

## 2019 National *You Be The Chemist* Challenge® Format

All National Challenge participants and attendees must review and comply with the Chemical Educational Foundation's® (CEF) 2019 National Challenge Format and 2019 National Challenge Official Rules.

### A. Competition Format

1. The structure of the competition, including the rounds, number of participants, and questions per round, is as follows:

| Round  | Number of Participants | Number of Questions per Round |
|--|------------------------|-------------------------------|
| Preliminary Rounds 1-3                                   | 42                     | 10                            |
| <i>—Top 15 participants announced after lunch break—</i> |                        |                               |
| Intermediate Rounds 1-3                                  | 15                     | 6                             |
| Quarterfinal Round                                       | 4                      | 6                             |
| Semifinal Round  | 3                      | 6                             |
| Championship Round                                       | 2                      | 6                             |

**Please note:** National Challenge Judges and Officials appointed by CEF have the right to alter the competition format in the best interest of the competition at any point. Any alterations will be announced to the participants and audience as necessary.

2. Participants will be staged alphabetically by last name for all rounds unless otherwise determined by the Judges.
3. Participants will be provided a pencil, scrap paper, and CEF's competition version of the periodic table for all competition rounds. The periodic table includes both element names and atomic masses.
4. Participants will be able to view each multiple-choice question and its answer choices on a screen as the moderator reads the question and answer choices aloud. Question and answer choices with long equations, symbols, or images may not be read aloud in their entirety.
5. Question and answer choices will be read only once and will **not** be repeated unless requested by the Judges.
6. Participants will use an electronic response system to answer multiple-choice questions each round. After the moderator finishes reading the question and answer choices, participants will have 10 seconds (unless otherwise noted) to submit their answers. Participants may change their answers during the allotted time but will **not** be able to submit an answer after the 10 seconds have passed. If a participant does not submit an answer within the time limit, their answer will be considered incorrect. The correct answer will be shown and read aloud by the moderator after time expires.

7. The number of correct and incorrect answers for each participant will be recorded by the electronic response system. Participants receive one (1) point for each correct answer and zero (0) points for each incorrect or missing answer.
8. Before Preliminary Round 1, Intermediate Round 1, and the Quarterfinal Round, participants will test the electronic response system by answering a calibration question that will not count towards their total scores. If a participant's electronic device is not working properly, they must raise their hand immediately to notify the Judges before the start of the round.

### **B. Preliminary Rounds 1-3**

1. All participants will compete in all three Preliminary Rounds.
2. Participants will respond to questions using an electronic response device by pressing the multiple-choice letter that corresponds with their answer choice. If any participant experiences technical difficulties during these rounds, the Judges must be notified immediately.
3. After each Preliminary Round, Judges will address any participant appeals before moving on to the next round.
4. After Preliminary Round 3, the competition will break for lunch. During the break, the National Challenge Officials will determine the fifteen participants with the highest cumulative scores. These fifteen participants will be announced following the lunch break and will advance to Intermediate Round 1.
5. If there is a tie in cumulative scores that prevents the Officials from determining the fifteen participants with the highest cumulative scores, a Tiebreaker Round will take place before Intermediate Round 1 to determine which participants will advance in the competition. For more information on Tiebreaker Rounds, see section F.

### **C. Intermediate Rounds 1-3**

1. The fifteen participants with the highest cumulative scores will compete in the three Intermediate Rounds.
2. Participants will respond to questions using an electronic response device by pressing the multiple-choice letter that corresponds with their answer choice. If any participant experiences technical difficulties during these rounds, the Judges must be notified immediately.
3. After each Intermediate Round, Judges will address any participant appeals before moving on to the next round.
4. After Intermediate Round 3, the National Challenge Officials will determine the four participants with the highest cumulative scores. These four participants will be announced and will advance to the Quarterfinal Round.
5. If there is a tie in cumulative scores that prevents the Officials from determining the four participants with the highest cumulative scores, a Tiebreaker Round will take place before the Quarterfinal Round to determine which participants will advance in the competition. For more information about Tiebreaker Rounds, see section F.

**D. Quarterfinal Round and Semifinal Round**

1. The four participants with highest cumulative scores will participate in the Quarterfinal Round.
2. Participants will respond to questions using an electronic response device by pressing the multiple-choice letter that corresponds with their answer choice. If any participant experiences technical difficulties during these rounds, the participant must notify the Judges immediately.
3. After each question in the Quarterfinal and Semifinal Rounds, the participants' chosen answer will be revealed to the audience. The correct answer will then be revealed and read aloud by the moderator.
4. After each round, Judges will address any participant appeals before moving on to the next round.
5. At the end of the Quarterfinal Round and at the end of the Semifinal Round, the participant with the lowest score for that round, and that round only, will be eliminated. Officials will use the participants' cumulative scores only if there is a tie between the participants with the lowest scores at the end of the round.
  - a. If a tie in participants' cumulative scores at the end of the Quarterfinal Round or the Semifinal Round prevents the designated number of participants from being eliminated, those tied participants will enter a Tiebreaker Round to determine which participant will advance in the competition. For more information about Tiebreaker Rounds, see section F.
6. When the number of participants is narrowed to two, the Championship Round will begin.

**E. Championship Round**

1. The final two participants will participate in the Championship Round and answer six multiple-choice questions.
2. After each question in the Championship Round, the participants' chosen answer will be revealed to the audience. The correct answer will then be revealed and read aloud by the moderator.
3. After each round, Judges will address any participant appeals before moving on to the next round.

The participant who answers the most questions correctly out of the six Championship Round questions will be declared the 2019 National Challenge Champion.

- a. If both participants have the same number of correct answers at the end of the Championship Round, the participants will enter a Tiebreaker Round. When one participant answers a question incorrectly and the other participant answers the question correctly, the participant who answered the question correctly will be declared the National Challenge Champion. For more information about Tiebreaker Rounds, see section F.
- b. If all Tiebreaker Round questions are exhausted, the remaining two participants will be declared joint National Challenge Champions, and both will be awarded Championship prizes.

## F. Tiebreaker Rounds

1. A Tiebreaker Round will be used in each of the following situations:
  - a. Before Intermediate Round 1 and before the Quarterfinal Round, a Tiebreaker Round will be used if National Challenge Officials cannot determine which participants will advance based on cumulative scores.
  - b. Before the Semifinal Round and before the Championship Round, a Tiebreaker Round will be used if National Challenge Officials cannot determine which participants will advance, either based on scores for that round only or cumulative scores.
  - c. After the Championship Round, a Tiebreaker Round will be used if National Challenge Officials cannot determine a National Challenge Champion based on scores for that round only.
2. Participants in a Tiebreaker Round will respond to questions using the same response system format used in the round that preceded it.
3. Participants in a Tiebreaker Round will be given the same question to answer at the same time.
4. After each question in a Tiebreaker Round, the advancement of participants will be determined depending on the number of participants who answered the question correctly and the number of open positions in the next round, as described in the scenarios below:
  - a. If the number of participants who answered the question correctly is *equal* to the number of open positions in the next round, those participants who answered correctly will advance to the next round. Those participants who answered incorrectly will be eliminated.
  - b. If the number of participants who answered the question correctly is *fewer* than the number of open positions in the next round, those participants who answered correctly will advance to the next round. Those participants who answered incorrectly will be asked another question.
  - c. If the number of participants who answered the question correctly *exceeds* the number of open positions in the next round, those participants who answered correctly will be asked another question. Those participants who answered incorrectly will be eliminated.
5. Tiebreaker Rounds will continue until all open positions for the next round are filled.

## G. Competition Conclusion

1. If a Champion has not been declared by 5:00 p.m. (Eastern Time) and there are only two participants remaining in the competition, they will be declared joint National Challenge Champions and both will be awarded the Championship prize.
2. If there are more than two participants remaining in the competition at 5:00 p.m. (Eastern Time), and all competition questions have been exhausted, the Judges will tally the cumulative scores of the participants who remain to determine the results. The participants' scores and their resulting place in the competition will be determined based on the number of total correct answers throughout all competition rounds (excluding Tiebreaker Rounds). If the Judges determine that more than one participant has the same cumulative score throughout all rounds for the positions of 4<sup>th</sup> Place, 3<sup>rd</sup> Place, 2<sup>nd</sup> Place, and/or Champion, those participants will be declared joint 4<sup>th</sup> Place, 3<sup>rd</sup> Place, 2<sup>nd</sup> Place, and/or Champions, respectively, and will be awarded the prizes designated for that place.