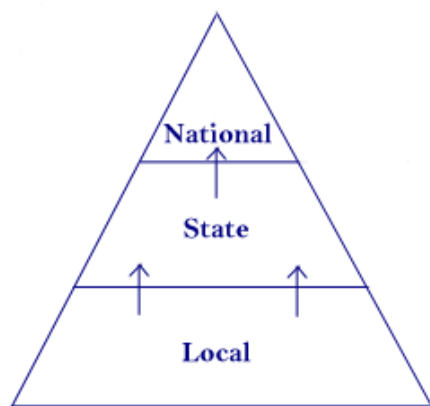


# ***YOU BE THE CHEMIST CHALLENGE GUIDELINES***

## **Preface**

The Chemical Educational Foundation (CEF) designed the *You Be The Chemist Challenge* (Challenge), a question-and-answer academic competition, to provide an entertaining and innovative way for 5-8<sup>th</sup> grade students to learn about chemistry.

The Challenge progresses through three levels: local, state, and national, with the organization beginning at the local level. Local competitions take place in communities across the country. The winning students from those competitions advance to a state competition, with state winners advancing to the National Challenge organized by CEF. Local and state competitions take place throughout the year, and the cycle ends with the national competition in June.



The following is CEF's suggested structure for the Challenge and is intended to assist in the organization of the Challenge at the local level.

CEF strongly encourages Local Challenge organizers (Organizers) to follow the format described below in order to establish a uniform structure for Challenges across the country; however, CEF appreciates the variations that can exist at the local level and, therefore, does not mandate this structure. If an Organizer believes his/her community will be served better by a variation to the suggested format, the Organizers must contact CEF to request approval of the suggested modifications prior to the registration deadline.

CEF will review any suggested modifications proposed by a particular Local Challenge site. (A Local Challenge site is a place where a Local Challenge is established with CEF's consent.) Prior to submitting any proposed modifications to the Local Challenge structure, CEF requests that Organizers review the following cautionary notes carefully:

- At the national level of the Challenge, CEF will devise and enforce the National Challenge Rules, and all competitors MUST comply. These rules will be controlled solely by CEF and its selected National Challenge judges.

- Any participant who does not meet all eligibility requirements will be ineligible for participation in State and National Challenges. Please see CEF's National Challenge Rules.
- At the state level of the Challenge, CEF will supply a recommended State Challenge format through the State Challenge Rules. Should organizers of a State Challenge wish to alter the format and rules for their State Challenge, they must confer with CEF. Each state's individual State Challenge Rules must be approved by CEF, and all competitors MUST comply.
- Organizers must present their Local Challenge Rules, highlighting any modifications to the suggested structure that have been approved by CEF, to all those participating in the Challenge prior to the competition.
- Other than approving Local Challenge structures, CEF has no authority over the conduct of Local Challenge competitions and will NOT render judgments relating to the conduct or outcomes of local competitions. Individuals having complaints or questions about Local Challenge competitions should register their concerns with the Organizer. Decisions of the Organizers are final.
- Challenge competition questions are to be used for competitions ONLY. Questions should not be distributed to students at any point for study purposes.
- Participation in the Challenge is voluntary. Organizers should ensure that the Challenge is a fun and entertaining experience for all involved.

## **Local Challenge Rules**

### **Participation Requirements (Sites):**

- All sites should meet the following requirements:
  1. In order to organize a Local Challenge site, Organizers should ensure the participation of at least 40 students (1-2 classrooms).
  2. Local Challenge sites should be organized according to county boundaries with the exception of the 20 largest U.S. cities (New York, Los Angeles, Chicago, etc.), which should be established as independent Local Challenge sites.

### **Participation Requirements (Student Participants):**

- All participants must satisfy all of the following requirements:
  1. Participation in Challenge competitions is open to all 5-8<sup>th</sup> grade students regardless of race, religion, creed, gender, or type of school one attends. Participation should NOT be contingent upon any other requirements such as membership in an organization, club, or other scholastic activity.
  2. Participants must not have passed beyond the eighth grade on or before April 1, 2009.

3. Participants must not reach the age of 15 on or before September 1, 2009.
4. Participants must enter State and National Challenge competitions in the same academic year that they qualified from their Local Challenge competition.
5. Once a participant has won the National Challenge, that participant is ineligible for future participation, other than within his or her own Local Challenge competition.

The Competition:

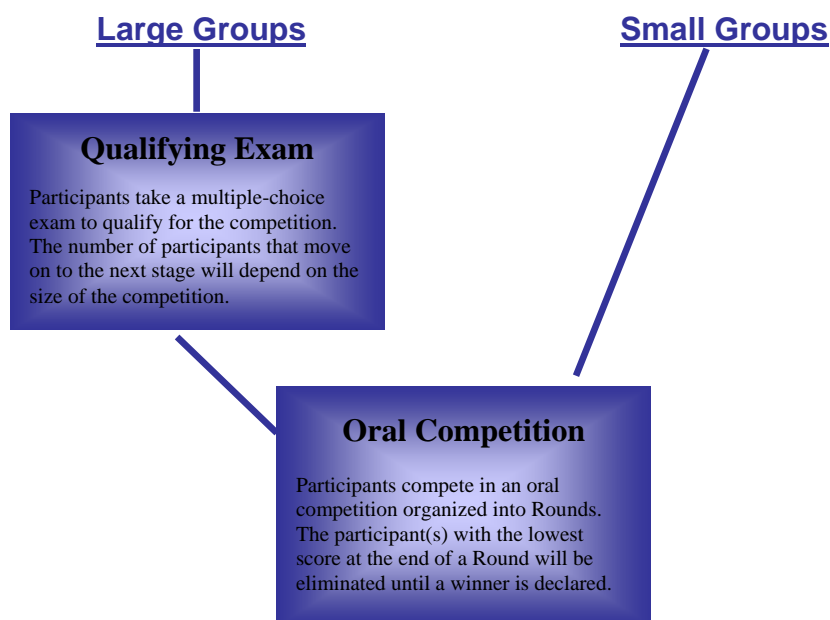
- **Judging:** Each local competition should utilize a panel of judges (Panel). CEF recommends that each Panel be structured and operate as follows:
  1. The Panel is comprised of judges. The Organizer of the Local Challenge should determine factors, such as numbers and composition of the Panel. One judge should be selected to act as a Head Judge or speaking judge. CEF recommends the number of judges be between three and five with at least one judge having a strong chemistry background, if possible.
  2. Judges and the Head Judge have the same responsibilities with the exception that the Head Judge will have the final decision on the accuracy of answers given, should the need arise, and explain any decisions made by the Panel. The Head Judge will also be responsible for reading an abbreviated version of the rules to the audience prior to the start of the competition.
  3. The Panel's comprehensive responsibilities are:
    - a. Review the relevant competition questions and study guide material prior to the competition.
    - b. Ensure compliance with all rules.
    - c. Listen to questions and answers for accuracy.
    - d. Record correct and incorrect answers for each participant.
    - e. Monitor time. (Each participant should receive 10-15 seconds per question, unless otherwise noted.)
    - f. Calculate and track total scores throughout the competition.
- **Moderating:** Moderators ask questions in the competition. The Organizer of the Local Challenge should be responsible for selecting moderators for their competition. CEF recommends the number of moderators be between one and three.
  1. Moderators will have the following responsibilities:
    - a. Review all relevant competition questions and rehearse reading those questions.
    - b. Read questions and all multiple-choice answers clearly.
    - c. Repeat questions as necessary (see Guideline 10 on Page 4).
    - d. State whether the participants' answers are correct or incorrect.
    - e. Read the correct answer.
    - f. Notify the audience of breaks in the competition, if applicable.

- **Curriculum and Questions**

1. CEF will provide all competition questions and answers to the Organizers for use in their competitions. Questions are not to be distributed to participants.
2. CEF provides the Challenge curriculum for each level in the form of a study guide (Study Guide). The Study Guide can be accessed on CEF's Web site, [www.chemed.org](http://www.chemed.org) and is supplied directly to Organizers for distribution, as appropriate, among their participants.
3. CEF recommends that Organizers notify participants as soon as the Study Guide is posted on the CEF Web site, so they may have ample time to prepare for the Challenge and further their knowledge and understanding of chemistry.
4. All questions and answers used in a Challenge are based on an understanding of the Study Guide material. Students participating in a Challenge competition are expected to understand the information contained in the Study Guide and be able to apply it to both familiar and unfamiliar situations.
5. Participants must compete with the questions supplied by CEF for that level of the competition and for that Challenge cycle. No other questions should be used during the competition. (A Challenge cycle will begin with each school year and end with the National Challenge in June.) Study materials and questions will vary based on the level of competition and from cycle to cycle.
6. Only answers contained in the curriculum supplied to the Organizers by CEF should be accepted as correct.
7. CEF will provide a written Qualifying Exam should it be needed (see Page 5).
8. CEF also provides additional questions (approximately 250-500 questions) for the local competitions (see Page 6). These additional questions may be used for oral competitions, such as Regional Challenges – a potential component of Local Challenges. The number of questions provided has been estimated as the number of questions needed to run a Local Challenge competition with 10-20 participants, depending upon the competition format chosen.
9. CEF will provide the competition questions to Organizers in a PowerPoint format and suggests that Organizers structure their competition to utilize this visual. CEF also recommends the use of an electronic response system to allow all participants to answer the same question during the competition; however, we realize the use of such a system may not be possible. Contact CEF for information about obtaining an electronic system.
10. If a Local Challenge competition takes the form of an oral competition, participants may ask to have the question repeated once.

- **Structure:** With respect to the varying circumstances and environments in which a Local Challenge could take place, the recommended structure (below) for local competitions is intentionally flexible. Due to the diversity of conditions, such as school size, area demographics, wishes of local communities, and sponsor participation, altering the suggested structure may be required but must be approved by CEF.

CEF recommends the following framework for Local Challenge competitions:



1. **Qualifying Exam:** If a large number of participants wish to compete, CEF recommends administering a Qualifying Exam. The Qualifying Exam should take place at a public venue to ensure all participants (i.e. home schooled, private school) are given an equal opportunity to compete.
  - a. Participants will take a timed (60-minute) exam in the form of 100 multiple-choice questions in order to qualify for the competition. The questions and answers for the exam will be supplied to the Organizers by CEF.
  - b. A Study Guide shall be supplied to the Organizers should their Challenge site choose to administer this prior to the exam. The Study Guide will consist of three levels of information, basic, intermediate, and advanced to correspond with the three levels of competition.
  - c. The comprehensive Study Guide will be available to all participants via the CEF Web site. CEF recommends that Organizers distribute only the relevant “basic” sections of the study guide, covering general chemistry information, for their Local Challenges. However, Organizers should also

note that the complete Study Guide is available on the CEF Web site for those students who wish to explore chemistry further.

- d. Questions from the Qualifying Exam and potential regional competitions will be derived from an understanding of the basic-level Study Guide material. The Organizer is responsible for determining who should administer and grade the Qualifying Exam and how it should be graded. Scores should be determined based on the answers provided by CEF.
2. **Oral Competition:** For smaller Local Challenge sites, where the Qualifying Exam is not necessary to narrow the number of participants, CEF recommends utilizing the oral competition format for their Local Challenge. For larger Local Challenge sites that require an additional component to determine the local winner (often called a Regional Challenge), CEF recommends that the Qualifying Exam is utilized to determine the Regional Challenge participants, who will compete in an oral format.
- a. **Oral Competition (no electronic response system):** CEF recommends that 10-20 participants take part in an oral competition, whether they are identified from the written Qualifying Exam or are selected by some other means.
    - i. Once at the oral competition stage, Organizers should determine the order by which participants will answer questions (alphabetically, numbers drawn, etc.).
    - ii. Moderators should ask each participant four to six questions per Round in the order determined above. All participants will be asked and should attempt to answer the same number of questions. CEF recommends that competitions utilize the PowerPoint presentations containing the questions, so participants may read the questions as the moderators read the questions aloud. At the end of a Round, the participant(s) with the lowest score(s) will be eliminated from the competition. CEF recommends that two to four participants be eliminated per Round in the early Rounds. In later Rounds, the format can be adjusted so that only one participant is eliminated per Round.
    - iii. If any number of participants has the same lowest score, a tiebreaker or Lightning Round should be used to determine who is eliminated. For details regarding the tiebreakers and Lightning Rounds, please see the National Challenge Rules.
  - b. **Oral Competition (utilizing an electronic response system):** If an electronic response system is available, a much larger number of participants can be accommodated in an oral competition.

- i. Once at the oral competition stage, Organizers should identify which participant will be using which response card to ensure that answers are recorded correctly.
  - ii. Moderators ask all participants 8-15 questions per Round. All participants will be asked and should attempt to answer each question in the Round using their response card. Such competitions should utilize the PowerPoint presentations integrated with the appropriate electronic response system to facilitate the use of the system and to allow participants to read the questions as the moderators read the questions aloud. At the end of the Round, the participant(s) with the lowest score(s) will be eliminated from the competition. CEF recommends that three to five participants be eliminated per Round in the early Rounds. In later rounds, the format can be adjusted so that only one participant is eliminated per Round. Organizers may also choose to modify the format for later Rounds (Semi-final Rounds), and use the Oral Competition format in the Challenge framework guideline 2 on Page 6.
  - iii. If any number of participants has the same lowest score, a tiebreaker or Lightning Round should be used to determine who is eliminated. For details regarding tiebreakers and Lightning Rounds, please see the National Challenge Rules.
3. ***Determining the Winners:*** When the number of participants is narrowed to two (2), the Final Round begins to determine the winner.
  - a. CEF recommends that each participant be asked three questions, in turn (See National Challenge Rules). The participant that has answered the most questions correctly at the end of a set of three questions will be declared the winner. If both participants answer the same number of questions correctly at the end of a set of three questions, the Final Round will continue, and they will be asked another set of three questions.
  - b. Each Local Challenge (which includes a potential Regional Challenge) will produce a winner, first runner-up, and alternate. The winner and first runner-up (unless otherwise specified for that state) will participate in the State Challenge, if required. The alternate will participate if the winner or first runner-up is unable to compete.

## **State Challenges**

If more than one Local Challenge site is established within a state, a State Challenge must take place. The Organizer (or another designated representative) from each Local Challenge site within a state must participate in the organization of the State Challenge. Organizers can review the Local Challenge site list on the CEF Web site or contact the CEF staff to determine if their

state requires a State Challenge. As many sites may be in progress, a CEF staff person will contact all Organizers once registrations are received to inform them of their state's status.

Organizers should be sure that their Local Challenge winners have access to the necessary State Challenge materials (their State Challenge rules, study materials, etc.). If a State Challenge is not required in a particular state, the Local Challenge winner will advance directly to the National Challenge as the state representative. Therefore, the Organizer should be sure that the participant receives the necessary State and National Challenge information (rules, study materials, etc.). The majority of National Challenge preparation materials will be supplied to participants directly by CEF. Organizers should contact CEF with any questions about what materials should be supplied to their participants.