

Event Supervisor Guidelines – 2018



Solon High School Science Olympiad Invitational Tournament

February 3, 2018

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Overview

This document contains guidelines and recommendations for all Event Supervisors (ES) at the 2018 Solon High School Science Olympiad (SHSSO) Invitational on February 3, 2018. These guidelines are intended to serve two purposes:

1. To ensure all events at our tournament will be challenging, fair, and run in accordance with all national Science Olympiad rules and policies
2. To assist new coaches who are less familiar with Science Olympiad, or veteran coaches who are not familiar with a new event; running events for the first time can be a complex challenge for even the most experienced volunteers

The first section is a set of general guidelines that apply to all events. The second section focuses on recommendations for all events that include a written test. The final section includes event-specific recommendations for events with a device or laboratory component.

SHSSO greatly appreciates your careful attention to these guidelines, and encourages you to contact shsso.coaches@gmail.com with any questions, comments, or concerns you may have.

General Guidelines

- Be familiar with, adhere to, and enforce the [2018 Division C Rules Manual](#)
- Be familiar with, adhere to, and enforce any [rule clarifications](#) posted to the national Science Olympiad website
- Be familiar with, adhere to, and enforce any [FAQ responses](#) posted to the national Science Olympiad website
- Be familiar with, adhere to, and enforce all Science Olympiad [policies](#) posted on the national Science Olympiad website, including those addressing the following:
 - Batteries
 - Building and Tools
 - Ethics and General Rules
 - Eye Protection
 - Lasers
 - Scoring
 - Significant Figures
- Submit scores and rankings based solely upon the criteria established in the rules, clarifications, FAQs, and policies identified above. ES are not permitted to base scores upon the race, color, religion (creed), gender, gender expression, age, national origin (ancestry), disability, sexual orientation, or school affiliation of competitors.
- Provide a consistent, fair experience for all timeslots and teams
- Immediately notify competitors if their score will be tiered for any reason
- Immediately notify competitors, their Head Coach, and the Scoring Director if a team is disqualified from an event for any reason
- Do not share details of an event's test content, parameters (e.g. target distance), lab task, etc. to any competitor, parent of a competitor, or other inappropriate person before the final timeslot is complete
- Direct any students, coaches, parents, etc. wishing to file an arbitration to the Scoring Director and the Arbitration Policy (Appendix A)
- Provide competitors with flexibility where possible within the rules, clarifications, FAQs, and policies listed above. As examples:
 - If a competitor arrives late, consider allowing them to use the remaining time to make their best effort (no extra time may be given).
 - If a student makes a spelling or grammatical error, consider giving full or partial credit as long as their intended answer was correct

Written Tests

- Focus on question formats that are fast and objective to grade such as multiple choice, true/false, fill-in-the-blank, or matching. If your exam necessitates expositive responses, have a clear rubric, and ask the same person to grade a particular question for all exams to ensure consistency.
- Begin grading the tests from the first time slot during the second time slot, and so on. If you start to fall behind, please contact the Scoring Director for additional volunteers.
- In order to provide sufficient differentiation between the 66 registered teams, the exam should include at least 120 independently scorable questions or question parts. Simply doubling the point values of 60 questions will not achieve this goal. If an exam is only part of the event (e.g. Hovercraft), a shorter exam would be appropriate.
- Include a broad range of question difficulty to both differentiate top competitors and allow less-knowledgeable competitors to succeed on some questions
- Consider using an answer document separate from the exam. Then, put your answer key into the same format as your answer document to facilitate scoring
- Unless given in the rules, pre-select tiebreaker questions (recommend at least 5) and communicate these to all competitors in the test instructions
- Use images and diagrams that are not from common internet sources – if you can find them quickly with a Google search, so can competitors. Use high-resolution, color images and diagrams wherever possible and appropriate.
- Unless otherwise directed by the rules, divide points across many subtopics
- Strictly enforce resource limitations. If the rules say that only ‘one 8.5” x 11” sheet of paper’ may be used, no alternative is acceptable. Two sheets of paper stapled/glued together, or placed into a sheet protector, are inadmissible. Be similarly strict with calculators.
- Require – and award credit for – appropriate units, significant figures, axes labels etc.
- Print extra copies of written materials in case of spills, loss, or other issues
- Consider displaying the remaining time on a projector screen, or announcing it frequently
- Competitor questions about instructions not answered during the first timeslot should not be answered in later timeslots; supervisor errors on exams, presentations, demonstrations, etc. should not be corrected unless all timeslots can be notified equally

Chemistry Lab

- Strictly enforce lab safety rules throughout the event, including refusing entry to competitors lacking the proper safety equipment or attire (goggles must be Type C), and disqualifying or penalizing teams engaging in unsafe activities, as outlined in rule 2.b. The ES should provide gloves if they are needed.
- At least one hands-on, wet lab activity should be included as part of this event. Ideally, use a mix of factual/knowledge-based questions, data-generating activities, and interpretive questions based on those activities.
- Provide all reagents, glassware, probes, or equipment needed to complete tasks. If you need assistance procuring, storing, or preparing these items, please contact SHSSO.
- Provide detailed, written instructions on the proper and safe use of any probes or equipment competitors may need
- Provide any periodic tables, standard reduction potentials, or constants that competitors will need. This ensure that all competitors have consistent starting constants, reducing grading complexity. Instruct competitors to only use the provided values.

Experimental Design

- Strictly enforce lab safety rules throughout the event, including refusing entry to competitors lacking the proper goggles (must be Type C), as outlined in rule 2.a., and disqualifying teams engaging in unsafe activities, as outlined in rule 4.e.
- Be familiar with and use the scoring rubric and scoring explanation available [here](#)
- Each team's lab report should be independently scored using the rubric (above) by at least two – ideally three – members of the event scoring team. The final score should be an average or consensus score derived from these independent assessments.
- Strictly enforce the limitations outlined in rule 2.c. on the supplies a team may bring to
- Create an answer document consistent with the scoring rubric, as instructed in rule 2.e.
- Provide extra blank and graph paper to competitors upon request
- Strictly enforce the requirement outlined in rule 3.a. that competitors must actually conduct their experiment on site using the available materials. Teams who skip this step and falsify experimental data should be tiered as outlined in rule 4.g.
- Try to provide a unique topic area and materials, so that competitors are engaged, and not simply repeating an experiment they have previously performed. For example, one year we provided all teams with earthworms, and supplies to enable them to measure earthworm behavior under different environmental conditions.

Forensics

- Strictly enforce lab safety rules throughout the event, including refusing entry to competitors lacking the proper safety equipment or attire (goggles must be Type C), and disqualifying or penalizing teams engaging in unsafe activities, as outlined in rule 2.d. The ES should provide gloves if they are needed.
- In order to provide sufficient differentiation between the 66 registered teams, the exam should include at least 120 independently earnable points. For example, a short answer question worth five points, where partial credit is possible, provides five independently earnable points. A multiple-choice question worth two points, but for which no partial credit may be given, only provides one independently earnable point.
- Provide detailed, written instructions on how to safely use any probes or equipment – beyond the typical items identified in rules 2.a. and 2.b. – that competitors are expected to use
- Provide all supplies outlined in rule 2.b., and any additional supplies necessary that are listed in rule 2.c.

Game On

- ES will be familiar with and use the scoring rubric and scoring explanation available [here](#). review the scoring rubric with all members of the event scoring team, and have all members score the first few games together as a team to establish consistent practices
- Strictly enforce the “no internet” usage rule, including frequently checking that students are not using/do not have access to the internet. If the provided computers are running the [online version](#) of Scratch, no other web browser tabs can be opened, nor should competitors be logging into their personal Scratch accounts.
- Clearly identify the expected theme and game type, which must come from the invitational game types identified in rule 3.b.i. and be based upon the descriptions available [here](#)
- Each game should be independently scored by at least two – ideally three – members of the event scoring team. The final score should be an average or consensus score derived from these independent assessments.
- Have an easy, clearly explained process for submission of Scratch game files. USB flash drives or shared online folders are both common solutions. SHSSO would be happy to advise on available technology solutions.
- Provide extra blank and graph paper to competitors upon request

Helicopters

- Use the official Helicopters Team Checklist to record the result for each team, and the Helicopters Score Sheet to track the results for all teams; both obtainable [here](#)
- While only one event volunteer needs to time the Pre-Flight Period and Flight Period, three timers must be used for flight times on official flights, with the middle value used as the official Time Aloft, as described in rule 4.l.
- Have sufficient timers to allow two teams to simultaneously conduct their Flight Period; with as many as 12 teams per 50-minute session, it is necessary to run flights in parallel
- Strictly enforce the construction parameters as outlined in rule 3., including the prohibition on using “commerically available rotors or propellers ... in whole or part”
- Strictly enforce the [Building and Tools](#) policy and rule 3.k., which state that devices must be built by competitors on the team, not their parents or coaches. If you suspect a device was not constructed by competitors, allow the team to compete normally, but immediately refer this matter to the Scoring Director for further evaluation.
- Strictly enforce rule 4.b., which prohibits competitors from receiving outside assistance after entering the designated competition area (must be clearly marked) and also prohibits event staff from handling the helicopter or its components until the event ends
- Provide a self-check inspection station as recommended by rule 4.e.
- Review team data with competitors, as recorded on the Helicopter Team Checklist, after the Flight Period ends as required under rule 4.o.
- Make every effort to avoid in-flight collisions between helicopters; collisions damage devices, disrupt accurate scores, and cost valuable time due to the re-flights authorized under rule 4.n.
- Carefully review construction, device charts/log, and testing rules with all event staff prior to the first timeslot

Hovercraft

- Strictly enforce the eye protection requirement outlined in rule 2.e.
- Use the official Hovercraft Team Checklist to record the result for each team, and the Helicopters Score Sheet to track the results for all teams; both obtainable [here](#)
- Provide at least two sets of tracks (fully compliant with rule 5) and sufficient supplies (e.g. penny rolls) in order to enable multiple teams to test in parallel; with as many as 12 teams per 50-minute timeslot, this is critical
- Use either photogates (preferred), or at least two independent timers, to measure run times as described under rule 4.m. If multiple timers are used, the average time should be taken as the scored time.
- Strictly enforce the [Building and Tools](#) Policy and rule 2.f., which state that devices must be built by competitors on the team, not their parents or coaches. If you suspect a device was not constructed by competitors, allow the team to compete normally, but immediately refer this matter to the Scoring Director for further evaluation.
- Strictly enforce all construction requirements as outlined under rule 3., including verifying that batteries adhere to rule 3f. and the [Battery Policy](#)
- Review all team data with competitors, as recorded on their Hovercraft Team Checklist, per rule 4.o.
- Do not allow practice runs before or during the competition, per rule 4.d.
- Carefully and safely store impounded devices, only allowing teams access to their own device; devices should not be removed from the event area if a team wishes to arbitrate an issue – see the Arbitration Policy (Appendix A).
- Carefully review construction, device charts/log, and testing rules with all event staff prior to the start of impound

Materials Science

- Strictly enforce lab safety rules throughout the event, including refusing entry to competitors lacking the proper safety equipment or attire (goggles must be Type C), and disqualifying or penalizing teams engaging in unsafe activities, as outlined in rule 2.c. The ES should provide gloves if they are needed.
- At least one hands-on, wet lab activity should be included as part of this event. Ideally, use a mix of factual/knowledge-based questions, data-generating activities, and interpretive questions based on those activities.
- Provide all reagents, glassware, probes, or equipment needed to complete tasks. If you need assistance procuring, storing, or preparing these items, please contact SHSSO.
- Provide detailed, written instructions on the proper and safe use of any probes or equipment competitors may need

Mission Possible

- Strictly enforce safety rules throughout the event, including refusing entry to or removing competitors lacking the proper goggles (must be Type C), as outlined in rule 2.a.
- Conduct a thorough safety inspection of each device before operation, as required in rule 2.b.; items identified as hazardous under rule 2.d. or prohibited by the [Battery Policy](#) and 2.j. should not be permitted
- Use the official Mission Possible Team Checklist to record the result for each team, and the Mission Possible Score Sheet to track the results for all teams; both obtainable [here](#)
- Strictly enforce the [Building and Tools](#) Policy and rule 3.k., which state that devices must be built by competitors on the team, not their parents or coaches. If you suspect a device was not constructed by competitors, allow the team to compete normally, but immediately refer this matter to the Scoring Director for further evaluation.
- Strictly enforce all construction requirements as outlined under rule 3.
- Plan for up to three devices to be simultaneously undergoing inspection, operation, or scoring; there are 66 teams that need to be scored in six hours
- At least two observers should jointly score each device; ideally, more than one timer will be used and the average used as the official time
- Carefully review construction, device charts/log, and testing rules with all event staff prior to the start of the first timeslot
- Review all team data with competitors, as recorded on their Mission Possible Team Checklist, per rule 4.k.

Mousetrap Vehicle

- Strictly enforce safety rules throughout the event, including refusing entry to or removing competitors lacking the proper goggles (must be Type B or better), as outlined in rule 2.a
- Use the official Mousetrap Vehicle Team Checklist to record the result for each team, and the Mousetrap Vehicle Score Sheet to track the results for all teams; both obtainable [here](#)
- Strictly enforce the [Building and Tools](#) Policy and rule 3.j., which state that devices must be built by competitors on the team, not their parents or coaches. If you suspect a device was not constructed by competitors, allow the team to compete normally, but immediately refer this matter to the Scoring Director for further evaluation.
- Strictly enforce all construction requirements as outlined under rule 3.
- Provide at least two competition lanes, allowing multiple teams to simultaneously compete with their device; with as many as 12 teams per 50-minute session, it is necessary to run in parallel
- While only one event volunteer needs to time the overall eight minute per team limit, three independent timers should be used for all runs, with the middle value used as the official Run Time, as described in rule 5.k.
- Strictly enforce rule 5.b., which prohibits competitors from receiving outside assistance after entering the designated competition area (must be clearly marked)
- Strictly enforce rule 5.f., which prohibits competing teams from rolling their device on the event room floor the day of competition (outside their eight minute competition window)
- Carefully and safely store impounded devices, only allowing teams access to their own device; devices should not be removed from the event area if a team wishes to arbitrate an issue – see the Arbitration Policy (Appendix A).
- Carefully review construction, device charts/log, and testing rules with all event staff prior to the start of the first timeslot
- Review all team data with competitors, as recorded on their Mousetrap Vehicle Team Checklist, per rule 5.p.

Optics

- Use the official Optics Team Checklist to record the result for each team, and the Optics Score Sheet to track the results for all teams; both obtainable [here](#)
- Provide at least one Laser Shoot Setup consistent with the directions found [here](#) (note – the setup has changed since last year); the provided laser must be consistent with the [Laser Policy](#)
- Review all team data with competitors, as recorded on their Optics Team Checklist, per rule 4.o.

Thermodynamics

- Strictly enforce safety rules throughout the event, including refusing entry to or removing competitors lacking the proper goggles (must be Type C), as outlined in rule 2.e.
- Use the official Thermodynamics Team Checklist to record the result for each team, and the Thermodynamics Score Sheet to track the results for all teams; both obtainable [here](#)
- Strictly enforce the [Building and Tools](#) Policy and rule 2.f., which state that devices must be built by competitors on the team, not their parents or coaches. If you suspect a device was not constructed by competitors, allow the team to compete normally, but immediately refer this matter to the Scoring Director for further evaluation.
- Strictly enforce all construction requirements as outlined under rule 3.
- Room temperature should be kept as constant as possible throughout the day (limit open doors, windows, etc.); contact SHSSO for assistance if needed
- Water bath temperature should be kept as constant as possible throughout the day; provide equipment capable of sustaining a constant temperature
- Closely adhere to the temperature measurements steps outlined in rule 4.g.
- Carefully and safely store impounded devices, only allowing teams access to their own device; devices should not be removed from the event area if a team wishes to arbitrate an issue from Part I – see the Arbitration Policy (Appendix A).
- Carefully review construction, device charts/log, and testing rules with all event staff prior to the start of impound
- Review all Part I team data with competitors, as recorded on their Thermodynamics Team Checklist, per rule 4.h.

Towers

- Strictly enforce safety rules throughout the event, including refusing entry to or removing competitors lacking the proper goggles (must be Type B or better), as outlined in rule 2.b
- Use the official Towers Team Checklist to record the result for each team, and the Towers Score Sheet to track the results for all teams; both obtainable [here](#)
- Strictly enforce the [Building and Tools](#) Policy and rule 3.i., which state that devices must be built by competitors on the team, not their parents or coaches. If you suspect a device was not constructed by competitors, allow the team to compete normally, but immediately refer this matter to the Scoring Director for further evaluation.
- Strictly enforce all construction requirements as outlined under rule 3.
- Provide at least two Test Apparata (constructed to be consistent with rule 5.), allowing multiple teams to simultaneously test their tower; with as many as 12 teams per 50-minute session, it is necessary to run in parallel
- Strictly enforce rule 4.b.i., which prohibits competitors from receiving outside assistance after entering the designated competition area (must be clearly marked); note the check-in and competition rules clearly indicate only participants – not event staff – should touch the tower throughout the event
- Carefully and safely store impounded devices, only allowing teams access to their own device; devices should not be removed from the event area if a team wishes to arbitrate an issue – see the Arbitration Policy (Appendix A).
- Carefully review construction and testing rules with all event staff prior to the start of impound
- Review all team data with competitors, as recorded on their Towers Team Checklist, per rule 5.b.xi.

Appendix A – Scoring and Arbitration Policy

Consistent with that national Science Olympiad [Scoring Policy](#), “all teams who participate and compete according to the rules must be scored and ranked.” Every effort should be made to break all ties using the scoring guidelines in the rules for each event. Special scoring designations should be used as follows:

- Participation (P) – “teams making an honest attempt to participate that cannot be assigned a raw score because of time, mechanical failure, wrong dimensions, etc.”
- Disqualified (DQ) – to designate teams displaying inappropriate behavior or cheating
- No Show (NS) – to designate teams that do not show up to the event, or who fail to “make an honest attempt to participate”

If a student, coach, or parent wishes to arbitrate an issue occurring during their event, they should be referred to this policy. For the 2018 Solon High School Science Olympiad Invitational Tournament, only the Head Coach(es) of the team(s) wishing to arbitrate an issue may file an arbitration request. This request should be submitted in writing to tournament headquarters as soon as possible, but not later than one hour after the awards ceremony has ended.

Any arbitration request received will be investigated by the Scoring Director, which will likely include discussions with the appropriate Event Supervisor, competitors, and Head Coach. Final arbitration decisions will be made by majority vote of the three SHSSO coaches. Both the Event Supervisor and Head Coach who filed the request will be informed of the decision in writing. Arbitration requests submitted more than one hour after awards, or by individuals other than a Head Coach, will not be reviewed.