



9th INTERNATIONAL
CHEMISTRY
TOURNAMENT

Korean Minjok
Leadership Academy,
Republic of Korea
15-19 August 2026



International Chemistry Tournament

9th Edition

RULES

August 15-19, 2026

Korean Minjok Leadership Academy, Republic of Korea

<https://ichto2026.com/>



세원인재육성문화재단





Part 1. General Considerations

- 1.1. The International Chemistry Tournament (IChTo or Tournament) is a team competition that consists of solving open-ended scientific problems, presenting the solutions to these problems, and defending them in scientific debates.
- 1.2. The aims of IChTo are the popularisation of chemistry, teamwork training, and the development of presentation skills.
- 1.3. The working language of IChTo is English, and speaking to others respectfully and with manners is mandatory.
- 1.4. Each participating country can register up to 2 teams to take part in the competition. However, the host country can register up to 3 teams.
- 1.5. Teams are composed of 4 to 6 students representing the same country. Students are permitted to represent a country of their choice. The participating students must be enrolled in a high school at the time of the registration, and they must not have graduated from high school more than four months before the intended date of the competition. Students who have graduated over four months prior or have more than three months enrolled in a university cannot participate in the competition. The organising committee reserves the right to request proof of studies.
- 1.6. A jury member is required to have at least a bachelor's degree (or higher) in chemistry or a related field. In addition, former IChTo / IChO / IMChO participants can also be jury members before acquiring their degrees, as long as they are studying chemistry or a related field.
- 1.7. A jury member must not be involved in any way with the training process of any of the participating teams in the competition.
- 1.8. The 9th International Chemistry Tournament will be held in Hoengseong, Republic of Korea, between the 15th and 19th of August 2026.
- 1.9. If the number of the registered teams exceeds 20, the Organising Committee may arrange additional rounds of selection.
- 1.10. During the Stages of the Tournament, participants are not allowed to use electronic devices apart from calculators. Teams are allowed to use one laptop or tablet per team to show their presentations (and to prepare the presentation of the Reviewer). Using the Internet is strictly prohibited on each electronic device. Breaking this rule first leads to a warning and then to a penalty of 30% of the TPs of the team for that round.
- 1.11. Participants are allowed to use mechanical watches, quartz watches, and stopwatches to measure time, however, they are not allowed to use smartwatches and phones. A clock well visible to every participant should be present in each Section.
- 1.12. Only Organizers are allowed to record the Stages. Team leaders are allowed to take pictures during the rounds.



Part 2. Definitions

2.1. The structure of the contest:

- 2.1.1. Section – The entirety of three or four teams, Jury members, and a Moderator participating in the Tournament together in the same room.
- 2.1.2. Round – The period of time starting with the challenge of the Reporter team to present a problem, ending with the announcement of the Grades to the Reporter, the Opponent, and the Reviewer, followed by an informal verbal evaluation by the Jury.
- 2.1.3. Stage – The sequence of challenges in a Section, where each team takes turns as Reporter, Opponent, Reviewer, and potentially Observer.
- 2.1.4. Semi-final Stages – Stages used for the selection of the finalist teams.
- 2.1.5. Final Stage – The last Stage, which decides the winning team of IChTo.

2.2. Participants and roles:

- 2.2.1. Delegation – A group comprised of a team of students and the teacher(s) accompanying them. A delegation may include more than one teacher other than the team leader, provided that all of them paid the registration fee.
- 2.2.2. Active participant - a participant taking the role of Reporter, Opponent or Reviewer in a round.
- 2.2.3. Captain – A team member who represents their team, challenges other teams, nominates the active participant of their team, calls for a time out and performs other actions on behalf of their team.
- 2.2.4. Reporter – A team member nominated by the team captain who presents a solution to the given problem.
- 2.2.5. Opponent – A team member nominated by the team captain who finds weaknesses and gaps in the solution presented by the Reporter of a competing team and criticizes the ideas, pointing out possible inaccuracies and errors in the understanding of the problem and the solution.
- 2.2.6. Reviewer – A team member nominated by the team captain who presents a short evaluation of both the Reporter and the Opponent, furthermore, draws a conclusion of the debate.
- 2.2.7. Observer – A team that may only participate in the general discussion.
- 2.2.8. Team leader – A teacher who coaches a team, leads the delegation associated with the team, and provides professional and personal support to the students.
- 2.2.9. Moderator – A person who announces every Round in a Section, moderates discussions during all Stages, has the right to decline inappropriate questions from the participants or Jury members and announces the marks given by the Jury at the end of a Round.
- 2.2.10. Jury – Professionals who ask questions from the participants and evaluate the Reporter, the Opponent, and the Reviewer.



- 2.2.11. Jury Head - A member of the Jury, designated after a discussion between the Jury members (if an agreement is not achieved, the organizers can make the decision), that has the right to decline inappropriate questions from the participants or other Jury members and verbally evaluates the performance of the participants.

2.3. The debates:

- 2.3.1. Tactical refusal - a refusal of the problem challenged by the opponent team that applies only to the current round.
- 2.3.2. Strategic refusal - a refusal of the problem challenged by the opponent team that applies for the rest of the competition (none of the teams can challenge the problem that was refused strategically in that stage or in the following stages).
- 2.3.3. Time-out - a 60 second break during which all the active participants (reporter, opponent, reviewer) are allowed to communicate with their teams.

2.4. Marks:

- 2.4.1. Grade – A mark given by a member of the Jury.
- 2.4.2. Technical Points (TPs) – Points serving for more accurate evaluation of the participants.
- 2.4.3. Rating Points (RPs) – A final score, which is the result of the conversion of TPs, taking into account the relative positions of the teams in their Sections.



Part 3. Grouping of Teams

- 3.1. The Tournament is held in 4 Semi-final Stages and 1 Final Stage.
- 3.2. Before the first Stage, a team contest (Quiz) is held. The participating teams are assigned a number from the first to the last, according to their results in the Quiz.
- 3.3. For the first semifinal stage, the teams are grouped based on the ranking of the teams, according to the results obtained in the Quiz.
- 3.4. The teams are grouped in the remaining semifinal stages based on the ranking of the teams, according to the sum of the RPs obtained in the previous semifinal stages. If teams have equal RPs, the order between them will be determined by their respective TPs. If teams have the same TPs, the ordering is done according to the sum of TPs earned by them as Reporter. For all the semifinal stages except the third, teams are distributed into sections in a way that ensures an assortment of higher-ranked and lower-ranked teams in each section. During the third stage, teams of similar ranking compete against each other in each section. Appendix 1 describes the rules of grouping in greater detail.

Part 4. Rules of the Semi-final Stages

- 4.1. The moderator manages the stage for each of the actions described in this part.
- 4.2. There must be at least five Jury members in each Section.
- 4.3. In the first Round of each Section the teams must decide:
 - a) The order in which they will select their roles for the Section. The highest-ranking team decides first, followed by other teams in descending order of rank.
 - b) After the order of choosing is established, the teams will further choose their roles for the first Round in that order (see the scheme below).

For a Section of 4 teams:

Round number	Team A	Team B	Team C	Team D
1	Opponent	Observer	Reviewer	Reporter
2	Observer	Reviewer	Reporter	Opponent
3	Reviewer	Reporter	Opponent	Observer
4	Reporter	Opponent	Observer	Reviewer

For a Section of 3 teams:

Round number	Team A	Team B	Team C
1	Opponent	Reviewer	Reporter
2	Reviewer	Reporter	Opponent
3	Reporter	Opponent	Reviewer



4.4. The standard course of a Round follows the scheme below:

Part of the Round	Max. time (minutes)
The Captain of the Opponent team announces the number of the problem that they intend to challenge the Reporter team with.	1
The Reporter team accepts or declines the challenge.	1
Repeating the challenge if necessary (see Point 4.5.).	2
Announcement of the Reporter's name.	1
Announcement of the Opponent's name.	1
Report (strictly monologue).	8
Preparation of the Opponent.	1
Opposition (strictly monologue).	5
Reporter's response (strictly monologue).	4
Academic discussion between the Reporter and the Opponent.	5
Announcement of the Reviewer's name.	1
Review (strictly monologue).	3
Jury's questions.	5
General discussion between the active participants and the audience.	5
Evaluation by the Jury (writing down the Grades).	2
Announcement of Grades.	2
Short verbal evaluation of each participant's performance and areas of improvement, carried out by the Head of the Jury (for educational purposes)	5
Spare time (may be added by the Moderator)	3
TOTAL	55

4.5. Procedure for accepting or declining a challenge:

- 4.5.1. After the Reporter team is challenged with a problem, the Captain of the Reporter team decides to accept or reject the challenge. In case of accepting the challenge, the Captain of the Reporter team must announce the name of the Reporter. In case of rejecting it, the Captain of the Reporter team announces whether the refusal is 'strategic' or 'tactical'. If the Captain does not indicate that the refusal is strategic, the refusal is considered to be tactical.
- 4.5.2 Teams can only ask for one strategic refusal per stage. A total of three strategic refusals is allowed for each team throughout all semifinal stages.



- 4.5.3. A team can reject three challenges in a Round without any repercussions. If the Reporter team refuses to accept the next challenge after the third rejection in the Round, the total number of TPs for the Reporter in the given Round is multiplied by a penalty factor according to the following table:

Number of rejections	4	5	6	7	8 or more
Factor	0.8	0.7	0.6	0.5	0.4

- 4.6. The Opponent team cannot challenge the Reporter team with the following problems:
- 4.6.1. Which the Reporter team already rejected in the current Stage;
 - 4.6.2. Which the Reporter team strategically rejected in previous stages;
 - 4.6.3. Which was already reported in the current Stage;
 - 4.6.4. Which the Reporter team has reported in previous Stages;
 - 4.6.5. Which the Opponent team has opposed in previous Stages.
- 4.7. If it turns out that the Opponent team cannot challenge the Reporter team due to the regulations of Points 4.6.1. to 4.6.5, then Points 4.6.3. and 4.6.5. are temporarily lifted for that Round.
- 4.8. Each participating student may take the role of Reporter, Opponent, and Reviewer only once for each role during the Semi-finals. If a participant breaks this rule, the total number of TPs for additional roles is multiplied by a factor of 0.5 as a penalty.
- 4.9. Team leaders are strictly prohibited from communicating with their teams during the Rounds. Such cases are penalised with 30% of the team's TPs for that Round.
- 4.10. The active participants cannot communicate with their teams from the moment they started their role until the end of the Round, apart from the time-out. Breaking this rule first leads to a warning and then to a penalty of 30% of the TPs of the team for that round.
- 4.11. Team Captains (apart from that of the observer team) may announce a 60-second-long time-out, which is limited to one per stage and per team, and it must be requested strictly before the Jury's questions. A time-out can only be announced in the intervals between the different parts of the Round, or during the academic discussion between the Reporter and the Opponent. A time-out can only be announced by the captain of the Team whose member is an active participant in the given part of the Round. The time-out applies to all teams in the Section.
- 4.12. The only file that the Reporter (and the Reviewer) is allowed to use during their presentation is their slide show presentation, in the form of a single file. The Reporter (and the Reviewer) is not allowed to open other files or windows that are not part of their presentation.
- 4.13. The jury can ask questions to any active participant. The Jury Head or the Moderator can refuse questions that are deemed disrespectful or not related to the problem. If the Jury Head and the Moderator disagree, the Jury Head can make the decision.
- 4.14. In the general discussion, each active team can only ask one question. Afterwards, the observers can ask questions to any active participant. If the observers do not have any more questions or if there is no observer team, the Jury is allowed to ask further questions, and then, the other persons in the audience. The Jury Head or the Moderator can refuse questions that are deemed disrespectful or not related to the problem. If the Jury Head and the Moderator disagree, the Jury Head can make the decision.



Part 5. The Rules of the Final Stage

- 5.1. After the fourth Stage, the three teams with the highest sum of RPs take part in the Final Stage. If teams have equal RPs, the order between them will be determined by their respective TPs. If teams have the same TPs, the ordering is done according to the number of TPs earned by them as Reporter.
- 5.2. The same procedure for choosing the roles as in the semifinal stages is followed.
- 5.3. In the Final Stage, teams themselves choose which problem they intend to report, but it cannot be a problem they already reported in the semi-finals.
- 5.4. In the Final Stage, it is not allowed to report the same problem more than once.
- 5.5. Each participant may only take one active role in the Final Stage, otherwise a penalty of 50% of TPs for that round is applied. A participant might take the same active role in the Final Stage that they had taken before in the Semi-final Stages.

Part 6. Marking scheme

6.1. Grades awarded by the jury members

- 6.1.1. The Jury members must write down the Grades before their announcement. It is not possible to change the grades after their announcement. Each jury member announces the grade for a team member at the request of the moderator using a scorecard indicating the grade visible for the entire room.
- 6.1.2. For each round, each jury member must award the following grades:
 - Reporter – two grades - for scientific and presentational parts, respectively
 - Opponent
 - Reviewer
- 6.1.3. The possible Grades that are awarded by the Jury members are 2, 3-, 3, 3+, 4-, 4, 4+, 5-, 5 and 5+. The highest Grade is 5+, the lowest is 2.
- 6.1.4. Each of the grades are awarded based on three main criteria, summarised below:



Reporter – Scientific part

Grade	Solution model	Correctness and completeness	Originality
5	The reporter interpreted the problem accurately, without oversimplifying, and followed a methodological framework suited to the problem.	The solution is scientifically correct, feasible, and supported with sufficient information for all aspects of the problem criteria.	The solution contains novel ideas, procedures, or demonstrations, builds on existing ideas from the literature, or applies a creative approach to solve the problem.
4	The solution is characterised by some issues, significantly violating at least one of the three main criteria.		
3	The solution is characterised by serious issues, significantly violating at least two of the three main criteria.		
2	The solution is severely inadequate, significantly violating all three main criteria.		

Reporter – Presentational part

Grade	Understandability of the reporter	Quality of the presentation	Debate skills
5	The reporter organised their solution in a clear and understandable way, with appropriate speech and presentational style.	The presentation was legible, well-organised, and presented in a good-looking form.	The reporter conveyed their arguments in a convincing manner, and demonstrated strong oratory skills.
4	The reporter's presentational style is characterised by some issues, significantly violating at least one of the three main criteria.		
3	The reporter's presentational style is characterised by serious issues, significantly violating at least two of the three main criteria.		
2	The reporter's presentational style is severely inadequate, significantly violating all three main criteria.		



Opponent:

Grade	Relevance	Scientific correctness	Debate skills
5	The opponent identified the most crucial and relevant issues, justified their importance, and prioritised their questions accordingly	The points made by the opponent were predominantly correct, and demonstrated good scientific knowledge.	The opposition was well-structured, convincing and demonstrated strong oratory skills.
4	The opposition is characterised by some issues, significantly violating at least one of the three main criteria.		
3	The opposition is characterised by serious issues, significantly violating at least two of the three main criteria.		
2	The opposition is severely inadequate, significantly violating all three main criteria.		

Reviewer:

Grade	Report reviewing	Opposition reviewing	Conclusion
5	The reviewer evaluated the performance of the reporter correctly, finding the key strengths and weaknesses of it.	The reviewer evaluated the performance of the opponent correctly, finding the key strengths and weaknesses of it.	The conclusion made by the reviewer was clear, concise, and meaningful, thus providing a correct summary of the round.
4	The review is characterised by some issues, significantly violating at least one of the three main criteria.		
3	The review is characterised by serious issues, significantly violating at least two of the three main criteria.		
2	The review is severely inadequate, significantly violating all three main criteria.		



Note: A more detailed explanation of each criterion and the grading schemes that will be used in the competence are included in Appendix 2.

The base grades (2, 3, 4, 5) can be modified with the signs "+" and "-", in order to evaluate participants at a higher resolution. The sign "-" indicates that a performance was below a certain standard, but still close to achieving a particular grade. For instance, a "5-" means that a performance was closer to a 5 than to a 4, but was lacking in certain aspects, (e.g. less serious violation of one of the criteria). In the same way, the sign "+" indicates that a performance was slightly above the standard for a particular grade.

Because there are three different criteria contributing to each grade, all three of them may be fulfilled to a different extent, and violations to each could be considered with different weight. This way, jury members can fine-tune their grading with the plus/minus system. Finally, the grade "5+" is awarded by the Jury only for exceptionally great performances.

- 6.1.5. It is compulsory for the Jury to explain Grades 2 and 5+ if awarded.
- 6.1.6. Any active participant or team Captain has the right to ask for justifications for any grade awarded to them after the verbal evaluation made by the Jury Head.

6.2. Technical points (TPs)

- 6.2.1. 2 grades are discarded: the highest and the lowest grade. The remaining grades are recalculated to TPs according to the following scheme:

Grade	2	3-	3	3+	4-	4	4+	5-	5	5+
TPs	2	5	9	14	20	27	34	42	51	60

- 6.2.2. After each Round, the recalculated TPs are averaged across the remaining grades and rounded to two decimal places.
 - a) TPs for the Reporter and the Opponent are multiplied by a factor of 2.
 - b) TPs awarded for the reporter's scientific and presentational part are added together.
The maximum number of TPs that can be awarded to the Reporter is 240.
 - c) The maximum number of TPs that can be awarded to the Opponent is 120.
 - d) The maximum number of TPs that can be awarded to the Reviewer is 60.



6.3. Rating points (RPs)

6.3.1. After the end of the Stage, the TPs awarded for the Report, Opposition, and the Review are summed up for each team. Next, RPs of the teams are calculated separately for each section according to the following formula and rounded to two decimal places:

$$RPs = \frac{TPs}{105} + F(\Delta_1) + F(\Delta_2)$$
$$F(\Delta_x) = \begin{cases} 1, for \Delta_x < 10 \\ \frac{30-\Delta_x}{20}, for 10 \leq \Delta_x \leq 30 \\ 0, for \Delta_x > 30 \end{cases}$$

where:

RPs - rating points (range: 0 - 6)

TPs - technical points (range: 0 - 420)

Δ_1 - difference between the TPs of the considered team and the TPs of the first ranked team (first place means $\Delta_1 = 0$)

Δ_2 - difference between the TPs of the considered team and the TPs of the second ranked team (first or second place means $\Delta_2 = 0$)

The RPs scale a team's TPs between 0-4, and their relative placement within their section between 0-2, thus allowing for a more balanced comparison of performances across sections.



Part 7. Determination of The Winner and Laureates

- 7.1. The teams having the highest sum of RPs are awarded diplomas of winner and laureates of 1st, 2nd, and 3rd class.
- 7.2. Diploma of 1st place is only given to one team having the most TPs in the Final Stage. If 2 or 3 teams have the same TPs then the final order is determined based on the potential TP differences in the following order: TPs for the Report in the Final Stage, TPs for the Opposition in the Final Stage, TPs in Semi-final Stages, TPs for Reports in Semi-final Stages, TPs for Oppositions in Semi-final Stages, the team's rank in the Quiz.
- 7.3. Second and third places are similarly determined by the Final Stage as it is written in Part 7 Point 2. The ranks of the teams (from fourth to the last) are determined by the sum of RPs. If teams have the same RPs then the final order is determined based on the potential TPs differences in the following order: TPs in Semi-final Stages, TPs for Reports, TPs for Oppositions, and the team's rank in the Quiz.
- 7.4. The maximum number of laureates cannot exceed 45% of the teams (rounded to the nearest integer) but should not be less than 3.
- 7.5. Individual participants can be awarded personal diplomas based on their total achieved TPs. Individual participants can also be awarded special prizes.

Part 8. Final Statements

- 8.1. Any questions and suggestions should be sent to ichtokorea@gmail.com or info@ichto.org
- 8.2. The organizing committee can change any part of these rules before August 15th, 2026. After that day, some changes may still apply but only with the agreement of the majority of the team leaders.
- 8.3. The result of the Tournament must be published on the official site of the Tournament – ichto.org – no longer than 3 days after the Tournament.



Appendix 1 - Grouping of teams

For the first, second and fourth semifinal stages:

	Number of teams				
	7	8	9	10	11
1 st Section	1, 3, 5, 7	1, 3, 5, 7	1, 4, 7	1, 4, 7, 10	1, 4, 7, 10
2 nd Section	2, 4, 6	2, 4, 6, 8	2, 5, 8	2, 5, 8	2, 5, 8, 11
3 rd Section	-	-	3, 6, 9	3, 6, 9	3, 6, 9

	Number of teams				
	12	13	14	15	16
1 st Section	1, 5, 9	1, 5, 9, 13	1, 5, 9, 13	1, 5, 9, 13	1, 5, 9, 13
2 nd Section	2, 6, 10	2, 6, 10	2, 6, 10, 14	2, 6, 10, 14	2, 6, 10, 14
3 rd Section	3, 7, 11	3, 7, 11	3, 7, 11	3, 7, 11, 15	3, 7, 11, 15
4 th Section	4, 8, 12	4, 8, 12	4, 8, 12	4, 8, 12	4, 8, 12, 16

If the number of teams is different, the distribution of teams takes place in a similar manner.

For the third semifinal stage:

	Number of teams				
	7	8	9	10	11
1 st Section	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3	1, 2, 3, 4	1, 2, 3, 4
2 nd Section	5, 6, 7	5, 6, 7, 8	4, 5, 6	5, 6, 7	5, 6, 7, 8
3 rd Section	-	-	7, 8, 9	8, 9, 10	9, 10, 11

	Number of teams				
	12	13	14	15	16
1 st Section	1, 2, 3	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4
2 nd Section	4, 5, 6	5, 6, 7	5, 6, 7, 8	5, 6, 7, 8	5, 6, 7, 8
3 rd Section	7, 8, 9	8, 9, 10	9, 10, 11	9, 10, 11, 12	9, 10, 11, 12
4 th Section	10, 11, 12	11, 12, 13	12, 13, 14	13, 14, 15	13, 14, 15, 16



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Appendix 2 – Grading scheme and criteria

Reporter – Scientific part

Name of the team:

Stage:

Name of the participant:

Round:

Solution model

- Correct task interpretation
- No parts of task omitted
- Suitable methodological framework



Notes:

Correctness and completeness

- Individual elements of the solution are correct
- Elements come together into a coherent unit
- Complete scientific justification



Notes:

Originality

- Combination and adaptation of multiple sources
- Original contribution well-highlighted
- Novel contribution, creative approach



Notes:

Final grade

2	3-	3	3+	4-	4	4+	5-	5	5+
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No criteria
fulfilled

Exceptional
solution

Note: Please refer to the appendix of the rules for detailed description of each criterion.

Name of the Evaluator:

Signature:

Date:

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Reporter – Presentational part

Name of the team:

Stage:

Name of the participant:

Round:

Understandability of the reporter

- The solution is clearly given in the assigned time
- The speech has good pace, vocabulary and volume
- The solution is not over- or underexplained



Notes:

Quality of the presentation

- The presentation summarizes the key points
- Figures and data without too much text are included
- The slides clearly show the references



Notes:

Debate skills

- Adequate time management and arguments prioritization
- The reporter is convincing and has sound arguments
- The solution is defended accurately and sufficiently



Notes:

Final grade

2	3-	3	3+	4-	4	4+	5-	5	5+
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No criteria
fulfilled

Exceptional
solution

Note: Please refer to the
appendix of the rules for detailed
description of each criterion.

Name of the Evaluator:

Signature:

Date:

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Opponent

Name of the team:

Stage:

Name of the participant:

Round:

Relevance

- They found and exhausted the most relevant inconsistencies
- The points raised were logically justified
- The opponent prioritized arguments

Not fulfilled

Completely fulfilled

Notes:

Scientific correctness

- The opponent recognized important scientific mistakes
- The scientific explanation of the arguments was accurate
- The lack of relevant information was recognized

Not fulfilled

Completely fulfilled

Notes:

Debate skills

- They were understandable and had sound arguments
- Adequate time management and arguments prioritization
- The opponent was persuasive

Not fulfilled

Completely fulfilled

Notes:

Final grade

2	3-	3	3+	4-	4	4+	5-	5	5+
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No criteria
fulfilled

Exceptional
solution

Note: Please refer to the
appendix of the rules for detailed
description of each criterion.

Name of the Evaluator:

Signature:

Date:

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Reviewer

Name of the team:

Stage:

Name of the participant:

Round:

Report reviewing

- Included general and specific remarks, and their insight
- Found aspects in which the reporter excelled
- Highlighted the scientific errors and information gaps



Notes:

Opponent reviewing

- Clarified if the arguments were justified/correct
- Evaluated the rhetoric and discussion ability
- Included if the points were pursued enough



Notes:

Conclusion

- A 2-3 sentence long conclusion is included
- It is insightful on the quality of the solution and debate
- Contains indications of the reporter and opponent



Notes:

Final grade

2	3-	3	3+	4-	4	4+	5-	5	5+
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No criteria
fulfilled

Exceptional
solution

Note: Please refer to the appendix of the rules for detailed description of each criterion.

Name of the Evaluator:

Signature:

Date:

세원인재육성문화재단





1. Reporter (Scientific part)

Solution model

The *solution model* is the approach that the reporter outlines to solve the problem. It includes a number of logical steps, perhaps most importantly **correct interpretation of the problem description**. The reporter needs to **address the specific problem at hand, and they need to address all aspects of it**. Otherwise, if they solve a different problem or reduce the problem to a simpler version of it, it is not fair to compare it to more complete solutions by other reporters, and therefore, such solutions deserve much lower marks. Furthermore, this criterion also evaluates the particular **methodological framework** the reporter utilises. Description and justification of **the experimental strategies and techniques**, proper use of scientific literature and quantitative data, and a scientifically well-structured presentation can all contribute to this.

Correctness and completeness

Correctness and completeness refers to the **overall quality and feasibility of the solution from both a theoretical and a practical standpoint**. While the *solution model* evaluates the basis and plan of a reporter's solution, this criterion focuses more on **factual correctness and scientific consistency in execution**. For instance, a solution may be well-constructed overall and addresses the key criteria outlined by the problem description, it may also have a number of things it gets wrong, or has some important scientific information missing. A few examples:

- A reaction does not proceed under the outlined conditions
- Factual scientific errors (e.g. in reaction mechanisms and products)
- Yields are prohibitively low for the particular application
- The limit of detection of an analytical method is insufficient
- The purity of a sample is vastly overestimated
- Different parts of a solution are incompatible with each other (e.g. cross-reactivity)
- Lack of literature reference or independent work to support claims

In each case, the key point is that the reporter usually begins their argument from correct premises, but their solution **contains theoretical mistakes, certain statements might not be sufficiently supported**, or – when implemented in practice – **the ideas simply do not work as well as expected**. This is arguably the most difficult criterion to fulfil.

Originality

This criterion is quite subjective, as originality can be difficult to define, and can vary substantially between different problems. Naturally, we do not expect students to carry out entirely novel, publishable experimental work, however, the solution has to **contain original ideas or apply existing knowledge to novel situations**. The use of scientific literature and experimental data is preferable in this competition, however, a solution which describes in its entirety the work of someone else cannot be considered original. Several things can contribute to an original solution, including (but not limited to) interpretation of published works and application of them in a different context, tailored to the particular solution at hand, **combination of multiple different works, designing a tool or apparatus specifically for a problem, and performing calculations, computational simulations or experiments to support a solution**. The **distinction between original contributions and information from cited references** should always be abundantly clear.



2. Reporter (Scientific part)

Understandability of the reporter

Understandability refers to the reporter's ability to **clearly communicate their solution**. This mainly refers to the speech of the reporter. The language of the tournament is English, therefore all information said and presented has to be in English. The participant should not be discriminated on the basis of fluency, as long as the speech they deliver is **generally audible and understandable, is at a comfortable pace** (neither too quick nor too slow), and their **vocabulary is sufficient** to express the ideas of the solution. However, if shortcomings in any of these hinder understanding, marks should be deducted. Furthermore, *understandability* can also mean that the **string of ideas and arguments** is constructed in such a way that it **facilitates quick and easy understanding**. This way, **nothing is over- or underexplained, and the speech is well-structured**.

If the reporter runs out of time and cannot finish their report within the allocated 8 minutes, the solution may also become less understandable. **This can be penalised** in the presentational part as well as in the scientific part, if the solution was incomplete due to the inefficient use of time.

Quality of the presentation

The presentation mainly means **the slides used to describe the solution** during the 8-minute report. A high-quality presentation **summarises the key points of the solution in a clear and succinct manner**, and supports it with **relevant figures and data**. Common mistakes include too much text or data on a single slide, insufficient time spent on a slide, unintuitive data presentation, and inconvenient ordering of information, all of which make understanding the solution more difficult. Generally, **the slides should complement the speech, and they should be organised and intuitively designed to facilitate efficient conveyance of information**, with a balanced assortment of images, text, and data appropriate to the particular situation. Aesthetics can play a role in this, but it is important to remember that **an aesthetically designed slideshow is not necessarily an informative one**. Finally, the **slides should always clearly include references** to information from the literature.

Debate skills

The final criterion for the reporter emphasises the necessity of rhetorics and debating skills. High oratory marks can be awarded to a reporter who is **highly convincing and uses sound arguments to support their points**. **Defending a solution well against questions** from the opponent and jury is essential, and in this, strong emphasis is placed on **accurately and sufficiently addressing the points raised**. **Dodging questions or misrepresenting them is undesirable**. A good reporter is not disheartened by uncomfortable questions, and can respond in a confident and convincing manner. However, confidence should not be confused with aggression, which is to be avoided. **Appropriate prioritisation of questions and strong time management skills are also essential** for a high grade (i.e. trying to address as many questions as possible, while also placing more emphasis on the most crucial ones).



3. Opponent

Relevance

The opponent's main objective is to find issues to raise in connection with the reporter's solution. These arguments and questions could be evaluated based on two main criteria: Relevance and Scientific correctness. By relevance we mean that the opposition **found the most problematic parts of the report, and explored these topics thoroughly enough** during the monologue and the discussion. For instance, pointing out a severe misinterpretation of the problem criteria, finding a criterion which was entirely overlooked by the reporter, and identifying major factual errors in the reporter's solution all contribute to a high grade. In contrast, if the opponent raises irrelevant points and/or discusses alternative solutions instead of the one proposed by the reporter, marks should be deducted. In addition, the important issues not only have to be raised by the opponent, they also **need to justify them in detail, explaining why they consider something a mistake, and why this is important**. Finally, while an opponent can (and should) find a wide range of topics to discuss, they also need to **prioritize these correctly according to their relevance, explicitly highlighting the most pressing issues**, and if appropriate, following them up during the debate.

Scientific correctness

The other key aspect of a great opposition is scientific correctness, meaning that the opponent not only found relevant questions, but also **demonstrated a high level of scientific knowledge, mainly focusing on scientific aspects of the report**. While calling attention to issues with the presentational style is completely valid (e.g. pointing out the lack of references on slides, any figures that were difficult to read, or equally, indicating that the speech was difficult to follow), in the context of an opposition this is generally less important, unless it hinders understanding of the scientific content (which also should be pointed out, if it is the case). The opponent's primary goal is **to find scientific mistakes in the report, and to recognise any missing information which would be instrumental to the solution**. Opponents should be carefully evaluated both their **implicit scientific knowledge (required to recognise the importance of a particular question)**, and their **more explicit scientific explanations**. Jury members should also consider the context of an opposition when selecting an appropriate grade, since an exceptionally strong report requires the opponent to adapt their style and approach slightly, focusing more on clarifying questions and additional supporting data.

Debate skills

Most of the points made for the reporter's presentational part also apply here, including understandability as well as the oratory aspects. A credible opponent must **structure their arguments well, and allocate their time wisely between the different questions**. High marks are awarded for opponents that present **with understandable speech, confidence, and high convincing power**. However, confidence should never be confused with aggressiveness. It can be difficult to raise issues in a polite manner, but opponents should not be too polite either, and state clearly if they found major mistakes in the solution, or if they think that some of the criteria are not fulfilled at all (in which case this should be the most important part/statement of their opposition monologue). Finally, during the academic discussion, it is desirable for the opponent **to pay close attention to the arguments and responses of the reporter, and react accordingly**, which forms the foundation of a productive discussion.



4. Reviewer

Report reviewing

The reviewer's first task is to accurately evaluate the performance of the reporter. This includes both the report itself, and the subsequent responses to the opponent and jury. In a way, the reviewer supports the work of jury members by **finding the aspects in which the reporter excelled**, while also **highlighting any mistakes and missing information**. By no means should a reviewer behave like a second opponent, but where relevant, it is essential to make note of serious shortcomings. There are a number of different approaches to reviewing, but all reviews should strike a fine balance between **general remarks** (e.g. slides were clear / the solution utilises and builds upon the findings of current scientific literature / the speech was perhaps too quick and not well articulated), and **specific points related to the particular solution presented**. A review is not simply a list of what was said in the debate, but it must include the **own evaluation and value statements of the reviewer**. Specific points can be used both to describe the reporter's solution itself and to demonstrate and justify general remarks made earlier with an example. In general, the reviewer should always keep a close eye on the marking criteria outlined for the reporter, and make their own evaluation and conclusions based on them.

Opposition reviewing

In case of the opponent's evaluation, much of the same criteria apply as before with the reporter. The reviewer **should explore the variety of questions the opponent posed**, and **say whether they were justified and correct**. In addition, just like with the reporter, the performance of the opponent also needs to be **evaluated on basis of their argumentation and rhetoric**. Naturally, the debate phase features both the reporter and opponent, and therefore evaluation of it can contribute to both criteria, but is perhaps structurally more relevant for the review of opposition. **Identifying key clash points** can be useful, and an opinion on whether the opponent pursued some of the points they made to a sufficient degree is also appreciated.

Conclusion

Finally, the reviewer needs to make a conclusion about the round. This generally **should not be longer than two or three sentences**, as the jury is looking for a short and insightful summary. The phrase '**insightful**' is highly emphasised here, as many reviewers towards the end of their performance (and indeed their allocated 3 minutes) tend to make quite bland and general conclusions. The conclusion itself needs to **contain overall indications of each of the two participants' performance with respect to each other** (but not necessarily placing one above the other). **It is essential to form a conclusion in order to achieve a high review mark**, and reviewers who run out of time before they can start making one should be penalised accordingly. It also needs to be noted that it is not the task of a reviewer to suggest specific grades to the jury in their conclusion.

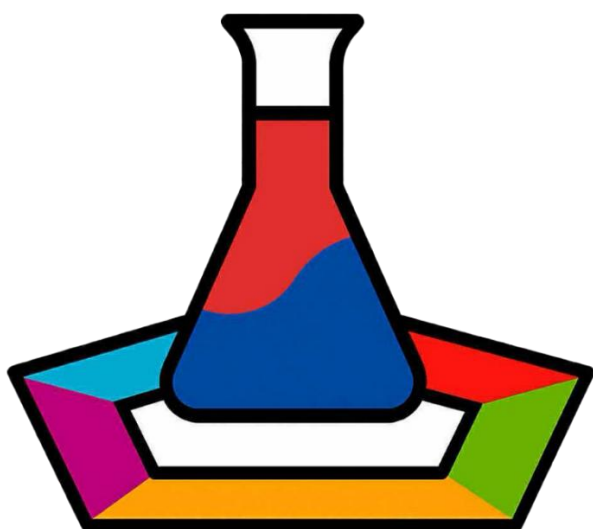
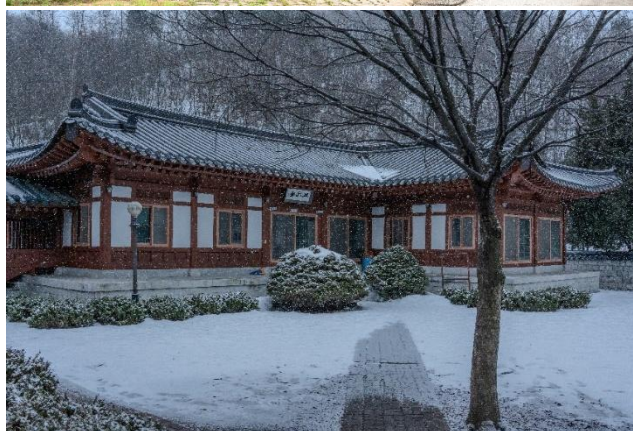
One other aspect which can contribute to all 3 review criteria (but is discussed here for convenience) is the **structure of the review monologue** and **relative amounts of time allocated to evaluating the reporter, opponent, and the debate**. In accordance with the amount of time and marks available to the reporter, they should be the ones to receive the majority of attention in a review. However, the opponent should not be ignored either, and an ample amount of time needs to be left to form the conclusion. The review is a short and time-sensitive role, therefore **giving a well-structured and balanced speech** is a challenging task.





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