc.com/about-us/policies/never-alone/>) to help ensure the safety of our students and volunteers. This means that volunteers should never be alone with a student who is not related to them. NCSO also requires 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. As a reminder, the students are never in the care, custody or control of the NCSO volunteers. Students should be escorted back and forth between events and home base and should not be unsupervised at any time during the competition day.

## **Training**

NCSO staff and representatives present sessions and workshops around the state each year at various conferences. Training is also available the first weekend in October each year at the NCSO Coaches Institute. Visit the NCSO website to find out more information about this year's Coaches Institute. Additional resources are also available on the NCSO website in the Event Resources section. These webpages have lessons, links, tips & videos to help students prepare throughout the year.

## Cost

The registration fee for each team is \$300. This fee helps cover the cost of running the local tournament and pays for facility fees, equipment, materials, trophies, and medals. Teams may also incur the cost of transportation to and from the tournament site, lunch and snacks on the day of the tournament, and purchasing materials used for practicing for events (although most materials needed for events are commonly found at home and in educational settings). You DO NOT need to pay for your team when you register online. You can go back in and pay or submit a check any time up until the time of the competition. If you register a team and later find that you will not be able to compete or will be bringing less teams than you originally planned, please contact the state office immediately. We must know at least 6 weeks in advance about your change in registration or your team will still be charged the registration fee.

## Timeline

The following timeline is only a suggested timeline. Each coach faces unique conditions. You will adapt and modify as you learn what works best for your students and school situation. Many new teams do not start Science Olympiad training until later in the school year. Also, they don't always compete in all of the events. So, this guide covers things from **basic level (in red)** to those things expected from an experienced team.

**August** – In August, teams typically begin planning the year. The Coaching Clinic announcements will start to appear on the NCSO website [www.sciencenc.com](http://www.sciencenc.com). The event rules are published on this website as well on August 1.

- **Seek school approval for a team (if necessary).** There are YouTube clips available for help convincing administration of the value of Science Olympiad.
- **Review the membership rules for organizing a team** at [www.sciencenc.com](http://www.sciencenc.com) under Policies and Team Composition.
- **Register your team on the NCSO web site for a tournament** (You must register for each team you plan to bring; you can pay at a later date). Directions for using the NCSO website registration are in a bright pink link at the top of the registration page.
- **Outline the current year:**
  - Plan for a team organizational meeting (you might want to first meet with returning team members if you are inheriting an established program.)
  - Plan for a parent meeting later in the fall after you've established your team.
  - Find the contact information for your regional directors and the date of your region's spring tournament. This is found on the "tournaments" page on the website.
- **Set up a database of information** for your reference. Record names, student ID numbers, current grade levels, phone numbers, and parents' names.
- **Promote the team.** Hallway posters, signs, and banners are a good idea to recruit team members. NCSO also has a short video on their youtube channel that can be played on announcements or linked in other communications.

## September---

- **Read the rules for each event carefully.** The rules are very specific and must be strictly followed by your students and their coach at all times.
- **Hold first team organizational meeting.** Introduce the events at this meeting to generate student interest. Students can sign up for events that they might be interested in doing. Remember you don't have to participate in all of the events. Go with the ones that seem to be of most interest to your students.
- **Solicit parent help.** Sometimes parents can be the best assets to help coach events.
- **Set up & maintain a team web site or Wiki site.** This is a great way to promote the team.
- **Start gathering resources, study materials, supplies, and mentors.** Build an SO library for future use. Take advantage of information on the web. Look to others to help mentor events. "Many hands lighten the load."
- **Set up team practice schedules.** Some teams practice after school. Other teams practice on Saturdays. Lunch and study hall time can be used. Elective course can also be established.

**September through November** -- If you can organize in the fall, your students will be able to take advantage of holiday breaks to study and prepare for their events. It's also a time when coach workshops will be offered. *(But if you are just getting started and can't pull it all together in the fall, you can still plan on competing at your Regional Tournament. Many schools don't start their teams until January.)*

- **Work with team members to explore events and determine which events best suit their interest and ability.** Students should plan to participate in at least 2 different events if you plan to compete all of the events. This will provide team versatility. (Remember you do not have to compete in all events.)
- Regionals publish their tournament schedules in early fall. They are posted on each tournament's webpage. Use the schedule to match students with events. **Once a schedule has been published, assign students to the events they should plan to compete.** Sometimes conflicts with the schedule happen. This is difficult for students who have spent a lot of time preparing for an event only to find they have 2 events in the set schedule at the same time. The tournament schedule cannot be amended for these conflicts. Team versatility helps.
- **Make sure your yearbook supervisor takes a team photo of you and your team for your school yearbook.**
- **Do some team fundraising** to help with costs like team registration, supply purchase, and possible team travel costs. (Some districts make teams pay for school buses to transport teams to competition.)
- Network with coaches from neighboring schools. Science Olympiad teams at the Middle and High School are your best resource!

## December - January ---.

- **Attend the coaches meeting at your regional tournament site, if available.** (This information will be sent to you by your regional director.)
- **Many successful teams do not start to meet in earnest until January** – we are not trying to beat them over the head with science, so it is okay to start a bit later if your tournament is in late March, April or May!
- **Prepare paperwork for competition.** (permission slips & paperwork required by your school and your regional director). This can also include logging in to Avogadro and entering competitor names and signing up for self-scheduled events. Make sure you adhere to deadlines for paperwork submission.
- **Organize transportation** for the team to the regional tournament site.

February – March – This is the time period for NC regional tournaments.

*This is “crunch time”. It can be very intense time for students and for the coach. HANG IN THERE !!!*

- **Test constructed devices as soon as possible.** Measure the devices carefully. If there are dimensions published in the rules and you are slightly off from those dimensions, your device will be ranked lower than other devices in event scoring at tournaments.
- **Make sure you have all required regional tournament paperwork completed and submitted.** Some regionals will require teams to provide 2-3 volunteers to help run the tournament. Try to line up parents or other teachers to do this.
- **Finalize travel arrangements to get the team to the regional competition.**
- **Collect signed permission slips.**
- **Continue practicing and fine-tuning events.**
- **Make sure ALL devices used in an event are clearly labeled with your team name.**

After the tournament -- This is a time for closure for your team and planning ahead for next year.

- Collect the resource materials that your team used and created this season. It is very helpful for creating year-to-year continuity and improving your team next year.
- Hold a team party during this month to congratulate the students for all of their hard work. You might want to give awards (MVP, Rookie of the Year, Most Creative Team Member, etc.).
- Write thank-you notes to people who helped your team along the way. Volunteers who helped you will be more likely to help again next year if you recognize and applaud their efforts.
- Keep looking at the NCSO web page for updates over the summer. New event rules are published on August 1. At least half of the events will stay the same. Some events will be retired for a few years, and some events will be brand new. It’s still a good idea to keep a library of all of your reference materials. Typically, retired events come back again after 5 or 6 years.



## Other Useful Information

### Paperwork/Administration

All must follow competition rules. Regional directors are required to collect the names and grade levels of the team members who will be competing. The Principal or head of the school must sign this list. We also request information such as which team member is competing in which event. It is important that you return all requested information carefully filled out before the deadline date.

It's a good idea to keep copies with you at the tournament.

You will need to keep student medical forms and be able to show that you have them available if asked at the tournament.

You will be asked to do a new set of documents for the State tournament if you qualify for it.

### Wrist Bands & Other Identification

Every tournament uses wristbands for students competing to wear to identify themselves as legitimate competitors. The wristband must be worn to enter an event.

### Competition Day

Science Olympiad competition runs like a track meet. There will be a central team location or gathering place where students, coaches, and parents can congregate. Some teams set up a "team camp" complete with a school banner.

There is a lot going on at a tournament and your efforts to help students be organized matter. Students will be competing in events at designated time periods. **Give them an individualized schedule of their events including times and locations for competition in each event – this can be printed from the scoring program, Avogadro, in advance.**

**Student MUST be on time for an event.** Suggest they wear watches or have cell phones with time available to keep track of when they need to be at an event.

Some engineering devices will need to be impounded before competitions start. **Make sure you have your team name clearly displayed on everything you impound.** Make sure your students impound their devices on time before competitions begin.

Parents can provide coolers of snacks for students. Typically these will be left at the designated team camp or team homeroom location. Keep an eye on belongings, however, as these events are open to the public.

When not competing, your students can watch the spectator events. Some events are closed to spectators. But a lot of the engineering events are open for spectators to watch. It's always great fun to have your comrades watching as you run your Mission Possible, Ping Pong Parachute, plane, or other engineering event. And encourage your team members to cheer each other on!

Encourage students to stay in their event for the full time. They should double-check work before turning in anything for grading. They should put their team name on every single page they turn in just in case papers get separated by supervisors during the grading process.

Encourage your students to have fun. It's a busy day.... full of activity..... full of emotions. But it's a good kind of busy.... a fun kind of busy.

Encourage students or parents to wait for competing team members to come out of closed events. It's nice to see a friendly face when you emerge from an intense round of testing.

**Make sure you pick up impounded equipment and devices to take home.**

Learn from other teams. At spectator events, watch the other teams and their devices. Learn from their experience. Get ideas for improvement. But be respectful of their intellectual property. You should ask before taking a picture of another team's device.

Sit as a group at the awards ceremony. There is generally a designated place for the team and a different place for parents to sit.

Take photos of students who go to the stands to claim a medal. This is great for the students, their parents, and for a team scrapbook. They make good yearbook moments, too.

Take a team photo after the awards. This can be used the following year as a promotional tool.

Cheer on the other teams. Stand and applaud the winning team. This shows good team sportsmanship.

**Things for the coach to bring on competition day:**

- Sharpie markers (for labeling if needed)
- Extra pencils with good erasers
- Copies of paperwork you have submitted
- Emergency phone contacts (as on medical forms)
- Extra nonprogrammable calculators
- Extra safety goggles
- Copies of graphs, energy transfer lists, or other documents needed to be turned in to Event Supervisors
- Roll of duct tape (just in case), screwdriver, glue, etc. for minor repairs to devices
- Trash bags (to clean up your homeroom or camp space)
- Cell phone
- Camera ---TAKE LOTS AND LOTS OF PICTURES !!! (Don't forget to put them at your web site.)

## Glossary of Science Olympiad Terms

1. **Alternate** – You may have more than 18 students wanting to compete. Students beyond the official 18 competing team members are called “alternates”. These students may be used as substitutes if an official team member becomes ill, injured or cannot compete at a tournament. You will need to clear this with the Regional director before substituting a student. In addition, alternate students are allowed to compete in trial events.
2. **Arbitration** – This is the process which allows a coach to file a complaint concerning the way his/her team has been scored, allowed to run their device, or any other concern that seems to violate the rules as stated in the rules manual. It is strongly suggested that the coach talk to the regional director before filing for arbitration. Often, things can be resolved at that point. Most regionals have paperwork that must be filed within a specified time frame as well as a designated person(s) who will determine the outcome. Most regionals require that only the head coach for the team file for arbitration.
3. **Coach** – this is used to describe 2 kinds of people in the organization. The Head Coach, who is in charge of the logistics and direction for the whole team, and the Event Coach, who has worked with a smaller group of kids to prepare for a specific event. When we ask to speak to a coach at the tournament, we always mean the Head Coach.
4. **Director** – This is the person in charge of the planning and implementation of the tournament. All questions you have about the tournament and competition process should be directed to this person. This person is also called the “regional director.”
5. **Event Supervisor** – Event supervisors are dedicated volunteers who prepare, implement, and score each of the competition’s events. Regional, State, and National level tournaments recruit their own event supervisors. All event supervisors (no matter the level of competition) MUST follow the event rules. These are not paid workers. They are volunteers. Have your students thank them for their work.
6. **Headquarters** – Most regionals have a designated area where you can find the tournament organizers so that questions can be asked about the tournament. This may also include an area where event supervisors can turn in their tests, scores, and rankings.
7. **Impound** – This is the process used to check in team-built devices before competition begins. Events that require advance impoundment are indicated in the events rulebook. Tournament schedules will indicate the time and location where impounding will take place.
8. **Junior Varsity team** – a team that can compete in invitational competitions and in *some* regions at the Regional Tournament, but not in State or National tournaments.
9. **Regional** –A “regional” tournament is the competition between teams from that local area. In Division A, this is the only competition there is, students do not advance to a State Tournament.
10. **Registration** – Team registration opens August 1 for the following year’s competitions. Registration takes place at the NCSO website ([www.sciencenc.com](http://www.sciencenc.com)). Choose the tournament that your team wants to participate in from the registration page and register the number of teams you plan to bring. Your

payment options include paying immediately by credit card or sending a check to the state office.  
***Teams that have not registered and paid the membership fee are not allowed to compete.***

11. **Self-schedule** – Some events will be “self-scheduled”. This means that individual time slots are available for teams to choose from rather than be placed in a block of time assigned by the tournament director. If your regional director has self-scheduled events, they will inform you of the time slots along with directions for the selection process. A highly competitive team will want to complete the self-scheduling process right away to secure times that work best for them.
12. **Spirit Award** – At each tournament, volunteers and staff are looking for examples of good sportsmanship and overall “spirit” from team members. They turn in nominations during the day and a team is awarded a spirit award at the closing ceremonies. This is a coveted award each year as teams work to exemplify good sportsmanship by cheering on and helping their team and others.
13. **Team** - another term with 2 meanings. The Team as a whole is the 18 members representing their school or group. There are then the individual teams of 2 or 3 going in to represent the Team in events.
14. **Trial event** – This is an event that is typically new and we are trying it out to gauge interest and work out kinks. Students receive medals just like all the other events, but it does not count towards the team trophy.

Questions – contact the NCSO State Office at [info@sciencenc.com](mailto:info@sciencenc.com).