

Virginia Science Olympiad

NEW COACHES SESSION



Exploring the World of Science

Coach Panelists: Jenn Ezzell (ES -B), Anita Sahai (ES-B),
Barbara Back (ES/MS - B), Leah Puhlick (C)

Engg Event Gurus: Chris Ganley & Justine Cromer

Facilitator: Ann Gray (ES/MS - B)

New Coaches Session

- Ideas for Organizing and Managing Your Team
- Resources/Samples/Examples
- 2011-2012 Events (also run in 2010-2011)

Coach Panelists: ES/MS: Barbara Back, Anita Sahai, Jenn Ezzell

HS: Leah Puhlick

ENG' G Events: Chris Ganley, Justine Cromer

What is Science Olympiad?

- Virginia Science Olympiad (VASO) is a local ‘chapter’ of Science Olympiad (SO).
- There are Science Olympiad organizations in 49 states
- In 2011 VASO registered 39 Schools in Divisions B & C
 - - 85 Teams competed at Regional Tournaments
 - - Approximately 1300 Students participated at Regional Tournaments
- Science Olympiad allows students to experience a broad range of STEM activities in a fun, team-based environment
- *VASO is a completely volunteer run organization, we depend completely on teachers, parents and other volunteers to operate.*

SO Teams Differ on lots of Dimensions - No One Best Way to Lead your Teams

ES competing MS -----MS -----HS

New School/New Coach --- New School/ Exp. Coach -- Exp School/New Coach -- Dynasty

Try to get 10 kids ----- Take All <= 3 teams ----- Competitive Team Selection ----- 50+ kids

Club (do events that interest you) ----- Cover ALL Events, Team Performance Impt

One Team -> State -----Best Regl Team -> State ----- Indiv Perf @ Tourns -> State

Parents Mentor each Event ----- Some Parental Support -----You have parents???

Curriculum/Mentors Provided ----- Student Led Learning ----- Students Run Team
/Event Leaders

What Questions /Topics Most Interest YOU?

Organizing and Managing your Team

- Organizing - Composition, Expectation Setting, Event Assignments
- Role of Coaches
- Event Preparation - Device Construction, Resources
- Team Building Activities
- Supplemental Info: Tournaments
- Supplemental Info: Event Writing/Running

Team Composition

- Team - max of 15 students attending the same school
 - Division B: Students may be in 5 – 8th grade
 - Division C: Students may be in 9 – 12th grade (max 7 Seniors)

- Each school may register up to 3 teams
 - All 3 teams may compete at the Regional Tournament
 - *Many school have > 45 students participating in SO !*

- State Tournament
 - Only one team per school will compete
 - In the unlikely event we exceed capacity for tournament location, VASO will determine how teams qualify for State
 - Coaches may select **any combination of students** for State Tournament... but criteria should be known in advance

Team Selection

- Recruiting Students
- When you have to restrict total SO participation...
 - test on general science knowledge (by grade?)
 - engg build test - MysArch? (may not test skills u need)
 - teacher recs, grades, past exp, essay, ????
- Selecting the State Tournament Team (15)
 - best performing team at prior tourn(s) ...or...
 - individual perf at past tourn (avg places, lower is better)
 - Credit for teamwork, commitment, “extra” events, assignments (study plans, lessons learned, etc), ????

Roles for the Coach

➤ What you SHOULD do:

- Event Assignments
- One point of contact btw VASO & School (or thru staff sponsor)
- Provide structure, guidance, monitoring, ensure fairness
- Set Expectations - students ... *and also ES, MS parents!*
- Reinforce Life Skills - Learning, Teamwork, Leadership, ...

➤ What you CAN do:

- Enlist outside aid (parents, teachers, “SME”s) to help guide students (some Elem schools require parent mentoring for their child’s participation)

Roles for the Coach, Mentor, Parent

➤ What you SHOULD do:

- HELP them learn to structure their time
- HELP them learn to find resources & mats for events, if needed
- Allow it to be FUN
- Reinforce what it means to *Compete Well*

➤ What you SHOULD NOT do:

- Create binders, study guides, study sheets
- Research for students
- Design or build engineering devices

Event Assignments

- Must consider
 - Tournament Event Conflicts
 - Covering ALL events with ≤ 15 students (if this is the goal)

- May consider - events, # events
 - Student Interest
 - Variety in Discipline & Skills Required
 - Overall Workload (and student's capacity)
 - Past Experience - but have them LEARN NEW EVENTS
 - Different Event Conflict in Different Tournaments?
 - Mixing Up Teams for Different Tournaments?
 - Timing of Event Assignments
 - Start with 1 or 2? Maybe hold back Engg events?

One Method

- Divide Students into Teams (random, test results, hard to fill events...?)
- Print off a LARGE Tournament Schedule
- For each Team Member - Color Coded Stickies for Choices (red - 1st, Orange - 2nd, etc)
- Assign highest choice possible going through list of students
- Work list backwards, assign highest choice possible
- Iterate for: (may also need to switch students between teams)
 - Fairness - who has fewest top choice stickies left?
 - Event Coverage
 - Partner Variety - work with different teammates on each event
- **Other methods???**

Event Assignments - Meeting Teamwork Goals

- Reinforce Mutual Learning
 - All-Team Events - E.g., MysArch, Pentathlon, etc
 - Hold Brainstorming Sessions for Device Designs
 - Engineering Expo - exchange ideas after each event
 - Sharing Lessons Learned, esp. after each Tournament
- Partner Assignments
 - Can start w/ all students in an event as “partners” (only u know pairs)
 - Engineering events - careful about requirements here
- Assignment to Teams
 - Can delay giving them their team assignments (but u have made them)
 - Assigning 4-6 events per student allows flexibility -- but incr' s load

Caution: Device Construction

- Devices must be designed and built by STUDENT members of the **CURRENT** 15-member team.
- At least one student competing in the event must be able to answer detailed and relevant questions about the design, construction and operation of the device.
 - Questions may include but would not be limited to:
 - What tools were used?
 - Why was a certain material selected?
 - Why were certain features added?
- If the design, building, calibration or testing of a device is too complicated for students, you may select not to compete in that event or compete with a very simple device

Ideas for Making it FUN

- Engineering Expo
- Field Trips & Parties
- Awards after Regionals
 - MVP, Best Event Partner, Best Teammate, Best Substitute Event Partner, Future SO Coach...
 - Student suggested (& coach vetted!) Awards
- ???

Caution: Event Rules

- Rule Book contains the OFFICIAL rules.
- Virginia only event rules posted online.
- Be careful of advice or ‘clarifications’ that you hear via word-of-mouth, or online.
- If VASO makes any modifications or clarifications to these rules that will be effective at a VASO tournament, they will be published on the VASO website.
- If you need clarifications regarding rules, we will be posting a form for this purpose on the website.
- **Clarification requests should only come from the School Sponsor/Coach of each team.**

Event Parameters & Requirements

- Resources and allowed for each event are listed in the “Official Rules” book.
 - Impound
 - Types of goggles
 - Allowed resources (Note sheets, calculators, etc.)
- “Check Out” sheet for students going to events during Tournaments
 - * Cell phones or any outside communication during events is strictly prohibited.

Event Resources

- Science Olympiad Website:
 - <http://www.soinc.org>, and <http://store.soinc.org/>
- State Websites:
 - <http://www.virginiaso.com>
 - <http://www.sciencenc.com>
- Science Olympiad Student Center (with caution)
 - http://www.scioly.org/wiki/Main_Page
- Old Tests
 - State and local websites, student pages, etc.
- Textbooks and library references
- Event Sponsors (See the OFFICIAL rules for other event sponsors.)
 - Disease Detectives (<http://www.cdc.gov>)
 - Awesome Aquifer (<http://www.groundwater.org>)
- Past Students and Coaches

Supplemental: Tournament Day

- What are event conflicts?
- What is my team number, and why is it important?
- What is impound?
- How do I read a Tournament Schedule?
- What types of awards are given?

Div B Tournament Schedule

October 9 DRAFT
Virginia Science Olympiad
Division B Tournament Schedule

8:00	8:15-8:45	8:45-9:15	Impound Devices (9:30-10:00)	Events		Session 1 (10:00-10:50)	Session 2 (11:05-11:55)	11:55-12:25	Session 3 (12:25-1:15)	Session 4 (1:30-2:20)	2:20-2:50	Session 5 (2:50-3:40)	Session 6 (3:55-4:45)	4:45-5:15	5:15-6:15	6:15
Doors Open / Coach Event Supervisor Check-In Students report to Homerooms	Coaches & Event Supervisors Meeting (1 coach per team)	Opening Ceremonies		Meteorology	1-10	11-20	Break # 1				Break # 2			Homeroom Clean-Up & Check-out	Final Event Scoring	Awards Ceremony
				Experimental Design	1-10	11-20										
				Disease Detectives	1-10	11-20										
				Awesome Aquifer	1-10	11-20										
				Road Scholar **	11-20	1-10										
			YES	Keep the Heat	11-20	1-10										
				Mystery Architecture	11-20	1-10										
				Forestry				1-10	11-20							
				Reach for the Stars				1-10	11-20							
				Science Crime Busters **				1-10	11-20							
				Missile Mission				11-20	1-10							
				WIFI				11-20	1-10							
				Optics				11-20	1-10							
				Anatomy						1-10		11-20				
				Dynamic Planet						1-10		11-20				
				Metric Mastery						1-10		11-20				
				Rocks & Minerals				11-20	1-10							
	Water Quality			11-20	1-10											
YES	Roller Coaster * (online scheduling)															
NO	Mission Possible (online scheduling)															
YES	Moose Trap Vehicle (online scheduling)															
YES	Storm the Castle (online scheduling)															
YES	Tower Building (online scheduling)															

* Roller Coaster will be an exhibition events at Regionals. Only 'core' team may compete, no alternates.

** Road Scholar and Science Crime Busters WILL NOT be run at Regional Tournaments.

Div C Tournament Schedule

October 9 DRAFT
Virginia Science Olympiad
Division C Tournament Schedule

8:00	8:15-8:45	8:45-9:15	Impound Devices (9:30-10:00)	Events	Session 1 (10:00-10:50)	Session 2 (11:05-11:55)	11:55-12:25	Session 3 (12:25-1:15)	Session 4 (1:30-2:20)	2:20-2:50	Session 5 (2:50-3:40)	Session 6 (3:55-4:45)	4:45-5:15	5:15-6:15	6:15
Doors Open / Coach Event Supervisor Check-in Students report to Homerooms	Coaches & Event Supervisors Meeting (1 coach per team)	Opening Ceremonies	YES	Protein Modeling *	1-10	11-20	Break # 1			Break # 2			Homeroom Clean-up & Check-out	Final Event Scoring	Awards Ceremony
				Experimental Design	1-10	11-20									
				Disease Detectives	1-10	11-20									
				Forensics	11-20	1-10									
				Chem Lab	11-20	1-10									
				Rock & Minerals	11-20	1-10									
				Anatomy & Physiology				1-10	11-20						
				Astronomy				1-10	11-20						
				Optics				1-10	11-20						
				Technical Problem Solving**				11-20	1-10						
	WDI			11-20	1-10										
				11-20	1-10										
YES	Thermodynamics														
	Dynamic Planet									1-10	11-20				
	Fermi Question									1-10	11-20				
	Forestry									1-10	11-20				
	Microbe Mission									11-20	1-10				
	Water Quality									11-20	1-10				
YES	Gravity Vehicle (online scheduling)														
NO	Helicopter (online scheduling)														
YES	Robot Arm **(online scheduling)														
NO	Sounds of Music (online scheduling)														
YES	Tower Building (online scheduling)														

* Protein Modeling WILL NOT include the onsite build at Regional Tournaments.

** Technical Problem Solving & Robot Arm WILL NOT be run at Regional Tournaments.

*** Sounds of Music Event Supervisors are a challenge to find. This event MAY NOT include the build/play portion if an appropriate supervisor cannot be found. Decision will be announced no later than 11/30/2011.

Supplemental: Running a Tournament Event

- Yes! You will be required to run an event at a regional tournament. Schools participating in SO their First Year may be given proctoring/helping assignments if not comfortable with test writing. Or you may be able to recruit a great event writer!

- What is included:
 - Writing a test (with answer key) and submitting to the Regional Director for approval
 - Proctoring the test at the tournament
 - Scoring the test

- * Note: VASO has a long-term goal of having outside SMEs for test writing so that coaches/mentors will not be involved.

Supplemental: How NOT to Write a Tournament Test

- Test should not be created using solely your teams resources.
 - Test should not be ‘tested’ on your team.
 - Test should not be a sample test or old test found online.
 - When using old tests as guides, remember that the focus changes year-to-year.
- * Ideally, your team will not even be aware of what event you are involved in!

Supplemental: Suggestions for Successful Event Tests

(May be obvious for teachers, but for the rest of us...)

- Use a variety of resources, including:
 - Old tests (both Division B and C)
 - Science Olympiad Event Guides
 - Text books
 - Regent's exams or other standardized tests available online
 - Consult an expert (industry professional, teacher, or parent)

Supplemental: Suggestions for Successful Event Tests

(May be obvious for teachers, but for the rest of us...)

- Provide a variety of question types
- When in doubt, make the test longer and or more difficult – the tests must provide differentiation in order to determine a winner.
- Write the test in a manner that is easy to grade consistently.
 - Include total points per question.
 - Designate tie-breakers.
 - Provide a cover sheet to include team name, team number, total points and status of tie-break.
 - Template & Scantron sheets may be made available by VaSO