

INFORMATION DOCUMENT

SCIENCE OLYMPIAD AT THE UNIVERSITY OF PENNSYLVANIA

PENN SCIENCE OLYMPIAD INVITATIONAL 2021

Draft Three - 2/23/2021

SOUP

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Letter from Our Executive Board

Dear Coaches,

We are so glad your team is attending the fifth annual Penn Science Olympiad Invitational!

We are hard at work to make sure that this year's tournament is the best and largest one yet. Enclosed you will find details regarding your team number, the tournament schedule and policies, and other important information. This year, we will have 100 teams competing from 15 unique states in our hybrid miniSO tournament.

We are super excited to host you here! Please feel free to reach out to us if you have any questions.

See you in February,
SOUP Executive Board

TEAM LIST

Team #	Team Name	State
1	Abington Heights High School	PA
2	Allentown Central Catholic High School	PA
3	Athens Area High School - A	PA
4	Athens Area High School - B	PA
5	Bayard Rustin High School - A	PA
6	Bayard Rustin High School - B	PA
7	Bridgewater Raritan Regional High School	NJ
8	Brighton High School	NY
9	Brooklyn Technical HS	NY
10	Canton High School	MI
11	Carmel High School - A	IN
12	Carmel High School - B	IN
13	Centennial HS - A	MD
14	Centennial HS - B	MD
15	Chaminade High school	NY
16	Chattahoochee High School - A	GA
17	Chattahoochee High School - B	GA
18	Cherry Hill East High School	NJ
19	Union-Endicott High School	NY
20	Columbia High School	NY
21	Conestoga High School - A	PA
22	Conestoga High School - B	PA
23	Cumberland Valley High School - A	PA
24	Cumberland Valley High School - B	PA
25	Cumberland Valley High School - C	PA
26	East Brunswick High School	NJ
27	Ed W. Clark High School	NV
28	Fairfax High School - A	VA
29	Fairfax High School - B	VA
30	Fayetteville-Manlius Senior High School	NY

TEAM LIST (CONT.)

Team #	Team Name	State
31	Harriton High School - A	PA
32	Harriton High School - B	PA
33	Hillsborough High School - A	NJ
34	Hillsborough High School - B	NJ
35	Hunter College High School - A	NY
36	Hunter College High School - B	NY
37	Iolani School	HI
38	John Jay High School	NY
39	John P. Stevens High School - A	NJ
40	John P. Stevens High School - B	NJ
41	JR Masterman School	PA
42	Kellenberg Memorial High School	NY
43	Lake Braddock High School	VA
44	Lexington High School	MA
45	Liberal Arts and Science Academy - A	TX
46	Liberal Arts and Science Academy - B	TX
47	Longmeadow High School	MA
48	Lower Merion High School - A	PA
49	Lower Merion High School - B	PA
50	Mason High School - A	OH
51	Mason High School - B	OH
52	Mason High School - C	OH
53	Merrimack High School	NH
54	Middlesex County Academy for Science, Mathematics & Engineering Technologies	NJ
55	Mira Loma High School	CA
56	Montgomery High School - A	NJ
57	Montgomery High School - B	NJ
58	North Penn High School - A	PA
59	North Penn High School - B	PA
60	North Pocono High School - A	PA

TEAM LIST (CONT.)

Team #	Team Name	State
61	North Pocono High School - B	PA
62	Parkland High School - A	PA
63	Parkland High School - B	PA
64	Philadelphia High School for Girls	PA
65	Plattsburgh High School	NY
66	Princeton High School	NJ
67	Reservoir HS - A	MD
68	Reservoir HS - B	MD
69	River Hill HS	MD
70	Saint Anthony's High School	NY
71	Saline High School - A	MI
72	Saline High School - B	MI
73	Shady Side Academy - A	PA
74	Shady Side Academy - B	PA
75	Solon High School - A	OH
76	Solon High School - B	OH
77	South Brunswick High School - A	NJ
78	South Brunswick High School - B	NJ
79	Staten Island Technical High School	NY
80	Strath Haven High School	PA
81	Stuyvesant High School - A	NY
82	Stuyvesant High School - B	NY
83	Sylvania Southview High School - A	OH
84	Sylvania Southview High School - B	OH
85	Syosset HS	NY
86	The Hun School of Princeton	NJ
87	The Mount Academy - A	NY
88	The Mount Academy - B	NY
89	The Shipley School	PA
90	Thomas Jefferson HS for Science and Technology	VA

TEAM LIST (CONT.)

Team #	Team Name	State
91	Townsend Harris High School - A	NY
92	Townsend Harris High School - B	NY
93	Upper Dublin High School	PA
94	Ward Melville High School - A	NY
95	Ward Melville High School - B	NY
96	West Windsor Plainsboro HS North - A	NJ
97	West Windsor Plainsboro HS North - B	NJ
98	West Windsor-Plainsboro High School South - A	NJ
99	West Windsor-Plainsboro High School South - B	NJ
100	Westborough High School A	MA

SATURDAY, FEB 27

EVENTS

10:00
AM
to
4:00
PM

Students will compete in events based on the schedule on the following page. The numbers in the table represent team numbers.

All events will follow national rules.

PENN PANELS & GAMES

2:30
PM
to
5:00
PM

Game Time! (2:30-3:30):
Game Session 1

Penn Panels (3:30-5:00):
Panels with the Vagelos Integrated Program in Energy Research (VIPER), Management & Technology Program (M&T), and Penn students

SUNDAY, FEB 28

CAMPUS TOURS & GAMES

11:00
AM
to
4:00
PM

Campus Tour (TBD):
Take a virtual tour of Penn's campus, led by Penn's Kite & Key club.

Game Time! (3:00-3:30):
Game Session 2

CLOSING CEREMONY

4:00
PM
to
6:30
PM

Join us for this year's closing ceremony, which highlights two speakers. This year's keynote speaker will be Grant Sanderson from the popular educational YouTube channel 3blue1brown. Our guest speaker is Dr. Jayatri Das, Chief Bioscientist at the Franklin Institute.

EVENT SCHEDULE

Event	10:00-10:50	11:00-11:50	12:00-12:50	1:10-2:00	2:10-3:00	3:10-4:00
Anatomy & Physiology	1-15	16-32	33-49	50-66	67-82	83-100
Astronomy	1-15	16-32	33-49	50-66	67-82	83-100
Boomilever *	Video Submission due by 10 AM ET on Saturday, Feb 27					
Chem Lab	67-82	83-100	1-15	16-32	33-49	50-66
Circuit Lab	1-15	16-32	33-49	50-66	67-82	83-100
Codebusters	50-66	67-82	83-100	1-15	16-32	33-49
Designer Genes	67-82	83-100	1-15	16-32	33-49	50-66
Detector Building **	1-15	16-32	33-49	50-66	67-82	83-100
Disease Detectives	50-66	67-82	83-100	1-15	16-32	33-49
Dynamic Planet	67-82	83-100	1-15	16-32	33-49	50-66
Experimental Design	33-49	50-66	67-82	83-100	1-15	16-32
Forensics	83-100	1-15	16-32	33-49	50-66	67-82
Fossils	83-100	1-15	16-32	33-49	50-66	67-82
Geologic Mapping	33-49	50-66	67-82	83-100	1-15	16-32
Gravity Vehicle *	Video Submission due by 10 AM ET on Saturday, Feb 27					
Machines **	16-32	33-49	50-66	67-82	83-100	1-15
Ornithology	50-66	67-82	83-100	1-15	16-32	33-49
Ping Pong Parachute *	Video Submission due by 10 AM ET on Saturday, Feb 27					
Protein Modeling **	16-32	33-49	50-66	67-82	83-100	1-15
Solar Power *	33-49	50-66	67-82	83-100	1-15	16-32
Sounds of Music **	67-82	83-100	1-15	16-32	33-49	50-66
Water Quality **	16-32	33-49	50-66	67-82	83-100	1-15
Wright Stuff *	Video Submission due by 10 AM ET on Saturday, Feb 27					
Write It Do It	83-100	1-15	16-32	33-49	50-66	67-82

TOURNAMENT POLICIES

At SOUP, all our event rules follow National Science Olympiad's competition rules. Our tournament policies, as listed below, also match those of National State Science Olympiad from the website.

In all tournaments, all officials, coaches, team members and spectators are expected to abide by the rules as stated in the Official Rules Manual. Violations may include any of the following:

01

INTERFERENCE

Only the team members assigned to the event may enter the competition area along with those supervising and judging the event. All others are to remain out of the room or the competition area at all times. If any student, coach, teacher, chaperone or parent interferes with or disrupts the conduct of the event, the team associated with the person will be penalized at the discretion of the event supervisor in conjunction with the appeals board. The team, coach and the site director will be notified of this action.

02

CHEATING

Any individual who cheats during an event will be penalized by disqualification. The team and the coach will be apprised of this action. If an event team or team member deliberately takes an action that impairs the ability of another team to fairly compete, that team will be disqualified from that event. Depending on the severity of the action taken by the team members, further action by the appeals board may result that the team members are disqualified from other events. Upon reporting this action to the State Board, the team members may be barred from further tournaments. **The use of offline digital binders is allowed, but the use of the Internet for additional research or help (other than teammate communication and authorized programs like Jmol and CAD) at the time of competition is strictly prohibited.**

03

VANDALISM

If a member of a team or a person associated with a team commits an act of vandalism, the team will be disqualified from the tournament. Vandalism means deliberate action that results in damage to property. This includes, but is not limited to, graffiti, damage to facility property, and damage to personal property of competitors, judges and supervisors.

COACH INSTRUCTIONS

We will be using Scilympiad for all events. To use Scilympiad as a coach, please see the following tips. Please see the following pages for Scilympiad tutorials.

Team Logistics

The team coach is responsible for collecting all the necessary forms from participants and sending them to us in a timely manner. Science Olympiad at the University of Penn (SOUP) has its own team registration form, media release form, and waiver of liability agreement. In addition, we require all of the Pennsylvania Science Olympiad (PASO) forms: the coach form, parent form, and build event form. All of these forms will be emailed in January.

At the end of the tournament, the team coach is responsible for verifying team scores and placements. Following the closing ceremony, we will be shipping out medals, plaques, and trophies. Awards include coach plaques for the top 3 teams, team trophies for top 6 teams, medals for the top 8 teams for non-trial/not optional events, and medals for the top 6 teams for trial/optional events. These awards will be shipped to the team coach's address that is on-file on Scilympiad. Please send us an email if you would like to change your preferred shipping address.

We will be hosting Q&A sessions for coaches in mid-January to early February.

Allowed Materials

Coaches should ensure that participants are aware of the rules set by the National Science Olympiad. Per the COVID rules modifications, each individual participant may have a personal set of reference materials (e.g., binders, single sheets of paper), calculator, or other academic resource(s) as specified in the specific event rules for use during the competition to allow social distancing and to prevent resource sharing. For example, if the event says "Each team may bring 1 sheet of paper," the COVID rules modifications allow each participant to have a sheet of paper as their resource and the contents on the two partners' note sheets can be identical or can be different. If the event says "Each participant may bring 1 sheet of paper," each participant can still bring only 1 sheet of paper.

Video Calls

In the unlikely event that we will need to set up a private video call for an event, the Event Supervisor will set up the video call and distribute the link ahead of time. The Event Supervisor will also allow participants ten minutes to move between events. Setup and preliminary checks will occur in the main Zoom room. Participants will then move to breakout rooms with the Event Supervisor to complete anything necessary for the event. During these calls, participants will not be allowed to be together to be equitable to all teams.

PARTICIPANT INSTRUCTIONS

We will be using Scilympiad for all events. To use Scilympiad as a participant, please see the following tips. Please see the following pages for Scilympiad tutorials.

Scilympiad Instructions

Scilympiad allows partners to see our tests at the same time. To ensure your answer will save properly, please use Edge or Chrome as your browser on your desktop or laptop.

Prior to tournament day, participants should create an account using the login ID provided by their coach. To do that, go to the tournament web page and click on "Tournament", then "Student Dashboard." Afterwards, click on "Take online test using Login ID." The first time a participant logs in, the system will ask to create a password. Once logged in, participants should see a list of the events they will be taking. If they cannot see all of the events or if they see extra events, they should let their coach know as soon as possible.

Once participants are on the event page, they will see the key parameters for their test. Participants will also see a chat box for them to communicate with their partner or the Event Supervisor(s). They should check with either partner first to make sure they're both ready to start the test before clicking "Start." As soon as either partner starts the test, the timer will start. When one partner clicks on an answer, the answer will show up on their partner's test immediately. For free responses, the system will save the answer automatically each time a participant clicks outside of the textbox. Please save answers periodically by clicking outside of the textbox. Also, make sure only one person works on a free response question at a time. If person A writes something for a particular question, and person B is also concurrently working on the question, when person A leaves the question, it will override the contents of person B's work. Please be sure partners work on different free response questions at any time. The only exception is for Codebusters' cryptography questions which requires participants to click "Save Answer."

In Scilympiad, the browser keeps track of the duration that the participant leaves the browser or goes to a different tab. To make sure the timer isn't triggered, make sure the team is set up before starting the test (video calls, etc. connected) and that all desktop notifications are turned off. During a test, participants will see the amount of time they have left for the event. When participants are finished, they should click "Submit." If participants are not done by the end of the period, the system will automatically submit the answered questions when time expires.

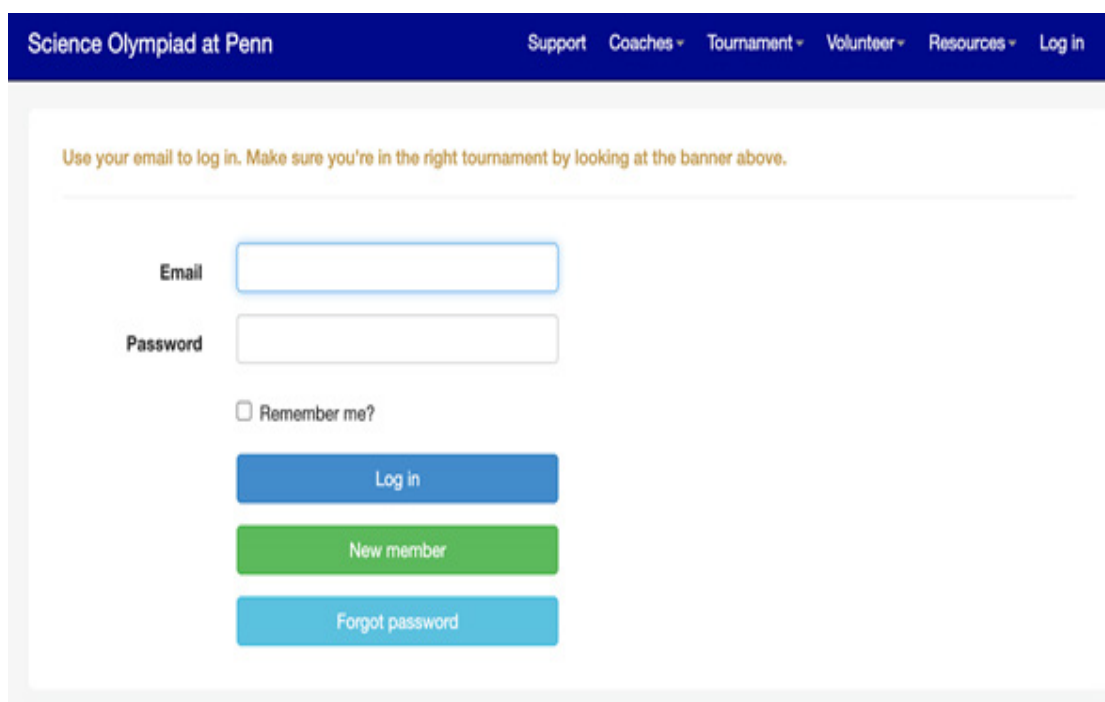
If you need more help with Scilympiad, please visit the Support tab in scilympiad.com/soup. We have posted additional resources under the webinar icon.

SCILYMPIAD TUTORIAL FOR STUDENTS

Creating Student Scilympiad Accounts

Note: If your coach has already registered you with your email, please use the same email when you create your account. Or use the email link.

To create an account, open scilympiad.com/soup and click on the Log In tab in the top right. Then, click on the green button “New Member” and fill in the required information.



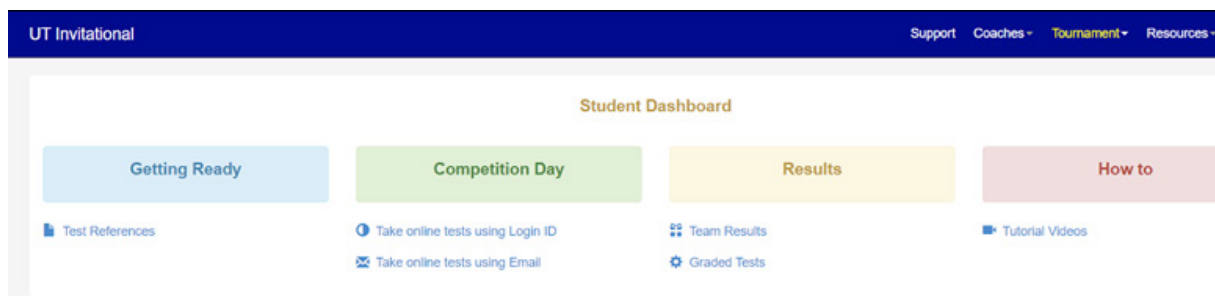
The screenshot shows the login page for Science Olympiad at Penn. At the top is a dark blue navigation bar with the text "Science Olympiad at Penn" on the left and links for "Support", "Coaches", "Tournament", "Volunteer", "Resources", and "Log in" on the right. Below the navigation bar is a light gray box containing a message: "Use your email to log in. Make sure you're in the right tournament by looking at the banner above." Below this message are two input fields: "Email" and "Password". Below the "Password" field is a checkbox labeled "Remember me?". At the bottom of the form are three buttons: a blue "Log in" button, a green "New member" button, and a light blue "Forgot password" button.

You will need to do this prior to the tournament date so your coach can make the necessary assignments for events.

SCILYMPIAD TUTORIAL FOR STUDENTS (CONT.)

Day of Tournament, Logging in

After opening the Scilympiad webpage, look for the **Tournament** tab in the top right. Hover over it and click on Student Dashboard, which should take you to the screen shown below.



(Image courtesy of UT Austin SO Invitational)

From here, you have access to many resources, including test references, team results (once released), and the testing environment. Under **Competition Day**, you must log in with "Take online tests using Login ID". **Your coach should have access to each student's unique ID, so make sure to ask him/her for it.**

Below is an example of what your screen should look like once you have logged in. When ready, click on an exam to begin.

The screenshot shows the 'Available Tests' page. At the top is a dark blue navigation bar with 'UT Invitational' on the left and 'Support', 'Coaches', 'Tournament', and 'Resources' on the right. Below this is a light gray header with 'Available Tests' in orange. A message says 'Click on the test under the Test Title column to select the test.' Below this is a table with the following data:

Event Name	Test Title	Questions	Time Limit	Start Time	End Time	Status
Fossils	Test Exam	9	50 minutes	09/20/20 12:03 AM	09/26/20 12:53 AM	
Fossils	Test Exam 2	4	10 minutes	09/23/20 07:52 PM	09/25/20 08:42 PM	

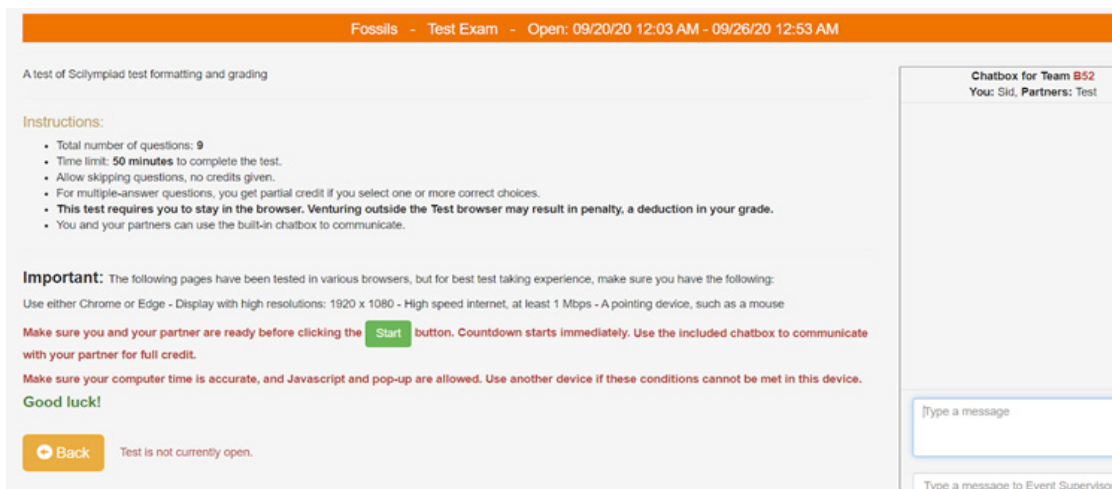
(Image courtesy of UT Austin SO Invitational)

You must start the test within the time slot indicated on the schedule. After the block, the test will be closed and you will no longer have access. Please start the test promptly within the timeblock to ensure the full 50 minutes.

SCILYMPIAD TUTORIAL FOR STUDENTS (CONT.)

Day of Tournament, Test Taking

When you click on an exam on the Available Tests page, it will take you to the Test Introduction. This page will have general information about the exam and instructions provided by the event supervisor. When you and your partner are ready to begin the exam, click the Start button. Once the countdown timer begins it cannot be paused for any reason.



(Image courtesy of UT Austin SO Invitational)

Some exams may have a supporting document to the exam which will be downloadable at the top of the test after clicking the Start button. While taking the exam, answers you input will be saved automatically after you select or type them. When you are finished with the exam, click Finish Test at the bottom of the page. If this button is not visible to you, try scrolling outside of the questions area in the lower half of the window.

If you are working with a partner, there is a **Sync Answers** button at the bottom next to Finish Test which updates your test version with answers your partner has inputted.

If you have any questions during the exam (whether content or technological), you can use the chat box on the right side of your screen to directly chat with an event supervisor. If they are not responsive and it's an urgent question, please send us a message via Remind101.

Video Tutorials

Before the tournament, feel free to access the webinars for video tutorials of the website. Go to the Support button on the top blue bar, under Resources, click Webinars, and click Students 01/10/2021.

Webinars			
Directors	Scoremasters	Event Supervisors	Coaches/Students
■ Directors 12/08/2020	■ Scoremasters 01/03/2021	■ Event Supervisors 12/06/2020	■ Students 01/10/2021
			■ Coaches 01/10/2021
			■ Coaches - Q & A - 01/10/2021

SCILYMPIAD TUTORIAL FOR COACHES

Under Sign Up

Under **Scheduled-Event Timeblocks**, here you can view your team's event schedule. There should only be one time block for each event. Click Event Signup. Click Signup next to all events you plan on participating in. (Note: Build events and Solar Power will not be on this list. We will send out a separate Google Form)

The screenshot shows the 'Event Schedule Signup' page for the Science Olympiad at Penn. At the top is a dark blue navigation bar with links: Support, Coaches, ES, SM, Director, Tournament, and Resources. Below the navigation bar, the page title 'Event Schedule Signup' is followed by three buttons: 'Show all my signups' (blue), 'Head Coach Dashboard' (green), and 'Timeblock Swap Requests' (orange). A paragraph of instructions follows, explaining how to sign up and cancel timeblocks. Below this is a note about peak signup availability. A table lists events with columns for Event Name, Timeblock, All In, Avail Spots, Your Spots, Max Spots, and Teams. Two events are listed: Anatomy and Astronomy, both with a timeblock of 03:10 PM-04:00 PM and 100 spots available. Each event has a 'Show' link in the Teams column.

	Event Name	Timeblock	All In	Avail Spots	Your Spots	Max Spots	Teams
Signup	Anatomy	03:10 PM-04:00 PM	<input checked="" type="checkbox"/>	100		100	Show
Signup	Astronomy	03:10 PM-04:00 PM	<input checked="" type="checkbox"/>	100		100	Show

(Image courtesy of UT Austin SO Invitational)

Under Compliance

- ☐ Make sure **Head Coach Profile** is updated
- ☐ Make sure your teams are registered
- ☐ Submit the 2 required **Release Forms** for each student
- ☐ Ensure completion of 3 PASO (linked) release forms

The screenshot shows the 'Head Coach Dashboard (Tournament Time Zone: EST)'. The dashboard is divided into four main sections: Registration, Compliance, Sign up, and Tournament Day. Each section contains a list of tasks or links. The Registration section includes links for Register/Update Teams, Update School Profile, Registration Fees, and Invite Coaches. The Compliance section includes links for Update Head Coach Profile, Upload Documents, Student/Team/Event Assignment, Release Forms, Verification / Checklist, Head Coach Reference Guide, Webinars, and Documents for Head Coaches. The Sign up section includes links for Self-scheduled Event Signup, Scheduled-Event Timeblocks, Invitational Signup, Volunteer Opportunities, Event Supervisor Signup, and Order Meal. The Tournament Day section includes links for Monitor Team Competition, Online Appeal Form, Tournament Results, and Online Score Inquiry.

(Image courtesy of UT Austin SO Invitational)

SCILYMPIAD TUTORIAL FOR COACHES (CONT.)

Assigning Students to the Roster and Putting Them into Teams

- ❑ Click on Student/Team/Event Assignment
- ❑ If you already inputted the number of members for your team, a row for each student should already be there to be filled out. From there you can **select each box** and fill out the names and grade of each student. You can state whether they are an alternate, they completed registration, and if they submitted their release documents. **Login IDs are automatically generated.**
- ❑ If there are no rows allotted, you can simply **add a student** or you can **import students** from an existing Excel file. You can also **delete a student** by selecting delete on their row.
- ❑ You can **preview changes** by selecting the respective button on the bottom. You can then **save changes** to confirm the changes. You can also **cancel changes**.
- ❑ To assign each student to their specific team, click **students to teams** and add/remove each student there. It is best to input all of your students first on the initial page before doing this. You can **add** students by clicking the checkbox next to their name and then selecting add to the proper name. Likewise, you can **remove** students to put them back into the pool to be inputted into another team.
- ❑ Once you have done that, you can now assign students to their events by clicking **Students to Events**.

[Add a student](#) [Import Students](#) [Students to Teams](#) [Students to Events](#) [Event Schedules](#) [Principal Certification](#) [Signed Releases](#)
[Head Coach Dashboard](#)

Follow the order of the buttons above to complete all the necessary steps. Make sure to click **Save changes** at the bottom if you enter names manually or delete. Grades must be numbers only. Take a moment to read additional instructions at the bottom.

Student Pool - shared across tournaments							
#	Last Name	First Name	Grade	Login Id		Alternate	Release Submitted
Delete						<input type="checkbox"/>	<input type="checkbox"/>
Delete						<input type="checkbox"/>	<input type="checkbox"/>

SCILYMPIAD TUTORIAL FOR COACHES (CONT.)

Assigning Events to Students

- ❑ You can change which team you are assigning events into with the Select Team dropdown.
- ❑ To assign students to events, simply click the checkbox of the event the student wants to compete in their respective rows. Events with the same color are in the same time slot.
- ❑ Once you are done assigning events, you can preview changes and then save changes to confirm the selection. You can also cancel changes to assign the events at another time.
- ❑ You can view the event schedule by selecting Event Schedules from the team roster page. You can find the listed events and the students competing in each event.

Select Team:
UAT SO

[To Excel](#) [Back to Team Roster](#) [Head Coach Dashboard](#)

Map students to events for each team and print out schedules for your students. If your tournaments group events to avoid conflicts, you should see events with same grouping in the same color. Font size for headings is reduced to fit. Minimum screen resolution: 1920x1080

Student Name	Anatomy	Botany	Circuit Lab	Codebusters	Crime Busters	Density Lab	Disease Detectives	Dynamic Planet	Food Science	Fossils	Heredity	Machines	Meteorology	Ornithology	Reach for the Stars	Road Scholar	Solar Power	Water Quality
Sid Arora	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Test Student	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

[Export to Excel](#) [Student Roster](#) [Head Coach Dashboard](#)

Schedule grouped by Team. If you don't see the list, you have not assigned students to teams or assign them to events. If you don't see anything under Timeblock, you haven't signed for any event timeblocks.

Event Name	Student1	Student2	Student3	Timeblock
Team Name: UAT SO (B01)				
Anatomy				
Circuit Lab				
Crime Busters				
Density Lab	Sid Arora (1012CQ)			
Disease Detectives	Test Student (1012C9)			
Dynamic Planet				
Food Science				
Fossils	Test Student (1012C9)			
Heredity				
Machines				
Meteorology				
Ornithology				

(Image courtesy of UT Austin SO Invitational)

SCILYMPIAD TUTORIAL FOR COACHES (CONT.)

Video Tutorials

Before the tournament, feel free to access the webinars for video tutorials of the website. Go to the Support button on the top blue bar, under Resources, click Webinars, and click the coaches videos.

Webinars			
Directors	Scoremasters	Event Supervisors	Coaches/Students
■• Directors 12/08/2020	■• Scoremasters 01/03/2021	■• Event Supervisors 12/06/2020	■• Students 01/10/2021 ■• Coaches 01/10/2021 ■• Coaches - Q & A - 01/10/2021

Communication with SOUP During Tournament

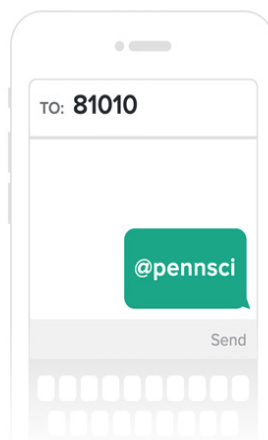
We will be using Remind101 for all communication during the span of the tournament. All tournament-wide announcements will go out on this platform. You can choose to get alerts through email or phone.

- ☐ Sign up for Remind101 via Computer:
Go to the following link: remind.com/join/pennsci
Complete the prompted information
- ☐ Sign up for Remind101 via Texts:

Tell people to text @pennsci to the number 81010

They'll receive a welcome text from Remind.

If anyone has trouble with 81010, they can try texting @pennsci to (615) 751-5924.



We recommend downloading the app or using your computer to access Remind101. During the day of the tournament, you will have the ability to send us direct messages so we can address any questions/problems/website difficulties. Please also have your students sign up for Remind101 on their devices also to receive the most up to date information. **We highly encourage you to keep this line of communication open with us!**

CHEMISTRY & PHYSICAL SCIENCE EVENTS

Chemistry Lab	For this year's Chemistry Lab event, there will be a mix of conceptual and calculation-based questions. Since the tournament will be online, students will not have to expect any hands-on lab activities. However, students may be asked to write the procedure, conclusion, or error analysis for a hypothetical experiment. Topics will involve pH calculations, mass percentage, error analysis, solubility, back titration, precipitation, titration curves, etc. Students should expect to use their scientific calculator for several questions. Students should also come prepared to scan and upload their test in the event that we do ask for work shown on certain problems. We recommend phone applications like Adobe Scan or CamScanner.
Forensics	This year's event will be similar in format to that of previous years, with a crime scene that requires careful analysis of key pieces of evidence in order to identify the perpetrator. However, there will be a few changes in order to help adjust to the online testing platform. Rather than having students perform the experimental section by hand, we will be utilizing a combination of videos, images, and diagrams generated by our own event supervisors. Additionally, students should come prepared with a greater understanding of the underlying principles and concepts behind the techniques (e.g., PCR, blood typing, etc.) because they may find a question or two about those as well.
Protein Modeling	In this event, students will be tested on their knowledge of the chemistry of protein folding, the biology behind protein expression, the scientific techniques used to research proteins, and the CRISPR-Cas9 system and subsequent modifications of this bacterial immune system to transform it into a versatile gene editing tool. Questions will be organized into two major sections: a general exam on the topics above, and a more theoretical section where students will use their understanding to analyze proteins in Jmol and interpret protein research. The proteins used in this theoretical section will be selected from well-studied proteins that are representative of major protein classes and/or relevant to the COVID-19 pandemic. If you are on Mac or Windows PC, please have the latest version of Jmol downloaded. If you are on another OS like ChromeOS, a web version of Jmol is available here.
Machines	In order to adapt to the online test setting, this event will be focused on the written portion, along with a few conceptual and practical questions about the build portion of the event. Topics to be tested include energy, forces, torque, friction, rotational motion, and equilibrium, as well as how they apply to both simple and compound machines. Additionally, there may be questions in the build section regarding data interpretation and problem solving for hypothetical machines. Students can expect a variety of multiple choice and short answer questions on this year's test that assess the given topics at a range of difficulties.

BIOLOGY EVENTS

Anatomy & Physiology	This year's exam will feature a longer test with many more questions.
Designer Genes	This year's exam will have a format that is similar to last year's exam. There will be lots of questions that relate to one another, and the questions will be more case-based than fact-based so that they will be difficult to look up. The event supervisors will stick to multiple-choice mostly to keep things simple in terms of grading, and they are planning to cover all the topics in the rules manual with at least 1 question. Tiebreakers will be integrated into the exam.
Disease Detectives	For this year's exam, the event supervisors want to keep the format largely the same as usual. The exam will have two large case studies composed of mostly short answer or extended response questions, along with a third section that tests general Disease Detectives knowledge, interspersed with smaller case studies of its own.
Ornithology	This year's exam will involve an extended test with more bird call sound files, conceptual questions, "reverse" questions (given the trait, name the bird), hypotheticals, and conservation questions.
Water Quality	This year's exam will be 100-150 questions with more short answers/free response ecology/reef questions to test depth of understanding. For the ID parts, there will be lots of species-specific questions and possibly case studies requiring some depth of understanding. The salinometer testing portion will not be included for this year.

ORNITHOLOGY BINDER POLICY

All parameters outlined in the 2021 Division C Ornithology Rules apply unless otherwise detailed in this binder policy.

2. **EVENT PARAMETERS:**

- a. Each team may bring one 2" or smaller three-ring binder, as measured by the interior diameter of the rings, containing information in any form and from any source along with one commercially produced field guide not contained in the binder. Sheet protectors, lamination, tabs and labels are permitted in both the binder and field guide.
- b. If the event features a rotation through a series of stations where the participants interact with samples, specimens or displays; no material may be removed from the binder throughout the event.
- c. In addition to a binder, each team may bring one unmodified and unannotated copy of either the **2021** National Bird List or a **2021** Official State Bird List which does not have to be secured in the binder.

Digital Binder Rules

- All digital binder materials must be prepared BEFORE the time of competition. You may not access any webpages outside of your binder during the competition as a part of your "digital binder."
- Digital binder pages may not exceed 700 pages (comparable to 350 double-sided pages that would fit in a 2-inch binder.)

Physical Binder Rules

- If competitors are not in the same location, they may use 2 copies of the physical binder.
- It is also acceptable if one competitor chooses to use a physical binder and the other competitor uses a digital binder, as long as the two binders contain the same information, despite their difference in format.
- All other rules associated with physical binders outlined in the 2021 Ornithology Rules apply (i.e. 2" or smaller three-ring binder.)

Note on Field Guides

- Per the Div. C Ornithology Rules, the "commercially produced field guide" cannot be contained in the binder.
- The field guide must be a physical book or a downloaded digital copy. You may not access any webpages during the competition as a part of your "digital field guide."
- If competitors are not in the same location, they may use 2 copies of the SAME field guide if they choose.

EARTH & SPACE SCIENCE EVENTS

Astronomy*	This year's exam will have a format similar to last year's exam, with more multiple choice questions and fewer calculation based problems (no calculus involved).
Dynamic Planet*	This year's exam will have a format similar to last year's exam, with more multiple choice and short answer questions. There will be 1-2 long paragraph responses.
Fossils	Fossil images will be uploaded onto the Scilympiad testing site, accompanied by short-answer and multiple-choice questions. The test will be longer than the usual offline format because of a lack of stations.
GeoLogical Mapping	Many problems will require written responses to diagrams and given maps (the event supervisors will check if students can upload pictures of maps). If this does not work, the exam will have short answer and multiple choice questions.
Solar Power	Offered as a trial event this year, Solar Power will be completely exam-based. Each team is allowed a three-ringed binder of any size containing any information from any source and fifty minutes to take the exam. Topics broadly covered include concepts related to energy and energy transfer, different forms of renewable energy, and energy conservation practices.

* Rules subject to further modification

NATURE OF SCIENCE EVENTS

Circuit Lab	To adapt to the online format, this event will be focused on the written exam portion, with no hands-on circuit section. The written section will be longer, and it will cover the topics in the rules manual with a stronger focus on conceptual questions and a few more circuit analysis questions.
Codebusters*	This year's test will be similar in format to that of previous years. The timed question will be automatically checked and recorded using Scilympiad's built in system. Time spent off the test tab will be penalized, so teams should print out the reference sheet beforehand for their own use.
Write It, Do It*	We will be running this event as Write It, CAD It according to these rules. The writer will gain access to screenshots of the model when the event begins, and they will have 25 minutes to write their description. This description will be passed to the builder (CADER), who will gain access to a CAD file along with the description when the event begins. The tournament will use the TinkerCAD program. The builder/CADER must have an account made before the tournament.
Experimental Design	This year's event will not have a wet lab portion. Teams will be given a list of materials and equipment to use, and they will design an experiment using those materials and write up a partial report (sections A-F, M, and O of the Experimental Design Checklist). In the second portion of the test, teams must solve a written portion based on statistics. They will be asked questions about the statistics of data, with more focus on conceptual questions over calculations. Topics will include statistics of central tendency, variation, linear regression, chi-square tests, and testing of null hypotheses.
Ping-Pong Parachute	This event will be a trial event. Participants will send in one single-take video of their test run with all parameters shown in the video.

* Rules subject to further modification

WRITE IT, DO IT

This document will cover all of the important details regarding Write It CAD It at the Penn Science Olympiad Invitational. **Coaches and students, please read through the entire document so that you are fully prepared for the event. There are important details at the end of the document that must be noted to minimize unnecessary point loss.** If there are any questions/concerns/issues regarding this document or SOUP WICI, send an email to one of the WICI event supervisors (samulee@sas.upenn.edu, todufalu@sas.upenn.edu). If there are any additional questions/concerns/issues, send an email to pennscienceolympiad@gmail.com.

The program used will be TinkerCAD.

Please follow all instructions listed below.

Failure to do so may result in your build being tiered or unscored.

Before Competition Day

Coaches

- Coaches should designate the Writer and CADER for each of their teams prior to the event. On Scilympiad (Coaches --> Head Coach Dashboard --> Submit Student/Team Roster), these team members should be assigned correctly to each role as shown below:

Student Name	Write It CAD It- CADER	Write It CAD It- Writer
Allen Chang	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Jason Chang	<input type="checkbox"/>	<input checked="" type="checkbox"/>

CADER

- The CADER should make a student account on TinkerCAD. Setting the account up as a student account will make file exchange easier.
- The CADER should change their account name to the following format: "Team Number-Team Name-SOUP" (e.g. C001-Scioly HS A-SOUP).
- The CADER should join the "SOUP 2021 WICI" class on TinkerCAD. **All CADers must join the class.** Once the CADER has created their account, go to <https://www.tinkercad.com/join-class/A3XTSYSH52FM> to join the class.

Writer

- Writers don't need to create a TinkerCAD account. **Do not join the class listed above.**

WRITE IT, DO IT (CONT.)

During Competition Day

Writer

- The Writer test window is scheduled to start at exactly the start of your time block (N:00/N:10) and run for 25 minutes (N:25/N:35). Writers should check the time block they are assigned to and start their test accordingly. Please be on the WICI writer test introduction screen on Scilympiad prior to the start time. **Start your test at exactly N:00/N:10, depending on your time block.**
- You will be provided with images of the build. If the images do not show up on Scilympiad or you prefer a PDF with higher resolution images, there will be a link to a PDF of the build images.
- Write your instructions in the short answer space provided. The test will automatically submit when time is up.
- Your instructions are autosaved every time you click outside of the box. This should be done frequently so that you do not lose your progress.
- **Please start your test at the exact time listed above to prevent any delays.**

CADer

- The CADer test window is scheduled to start at exactly 30 minutes into the testing period (N:30/N:40) and run for 20 minutes (N:50/[N+1]:00). CADers should check the time block they are assigned to and start their test accordingly. Please be on the WICI CADer test introduction screen on Scilympiad prior to the start time. **Start your test at exactly N:30/N:40, depending on your time block.**
- You will be provided with your writer's instructions and a link to the WICI build parts. Navigate to the link, select "Copy and Tinker," and rename the file to "Team Number: School Name - Team Name" (e.g. C001: Scioly High School - Scioly HS A). No further duplication of the file is necessary.
- Paste your TinkerCAD build link into the short answer space. It is highly recommended that you do this at the start of the event so that you don't run the risk of not submitting a build. **Make sure that your build link works prior to the end of the testing window.**
- The test will automatically submit when time is up. When your testing window is over, your build on TinkerCAD should not be edited any farther.
- Any Tinkers by the CADer will be visible to the Event Supervisor through the class on TinkerCAD. The Event Supervisors can see all Tinkers by all CADers in the class, but each CADer cannot see anyone else's Tinkers. **CADers should not edit their build after their time window has expired. Failure to abide by this rule may result in disqualification.**
- **Please start your test at the exact time listed above to prevent any delays.**

WRITE IT, DO IT (CONT.)

Important WICI Test Notes

- The position of the objects relative to the workplane (x, y, z axes) will factor into grading (along with the position of each of the objects relative to each other). For example, an object that is on the right edge of the workplane must be seen as being on the right side relative to the front view. You can always check the positioning of the workplane by looking at the small cube to the top left of your build or noting the orientation of the light blue "Workplane" word (this should be on the front left corner of the workplane).
- The build parts will be placed outside the workplane when starting. Any parts not in the region of the workplane in the build submission will not be graded.
- There are no extra pieces, and all provided pieces will be part of the completed build.
- The size, scaling, and shape of the parts should not be edited. CADers are only responsible for rotating, moving, and flipping the pieces. If you accidentally make any unnecessary changes, make sure to undo the edit. **Any parts whose size, scaling, or shape have been changed may receive a score deduction.**
- Submission time on Scilympiad is the first tiebreaker. A test that is not manually submitted will automatically be marked as having 0:00 remaining.
- Other tiebreakers will be implemented if needed.

Final Reminders

- Name your TinkerCAD username correctly.
- Join the "SOUP WICI 2021" class on TinkerCAD.
- Start your test at the correct time based on your time block and role.
- Name your TinkerCAD build correctly.
- Paste your build URL at the start of the test to ensure build submission.

BUILD EVENTS

Boomilever*	This event will be a trial event. Participants will send in one single-take video of their test run with all parameters shown in the video.
Detector Building	This event has been changed to a fully written format. The length of the test will be adjusted accordingly to be a full-length written exam. This event will count toward the overall team score.
Gravity Vehicle*	This event will be a trial event. Participants will send in one single-take video of their test run with all parameters shown in the video. The target distance will be 10.05m for Gravity Vehicle.
Wright Stuff*	This event will be a trial event. Participants will send in one single-take video of their test run with all parameters shown in the video.
Sound of Music	This event has been changed to a fully written format. The length of the test will be adjusted accordingly to be a full-length written exam. This event will count toward the overall team score.

* Your safety is our first priority. For these building events, please submit a video of your team running the device. All video submissions must be filmed at school under the team coach's supervision in order to qualify. Please title the video with the event name, your team number, and where the video was filmed. Refer to the "Build Events: Rules and Regulations Addendum" section of this document for more information.

Please follow all safety procedures and social distancing guidelines. These events will not count toward the overall team score, but will qualify for trial event awards. Please frequently check this page for additional specifications.

If local guidelines restrict your team's ability to film the device at school, please follow the local guidelines and do not attempt the build event. Teams that are found to be violating safety regulations, including filming at home, will be subject to disqualification.

DEVICE TESTING POLICY

DEVICE TESTING POLICY FOR ALL TOURNAMENTS APPROVED BY PASO in 2020 and 2021

The testing of devices for Boomilever, Gravity Vehicle, Ping Pong Parachute, and Wright Stuff for any invitational tournament approved by PASO must occur in the school of the participating team and supervised by a coach, even if the school is not located in Pennsylvania. The same requirement applies to PASO regional and state tournaments. The purpose of this requirement is two-fold. First, we are concerned that all safety policies, event rules, and PASO testing procedures (as specified by the PASO State Event Supervisor for an event) are followed, and we believe the best person to insure this is done is a coach. Therefore, goggles must be worn as required by the rules for all device testing. Second, all Covid protocols required by the school must be followed as well. Masks must be worn by all persons during device testing and social distancing must be practiced. If any video submitted for grading for these events shows violations of safety policies, event rules, testing procedures, or Covid protocols, the team may be disqualified from the event or penalty applied to the team score for the event.

We realize that some teams may not have access to the school at the time of a tournament and may not be able to test devices as required by this policy (which means they may not participate in these events). That is why these events have been classified as trial events and do not affect team scores.

Testing of the devices for these events during the construction phase may be done at student homes, provided the PASO Parent Acknowledgement is on file with the head coach. However, PASO will not allow testing of devices for these events to be conducted at student homes for tournaments. If an invitational tournament includes other events not listed above that include any device testing, the testing of those devices for the tournament must be conducted in the school and not at a student home.

Since testing of devices must occur in the school, all tournaments approved by PASO are considered mini/satellite hybrid tournaments. Therefore, each team must submit the Satellite SO form (PASO version) if they plan to participate in events that include device testing. If an administrator will not sign the Satellite SO form, the team may not participate in any event in which device testing is required.

Effective 12/1/2020

For the Penn Science Olympiad Invitational, the following events will be counted as trial events. They will count toward individual awards, but will not count toward the team's total score: Boomilever, Gravity Vehicle, Wright Stuff, Ping Pong Parachute, and Solar Power.

BUILD EVENTS: RULES AND REGULATIONS ADDENDUM

The Penn Science Olympiad Invitational 2021 will adhere to the National Division C rules. The contents of the following pages detail submission requirements and other policies relating to events that will have build components, namely Boomilever, Gravity Vehicle, Ping Pong Parachute, and Wright Stuff.

All questions pertaining to these policies should be emailed to pennscienceolympiad@gmail.com With the following email subject line:

Subject: "Builds Clarification - [Event Name] - [School Name]"
(e.g., "Builds Clarification - Gravity Vehicle - Phoenix High School")

General Video and File Submission Guidelines

Any activity related to the device construction/testing and video recording must be conducted under the local, state, and national regulations surrounding COVID-19.

All videos must be submitted between **Monday, February 22 at 9:00 AM EST** and **Saturday, February 26 at 12:00 PM EST**. There will be no late submissions accepted for any event under any circumstances.

An email will be sent to coaches before the start of the submission period containing four distinct Google Forms links for each of the four build events listed below. Note that the form will not be accepting submissions until the opening of the submission period. The Google Forms submission links will be used for submission of all of the following events:

- Boomilever
- Gravity Vehicle
- Ping Pong Parachute
- Wright Stuff

BUILD EVENTS: RULES AND REGULATIONS ADDENDUM (CONT.)

General Video and File Submission Guidelines (Cont.)

The video submission must be submitted by the head coach of each team. The form will ask for the following information, at minimum:

- School Name
- Coach Name
- Coach's Contact Information (Phone Number and Email Address)
- Student Participant Names
- Video Submission (described below)
- Filename format: C[Team Number]-[School Name]-[Event]-[Document Description]

Examples:

"C014-University of Pennsylvania-Ping Pong Parachute-Flight Log"

"C200-University of Pennsylvania-Gravity Vehicle-Video Submission"

- Electronic Signature (relating to the Code of Ethics)

Video submission can be done in any of the following ways:

- Video file in a reasonably common file format (i.e., .MP4, .MPEG-4, .MOV, .AVI)
- YouTube link (can be unlisted as long as the video itself is accessible through the provided link and does not require any additional permissions).
- Note that these videos will not be shared with anyone outside of the SOUP organization.
- Event supervisors will be checking upload dates and times of all videos. Any videos that are submitted are subject to immediate judging. Any links/videos edited after the end of the submission period are automatically disqualified.
- Teams are responsible for ensuring that their video upload is accessible. Any questions pertaining to video submission must be submitted via email to pennscienceolympiad@gmail.com before 9:00 AM EST on Thursday, February 24.

BOOMILEVER

Due to the magnitude of build parameters outlined in the rules, event supervisors will not check parameters that they deem to have minimal impact. Furthermore, some rules will be simplified to make it easier for students to create a testing set up. With that in mind, no SOUP policies listed below will be more strict than the official rules. The official rules provide more details that may be relevant to teams in improving the testing setup, but these will not be scored/checked. For all numerical measurements, students should display it to the camera as best as possible and read it out loud in case numbers/markings can not be read in video. The following policies can be split into two main types:

- **Eyeball:** Does not require students to demonstrate measurement in video, but event supervisors will visually determine if these parameters abide by the rules to a reasonable extent.
- **Measure:** Measurement must be explicitly and clearly shown in the video. Students must use standard measurement tools (no custom measurement devices allowed) and all video clips must be framed in such a way that the event supervisors can verify the measurement.

Testing Apparatus Parameters

- ☐ Students may use sand hoppers or hand load their device.
- ☐ Testing Wall
 - ☐ Vertical, solid surface large enough to support boom (Eyeball)
 - ☐ 4" J-bolt with 1/4" nominal round stock, 1" nominal inside hook diameter with threaded 1/4" mounting end (Eyeball)
 - ☐ Opening between wall and J-bolt edge is 2.5+/-0.1 cm (Measure)
 - ☐ J-bolt secured (Eyeball)
 - ☐ Horizontal contact depth line 15cm below center or J-bolt hole (Measure)
 - ☐ Vertical lines 4 cm to the left and right of center or J-bolt hole (Measure)
- ☐ Loading Assembly
 - ☐ ~5 x 5 x 2 cm block with ~8 mm hole in center (Measure block 5 cm side, eyeball others)
 - ☐ 1/4" threaded eyebolt with 1" nominal eye outside diameter, 2 1/4" to 4 1/2" long, through block with wingnut on top (Eyeball)
 - ☐ Sand or comparable material may be used (steel beads, blasting media, etc.) (Eyeball)
- ☐ Stabilizing Sticks
 - ☐ ~1/2" diameter, ~18" long dowel with spring-type door stop or comparable flexible material on one end (Eyeball)

Diagrams

As outlined above, we will allow a bit more leeway in some of the information shown in the diagrams:

1. [Boomilever & Testing Wall Diagram Front View](#)
2. [Boomilever & Testing Wall Diagram Side View](#)
3. [Loading Block Assembly and Bucket Stabilization Sticks](#)

BOOMILEVER (CONT.)

Boomilever Parameters

- ☐ Single structure made of wood and adhesive with no other materials (Eyeball)
- ☐ Can be attached to J-bolt (Eyeball)
- ☐ Center of loading assembly 40-45 cm from wall (Measure)
- ☐ Does not touch wall below horizontal contact line or between vertical contact lines (Eyeball)

Device Testing Parameters

- ☐ Wear at least B grade eye protection
- ☐ No outside help/communication except giving instructions to a camera person
- ☐ A question on the boomilever will not be asked, students will not have to fulfill this requirement.
- ☐ Before Testing
 - ☐ State their estimated load supported (write large, legible on paper)
 - ☐ Weigh boom (Make sure zeroed and fully on scale)
 - ☐ Measure testing wall horizontal, vertical contact lines, J-bolt opening, and loading block side length (as highlighted in above sections)
 - ☐ Loading block must start assembled
 - ☐ Be sure to have everything prepared, boom may not be attached to the J-bolt yet. Timer starts when students say "START" (you can use a timer if you want, but we can use the video timer). 6 minutes
- ☐ During Testing
 - ☐ Mounting hook can not be adjusted, but the assembly block can.
 - ☐ Complete setup (all the way to bucket hanging)
 - ☐ Pause timer. Students say "STOP"
 - ☐ Verify on video that
 - ☐ Boom exerts force on inside radius of J-bolt (ie. not on flat end) (Eyeball)
 - ☐ Boom touches wall above horizontal contact lines (Eyeball)
 - ☐ Boom touches wall outside of vertical contact lines (Eyeball)
 - ☐ Center of loading assembly 40-45 cm from wall (Measure)
 - ☐ Resume timer. Students say "Start"
 - ☐ If students adjust the boom, be sure to reverify the four above parameters.
 - ☐ Students can start loading sand, boom can not be adjusted once students start loading
 - ☐ Pay attention to these throughout the entire loading session.
 - ☐ Where the boom touches wall does not cross contact lines (Eyeball)
 - ☐ Bucket is hanging freely, not caught on anything (Eyeball)
 - ☐ Only tips of stabilizing sticks touch bucket and it does not support the bucket (ie. not on the lip of bucket where force can be exerted upwards) (Eyeball)
 - ☐ Stop loading when it breaks, we may need to subtract weight if students purposefully load more
- ☐ After Testing
 - ☐ Remove any boom pieces from bucket
 - ☐ Weigh sand and loading assembly (block, chain, hooks, etc.) (Make sure zeroed and fully on scale) (Measure)

GRAVITY VEHICLE

Due to the magnitude of build parameters outlined in the rules, event supervisors will not check parameters that they deem to have minimal impact. Furthermore, some rules will be simplified to make it easier for students to create a testing set up. With that in mind, no SOUP policies listed below will be more strict than the official rules. The official rules provide more details that may be relevant to teams in improving the testing setup, but these will not be scored/checked. For all numerical measurements, students should display it to the camera as best as possible and read it out loud in case numbers/markings can not be read in video. The following policies can be split into two main types:

- **Eyeball:** Does not require students to demonstrate measurement in video, but event supervisors will visually determine if these parameters abide by the rules to a reasonable extent.
- **Measure:** Measurement must be explicitly and clearly shown in the video. Students must use standard measurement tools (no custom measurement devices allowed) and all video clips must be framed in such a way that the event supervisors can verify the measurement.

Track

- ☐ For diagrams, refer to this [link](#).
- ☐ Setup
 - ☐ Track is smooth, level, and on a hard surface (Eyeball)
 - ☐ Start and target points are marked with tape (Eyeball)
 - ☐ Target distance from start point to target point is as announced (Measure)

Practice Logs

- ☐ Submit according to official rule guidelines in Scilympiad as a file
- ☐ Display log in video for graders to verify that it is the same as the one submitted online

Construction Parameters

- ☐ Vehicle mass < 2.000 kg (Measure)
- ☐ Dowel rod approximately $\frac{1}{4}$ " round with its bottom < 1 cm from floor, top > 20 cm above floor, and approximately perpendicular. No part of vehicle (excluding wheels) may extend > 0.5 cm beyond dowel rod (Eyeball)
- ☐ Only gravitational potential energy may be used to propel the vehicle (Eyeball)
- ☐ Kinetic energy sources other than gravitational are at lowest state in ready to run position (Eyeball)
- ☐ Vehicle is non-horizontal (Eyeball)
- ☐ Release mechanism included (Eyeball)
- ☐ Vehicle and ramp combined in ready to run position: base < 50.0 cm x 50.0 cm, height < 100.0 cm (Measure)
- ☐ During run, all parts must move as a whole, no parts may fall off the vehicle/ramp, and only the wheels may contact the ground (Eyeball)

GRAVITY VEHICLE (CONT.)

Competition

- ☐ No outside help/communication except giving instructions to a camera person
- ☐ Design questions will not be asked; students will not have to fulfill this requirement
- ☐ No electronic or electric devices including for sighting/aiming may be used (except calculator).
- ☐ Ramp and vehicle must be placed behind the start line and be able to remain in place untouched.
- ☐ Sighting/aiming devices must not be left on track during run.
- ☐ If sighting/aiming device is left on vehicle, the total mass must not exceed 2.000kg (Measure)
- ☐ No substances may be applied to the vehicle/track.
- ☐ A pencil must be used to start the run. The vehicle/ramp cannot be touched, pushed, or held during the release.

Run Parameters

- ☐ Distance from the measurement point to the target point must be measured to the nearest 0.1cm (Measure)
- ☐ Vehicle cannot be touched before measurement
- ☐ Total runs (3) must occur within 10 minutes

Video Recording

- ☐ Measure track target distance, vehicle mass, and dimensions of vehicle/ramp combined in ready to run position (as highlighted in above sections).
- ☐ After measurements are made, the vehicle must be removed from the ramp. The 10-minute timer begins when students say "START" (you can use a timer if you want, but we can use the video timer), following which teams can set up and start up to 3 runs.
- ☐ Each run must begin with the vehicle and ramp in full view. Following release, the camera must follow the vehicle at all times. At no point can the vehicle completely leave the frame of view; otherwise, the run will be considered as a failed run.
- ☐ An overhead view of the measurement from the measurement point to the target point must be provided.

Resources

- <https://www.soinc.org/gravity-vehicle-c>
- https://www.soinc.org/sites/default/files/uploaded_files/21GravityVehicleTeamChecklist121820.pdf

PING PONG PARACHUTE

Video Requirements

- ☐ The video must clearly show the following perspectives while rotating around the device in a continuous frame:
 - ☐ The bottle itself including the bottle opening
 - ☐ The bottle's connection to the parachute device
 - ☐ The parachute device and the nose
- ☐ Furthermore, the video must show:
 - ☐ The fins are at least 5 centimeters higher than the level of the bottle opening (using a measuring tape or ruler)
 - ☐ A bottle cap that is able to rotate around the nose cone.
- ☐ If using two rockets, please do the above for both rockets prior to launch.
- ☐ The 5-minute launch period will proceed as instructed in the rules, allowing for two launches during the time allotted.
- ☐ You must avoid cuts in the video to simulate a competition environment and allow for event supervisors to view the entirety of the run.

Day-Of Requirements

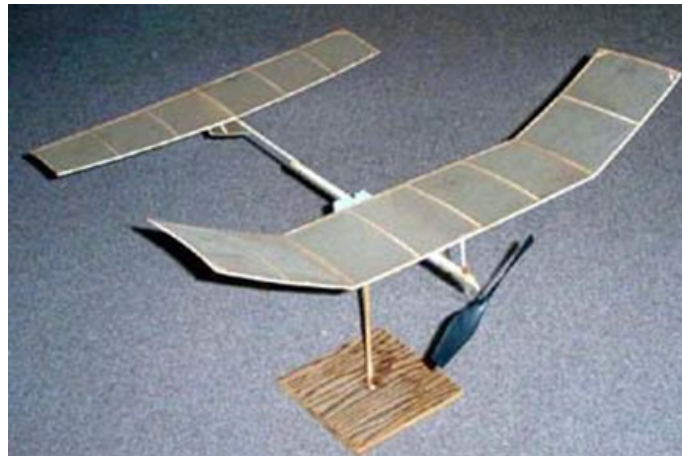
- ☐ There will be a test on Scilympiad that will serve as receipt/confirmation of your video submission.
- ☐ Submit a flight log as a file in Scilympiad, which includes at least 5 parameters for 15 or more test flights prior to the competition. 3 of those parameters must be the following:
 - ☐ Pressure (psi)
 - ☐ Estimated/recorded peak flight height (feet)
 - ☐ Flight time
 - ☐ Note that file type must be a standard/commonly used file type (e.g., .doc, .docx, .pdf, .jpg, .png, etc.). See file naming requirements in "General Video and File Submission Guidelines" section.
- ☐ You will be asked to include an estimate of the height of the launch room on the test. If possible, an exact number would be preferable.
- ☐ The test **MUST** be completed in order for the team to be eligible for placement in the event.

WRIGHT STUFF

This event will adhere to Division C 2021 rules. This means that event supervisors will be checking all the following parameters are met in your construction and video:

Video Requirements

- ☐ At some point in the submitted video, all of the following must be shown:
 - ☐ Top-down, side, and bottom view of the airplane
 - ☐ Verbal explanation of the materials that were used to construct the plane
 - ☐ All materials except boron filament can be used for this purpose
- ☐ In the same video cut that the plane is flown in, all of the following must be measured:
 - ☐ The weight of the plane. Its mass, excluding the rubber motor, must be at least 8 grams
 - ☐ The dimensions of the wingspan and horizontal stabilizer. The former must not exceed a 30 cm horizontal span, and 8 cm chord; the latter must not exceed a 12 cm horizontal span and 6 cm chord



(Bigger one at front is 30 cm x 8 cm, smaller one at back is 12 cm x 6 cm)

- ☐ The propeller of the plane - its diameter must not exceed 8 cm
- ☐ These measurements may be completed in any way the competitors choose—and can be done before or after the plane is flown—but they must be done in a way that does not put into question the legitimacy of its process. For example, if you wish to use custom measuring devices to show the plane's dimensions, be sure to compare their measurements to those of a standard ruler as well. If the competitors wish to use two planes in their video, they must both go through this process.

WRIGHT STUFF (CONT.)

Flight Period Requirements

- ☐ A competitor must verbally state when they are beginning the Preflight Period. The rubber band cannot be wound when this takes place.
- ☐ After this declaration, only the competitors are allowed to make adjustments to the plane
- ☐ During the Preflight and Flight Periods, the video must be focused on the plane, making it clear to viewers exactly when the plane leaves the competitor's hand, exactly when it first hits the ground, and whether or not it gets stuck while flying
- ☐ Prior to any flight, a competitor must verbally state whether it's a trim or official flight
- ☐ Additional Notes
 - ☐ The competitors must record their flights indoors, as per tournament rules
 - ☐ Competitors do not need to explicitly state any bonuses/penalties their submission should receive, nor calculate their own scores—SOUP members will keep track of this based on the submitted video

Day-Of Requirements

- ☐ Submit a flight log as a file in Scilympiad, which includes at least 6 parameters for 10 or more test flights prior to the competition. 3 of those parameters must be the following:
 - ☐ Motor size before windup
 - ☐ Number of turns on the motor or torque at launch
 - ☐ Flight time
- ☐ All of the measurements in the flight log must be visible to video viewers for graders to verify that it is the same as the one submitted in Scilympiad

CONTACT INFORMATION

If you have any questions or concerns, please do not hesitate to reach out to us.

- Website: <http://pennscienceolympiad.org>
- Email: pennscienceolympiad@gmail.com
- Scilympiad: scilympiad.com/soup
- Facebook: facebook.com/ScienceOlympiadatPenn/
- Instagram: instagram.com/ScienceOlympiadatPenn/
- Twitter: twitter.com/pennscioly/
- SciOly.org forum: sciol.org/forums/viewtopic.php?f=294&t=18136
- Live-Tournament Updates: pennscienceolympiad.org/updates/

Announcements:

- Updated team list with Union-Endicott High School in place of Cherry Hill East High School - B (Team #19) on pg. 5
- Updated event descriptions for WIDI and Experimental Design
- Added Orinthology Binder Policy section
- Added Scilympiad Tutorials section
- Added Build Events: Rules and Regulations Addendum section
- Activity logistics updated on pg. 9
- Added Write It, Do It section
- Event Schedule time blocks updated on pg. 10
- Updated description of Solar Power on pg. 24
- Jmol downloads specified for Protein Modeling on pg. 21
- Cheating policy updated to reflect online environment on pg. 11

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