Tips From Inside The Montana Science Olympiad

http://www.montana.edu/ehhd/sciencemathresourcecenter/mtso/

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Montana Science Olympiad (MTSO)

Rigorous state-wide STEM competition

- Events cover biology, earth science, chemistry, physics, technology & engineering
- 14 events per Division
- Two Divisions: B (grades 6-9) and C (grades 9-12)
  - Rules regarding grades 9 & 12 team members: https://www.soinc.org/divisions_abc
  - Maximum of 15 students per team per Division from a School
  - Schools can have both Varsity & Junior Varsity teams
- Held the Tuesday before Thanksgiving at Montana State University, Bozeman, MT
## 2015 MTSO Events (part of the 2016 National Science Olympiad)

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<th>Division B (Grades 6-9)</th>
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<td>1. Anatomy &amp; Physiology (Skeletal, Muscular, Integumentary)</td>
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<td>2. Invasive Species</td>
<td>2. Green Generation</td>
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<td>3. Fossils</td>
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<td>4. Reach for the Stars</td>
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<td>14. Write it do it</td>
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Registering for MTSO

- Registration deadline for school teams (membership) is mid-October every year
  - Coach registers school teams online: [http://www.montana.edu/ehhd/sciencemathresourcecenter/mtso/school_teams.html](http://www.montana.edu/ehhd/sciencemathresourcecenter/mtso/school_teams.html)
  - Deadline extended to **October 19** for MEA/MFT presentation attendees
  - Register early! Rules Manuals are mailed upon a team’s registration

- Second registration required for competition events by late October
  - Coach registers students online using Avogadro: [https://avogadro.ws](https://avogadro.ws)
    - Set up new username or activate existing username – MTSO office emails confirmation
    - Enter names of students competing in specific events – A school team (JV, Varsity) may have 1 team/per event (see [https://www.soinc.org/organizing_team](https://www.soinc.org/organizing_team) for Scheduling Tips)
    - If registered student(s) decides *not* to compete in an event **PLEASE** update Avogadro
  - Deadline is **October 26**
Coaching a Science Olympiad Team

Walt Woolbaugh
MS Science
Manhattan Junior High School
National Science Olympiad (NSO)

Overall winning team from each MTSO division may compete at the National Science Olympiad

- 23 team & individual events
- In mid-May every year
- Will be held at University of Wisconsin-Stout, Menomonie, Wisconsin in 2016

http://www.scienceolympiad2016.org/home.html
A Montana Team Placed at the 2015 NSO!
Fergus High School placed 3rd in “The Wright Stuff” at the National Science Olympiad
at the University of Nebraska in Lincoln
Tips from the Winning Team’s Coach

from Mike Mangold, Fergus High School:

“In order for teams to be successful, they need to have **time to prepare**. We usually start **practices 2 nights** a week in mid-October until the competition. This is hard because of busy schedules the students have, so **time other than this is needed** and it is **up to the students** to schedule more time. Our school’s success has been due to a **solid science background** in the classroom setting, but also having students that are **excited about science** for one, but also **enjoy competition**. They realize that they are going to have to compete in the real world and this helps them get their feet wet.”

- Place responsibility on the students: “student preparation is driven by the students”
- Involve community members, find mentors: “it takes an army”
- Choose wide ranging events to support students’ interests and to show how different categories of science are interconnected
Succeeding at State and Nationals

from Mike Mangold, Fergus High School:

“We try to get liaisons that have a background in areas to help mentor the students from aeronautic, geologic, and astronomy backgrounds. It gets members of the community involved and gives ownership to the community.

“We actually took 3rd at nationals in ‘Wright Stuff.’ And this happened because of a guy that volunteers his time to work with the students in the flying events.

“At the State level you need to be well rounded. I notice many students focus on one event and they don’t do well on a secondary event. For team scores, we make sure they devote equal time and effort to all their events.”
Tips for Coaches & Teams

➢ Form team early
  ▪ Advertise to other teachers and student body
  ▪ Organize informational meeting to recruit students
  ▪ Make it competitive to get on the team, but balance this with being inclusive
  ▪ Consider having a JV Team for students to become familiar with the Science Olympiad

➢ Register and receive Rules Manual early
  ▪ Study event rules carefully (*keep in mind MTSO 2015 is part of NSO 2016!*)
  ▪ Encourage students to analyze how scoring is done and what causes penalties for each event
  ▪ Make sure students identify & bring required materials to the competition (e.g., safety glasses)
  ▪ Bring binders for events that allow them, include reference information (even if can’t read it all in advance)

➢ Plan and practice
  ▪ Develop a plan to allow time to prepare for all events in which team is competing
  ▪ Hold regular meetings for team to prepare with support (coach, mentors, each other)
  ▪ Keep meetings engaging and fun, raise expectations, include food

*Based in part on “Coaching an SO Team” from NSO*
Tips for Coaches & Teams, cont.

➢ Select competition events strategically
  ▪ Pick events with easiest preparation the first year
  ▪ As a team, compete in every event to get a better overall score
  ▪ Encourage students to compete in multiple events — no more than 3 events per student is recommended

➢ Get support
  ▪ Talk to someone with Science Olympiad experience (MTSO Office can assist)
  ▪ Consult MTSO staff, other teachers, administrators, parents, community members — find mentors and/or sponsors for specific events
  ▪ Refer to resources under “B/C Events” on Science Olympiad site: https://www.soinc.org/
  ▪ Consider attending a Coaches Workshop: https://www.soinc.org/workshops

Based in part on “Coaching an SO Team” from NSO
The Science Olympiad Arbitrator

*from John Graves, MTSO Arbitrator, 2015*

“The main role of the Science Olympiad Arbitrator is to **settle disputes** that arise during the day of competition. In many cases those are simply decisions that I make as they arise. In other cases, the conflict is more involved and an impromptu committee is formed to decide the issue. If the question arises in a Division C event, I will solicit the input of 2-3 coaches from Division B and vice versa. Every attempt is made to protect the integrity of the event, the work of the students and fairness of decision.”

- **Event captains, coaches and students** have access to the Science Olympiad Arbitrator.
- The most common issues arise from **interpretation of the rules** and/or **the spirit of the event**. Captains, coaches and students are encouraged to clarify all rules prior to the day of competition.
MTSO Supplemental Activities

FREE Science Fun Night at Museum of the Rockies:
- Monday, November 23, 6:30 - 8:30 pm
- Online registration: http://museumoftherockies.doubleknot.com/event/science-fun-night/1767176
- Planetarium show, magic show, learning stations & presentations from museum staff and MSU science & technology clubs & organizations, and more!
- Pizza ($1/slice)
- Pre-Check-in for MTSO

Talks & Tours at MSU:
- Tuesday November 24, two sessions: 11:40am-12:40 pm and 12:40pm-1:40 pm
- Online registration: coming soon
- Subzero and Neuroscience labs, Center for Biofilm Engineering, Space Public Outreach Team (SPOT), learn about STEM careers, and more
- Interact with MSU faculty, staff, graduate & undergraduate students
2014 MTSO by the Numbers

- Schools: **71**
- Teams: **88** (43 Div B, 45 Div C)
- Students: **1031** (508 Div B, 523 Div C)
- Events: **28** (14 in each Div)
- Volunteers: **115**
- Event Captains: **31**
Final Words

- Explore MSU map and MTSO schedule in advance of competition (posted on MTSO www site)
- Consider bringing a cart to transport large items
- Sign up for MTSO Twitter feed
- Check competition results before awards ceremony
- Welcome parents, siblings, friends to MTSO as spectators
- Get a good night’s sleep before the MTSO

*Be safe, have fun, and take pictures!*
2015 MTSO Team

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