Rule ↕	Question ↕	Response ↕
1.d.1	Can we create a capapult?	Yes, as long as 3.b. and 3.d. are met.
2.b.1	During the competition, is it possible to switch tubes(part of the device), for near target and far target? The tubes both meet the device specs but one is a little shorter than the other.	Yes.
2.b.1	For near target and far target, we are not changing the balls and weights, instead our projectile has two portions: ball and launching tip. We are using the same ball, but we change the launching tip (different frictions) that can be exchanged very easily. This is very similiar to changing ball or weight. Is this allowed?	The rules specifies that the projectiles as either tennis, racquet and/or ping pong ball. Other parts are considered to be part of the device and teams may modify their device during their 8 minutes.
3.1.1.1	National FAQ: Can student impound multiple counter weights and use different ones for different shots?	Yes, as long as the sum of the mass of all weights is less than the maximum allowed (3.5 kg for Division C, 5.0 kg for Division B).
3.2	National FAQ: The sighting devices such as laser pointer must be removed before launch. Does switching it off meet this criteria?	No. They must be removed from the competition area.
3.3.1	For "Devices will be inspected to ensure that there are no other energy sources" should this inspection be completed before being allowed to compete instead of after as written in this paragraph? If the infraction is identified before competition the team may be able to remedy the design and become compliant. This paragraph does not allow for this, and would result in only penalties that might have been avoided.	Yes, this inspection may occur prior to competing - however, the disassembly, if requested by the Event Supervisor, may occur after competing.
3.a.1	National FAQ: Can the falling mass be raised above the 75cm height before launch? The rules only mention the counter weights and launching device needing to fit into the 75cm .	No. Rule 3.a. says all device components must fit in the cube in 'ready to launch' position.
3.b.1	The wording in 2.b directs that the mass used to launch the projectile has to be detached when impounded. The machines use the mass hanging from a rope or chain or attached to a piston or arm to drop or swing to impact the air container and thus propel the projectile. Does the rope or chain or piston or arm to which the mass will be necessarily attached for the machine's operation also be detached and all items that move with or by the mass be weighed together for compliance with 3.b?	If the parts are of nominal mass, then they do not need to be detached and massed. One method to determine if they are "of nominal mass" is if they stay raised with the mass detached - this would indicate that their mass is not contributing to the energy used to launch the projectile.
3.b.5	National FAQ: May teams subtract from their mass during competition if they prove during impound that the maximum possible weight their mass may carry is within 3.5kg?	Yes, any changes done will occur during the 8 minute competition time and will be subject to verification of mass. The competition time will not stop for this additional mass verification.
3.d.1	For Air trajectory, is it allowed to convert falling mass geo potential energy to stretch elastic rubber band, and just before falling mass reaches floor, release the stretched elastic so that a lever attached to elastic pressurizes the air cavity which further pushes ping pong ball that was resting at air cavity outlet	Yes, this would be allowed.

Rule	Question	Response
3.e.1	All chamber must start at ambient air pressure but must automatically return to ambient air pressure. Chambers are not required to automatically return to the same shape. Does using hand to press back the air chamber back to the original shape meet this criteria?	The rules does not require the chamber to return to the same shape automatically; only the pressure.
3.e.1	In order to re-inflate the bladder or air chamber, can I use a trash bag to squeeze air into the device air chamber or a electric leaf blower to reinflate the device air chamber? Does this rule mean that as long as I don't touch anything in order to re-inflate, it's acceptable? (ex. using a spring to reinflate on it's own)	The air chamber is not required to automatically return to the same shape, just that it has to be at ambient air pressure before and after the launch. The rule does not mean that you cannot touch it to re-inflate. Electric leaf blower are permitted, but please note that electricity will not be supplied by the event supervisor and outlets may not be available. Outlets may also not be available to be safely used in the event space.
3.e.1	National FAQ: Can students blow into the outlet hose to inflate the air chambers, as most chambers dont inflate automatically like bottles or even kickballs after deflating with falling mass on it?	Yes, the chamber can be returned to shape and ambient air pressure.
3.f.1	National FAQ: It is not clear that the triggering device causes the mass to fall but instead the ball to launch. Is it possible the mass is dropped prior to or with an independent release that the trigger that launches the ball?	No, because all air chambers must start at and return automatically to ambient pressure. Dropping the mass first would require an air chamber to be at non-ambient pressure prior to triggering.
3.f.2	National FAQ: May a contestant, standing 75 cm outside the launch area, holding on to the string that is supporting the falling mass, just release the string to initiate launch or must there be a means of locking the mass into position until launched?	For safety purposes, a student holding a string as the only means of supporting the mass is not allowed. There must be a locking mechanism/trigger holding the mass in place.
3.g.1	Does event supervisors provide the projectiles eg ping pong ball, tennis ball, racquet balls this round or students need to bring their projectiles? Same goes with the weights, bucket and the target panels?	Per rule 2.b. and 3.g. team must impound their projectiles and masses. Buckets and targets are provided by Event Supervisors.
3.g.1	In terms of the ping pong ball, There are outdoor ping pong balls available on amazon. they are standard size (40 mm) but 20% heavier. Since these are not modified by me, can I use them for the competition?	As per previous FAQ, the balls must meet the standards of competitive table tennis, racquetball, and tennis.
3.g.1	National FAQ: Must projectiles be legal for any type of standardized regulation competition of that sport in every measurable way when device is tested?	Yes, the balls must meet the standards of competitive table tennis, racquetball, and tennis. For ping pong balls other competitive table game balls are not allowed. They must be commercially available and purchased. Home made balls will also not be permitted.
3.g.2	The stated projectiles are tennis, racquet and/or Ping Pong balls. However, we are using plastic golf ball and golf foam ball. I asked this question during an introduction event, I was told that the hard golf ball is not OK, but soft (plasitc or foam) golf ball is OK. Please clarify it.	Per rule 3.g. Teams must provide unmodified (labeling is permitted), standard (i.e., can be used in regulation competitions) tennis, racquet, and/or Ping Pong balls to be used as projectiles. Plastic golf balls and goal foam balls are not allowed.
3.g.3	National FAQ: Can golf balls be used as the projectiles?	No, only the projectiles listed in rule 3.g. are permitted to be used in competition.
3.i. .1	Is it possible that during the competition, to use an angle detecter to measure the angle of the device, and then remove it from the launch area before launch?	Yes

Rule	Question	Response
3.i.1	In the rules it says that electronic devices are not allowed as a part of the device. However, if they these electronics were removed before the launch is any electronic device allowed?	Please see the posted National FAQ on this topic.
3.i.1	In the context mentioned that sighting devices such as a laser pointer is permitted if it is removed during launching. Does switching off the laser pointer before launching but still on the air trajectory fulfill this rules, or it need to be totally dismantle or removed from the air trajectory device before launching?	No, switching off the laser pointer does not satisfy the requirement of removing it before launch.
3.i.1	Do we need to remove the laser pointer from the air trajectory device each throw, or we can just turn it off without removing it ?	Per rule 3.i., electronic sighting devices, such as a laser pointer, must be removed before launch.
3.i.1	National FAQ: May competitors place an object for sighting purposes in the designated target areas?	This decision is at the local event supervisor's discretion based on what the team is using as a sighting target, and where the team wants to place it. Keep in mind the sighting object must be removed before the launch, does not alter the target and does not damage the target.
3.i.1	National FAQ: May competitors place an object for sighting purposes in the designated target areas?	This decision is at the local event supervisor's discretion based on what the team is using as a sighting target, and where the team wants to place it. Keep in mind the sighting object must be removed before the launch, does not alter the target and does not damage the target.
3.i.1	National FAQ: Are electric tools besides sighting devices, such as hair dryers, allowed?	There is no prohibition in the rules for electric tools, so they are allowed. Please note that electricity will not be supplied by the event supervisor and outlets may not be available. Outlets may also not be available to be safely used in the event space.
4.1	National FAQ: Are the students allowed to use their design log and/or a separate note sheet during the competition to make adjustments to the launch device?	Yes, this is allowed. In order to use the design log in this way, they should impound 2 copies of the design log, one for the judge and one for them to use during the competition.
4.a.iii.1	For Design Log, What does "showing relationship between multiple parameters" mean? Do we need to show more than two parameters on one graph OR do we need to show multiple graphs wherein each graph shows relationship between two parameters?	Each graph should show the relationship between two or more parameters. Oftentimes one parameter is an independent variable, and another parameter is a dependent variable.
5.1	National FAQ: "After each launch ... and make measurements to calibrate their device." Does this allow for measurements to be taken to calibrate my device before the very first launch? Ex. Approach the target to aim device at target. Or can measurements can o...	Measurements to calibrate and aim a device can be taken any time during the eight minute window.
5.1	National FAQ: We would like to find out whether it's allowed to have a laser measuring device? One of the kids cut their fingers recently measuring things with the tape measure so I'm just curious.Thanks,Man	Laser measuring devices are allowed as long as the follow the national laser policy and are removed before activating the device.

Rule	Question	Response
5.a.1	National FAQ: Are teams allowed to adjust or calibrate their device during "measurement time required by the supervisor" which is not part of the 8 minutes?	Teams are not allowed to work while the judges measure. All adjustments must be made during the students 8 minutes. If they are adjusting or working on their device while measurements are being taken their time will start again.
5.a.3	National FAQ: Are devices with remaining construction violations scored in Tier 2 according to rule 7h, or are they not allowed to launch at all according to rule 5a?	Rule 7.h. allows the event supervisor to make the decision on a specific device. If the event supervisor determines the device is safe to launch, it is allowed to launch then tiered. If the device is not safe to launch (poses risks to participants, observers, or could damage the host site), then it will not be permitted to launch.
5.c.1	National FAQ: The triggering device is a string connected to the falling weight. After the trigger the string still connected and extended outside the 75cm box. Is this OK? or does the string needs to go in or come out after the launch?	Yes triggering device is not part of the launcher that needs to stay inside the 1.5 meter square. It is ok for the triggering device to remain connected to the device after activation.
5.g.2	Event supervisor will notify team when to get their projectiles and make measurements to calibrate their device, in this context are students allowed to walk to the target and measured the target distance from the launching area or check their angle point of view from the target distance?	Yes, per rule 5.g., at that point, the team may approach the target to retrieve their projectile and make measurements to calibrate their device.
5.h.1	National FAQ: Can two bucket shots be taken consecutively?	Yes, if the team is within 500 mm of both targets for the respective first shots at each target.
5.h.1	If a team qualifies to do a bucket shot for both near and far target can that be done as their last two shots. For eg, first a shot = near shot(qualifies for bucket), second shot=far shot (qualifies for another bucket) , third shot = bucket try and fourth shot= another bucket. Can the above order be followed ? Birdso and Sierra Vista invitational had different rules and hence wanted to get it clarified.	Yes, the bucket shots may be done last; there is no requirement that a bucket shot immediately follows a qualifying first shot.
6.b.2	Trigger boundary is 75 cm away from the sides. Can the contestant stand in front side which is also 75 cm away especially target which is 45 degree?	Per 5.b., competitors must not be in front of the front edge of the launch area during a launch.
6.c.i.1	National FAQ: Can the students place a bucket or a board for sighting purposes before launching especially for near and far panel shot?	They can place a measuring object for sighting purposes. It cannot alter or damage the playing field.
6.d.1	When will the target distance be announced? Can student bring measuring device to measure it? Does event supervisor provide measuring device?	The distance will be announced after impound. Teams can bring measuring device to measure the track. The Event Supervisor will not provide measuring devices for teams to use.
6.f and g.1	6f and 6g appear contradictory. 6f says the teams request the placement of the bucket and that it not be on the course unless requested, and 6g says the bucket has to be placed and its position announced and it be there for all teams. Is 6f written incorrectly? 6f would be correct if the bucket were removed	Rule 6.f. states that the competitors can request the bucket to be placed in the competition. The specific location of the bucket will be the same for all teams (as per rule 6.g.) and is announced after impound is over.
6.f.1	Does the bucket shot need to come after each panel shot or can it be accumulated till the end of the shot?	The bucket shot can be done as their last two shots, so long as their qualifying shot is before their bucket shot.

Rule	Question	Response
6.f.2	According to the rules, it says "anywhere up to 2.00 m tro the right or left of the centerline". So for the bucket shot on near target and far target, how much is the interval of offset(1 m, 0.5 m, etc.)	There is no set interval.
6.g.1	National FAQ: Are the event supervisors required to announce the location of the bucket in a centerline distance and distance left/right of centerline (and not a designated spot on the floor that competitors will have to measure)?	While the Bucket location can be anywhere in the field of play, the judge must announce the location of where the center of the bucket is with respect to centerline distance and distance right/left of center. This announcement should be made when the target distance announcement is made, and the bucket must be the same for everyone.
6.h.8	National FAQ: If I get the first shot within the 500mm mark, does the bucket shot have to come right after that shot, or can I wait until after I do the other target before I do the bucket shots.	You can do the shots in any order (second target or bucket shot) as long as it is clearly communicated with the event supervisor.
7.d.2	The context CS is it same as LS (Log Score)? What is the example of two calculations?	The CS should be listed as LS

Rule	Question	Response
2.1	National FAQ: Are using lamimnated/ sheet protectors for a cheat sheet allowed?	Yes, these are allowed. Just be sure to only include one sheet within the protector. Do not include more than one sheet.

Rule	Question	Response
2.a.1	National FAQ: The rules state that I am allowed to bring two computers/tablets to Astronomy. However, am I allowed to also tape a small reference sheet to the area next to my trackpad? It will contain images/constants/statistics/equations.	No. Any resources that you would have on an external page can be scanned and added to your desktop, or written with a word document. Only the laptop will be allowed.

Rule	Question	Response
3.3	National FAQ: Are equilibrium pressures testable within the context of equilibrium calculations since it says equilibrium concentrations?	Equilibrium partial pressure questions may be included at the State and National level competitions but NOT at the Invitational and Regional level competitions.
3.d.v	National Rules Clarification	09/21/2023 Changed "calorimeter" to "colorimeter".

Rule	Question	Response

Rule	Question	Response
2.1	Can teams bring a digital timer to track time? Recently held Sierra Vista Invitational examiners didn't share time left with team when asked.	Non digital watches are allowed. However, digital watches and other timing devices are not allowed.
2.d.1	National FAQ: May an event supervisor just provide 1 resource sheet per team?	No. It is expected that each student taking the test gets their own copy of the resource sheet.
2.d.1	National FAQ: Rule 2.d. says the test packet will include a resource sheet (singular). The "Printing a Test" video at https://www.youtube.com/@Codebusters-sciol/videos says to print a resource sheet for each student (3 per team for B and C Div). May an event su...	No. It is expected that each student taking the test gets their own copy of the resource sheet.
3.e.iii.1	Are "word" Baconians allowed? The part of the sentence "a and b values represented as one or more letters" seems to imply that.	Yes.
3.e.v.1	For cryptarithms, can it be assumed that each unique letter of the alphabet represents a unique digit from 0 to 9?	Yes
3.e.vii.1	National FAQ: Will provided messages that were encoded with the Complete Columnar Transposition Cipher be encoded with spaces from the plaintext or not?	No. Just like Patristocrats, spaces are removed from Complete Columnar Ciphers before encoding.
3.e.vii.1	National FAQ: Will provided messages encoded with the Complete Columnar Transposition Cipher be allowed to give the (length of the keyword used/number of columns used for encrypting)?	Yes. The event supervisor can provide additional information such as the length of the keyword/number of columns in order to make a problem easier to solve.
3.f.v.1	The keyword refers to the Polybius keyword or the non-Polybius keyword?	The non-Polybius keyword.
4.1	What is the scoring method for Cryptarithms? Is it all or nothing?	Cryptarithms are scored by solving the keyword/keyphrase which uses the same mappings of the letters in the Cryptarithm, regardless of whether or not they actually solve the math of the cryptarithm. The same scoring rules for all ciphers applies in that up to 2 can be wrong to still get full credit. Each additional letter mistake results in a loss of 100 points (up to the value of the question).

Rule ↕	Question ↕	Response ↕
1.1	National FAQ: How should students be scored if they bring a device that does not use an ORP or redox probe (e.g. if they present instead with a conductivity-based probe)?	Rules 1 and 2.a. clearly state students must construct a REDOX or ORP probe, bringing any other type of probe (e.g. conductivity probe) would not meet the criteria and therefore not be scored. Students that bring this type of probe will only receive credit for the test portion of the event.
2.a	National Rules Clarification	09/14/2023 Calculators must be stand-alone. "Section 2.a.: Each team may bring one participant-constructed, ORP or Redox probe with a laptop or a stand-alone calculator for programming/display, two stand-alone calculators of any type, and 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. Sheet protectors, lamination, tabs and labels are permitted."
2.a.1	National FAQ: The language describing the device has been updated since Detector Building last ran Salt Concentration Sensing, changing from conductivity sensor to ORP probe. Is it required that the device be an ORP probe, or can it still use any means (within ...	Yes, the device must be an ORP probe. Measuring conductivity via resistance or inductance with a conductivity probe is prohibited.
2.b, c.2	Paragraph b of the rules state event supervisors will provide 2 samples from 0 to 5000ppm. Paragraph c then states the competition will test 3 or 4 different concentrations for Regional and State/National respectively. Paragraphs b and c conflict. How many samples will the event supervisors provide?	The 2 samples referenced in 2.b. refer to samples for calibration, and are not the unknowns referred to in 2.c.
2.b.2	National FAQ: Are we to interpret parts per million (ppm) as mass of solute per volume of solution, or mass of solution in this event? Slight difference due to temperature.	PPM is defined as mass/volume or mg solute/ liter solvent.
3.1	National FAQ: Does the salt bridge have to contain a salt (NaCl, KCl, etc.) or could it just be a piece of filter paper, cotton yarn or ceramic wick (as shown in the diagram provided on soinc.org)?	No, the salt bridge can be a non-conducting material such as string, yarn, cotton balls, etc.
3.5	National FAQ: External ADCs, such as the ADS1115, come on PCBs with other resistors and capacitors, but no other ICs. Are these allowed?	No, they are not allowed. They violate 3.c.
3.a.2	National FAQ: It says in the rules that the ORP probe must be participant built; can teams purchase electrodes online as components of a probe and then use those to construct the probe itself?	No, preassembled electrodes or electrodes from a probe are not allowed. The electrode must be student constructed
3.b.1	National FAQ: Must the salt bridge of the ORP contain an electrolyte, or can it simply be a piece of non-conducting material such as a string?	No, the salt bridge can be a non-conducting material such as string, yarn, cotton balls, etc.
3.b.1	National FAQ: Would a thermistor be considered a fundamental component and could we measure temperature to supplement our ORP readings as they could change with temperature?	Yes, a thermistor would be considered a fundamental component.
3.b.1	National FAQ: Will a salt bridge containing metal be considered a salt bridge?	No, it will not.

Rule	Question	Response
3.b.1	National FAQ: The wording here has me a bit confused, are we allowed to purchase a salt bridge and electrode in order to combine them into an ORP sensor? Or do we have also have to construct a salt bridge and electrode from basic materials?	Both the electrode and salt bridge are student constructed and can not be purchased as preassembled devices.
3.b.2	National FAQ: Is it legal to use PCBs in which all other components (resistors, capacitors, etc.) have been desoldered except one chip so they essentially serve as surface mount adapter boards? Specifically, this is in regard to components such as the ADS1115 t...	No, that is not legal.
3.b.5	National FAQ: Would using a variant of SOIC (e.g. SOP, SSOP, VSSOP) be permitted?	Yes, provided the adapter board used adheres to 3.b
3.b.ii.4	National FAQ: There is confusion between allowed solderable breadboard in Section 3 b and violation if printed circuit board is used in Section 3 c (ii). Event supervisor can say solderable breadboard is actually printed circuit board and it is not allowed. Kin...	A solderable breadboard is allowed, but a printed circuit board is not. A printed circuit board, the connections are all premade on the board. The breadboard, the students have to make all of the connections, whether they are soldered or not
3.c.i.1	National FAQ: If students build a device that incorporates a preassembled or commercial sensor, what is the appropriate penalty?	Such a sensor would violate rules 3.b. and 3.c.i. Scoring rules 6.c.iii. and 6.c.iv. specify a penalty of having the Build Score multiplied by 0.6 (3.b) and 0.8 (3.c.i).
3.g.1	National FAQ: Regarding the digital display of the salt concentration, may the display be more precise than the nearest unit value (e.g., 0.1 ppm, 0.01 ppm, etc.)? Perhaps the rule should be TO AT LEAST the nearest unit value.	Yes, since 5.e. specifies that the Event Supervisor records the concentration in ppm to the nearest 1 ppm, there is no need for more precision.
3.h.1	National FAQ: Will the LED light's range necessarily be one single continuous range, or do we have to account for a discontinuous range (e.g. red lights up from 0-700 and 4000-5000)?	There will only be 3 ranges, but at the state and national level, any combination of colors can be used for these ranges. It is possible for there to be a discontinuous range.
3.ii.ii.3	National FAQ: Rule 3, section b says "All supporting circuits must be assembled on a breadboard. This includes solderable breadboards and perfboards" and section c says, "The following are construction violations: ii printed circuit boards (except digital displ...	Yes, solderable breadboards and perfboards are allowed
5.d.2	National FAQ: Based on a suggestion made at SOSI, many teams are attempting to exchange salt bridge components in between each sample measurement. Is swapping salt bridge components for materially identical replacements considered a "change to the device"?	No, swapping out salt bridges &/or electrode solution would not be considered a change to the device.
5.e.2	National FAQ: If students need to perform maintenance on their device in between measuring samples (e.g. rinsing their probe), is the needed time included in the 1 minute they have to measure each sample, or should they be given additional time to complete thes...	Rinsing the probe should be done within the minute, no additional time should be provided.
5.e.4	National FAQ: The rules mention: "along with the LED color displayed for each concentration.". The code continuously updates the LEDs till the code finishes. Can the student indicate to the evaluator when the code has finished so that the evaluator can then rec...	Yes, the team should indicate to the event supervisor when the LED color is ready to be read.

Rule	Question	Response
5.II.a.1	"Teams will be given a written test to assess their knowledge of the theories behind the event" Are we allowed to use the "one 2" or smaller three-ring binder ... containing information in any form and from any source ..." (In section 2. a.) during the test?	Yes, teams may use the binder during their test.

Rule ⇅	Question ⇅	Response ⇅
	National Rules Clarification	09/14/2023 This Rule Clarification corrects the information provided in the Calculator Matrix on page 80 of the Division B Rulebook to make it consistent with the information provided in Rule 2.b. on page 17 of the Rulebook. Removed "Class III" calculators from the Calculator Matrix.

Flight B/C

Rule	Question	Response
2.2	National FAQ: Can you take a torque meter into competition? And if so, does it have to fit into the measured box?	Yes, you may bring a torque meter to competition. No, it does not need to be in the box with your aircraft.
3.1	National FAQ: Are teams from the same school allowed to use the same "team-provided Measurement Box" for measurement purposes, or are they expected to have one per team?	Yes, teams from the same school are allowed to use the same "team-provided Measurement Box" for measurement purposes
3.d.1.1	National FAQ: For the Measurement Box, are the dimensions set in the order L x w x h, or are the participants able to choose which number they want to use for each dimension as long as it is a right, rectangular prism shaped box.	The rules state a RIGHT RECTANGULAR PRISM.. there is no definition of length, width or height. therefore as long as the box fits within the parameters and the model (in flight configuration) fits completely inside the box, it would be considered within the rules.
4.a.2	National FAQ: If a team presents 2 planes at check in, are 10 test flights required for each plane in order for the log to be considered complete?	No. Rule 4.a only requires 10 test flights, it does not tie the flights to specific planes. The 10 flights can be from one plane or any combination of planes.
5.d.ii.1	National FAQ: Do teams checking in two planes need a separate measurement box for each plane, or can a single measurement box be used to verify the dimensions of both planes?	No, teams do not need a separate measurement box for each plane. You may if you wish, but one is sufficient. Per rule 2.b "Teams must bring one or more Measurement boxes..." One box will satisfy this requirement, the sentence does not require more, only allows more. Rule 5.d is consistent, competitors provide measurement box(es), but may be as few as one for both planes.
5.d.iv.1	If the motor weight is slightly over, can the student trim the rubber and have it re-weighed?	Yes.
5.d.v.1	After the the motors are returned to students, are they allowed to apply the oil to the rubber before trials and official flights?	Yes, please see rule 3.j.iii.
6.b	National Rules Clarification	09/05/2023 This Rule Clarification corrects an incorrect reference to another section of the Flight Rules. Bonus refers to 6.c., NOT 5.c.

Rule ↑↓	Question ↑↓	Response ↑↓
2.a.1	National FAQ: May each team bring one sheet of paper, each participant on a team bring one of the same sheet of paper (two identical sheets per team), or each participant on a team may bring one sheet of paper with different information on each sheet (two disti...	Rule 2.a. states that each participant may bring one 8.5"x 11" sheet of paper... that may contain information on both sides in any form from any source..." Therefore the participants are allowed to each have one page that has different information on it.

Rule	Question	Response
2.1	National FAQ: For the Division B Forestry Event, are we allowed to bring a ruler to measure the lengths of leaves and specimens?	No, rulers are not permitted to be brought into competition.
3.g.1	The rule stated that some states may have a modified Regional or State tree list. Does such a list exist in Southern California? If so, where is the list posted?	Southern California does not have a State-specific 2024 Tree List.

Fossils B/C

Rule ⇅	Question ⇅	Response ⇅
	National Rules Clarification	11/02/2023 This Rule Clarification corrects a taxonomic update of an organism specified in the Fossil List. OLD: Genus Carcharocles (formerly Carcharodon) Species C. megalodon NEW: Genus Otodus Species O. megalodon (Formerly Carcharocles and Carcharodon)
2.c.1	Does our copy of the 2024 Science Olympiad Fossils List need to be unaltered? As in, are we allowed to annotate it beforehand and remove it from our binder during the competition?	Per rule 2.a. team may bring a binder of any size containing information in any form and from any source. This means that an altered fossils list can be included and it can be annotated beforehand. Rule 2.a. also states that if the event features a rotation through a series of laboratory stations, then no material may be removed from the binder throughout the event.
3.e.i.1	National FAQ: It says specimens on the fossils list may need to be identified, it says Species C. Megalodon(carcharocles megalodon) but megalodon's species name is actually otodus megalodon so why is that?	Please see the posted Rule clarification on this topic

Rule	Question	Response
2.3	National FAQ: Does highlighting count as annotations?	No, highlighting on the resource sheet does not constitute annotations.
2.5	National FAQ: The last sentence is "Any measurements must be made to the precision of the device" but there is no measurement devices listed in the the list of things they can bring. Will measurement devices be supplied by event supervisors or should there be s...	If any measurements need to be made, any necessary devices will be provided by the event supervisor.
3.a.ix.5	National FAQ: Why is "Candida auris" typoed as "Candida aureus"?	This is a typo Candida aureus should be Candida auris. See the official rules clarification page.
3.a.xix.3	National Rules Clarification	10/11/2023 This Rule Clarification corrects a misspelling of an organism specified in the Rules. "Candida aureus" changed to "Candida auris"

Rule	Question	Response
	National FAQ: The rules do not say anything about mirror/barrier orientation. Are all mirrors required to be on on the side of the barrier closest to the laser source, or are students expected to plan for the mirror being on either side of the barrier?	General Rule 1 applies here. Since the rules do not say anything about mirror or barrier orientation, the ES may orient the barrier mirror in whatever direction they choose.
2.b.0	Can participants bring their tools and templates in a separate box (example: shoe box) which is not attached to the binder?	Yes.
2.b.8	National FAQ: Is an electronic angle finder allowed under "Each team may also bring tools..."	Yes. General Rule 1 applies.
2.c.1	National FAQ: May students use the moveable mirrors to align the other moveable mirrors? Students aren't allowed to bring mirrors, but whether you can use the moveable mirrors is unspecified.	No. All five moveable mirrors and the barrier mirror are covered so that they are not useable as mirrors until the point at which the competitors are no longer allowed to adjust the mirrors — see rule 3.II.g.
3.c.ii.1	National FAQ: When the rules say the topics for division B state and national tournament tests, does it also mean that *only* those topics will be on the test and none from topics for regional tests or division C tests will be on the test?	The topics for State and Nationals include the Regional topics. Also. Division C includes all Division B topics as well as those listed only for Division C.
3.f.1	National FAQ: Can barriers be temporarily removed to place templates?	No, Event supervisor placed barrier(s) may not be removed.
3.f.1	National FAQ: Some competitors use paper or transparency templates to assist in mirror placement/alignment. Can these remain in the box during the laser shoot or must they be removed?	Yes, rule 3.part II.j. specifically addresses this question
3.h.1	National FAQ: Can tools or paper be temporarily stuck to the floor of the LSS? Example: Post-It notes which are later removed after the laser shoot?	Rule 3.Part II.h. states that competitors must not mark on or modify the LSS. Adhesives may leave a residue behind on the LSS, leaving a mark. Since the exact materials and construction of the LSS will vary from tournament to tournament, this determination will need to be made by the ES.
3.h.1	National FAQ: What should be done if a team accidentally moves a barrier during their 4 minute setup time?	No penalty, however, the ES will have to reset the moved object and the time to do the comes from the students 4 minutes. They do not get any extra time if this happens.
3.II.c.1	During the competition, how can the students know the beam is properly aligned? Can the students request the event supervisor to show the proper alignment of the laser beam?	No; per 3.Part II.c-d., Event Supervisors will verify the beam's alignment and place mirrors/obstacles before the team is allowed to see the LSS.
3.II.j.2	question about templates: can the templates be put inside the optics box and left there?	Yes, per rule 3.Part II.j., participant tools/templates may remain on the LSS.
3.j.1	National FAQ: How should a team's Accuracy Score be calculated if the laser beam is split by a mirror edge and there are therefore two points where the laser strikes an LSS wall?	If one beam is brighter, as determined by the Event Supervisor (ES), the measurement will be made from the brighter beam. If both are equal as determined by the ES, the beam closer to the target will be used for the measurement.

Rule	Question	Response
3.j.2	National FAQ: Can the mirrors be placed on top of templates? Example: Placing a mirror on a mat or plastic sheet that is not removed when the laser is turned on.	Yes student placed mirrors may be on top of their templates.
4.2	National FAQ: What's the maximum number of barrier mirrors in Div C? Some people think that "In Division C, any of the three barriers may have the mirror" means there can be up to 3 barrier mirrors. Others think "One barrier must have a mirror" means there ca...	One barrier has a mirror, the other two barriers do not. See 4.i.
4.2	National FAQ: What's the maximum number of barrier mirrors in Div C? Some people think that "In Division C, any of the three barriers may have the mirror" means there can be up to 3 barrier mirrors. Others think "One barrier must have a mirror" means there ca...	One barrier has a mirror, the other two barriers do not. See 4.i.
4.f.1	Will the midline be already drawn and visible on all the LSS in the competition or participants have to draw it on their templates from laser to the midpoint of the scale on the opposite wall?	It will already be drawn.
4.h.1	National FAQ: Is rule H, "placing a barrier mirror along the middle line," satisfied (1) only if both the front and back surfaces are on the middle line, or (2) so long as any portion of the barrier (e.g., a corner of the barrier) touches the middle line?	Rule 4.h. only requires that the laser beam is blocked by the barrier. It places no restrictions on the orientation.
4.i.2	there are 5 mirrors and a barrier. But is the barrier always also a mirror? And do the kids get extra points if they reflect the laser off the barrier?	4.d. specifies that there are 5 moveable flat mirrors. 4.h. and 4.i. specifies that there will be 1 barrier for Div B and 3 barriers for Div C. One barrier will have a mirror (so in Division B, it will always be a mirror as well). Teams receive points for both having lasers reflected off of the moveable mirrors (5.c.) and they will receive additional scores for reflecting laser off of the barrier mirror (5.e.)

Rule ↕	Question ↕	Response ↕
.1	National FAQ: Does the offline microbit ide violate Rule 6.d.i., specifically software simulation?	No. While Microbit IDE does have the ability to simulate code, this feature is a software debugger and not a motion simulation. Rule 6.d.i does not allow motion simulation. Several programming IDEs include a software debugger. While these software debuggers could be available in a robot's programming IDE, these should not be used during a completion to avoid confusion with Rule 6.d.i.
2.3	National FAQ: are u allowed to measure the track at any point and the distances the robot will need to go?	Yes. Competitors may measure any track dimension or distance as part of their Track Time.
2.a.1	National FAQ: Can the programming unit be impounded while connected to the rest of the robot, or does it have to be disconnected from everything else when impounding?	The programming unit must be disconnected from the robot during impound. The programming unit cannot be connected to the robot until the start of the team's setup time.
3.1	National FAQ: If a robot does not have a dowel attached to it, should it be accepted at impound and allowed to compete?	Yes. The robot would receive a penalty for a Construction violation per rule 7.f.v.
3.1	National FAQ: Is the six batteries the total number of batteries that can be impounded or the total number of batteries the robot can use at any time? Specifically, if the robot takes six batteries, are we able to impound an additional six batteries in case tho...	Yes. Spare batteries are allowed as these are spare parts which must be impounded.
3.1	National FAQ: Are prebuilt robots permissible as long as they meet the Construction Parameters?	No. Teams may purchase a kit but must assemble the robot.
3.1	National FAQ: Can we decide what front of the robot is, or is there a specific definition of front, as it seems vaguely worded(especially in cases like symmetric robots or mecanum wheeled robots)?	Per rule 3.e. and 6.m., the front of the robot will be the end where the dowel is placed.
3.1	National FAQ: The rules state that the robot must fit in an area of "any height." Obviously a height of 2cm would not allow the 10cm dowel to fit - what is the minimum height the robot must fit inside?	The height is determined by the design chosen by the students. All Construction Parameters of section 3 must be met.
3.1	National FAQ: Can a team use a positioning jig to line up the robot before a run? The jig will be removed from the robot/track before starting the run.	Yes. A positioning jig or alignment device may be used, but must be removed before the robot starts its run.
3.a.i.1	National FAQ: The rules state that "The Robot must be designed and programmed to navigate a track, make decisions, travel to gate zones, and stop at a designated target point on the track without external interactions." My question is what is an "external Inter...	"Without external interactions" refers to the Robot must not receive external information or instructions during a run. Rule 3.g. allows for sensors to provide information to the Robot's program about the environment. Sensors mounted on the Robot would be part of the Robot and not considered external.
3.b.2	National FAQ: Does the 6 NiMh AAA battery pack from vex comply with the rules on batteries?	Yes, provided the 6 individual AAA batteries can be visually inspected by the event supervisor. A sealed battery pack is not valid as the individual batteries need to be visually inspected.
3.g.1	National FAQ: Previous FAQ answers state no WiFi networks are allowed. Are WiFi capable microcontrollers like ESP32 allowed?	Yes, using microcontrollers with WiFi capability is allowed. Competitors must be prepared to prove to the event supervisor that the WiFi is not being used.

Rule	Question	Response
3.h.1	National FAQ: 3.H states, "All parts of the Robot must move as a whole." Would a robot that has an ultrasonic sensor on a moving servo violate this rule?	No. Sensors are the only parts on the Robot that may rotate.
3.h.1	National FAQ: The rule states the robot must move as a whole, specifically citing tethers and such. Would actions such as pivoting the (still connected) dowel around the robot and/or putting the dowel on an extendible arm be considered not moving as a whole?	No per rule 3.e., the placement of the dowel defines the front of the robot. You may not rotate, pivot, extend, or move the dowel around the bot as this violates rule 3.h. that the entire robot must move as a whole.
5.c.2	National FAQ: Do the Imaginary Lines have to be imaginary?	As per rule 5.c, the imaginary lines are optional and up to the Event Supervisor's discretion. If the imaginary lines are placed on the track, then it is recommended to use 1/4" wide tape.
5.f.3	National FAQ: The rules state obstacles are "1.5 inches by 3.5 inches by 16 inches long," presumably to allow for six obstacles to be cut from a standard 8' 2x4. Can we assume the 16" length is approximate, as a small amount of length will be lost when cutting ...	Yes. The 16" length is approximate.
5.f.f.1	National FAQ: Is it possible that the target or gate is surrounded by obstacles in all sides?	No. The Track Setup must contain a path clear of 2x4 obstacles to enter all Gate Zones and reach the Target Point.
5.f.f.1	National FAQ: Is there any requirement for the tape color?	No. The color of the tape used to mark the track is the choice of the Event Supervisor.
5.g.4	National FAQ: Are the Gate Zone marked with a letter in tape in the middle? Or by writing on the tape that outlines the Gate Zone?	The local event supervisors choose the method of marking the Gate Zone. The only requirement is the Gate Zone is clearly labeled.
6.1	National FAQ: It is not specified in the rules whether the 2x4 obstacles will be announced before the 10 minute setup period. Will they be announced before this period?	Yes. The 2x4 obstacles are part of the track setup and must be announced before the start of the 1st time slot.
6.1	National FAQ: Rule says, "Teams are allowed to make programming changes". Is there any restriction on structure of the program, what information can be fed to program, what can be configured in program and what can't be ? What are the impounding rules for progr...	The only files that can be viewed or modified by the students during the competition must be the files impounded on the USB drive. Students are only allowed to impound one robot program which can be one or several source code files.
6.c.2	National FAQ: (6.C) Are competitors allowed to run the program files on their laptops prior to loading it onto the robot?	No. Running the program on any device other than the robot would violate rule 6.d.i as this would be a software simulation of the robot.
6.c.i.1	National FAQ: Is using Lego Mindstorm as the platform for the robot and the program legal?	Lego Mindstorm is a valid platform provided the submitted robot meets all construction requirements. There are several Lego kits that use illegal batteries which is the largest concern with purchased robot kits.
6.c.i.1	National FAQ: (In reference to rule 6.C.I) If the robot is configured wirelessly via a web browser, through a network created by the robot itself, does opening a web browser to configure the robot violate this rule? The wireless network is not connected to the ...	Configuring the robot via a web browser or any other tool other then the robot's programming software would violate Rule 6.c.ii. Sending a configuration to the robot would not be modifying the robot's impounded program during the event. A wireless network is not allowed to be used as this would be a violation of rule 3.a. and/or 6.b..

Rule	Question	Response
6.c.i.6	National FAQ: Given the impounded USB drive containing our code, will the provided computer(if there is one) for code editing also have the Arduino IDE installed, enabling us to upload the code back to our microcontroller?	Teams are responsible for providing their own programming tools, cables and/or computers. The tournament or event supervisor will not be providing a computer to be used during the competition.
6.c.ii.1	National FAQ: Once the programming changes are made, to download the modified program can the robot create its own WiFi network which is only connected to a single laptop and operates the same way as a Bluetooth connection?	No. WiFi networks are not allowed.
6.c.ii.1	National FAQ: Once programming changes are made to the impounded program, Can the modified program be downloaded over wifi or Bluetooth connection to the robot or does it have to be over a wired connection?	Sending the program to the robot is allowed using either a hardwire cable like an USB cable, Bluetooth connection, or a memory device like a SD card. Communicating over a WiFi network is not allowed.
6.d.i.3	National FAQ: The rules note "The teams are not permitted to test their Robot's movements on any surface during the Setup Time." Does that mean we are allowed to test/start/run the robot in midair, if it is not contacting a surface?	Yes. The Robot's program can be tested during Setup Time provided the Robot is not in contact with any surface as in the example of the Robot being held in midair.
6.f.1	National FAQ: What is the time span in which competitors are allowed to declare a run as failed? For example, any time during the run, but are competitors also allowed to do so after a run has ended (i.e. 3 seconds without movement have elapsed)?	The robot must be moving to allow competitors to declare a run as failed. Since the 3 seconds without movement is not part of the run time, the 3 seconds cannot be used to declare a run as failed. Declaring a run failed during the 3 seconds without movement is only allowed if the robot starts moving again.
6.i.1	National FAQ: Rule 6.c.i states a "single program file" and Rule 2.a.i states "one robot program". A program can be made up of several source code files. Are multiple source code files allowed?	Yes. Students are only allowed to impound one robot program which can be one or several source code files.
6.i.2	National FAQ: Team will get 10min for setup to configure robot paths in program after seeing the tracks and all setup should be done away from the track. Can the team take notes of the paths on a paper and then go away and use those notes to setup program?	Yes, students can make notes on paper during their 10 minute Setup Time. Per Rule 2.b, the only paper and notes that students may use must come from their impounded Practice Log.
6.iii.1	National FAQ: Rule 6.c.iii says opening other files on the laptop would be a violation. Does opening a programming tool (IDE) like Ardunio's violate this rule?	No. Running a program or software tool on the laptop is not opening the file. Viewing the contains of a file on the laptop would be a violation. The only files that can be viewed or modified by the students during the competition must be the files impounded on the USB drive.
6.iii.1	National FAQ: Would using library files that are stored on the laptop's hard drive be a violation of Rule 6.c? Do these library files need to be impounded?	No. A library is a file referenced by the students' program and not modified by the students. Only source code modified or viewed by the students must be impounded on the USB drive.
6.iii.1	National FAQ: Can we open a log file that the robot generates after a run?	Yes, students may open a log file generated by the robot after the run is completed.
6.k.1	National FAQ: Are you allowed to press the robot with the pencil(not hand) to start it? The rules say we are allowed to activate it with any motion of the pencil, but the next sentence states we can't press it. I'm not sure whether that applies to the pencil or...	Rule 6.k states "push" and not "press". Teams are not allowed to "push" the robot horizontally meaning the robot cannot be moved physically by a participant when the robot's trigger is activated. Participants can only use the pencil to make contact with the robot during the trigger activation.

Rule	Question	Response
6.l.2	National FAQ: If the robot comes to a stop and stops for over 3 seconds, and then moves again, is it considered a failed run? If the part before if counts, how does the ES measure the target point distance as the robot already moved away?	If the Event Supervisor does not have a position to measure the distance from, then the run will be recorded as a failed run.
6.m.1	National FAQ: Should the Gate Zone Bonuses still be awarded if the team chooses to run with obstacles removed (assuming they properly enter the Gate Zone)?	Yes. The Gate Zone bonuses and Obstacles penalties are awarded independent of each other.
6.m.1	National FAQ: Should a Gate Zone Bonus be awarded if a robot enters through an obstructed side of a gate (e.g. by pushing an obstacle into the Gate Zone)?	Yes. The Gate Zone bonuses and Obstacles penalties are awarded independent of each other.
6.m.1	National FAQ: Rule 6.m requires the robot to enter a Gate Zone to receive the bonus. Does the entire robot need to be inside the Gate Zone or does just the dowel rod need to enter the zone?	The entire robot does not need to enter the Gate Zone. The entire dowel rod must be inside the Gate Zone to receive the bonus. The requires of Rule 6.m still apply on how the robot must enter a Gate Zone.
6.o.1	National FAQ: Would making a robot wait 2 seconds after every action (as to not end the run accidentally) be penalized for stalling?	The Stalling Penalty (Rule 6.o) is awarded for delaying movements. A single pause between movements would not be a stalling action. If the movements between the delays are repetitive, then those movements would receive the stalling penalty.
6.o.1	National FAQ: If the robot pauses for ~1 second multiple times, will a Stalling Penalty be applied? The given reason is to kill momentum, so that longer straight-line movements will be more accurate. If so, if the pause is adjusted to 0-2.5 seconds, will that b...	A stalling penalty can be awarded for repetitive motions. If the motions described are repetitive and do not improve the distance score, then the stalling penalty would be awarded. Motions not occurring within the target 50 x 50cm zone or an adjacent 50 x 50cm zone cannot be awarded the stalling penalty.
6.o.4	National FAQ: Rules state that end of run occurs in target square or adjacent. If robot stops outside of these squares, is it still a legal run and is distance measured?	A valid end of run can occur any where within the track boundaries and within any of the 50 x 50cm squares. Rule 6.o is defining how and where the stalling penalty can be applied.

Scrambler C

Rule	Question	Response
	National FAQ: Is there a minimum (or recommended minimum) width for the track? At a recent tournament, they ran the event in a hallway and many teams hit the wall. The width was less than 3 m at first and then they moved a couch out of the way and it was	The track would have the same minimum width of 2.0 meters even if a timing system is not used, per rule 5.h.
3.1	National FAQ: Can a school with multiple teams impound use the same energy propulsion device, as long as it meets all specifications for both teams?	Yes, per rule 2.b, teams may share energy propulsion systems but each team must have its own vehicle.
3.b.2	National FAQ: The rules state that the scrambler, egg, falling mass, and cushion must fit in a 100.0 cm x 50.0 cm base and a 100.0 cm height. Does this imaginary box include the energy propulsion system? If not, what are the parameters for the energy propulsion…	Per rule 3.a., the "Scrambler" has 2 components, the egg transport (vehicle) AND an energy propulsion system. Both parts of the "scrambler" must fit within the prescribed dimensions.
3.c.2	National FAQ: "The gravitational potential energy of the falling mass may be converted to other forms of energy"Does this mean it is possible to use the falling mass and trigger another release mechanism such as an elastic rubber band release mechanism.	It is possible to do that, but we are not prejudging a specific device. Per Rule 3.c.. the falling mass must transfer all of the energy needed to propel the vehicle into that elastic band. The elastic band must start with zero potential energy and must not have any stored elastic potential energy prior to the falling of the mass.
3.e.3	National FAQ: It states "within 1.0 cm from the bottom of the backstop". What does that mean exactly? Our interpretation means the dowels have to be anywhere from 0-1.0 cm from the bottom of the backstop.	Yes. The bottom of the dowels must be between 0.0 and 1.0cm from the bottom of the backstop.
3.e.5	National Rules Clarification	Tolerance fixed; "1.27 cm (0.50") thick" changed to "at least 1.1 cm thick"
3.e.6	National FAQ: Does the egg holder/backstop need to be rigid (like last year) or can it be cushioned in any way?	The egg holder / backstop must be attached rigidly without cushioning or other mechanical methods to absorb the egg's impact.
3.h.1	National FAQ: Assuming no energy is imparted to the system, is it permitted to stabilize the energy propulsion system (aka "touch the frame") when the pencil is pulled to start the run?	No, Rule 3.a. defines the scrambler, which includes the energy propulsion system, and rule 6.d. prohibits the scrambler from being touched until it is triggered.
5.h.1	National FAQ: If a photogate timing system is NOT used, what is the minimum track width requirement? Similarly, if the photogate timing system IS used, does the track have to maintain that same "minimum gap of 2 m" throughout the full length of the track?	The track would have the same minimum width of 2.0 meters even if a timing system is not used.
6.d.1	National FAQ: As long as the pointed tip of the egg is the furthermost point of the vehicle relative to the Start Point, if the launcher is angled, can a part of the launcher touch the tape used to create the Start Point?	Yes. The launcher can be in front of the Start Point provided no part of the launcher crosses the 0.5m Timing Line.

Rule ↑↓	Question ↑↓	Response ↑↓
3.a.i.4	National FAQ: When it says soaked, is it referring to glue, or water? Can I soak my wood in water to allow it to be bent?	Yes, you can soak wood in water. Rule 3.a.i prohibits soaking wood in glue and/or color enhancement.
3.a.i.4	National FAQ: My students want to label pieces of balsa with lengths, such as 11cm or 18cm as they measure and cut. Would this be acceptable or is it in violation of the rules that state wood can not be painted, colour enhanced. This is ink pen only.	No, per Rule 3.a.i, only ink barcode markings, or markings from the construction processing are allowed. Labeling pieces with ink is not permitted.
3.a.i.5	One FAQ said "small pencil 'cut-lines' or 'guide-lines' made by students are considered part of the Tower construction process, and therefore allowed." My students use color pen marked "guide-lines", is this allowed? Or only pencil marked guide/cut-lines are allowed?	Yes, per Rule 3.a.i, only ink barcode markings, or markings from the construction processing are allowed.
3.a.i.6	National FAQ: One FAQ says labeling the balsa is a construction violation per 3.a.i which only allows "Ink barcodes or markings from the construction process." Would a line drawn to indicate where the balsa was cut or to line up cross members be considered a la...	Yes, small pencil "cut-lines" or "guide-lines" made by students are considered part of the Tower construction process, and therefore allowed. Again, per Rule 3.a.i, only ink barcode markings, or markings from the construction processing are allowed. Labeling pieces with ink is not permitted.
4.b	National Rules Clarification	09/14/2023 This Rule Clarification corrects two spelling errors found in the Rules. "Deisgn" changed to "Design" "ti" changed to "to"
4.b.i.1	National FAQ: The design log template states "Add hand or CAD drawing to the back of this form or attach a separate sheet." Would a labelled, pre-testing photograph of the tower be sufficient for this requirement?	No, a hand sketch or CAD drawing is required.
7.d.ii.1	National FAQ: The design log says "Include key dimensions, angles, size..." when specifying the requirements for the hand or CAD drawing of the tower (section "Sketch of Design"). Are ALL these components required in the drawing to receive the 1.25x log bonus?	No, per the Design Log template, the sketch should include only "key" or primary information such as dimensions, angles, and sizes in order to build the tower. It is not necessary to provide dimensions for every member, every angle, every detail.
7.g.ii.2	National FAQ: Score(1.25x), this example is confusing. 4.a states that Division B - Design logs are optional and will not be scored. Please clarify whether Division B Score has (1.25x) for Log compliant.	No, Div B does not have a 1.25 multiplier opportunity. Per 7.d.i, any Div B Design Log presented will not be scored, and all Div B score calculations will receive a 1.0 multiplier.
7.g.iii	National Rules Clarification	09/05/2023 This Rule Clarification corrects a scoring example by including the correct Load Supported value and recalculating the result. Structure 3: Changed "12,134" to "15,000" Changed "2,116" to "2,470"

Rule ⇅	Question ⇅	Response ⇅
1.I.A.I.1	For Wind power is it possible to change the wiring of the voltage meter before testing? because when the blade generates power it comes in negative amounts	Yes
3.1	National FAQ: As CD have one side with labeling layer that is usually silver and another side that do not have the labeling layer, can the blade(s) be attached to either side of the CD?	Yes, you can attach to either side. However, once the blades have been affixed to that side, that side must be the side facing away from the motor/generator and support stand, per rule 3g.
3.2	National FAQ: Are we allowed to remove the shiny aluminum film from the CD, resulting in a clear CD used for the windmill? May I take the aluminum film off the CD and use the resulting clear disk for my device? I did this for an invitational and it was accepted...	No. Rule 3.c. states that the CD may not be modified except to attach blades using adhesives. Removing material from the CD is a modification.The original question is included for your records; there is no need to respond unless you feel there is an error.
3.2	National FAQ: Are we allowed to remove the shiny aluminum film from the CD, resulting in a clear CD used for the windmill? May I take the aluminum film off the CD and use the resulting clear disk for my device? I did this for an invitational and it was accepted...	No. Rule 3.c. states that the CD may not be modified except to attach blades using adhesives. Removing material from the CD is a modification.
3.2	National FAQ: Under construction parameters 3C, it says Modification of the CD is not allowed (except via tape, glue, etc.) In regard to etc. Can a small small hole be drilled to use nuts and bolts to affix the blades to the CD? Or must the CD be 100% present.	No, modification of the CD is not allowed per rule 3.c.
3.a.1	National FAQ: Do all of the blades need to be directly attached to the central disk or can they attach to a structure which is attached to the disk (such as a cup), to create multiple layers of blades?	Rule 3.a states the blades must be attached to the central disk. Since the rules do not state "directly attached to the central disk" then this would be allowed by General Rule #1. However, any structure attached to the CD/DVD is considered part of the blade assembly and, as such, must comply with the construction parameters.
3.a.2	National FAQ: The rules state "attached to a central disc (i.e. a compact disc (CD), digital video disc (DVD), or Blu-Ray disc)" Is this list exhaustive? Can a plastic disc of the same diameter be used in place of the CD or must it be a commercially made CD, DV...	Yes, rule 3b states that the blade assembly must be attached to a 12.0cm CD, DVD, or Blu-ray Disc.
3.b	Are plastic disks (such as the blank plastic CD/DVD protector disk that often comes in a package of CDs) allowed?	No; per the National FAQ, only CDs, DVDs, and/or Blu-Ray discs are allowed. Therefore, discs must have a data-storage layer in order to qualify.
3.e.1	National FAQ: Are ceramic magnets (ferrites) considered "nonmetallic substances?"	While ceramic magnets are not metallic, and therefore not disallowed by rule 3.e., rule 1 disallows energy transfers from the fan to the blade assembly that proceed by means other than the wind. If the blade assembly is magnetic, the ES would not be able to know whether an interaction between the magnetic fields of the fan motor and blade assembly is transferring energy. Therefore, magnets may not be used in the blade assembly.
5.c.1	National FAQ: Are students allowed to use a backup blade assembly, if the one they use breaks.	No, students are allowed to bring one blade assembly. Per rule 2.b., students are allowed to bring tools and supplies to repair the blade assembly if it breaks.

Rule	Question	Response
5.e.4	National FAQ: Are students allowed to kick off their blade turning by giving a nudge or push ? If the blade is taking time to start spinning, can students help it by giving it a push?	According to rule 5.II.e., students are permitted to start the blade assembly.
5.e.5	National FAQ: Does the "reposition the support stand" portion of the Device Testing section allow for the rotation of the entire support stand so the CD is at a different angle to the fan?	Yes, the students may reposition the support stand for the blade assembly at any angle they choose for their device, if the test stand at the tournament is capable of being adjusted that way.
5.f.1	National FAQ: In the rules it said "With the fan already on and the blade assembly already rotating for at least 10 seconds, the students must tell the event supervisor to begin a 30 second measurement period.". Does that mean I can start measurement period wit...	Yes. Rule 5.II.f says that your blade must already be spinning before the measurement period begins.
6.c.1	National FAQ: How far away from the support stand should the box fan be placed?	Rule 5.II.e. allows teams to reposition the support stand during the testing period, so teams may choose the distance to be whatever they like.

Rule	Question	Response
3.12	National FAQ: Is it possible there will be additional materials presented for the "do it" portion of the event that are not part of the "write it" materials.	Yes. Provided materials are at the discretion of the event supervisor.
3.c	Are striking out whole paragraphs, using inserts such as "^", or inserting a paragraph by using arrows allowed?	Yes, these would be allowed as "Editing, punctuation, or scientific symbols that fit within the context of the written description are allowed."
3.c.1	Can the writer write something exactly as it appears on the object? For example if the object it has the word hi the giant letter, can you write on your paper hi in the size that it appears on the object.	No, this is not allowed