# The Regulations of the International Young Naturalists' Tournament 2014

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# Chapter 1. General information

## I. Young Naturalists' Tournament

The International Young Naturalists' Tournament (hereinafter the *IYNT*) is a team competition for students of secondary schools in their ability to solve research problems of the natural sciences, convincingly present their solutions, and defend them in scientific discussions called Science Fights (*SF*.)

## II. General Council

1. The IYNT is solely governed by the General Council (*GC*) established by the founding countries of the IYNT. The GC presides over the manner in which the Tournaments are held, ensures implementation of the Tournament Regulations, and entrusts the Local Organizing Committee (*LOC*) of the host country with hosting and conducting the respective IYNT event. The LOC determines the venue of the IYNT and the schedule and ensures all necessary conditions for hosting the Tournament.

2. The GC has approved the present version of the Regulations and it can be edited or amended only by the General Council.

## III. Participants of the IYNT

1. The participants are aged 12 to 16. The students who turn the age of 16 years before May 15, 2014 cannot be participants.

2. Teams.
The participating teams represent schools and institutions of secondary education.
Teams of institutions of secondary education comprise students from one institution.
Combines teams comprise students from cities, republics, countries.

3. The membership of the teams
> A team is composed of six students of secondary educational institutions. The LOC may allow participation of teams of five or four students. The composition of the team cannot be changed during the IYNT.
> The team is headed by a Captain who is the official representative of the team during the IYNT.
> The team is accompanied by two adults. One of them, aged no less than 18, is the team leader and the official representative of the team at the IYNT team. He or she interacts with the organizing bodies of the IYNT and arranges the participation of the team, including the preparations of a package of documents. Another one is the scientific supervisor of the team and works in the Jury for the Science Fights (*JSF*).

4. Registration of teams in the Tournament
The teams participate at the Tournament via application and registration. The team must fulfill the requirements for the registration, established by the General Council.

5. Rejection of participation in the Tournament

It is possible that the team registration is declined in the following cases:

    The team represents a specific institution which has already registered a team.

    The team have not fulfilled the requirements of the registration.

    The total number of teams wishing to take part in the Tournament exceeds the number the LOC can host. In this case, the LOC must report to the GC the total number of teams they can host no later than 6 months before the registration deadline. In this case, the GC will decline the registration of the teams with a low preliminary ranking (R0) in cooperation with the LOC.

6. Preliminary ranking of teams (R0)

The preliminary ranking is determined for the teams participating in the preliminary competition.

    Participation in the preliminary competition is voluntary.

    Participants of the competition send solutions of several problems from the main set of problems to the Jury of the Tournament before a deadline.

## IV. Problems of the IYNT

*Main problems*

1. The main problems are theoretical and experimental problems in natural sciences.

2. The main problems of the IYNT may be used in any competition that could lead to preparation and selection of a national team for the IYNT.

*Additional problems*

3. The additional problems of the IYNT are not published in advance and are offered to the teams directly in the course of the Science Fights.

## V. Jury

1. The Jury evaluates the solutions of the IYNT problems made by the teams and the team performances in Science Fights.

2. The Jury of the IYNT is formed by the GC in cooperation with the LOC. The Jury consists of independent experts and the scientific advisors of the participating teams (one scientific advisor per each team.)

3. Groups of Jury for Science Fights (*JSF*) are formed from the individual jurors. Each Group consists of several independent experts and three advisors of the teams (team leaders) such that their teams do not take part in the respective Science Fight. One of the independent experts is the Chairperson who conducts the Science Fight and ensures that the Regulations are respected.

## VI. Team registration

1. In order to participate at the IYNT, each team must register on the webpage of the IYNT. Each team is then assigned with their identification number (*ID*.) The ID of the team will be used in all official IYNT forms and protocols.

2. If all the registration requirements are fulfilled, the team is recognized official participant of the IYNT and is officially invited.

3. The teams that have registered on the webpage of the IYNT but not included into the list of official participants, can attend the YNT out of the competition. Such teams do not take part at the Semi-Final and Final Science Fights. The LOC decides to allow such teams to attend the event and about the conditions of such a participation.

## VII. The agenda of the IYNT

The agenda of the IYNT includes:

    Opening Ceremony;

    Introduction of teams in a short performance (officially graded round);

    Drawing lots;

    Two Selective Science Fights with main IYNT problems (officially graded rounds);

    Two Selective Science Fight with additional IYNT problems (officially graded rounds);

    One Selective Science Fight with the problem 'Invent Yourself' (officially graded round);

    One Semi-Final Science Fight (officially graded round);

    One Final Science Fight (officially graded round);

    Cultural program provided by the host country;

    Extra contests in various nominations (graded but not used in the official ranking of teams);

    Closing and Awards Ceremony.

## VIII. Winners

1. The members of the team winning in the Finals are awarded 1st place diplomas and Gold medals of the IYNT.

2. Other teams participating in the Finals are awarded 2nd place diplomas and Silver medals of the IYNT.

3. All other teams participating in the Semi-Final SFs are awarded 3rd place diplomas and Bronze medals of the IYNT.

4 All other participants of the IYNT receive certificates of participation.

5. Team leaders receive certificates indicating the ranking of their team.

## IX. Official language

The official language of the IYNT is English.

# Chapter 2. Rounds of the Competition and the Grading

The rounds of the IYNT lead to the official ranking of the IYNT. In such rounds the performance of the teams undergoes a comparative evaluation by the Jury. The grading reflects whether the team is successful in their performance.

## I. Calculation of the grading parameters in the actual stages of the Tournament

### 1.Grading (G)
Each member of the Jury grades the team performances by giving integer grades (G): In the contest of team Introductions from 1 to 10.

| | |
|---|---|
| For a Report in a Science Fight | from 1 to 30. |
| For an Opposition | from 1 to 20. |
| For a Review | from 1 to 10. |

### 2. Average points (P)
The average points for the short Introduction performances at the Opening Ceremony are equal to the arithmetic mean of all grades given by the Jurors.

The average points for the performances of the teams in SFs are calculated in the following manner:

The two remaining extreme grades, one maximum and one minimum, are replaced with one grade equal to their arithmetic mean.

In the next step, the arithmetic mean of this and all remaining grades is calculated. The resulting value if the Average points (P) of the team for their performance.

All Average points are rounded to 0.01 point.

### 3. Sum of Points (SP)
The Sum of Points for the team Introduction at the Opening Ceremony is equal to the Average Points earned.

The Sum of Points in the Scientific Fight is equal to the arithmetic sum of all the Average Points for the team in all performances in the given SF.

The resulting Sums of Points are rounded to 0.01 point.

### 4. Total Sum of Points (TSP)
The value of TSP is equal to the sum of all SPs for the team during all completed stages and performances. The resulting value is calculated after each SF and rounded to 0.1 point.

### 5. Winner of the graded rounds
In the contest of team Introductions, the winner is not determined but the Sum of Points (SP) is included in the total Sum of Points of the Team.

The winner (-s) of the Science Fight are the team with highest Sum of Points (SP) in that Science Fight and the teams with the SP that differs from the maximum SP by no more than one point.

### 6. Criterion of Victory (V)
The criterion V equals 1 for the teams winning at a Science Fight.

The criterion V equals 0.5 for the teams which are not winners of the Science Fight but have the value of SP that differs from the maximum SP by no more than 10 points.

The criterion V equals 0 for the teams which have the value of SP that differs from the maximum SP by more than 10 points.

### 7. Sum of Victories (SV)
The parameter SV of a team equals the sum of criterions V in all Science Fights.

### 8. Ranking (R)
The team ranking has values from 1 to N, where N is total number of teams. It indicates the position of the team in the list of all teams sorted descending.

The value of R for all N teams is calculated only after the completion of the third Selective Science Fight. The highest ranking (R=1) is assigned to the team that has the highest Sum of Victories (SV) in all preceding rounds. In case of equal SV for two or several teams, their ranking is determined via comparison of other grading parameters in the following order:

Total Sum of Points (TSP) in all preceding rounds;

the sum of Average grades for all Reports in all preceding SFs;

the sum of Average grades for all Oppositions in all preceding SFs;

the Average grade for one single best Report in the preceding SFs;

the Average grade for one single best Opposition in the preceding SFs.

If the listed criteria are not sufficient to unambiguously resolve the ranking of the teams, the Organizing Committee introduces additional criteria allowing determination of a univocal ranking.

### 9. Preliminary Ranking (R0)
The Preliminary Ranking of the teams reflects whether the team was successful in fulfilling the requirements of the registration. It is made public before the drawing of lots and is considered only for the drawing of lots.

## II. Penalties

### 1. Violations in the number of rejects -- NR (number of rejects)
If the number of rejections for a specific type of problems (main or additional) within one SF exceeds the limit, the SP in the said SF is reduced. If the total number of rejections at all (the current and all preceding) Science Fights exceeds the limit by one, the SP in the said SF is reduced by 10%; if it exceeds the limit by two the SP is reduced by 20%; if it exceeds the limit by three the SP is reduced by 30%, etc.

If there is no rejection in a particular Science Fight, the SP is not penalized even if the total number of rejections in preceding SFs exceeded the allowed limit.

Repeated rejection (if a challenge on the same problem has been rejected by the team before) incurs no penalty.

### 2. Violations in the number of performances in one Science Fight -- NP (number of performances)
Exceeding the allowed number of times to take the floor within one Science Fight. Each individual team member is allowed to take the floor only once. If the team member takes the floor in two roles, it is recognized as one violation; if the team member takes the floor in three roles, it is recognized as two violations.

### 3. Violations in the performances in Selective and Semi-Final Science Fights -- NT (number total)
Exceeding the allowed number of times to take the floor within all Science Fights, except for the Finals and the Science Fights with the problem 'Invent Yourself'. Throughout all Science Fights, counted together, an individual team member is allowed being Reporter only once; plus being Opponent only once; plus being Reviewer only once. Any violations are registered as summed up after each Science Fight.

The SP in the Science Fight with two violations by a team is decreased by 10%; if there are two violations, the SP is reduced by 20%, if there are three violations, the SP is reduced by 30%, etc.

### 4. Forbidden usage of Internet and phones -- DT (data transfer)
The number of such violations is summed after each Science Fight.

SP of a team in a Science Fight in which this type of violation was detected is decreased: by 10% if the violation is the first one, by 20% if the violation is the second one, by 30% if the violation is the third one, and so on.

### 5. Violations in the duration of one performance -- DP (duration performance)
The team exceeding the duration of their Introduction at the Opening Ceremony by no more than two minutes will have their SP for the Introduction reduced by 10%. If the duration is exceeded by more than two minutes, their SP for the Introduction is reduced by 40%.

There are no penalties for exceeding the time allowed for presentations at the Science Fights. This is under control of the Chairperson who will stop the presenter when the time is up.

### 6. Summing of the penalties
The penalties for the violations described in p. 1 – p. 4 are applied independently and sum up, if the violations happened *within one Science Fight*.

## III. Grading parameters

The current values of Grading parameters for the teams (with penalties applied) are published as a table after each Science Fight.

**SP,** Sum of Points for the most recent completed round.

**TSP,** Total Sum of Points.

**SV,** Sum of Victories.

**R,** Ranking (starting from the third Science Fight.)

# Chapter 3. Introduction of teams at the Opening Ceremony

Each team introduces themselves in a short performance at the Opening Ceremony of the IYNT.

The performance can be of any genre and of any kind. Team leaders may also take part in the performance.

The duration of the Introduction performance is limited to 3 minutes.

Exceeding the time allowed for the Introduction incurs a penalty.

Taking the penalties into account, the grading parameters for each teams are determined:

**SP,** Sum of Points for the Team Introduction.

# Chapter 4. Science Fights

A Science Fight is a meeting of three teams in which the teams discuss and present their solutions of the IYNT problems.

## I. Types of Science Fights

There are five types of Science Fights (SF) in the IYNT which differ in regulations, contents of problems, or composition of teams.

1. Selective Fights with the main Tournament problems.
Are conducted according to the Standard Science Fight regulations using the problems selected for this Science Fight from the list of the main IYNT problems. All teams participate.

2. Selective Fights with the additional Tournament problems.
Are conducted according to the Standard Science Fight regulations with changes in sections 1 and 2 using the additional problems selected for this Science Fight. All teams participate.

3. Selective Fight with the problem 'Invent yourself'.
Is conducted according to the Standard Science Fight regulations with changes in sections 1 and 2 using the problem 'Invent yourself' problems. Only those teams participate that have submitted their formulations of the Problem 1 'Invent yourself' to the Organizing Committee by 20h00 on the first day of the IYNT.

4. Semi-Final Science Fights.
Is conducted according to the Standard Science Fight regulations using the problems selected for this Science Fight from the list of the main tournament problems. 9 teams participate.

5. Final Science Fight.
Is conducted according to the Standard Science Fight regulations with changes in section 1 using the problems selected for this Science Fight from the list of the main tournament problems. 3 teams participate.

## II. Standard Science Fight regulations

1. Before the beginning of a SF, the Jury and the teams are introduced.

2. In the course of the SF the members of a team communicate only with each other. They are not allowed to use mobile data transfer and the internet. When needed, the organizers may provide laptop computers and other equipment.

3. In the groups of three teams, the SF is carried out in three Stages. In each Stage, each team plays one of the three roles: the Reporter, the Opponent, and the Reviewer.

4. After each Stage, the roles are reassigned in the following order:

| 3 teams | Stage I | Stage II | Stage III |
|---------|---------|----------|-----------|
| Team 1  | Rep     | Rev      | Opp       |
| Team 2  | Opp     | Rep      | Rev       |
| Team 3  | Rev     | Opp      | Rep       |

Here Rep means Reporter, Opp means Opponent, and Rev means Reviewer.

5. Only one team member takes to the floor as Reporter, Opponent or Reviewer on behalf of their teams. All other team members may work as assistants, offer technical support to the presenter, pass notes with short commentaries and if allowed by the chairperson can make short remarks.

6. Team leaders can be observers when their team takes part in a Fight, if they do not work in the Jury in other rooms. They have no right to intervene in the work of the Jury and in any of the actions.

7. In the groups of two teams, the SF is carried out in two Stages. In the first Stage, one team acts as the Reporter, and the second team is divided into two independent subgroups that take the role of the Opponent and the Reviewer, respectively. In the second Stage, the teams change their roles.

After each Stage, the roles are reassigned in the following order:

| 2 teams | Stage I | Stage II |
|---------|---------|----------|
| Team 1 | Rep | Opp, Rev |
| Team 2 | Opp, Rev | Rep |

## III. Limitations on team members to take the floor

1. During any single Science Fight (Selective, Semi-Final and Final) each team member may take the floor only once.

2. Throughout all Selective Science Fights with main and additional problems and Semi-Final Science Fight, as a whole, each team member may take the floor only once in a specific role.

3. In the Selective Science Fight with the problem 'Invent Yourself' and in the Final Science Fight, each team member may take the floor in any role, regardless of the p. 2.

4. Penalties are applied if these limitations are not followed.

## IV. Rules of problem-challenge and rejection

1. All problems presented in the same SF must be different.

2. In the Selective and Semi-Final Science Fights, the Opponent can challenge the Reporter on any problem available for such Fight, except for those problems that:
   a. the Reporter has previously reported (in earlier SFs);
   b. the Opponent has previously reported;
   c. the Reporter has previously opposed;
   d. the Opponent has previously opposed.

3. The Reporter can reject the Challenge. Such rejection is recorded in the protocol. In such case, the Opponent makes a new Challenge.

4. It is allowed to make a challenge on the problem that has been previously rejected

5. In a situation that no problems are left for a challenge, the restrictions in the p. 2 are lifted in the following order: first d., then c., then b., then a.

6. In the Science Fights with the main IYNT problems, the total allowed number of rejected challenges not incurring a penalty is two.

7. In the Science Fights with the additional IYNT problems, the total allowed number of rejected challenges not incurring a penalty is two.

8. Penalties will be applied to the Reporter for rejecting a challenge if the Reporter exceeded the allowed number of rejections for a challenge.

## V. Standard Stage regulations

1. In the selective and Semi-Final Science Fights, the Stages are carried according to the following regulations.
* Positions where Standard Regulations of a Stage should be amended as necessary.

| # | Performance | Duration |
|-----|-------------|----------|
| 1* | **Challenge*** | 2 min |
| 2* | **Preparation** of the Reporter* | 3 min |
| 3 | **Presentation** of the report | 8 min |
| 4 | **Clarifying** questions of the Opponent to the Reporter | 3 min |
| 5* | **Preparation** of the Opponent* | 3 min |

| 6 | **The Opponent** takes the floor | 4 min |
|---|---|---|
| 7 | **Discussion** between the Opponent and the Reporter | 5 min |
| 8 | **Clarifying questions** of the Reviewer to the Reporter and the Opponent | 2 min |
| 9 | **Preparation** of the Reviewer | 2 min |
| 10 | **The Reviewer** takes the floor | 3 min |
| 11 | **Discussion** of the Reviewer with the Opponent and the Reporter | 3 min |
| 12 | **Concluding remarks** of the Opponent | 1 min |
| 13 | **Concluding remarks** of the Reporter | 1 min |
| 14 | **Clarifying questions** of the Jury to the speakers | 5 min |
| 15 | **The grading** | 3 min |
| 16 | **Concluding remarks** of the Jury | 4 min |
| 17 | **Summary and results** of the Stage | 1 min |
| 18 | **Break** | 10 min |
| Total for one stage (no break incl., appx.) | | **50 min** |
| Total for a 3-team SF with 2 breaks (appx.) | | **3 h** |
| Total for a 2-team SF with 1 break (appx.) | | **2 h** |

1*. In the Science Fights with additional problems, the consecutive challenge by all teams is carried out in the beginning of the Science Fight. 10 minutes are allowed for the challenge procedure. In the Selective Science Fight with the problem 'Invent Yourself' and in the Final Science Fight the challenge procedure is omitted.

2*. In the Science Fights with additional problems the preparations for the report consist in performing a task. Between 45 and 90 minutes are allowed for the work on the task, the exact timing is specified in the schedule.

5*. In a two-team Science Fight, p. 5 (the preparations of the Opponent), the Opposing team is divided into two independent subgroups, of which one continues the role of the Opponent, while the other becomes a Reviewer. In total of 6 minutes are given to the Opponent in p. 5.

## VI. Team performance in the Stages

1. **The Reporter** presents orally the solution to the problem by their team. The Report must contain the formulation of the problem, the basic ideas and methods for the solution, including the description of the observations and the experiments, and also the clear conclusions. The visual aids for the report are PowerPoint slides. All basic points of the Report must be presented visually as tables, graphs, mathematical formulae, photos and videos, etc.

2. **The Opponent** criticizes the report, including its contents and form. The Opponent points to possible inaccuracies and errors in the understanding of the problem and in the solution by the Reporter. The Opponent should emphasize the strong sides of the Report. The Opponent should express their agreement or disagreement with the Reporter's conclusions. **The presentation of the Opponent should not become a presentation of their own solution.** The Opponent initiates the discussion with the Reporter.

3. **The Reviewer** presents a short evaluation of the presentations by Reporter and Opponent, pointing to the strong sides and to the possible drawbacks and disadvantages. The Reviewer initiates the discussion with the Reporter and the Opponent.

## VII. Results of a Science Fight

1. The results of the Science Fight for the teams (with penalties applied) are determined with the following grading parameters.
        **SP,** Sum of Points in the Science Fight.
        **V,** Criterion of Victory for the team in the Science Fight.

2. The following grading parameters are assigned to the teams that have not taken part at the Selective Fight:
        $SP = 3$, $V = 0$.

# Chapter 5. Distribution of teams in the groups

1. For the first three Selective Science Fights, the distribution of teams among the groups is by the lot.

2. The lots are drawn at the Opening Ceremony. The scheme of the drawing lots is made public prior to the procedure. The lots will allow for such distribution of teams in the groups that:

no two teams shall meet more than once throughout all Selective SFs,

the teams having the highest ratings based on the provisional results, or results at preceding National rounds, shall not meet each other in the Selective SFs. The number of such teams equals the number of groups,

when possible, each team has to change rooms so that each time it is graded by a different group of experts,

the Organizers can decide to introduce additional rules for the lots to exclude specific teams from meeting each other in one group.

3. In all tables below the sequence of performances (Rep-Opp-Rev) is determined by the order in the respective line. Distribution of 18 teams:

| SF | Groups | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A | | | B | | | C | | | D | | | E | | | F | | |
| # 1 | 1 | 7 | 13 | 2 | 8 | 14 | 3 | 9 | 15 | 4 | 10 | 16 | 5 | 11 | 17 | 6 | 12 | 18 |
| # 2 | 9 | 16 | 6 | 10 | 17 | 1 | 11 | 18 | 2 | 12 | 13 | 3 | 7 | 14 | 4 | 8 | 15 | 5 |
| # 3 | 18 | 5 | 10 | 13 | 6 | 11 | 14 | 1 | 12 | 15 | 2 | 7 | 16 | 3 | 8 | 17 | 4 | 9 |

Here the numbers indicate the team index received in the lots.
Similarly, a group table can be compiled for any other total number of teams.

4. In all the following Selective Science Fights the teams are distributed among the groups according to their ranking, i.e. the index which indicates the Ranking of the teams after the third Selective Science Fight:

| SF | Groups | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A | | | B | | | C | | | D | | | E | | | F | | |
| # 4 | 16 | 9 | 4 | 17 | 8 | 5 | 18 | 7 | 6 | 13 | 12 | 1 | 14 | 11 | 2 | 15 | 10 | 3 |
| # 5 | 17 | 8 | 2 | 16 | 9 | 3 | 15 | 10 | 4 | 14 | 11 | 5 | 13 | 12 | 6 | 18 | 7 | 1 |

5. In case a number of teams have not taken part in a Selective Science Fight, the distribution of teams among groups is carried out with a respective smaller number of teams.

6. If the total number of teams in a league is over 11, then nine teams having the highest rankings after the completion of Selective Science Fights are allowed to the Semi-Finals. The distribution of the teams in the groups of Semi-Final Science Fights (the least number corresponds to the highest ranking in the table):

| Semi-Final Groups | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| A | | | B | | | C | | |
| 7 | 6 | 1 | 8 | 5 | 2 | 9 | 4 | 3 |

7. One team from each of the three Semi-Finals groups is allowed to the Final Science Fight. Only one winning team is determined in each Semi-Finals room. If there are two of three winning teams in a Semi-Final group, the team with the highest ranking is allowed to the Finals.

8. If the total number of teams in a league is between 8 and 11, then six teams having the highest rankings after the completion of Selective Science Fights are allowed to the Semi-Finals. The distribution of the teams in the groups of Semi-Final Science Fights:

| Semi-Final Groups | | | | | |
|---|---|---|---|---|---|
| A | | | B | | |
| 5 | 4 | 1 | 6 | 3 | 2 |

Based on their results in the Semi-Final SFs, three teams are allowed to the Finals.

9. If the total number of teams in one league is less than eight, the Semi-Finals for the said league are not carried out and the three teams with the highest rankings are allowed to the Finals.

10. The distribution of the teams in the Final Group:

| Final Group | | |
|---|---|---|
| Team with the lowest ranking. | Team with an intermediate ranking. | Team with the highest ranking. |

11. Within one hour after the announcement of the Finalists, the Finalists select the problems for their reports from the set of the main IYNT problems. Priority in the choice is determined by the ranking. The list of selected problems is made public.

The regulations developed and written by Evgeny Yunosov
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