

# Regulations of the International Young Naturalists' Tournament

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## Chapter 1. General information

### I. International Young Naturalists' Tournament

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

### II. General Council

The IYNT is solely governed by the General Council (hereinafter the *GC*) established by the Founding Members of the IYNT. The GC presides over the manner in which the IYNT is held, releases its Problems, approves the Regulations and ensures their implementation, and has ultimate authority over the IYNT competition. The GC establishes executive Bodies, Centers, Commissions, and Committees of the IYNT, assigns their responsibilities, and appoints Chairpersons. The GC entrusts Local Organizing Committees with hosting each respective IYNT event.

### III. Local Organizing Committee

The Local Organizing Committee (hereinafter the *LOC*) provides board, lodging and premises, and ensures all necessary conditions and facilities to conduct the IYNT competition. The LOC determines the venue of the IYNT and its schedule in agreement with the GC.

### IV. Participants

1. The participants are aged 12 through 16. The age limit is set such that participants of the IYNT must not turn the age of 17 years during the calendar year of the respective IYNT competition.
2. Each Team is composed of six Team Members, including one Team Captain. Participation of smaller Teams is allowed. No Team Member and no Team Captain can be replaced after the Opening Ceremony.
3. Each Team is accompanied by two adult Team Leaders who supervise their Team and work in the Jury.
4. To participate, a Team must pre-register for the IYNT and subsequently fulfill the requirements for registration. These requirements are determined and made public by the GC.

### V. Agenda

The agenda of the IYNT includes the following social activities and SFs graded by the Jury:

- Opening Ceremony; Drawing lots;
- Introduction of Teams via short performances (graded by Jury);
- Taking a group photograph of all participants by the LOC; Jury briefings; Cultural program provided by the LOC;
- Selective SF 1 with Problems 1...6 (graded by Jury);
- Selective SF 2 with Problems 7...12 (graded by Jury);
- Selective SF 3 with Problems 13...17 (graded by Jury);

Selective SF 4 with Problems 21...26 (graded by Jury);  
 Semi-Final SF with Problems 1...17 (graded by Jury);  
 Final SF with Problems 1...17 (graded by Jury);  
 Closing and Awards Ceremony.

## VI. Introduction of Teams at the Opening Ceremony

Each Team introduces themselves in a short artistic performance, of any genre, during the Opening Ceremony. Team Leaders may participate. The Teams can in particular produce and display a short video about them. The duration of the Introduction is limited to 3 minutes. By the end of the IYNT, each Team submits any audiovisual materials of their Introduction (e.g. videos or slides) to the GC for archiving, and must ensure that the files are safely kept.

## VII. Problems

1. The set of Problems with numbers 1 through 17 is released by the GC to the Teams and the general public in advance but not earlier than on the closing day of the previous IYNT.

Problems 1...6 are discussed in Selective SF 1, Semi-Final SF and Final SF. Problems 7...12 are discussed in Selective SF 2, Semi-Final SF and Final SF. Problems 13...17 are discussed in Selective SF 3, Semi-Final SF and Final SF; require Teams to specify their own topic of study, formulate an original problem statement, and then solve the respectively formulated problem; these Problems are designated *Invent Yourself*.

2. Teams release their original written statements of the Problems *Invent Yourself* (13...17) no later than at the deadline established by the GC. The submitted statements of the Problems are public. Teams that have not timely released their original statements of *Invent Yourself* do not participate in Selective SF 3.

3. The set of Problems with numbers 21 through 26 is not published in advance and is released to the Teams by the GC directly in the course of Selective SF 4. These Problems are research oriented and are solved by the Teams during Selective SF 4.

4. All Problems reported in one Group of one SF must be different.

## VIII. Science Fights

A SF is a public scientific discussion that is conducted in one or several parallel Groups of three or two Teams. Various SFs differ in the available Problems, in the schedule and structure, and in the eligibility of Teams to participate, according to the table below.

Science Fight	Participant Teams	Challenge	Problems	Brackets determined by	Sequence of performances	Duration, appx.
Selective SF 1	All Teams	Yes	1...6	Lot	Order in Bracket	180 min
Selective SF 2	All Teams	Yes	7...12	Lot	Order in Bracket	180 min
Selective SF 3	Only Teams with problem statements	Yes	13...17	Lot	Order in Bracket	180 min
Selective SF 4	All Teams	Yes	21...26	Results after Selective SF 3	Decided by winner of Captain's Contest	240 min
Semi-Final SF	Semi-Finalists (9, 6 or 0 Teams)	No	1...17	Results after Selective SF 4	Decided by winner of Captain's Contest	200 min
Final SF	Finalists (3 Teams)	No	1...17	Results after Semi-Final SF	Decided by winner of Captain's Contest	200 min

## IX. Jury

1. In all SFs, the Jury evaluates the solutions of the Problems and the Team performances by publicly showing integer Grades. Guidelines and particular criteria aimed at improved grading are made public by the GC. Each individual Juror decides on each Grade and bears sole responsibility over the Grade. Each Grade is public. No Grade can be corrected retroactively. Each Juror must publicly justify any of their Grades upon the request of Team Captains or the Chairperson.

2. The Jury for each SF Group is composed of independent experts and Team Leaders such that their Teams do not take part in the respective Group. The Jury for each Group is formed by the GC in cooperation with the LOC.

3. One of the Jurors in each Group is the Chairperson who conducts the SF and ensures that the Regulations are respected. The Chairperson is appointed by the GC or by an accredited Committee before the beginning of the SF.

## X. Official language

The official language of the IYNT is English.

## Chapter 2. Science Fights

### I. Standard SF procedures

1. Each SF in each Group is conducted by a Chairperson who facilitates discussions, announces the ordering, manages time, clarifies the Regulations, ensures their implementation, and collects preferences for the next SF when necessary. In the beginning of a SF, the Chairperson asks Jurors to introduce themselves, and asks Team Captains to introduce their Team Members. In Selective SF 4, Semi-Final SF and Final SF the Chairperson carries out the Captain's Contest in the beginning of the SF, before Stage I.

2. In the Groups of three Teams, the SF is carried out in three Stages. In each Stage, each Team acts in one of the three roles: Reporter, Opponent, and Reviewer. The roles are assigned in the following standard order:

<b>3 Teams</b>	Stage I	Stage II	Stage III
Team 1	Reporter	Reviewer	Opponent
Team 2	Opponent	Reporter	Reviewer
Team 3	Reviewer	Opponent	Reporter

3. In the Groups of two Teams, the SF is carried out in two Stages. In Stage I, one Team acts as Reporter, and the second Team is divided into two independent sub-teams that take the roles of Opponent and Reviewer, respectively. The division takes place in the very beginning of each Stage. Team Captain decides on how the Team is divided and may appoint a temporary acting Captain for the sub-team from which he or she is absent. In Stage II, the Teams change their roles. The roles are assigned in the following order:

<b>2 Teams</b>	Stage I	Stage II
Team 1	Reporter	Opponent, Reviewer
Team 2	Opponent, Reviewer	Reporter

4. In Selective SF 1, Selective SF 2, and Selective SF 3, the sequence of performances is determined by the Tournament Bracket established at the Opening Ceremony. In Selective SF 4, Semi-Final SF, and Final SF, the sequence of performances is determined via Captain's Contest conducted by the Chairperson in the beginning of the SF before Stage I. The Captain's Contest has a sole winner. The winner determines the roles of all Teams in Stage I and thus the sequence of performances in the whole SF. The Captain does not interact with their Team during the Captain's Contest and when deciding on the sequence of performances.

5. In the course of one Stage, only one Team Member acts as the primary representative of the Team, asks questions, conducts discussions, presents opinions on behalf of the Team, and takes to the floor as Reporter, Opponent, or Reviewer. All other Team Members may act as assistants, offer technical support, or pass notes. Short remarks, explanations, language support, questions, and similar verbal contribution from other Team Members are allowed only if the designated Team representative hands this over to another Team Member and invites their brief input. The Chairperson requests other Team Members to be silent or be seated if their verbal contribution exceeds a reasonable minimum, and in particular if the designated Team Member is not visible as the primary representative of their Team.

6. In the course of one Stage, Members of one Team do not seek and do not obtain any form of advice or consultation from anyone outside their Team, in particular from Team Leaders. The Chairperson requests the Team to stop any of such consultations. There is however no limitation in using literature, electronic equipment, online resources, and similar sources of information.

7. Prior to announcing their Grades, Jurors have no right to express their judgment or opinion. Jurors have no right to explicitly examine textbook knowledge of Team Members or pose the same question to several Teams at once.

8. Before the Jurors show their Grades, the Chairperson checks that each Juror has filled and signed their individual Protocol and has clearly recorded their Grades. In case of any discrepancy between the Protocol and the displayed Grade, the Protocol prevails and is considered correct.

9. Chairperson and any Team Captain can ask any Juror to justify any of their Grades, in particular the extreme Grades.

10. If a Team does not show up for a SF, the Chairperson reports to the GC. The GC establishes the whereabouts of the Team and may resolve to conduct the SF without the absent Team as a two-team SF. If the Group in question is scheduled as a two-team Group, the GC may introduce a one-time amendment in the Bracket, upon the discretion of the GC.

11. Each SF is public. There is no restriction in the access of visitors and in filming, recording or broadcasting a SF.

12. The Chairperson preserves all data from their Group, including Grades, names, rejected and reported Problems. The Chairperson signs their SF Protocol and is responsible its integrity and correctness.

## II. Standard Stage procedures

1. Each SF is composed of three or two Stages. Each Stage is composed of separate Phases according to the agenda in the table below. Asterisk (\*) denotes the positions where Standard Stage procedures are amended in particular types of SFs.

#	Phase	Duration
1*	<b>Challenge by the Opponent</b>	1 min
2*	<b>Accepting or rejecting the challenge by the Reporter</b>	1 min
3**	<b>Preparation</b> of the Reporter	3 min
4	<b>Presentation</b> of the report	8 min
5	<b>Clarifying</b> questions of the Opponent to the Reporter	3 min
6	<b>Preparation</b> of the Opponent	3 min
7	<b>Statement by the Opponent</b>	4 min
8	<b>Discussion</b> between the Opponent and the Reporter	5 min
9	<b>Clarifying questions</b> of the Reviewer to the Reporter and the Opponent	2 min
10	<b>Preparation</b> of the Reviewer	2 min
11	<b>Statement by the Reviewer</b>	3 min
12	<b>Concluding remarks</b> of the Opponent	1 min
13	<b>Concluding remarks</b> of the Reporter	1 min
14	<b>Clarifying questions</b> of the Jury to Reporter, Opponent, and Reviewer	6 min
15	<b>Grading</b>	4 min
16	<b>Concluding remarks</b> of the Jury, justification of Grades	5 min
Total for one Stage (no break incl., appx.)		<b>50 min</b>
Total for a three-team Group with two breaks of ca. 10 min each (appx.)		<b>3 h</b>
Total for a two-team Group with one break of ca. 10 min (appx.)		<b>2 h</b>

\* In Selective SF 4, consecutive challenges by all Teams are carried out in the beginning of the SF. The order of challenges is determined by winner of Captain's Contest. In Semi-Final SF and Final SF, the challenge procedure is omitted.

\*\* In Selective SF 4, the preparation time is used by all Teams for solving an accepted Problem. The preparation time is 45 minutes.

2. The Chairperson must rigorously keep the time limits for each Phase.

## III. Team roles in the Stage

1. **The Reporter** presents an original solution prepared by their Team. The Report contains the basic ideas and methods for the solution, the description of observations and experiments, theoretical analysis, and also clear conclusions. The Reporter explicitly cites the sources of any ideas, data or theories which are not of own work. The standard visual aids for the report are multimedia slides with graphs, figures, data, mathematical expressions, photos, or videos. Other visual aids may include experimental demonstrations or handout sheets. By the end of the IYNT, the Reporter submits a copy of their solution (i.e. slides or written reports) to the GC for archiving, and must ensure that the files are safely kept.

2. **The Opponent** presents a critique of the Report, including its contents and form, and leads the discussion with the Reporter. The Opponent justifies their agreement or disagreement with the methods, results, and conclusions presented by the Reporter. The Opponent challenges each aspect of the Report and discusses possible improvements. The Opponent points to inaccuracies and errors in the understanding of the Problem and in the solution, but also points to achievements and strong sides of the Report. Whilst the Opposition focuses only on the Report and may not be a presentation of their own solution, the Opponent can cite literature and own results to justify particular criticisms. By the end of the IYNT, the Opponent submits a copy of their opposition (e.g. slides or written notes) to the GC for archiving, and must ensure that the files are safely kept.

3. **The Reviewer** summarizes and assesses the outcome of the debate between the Reporter and the Opponent, and draws weighted and independent conclusions. The Reviewer presents a short evaluation of the performances of two other teams, pointing to their strong sides and shortcomings. The Reviewer does not select the reviewed Problem, and therefore expresses their critical third-party view on the essential points raised in the debate and concludes this debate. Whilst the Review focuses only on the performance of two other Teams and may not be a presentation of another solution, the Reviewer can cite literature and own results to justify particular opinions. By the end of the IYNT, the Reviewer submits a copy of their review (e.g. slides or written notes) to the GC for archiving, and must ensure that the files are safely kept.

## IV. Challenge and rejection

1. In any Selective SF, the Opponent can challenge the Reporter on any Problem available for the SF, except for the Problems that have been reported in this SF in the current Group by another Team.

2. The Reporter can reject the challenge. Such a rejection is recorded in the Protocol. In such case, the Opponent makes a new challenge on a new Problem.
3. In a situation that only one Problem is left for a challenge, the Opponent makes the challenge and it is considered accepted by the Reporter irrespective of any other considerations.
4. Throughout all Selective SFs, the total allowed number of rejected challenges not incurring a penalty is **three**.

## Chapter 3. Grading, Penalties and Results

### I. Grading parameters

#### 1. Grade ( $G$ )

Each Juror evaluates the Team performance by giving integer Grades  $G$ . In any SF, the Grades are in the following range:

To the Reporter	from 1 to 30;
To the Opponent	from 1 to 20;
To the Reviewer	from 1 to 10.

In the Opening Ceremony, the Introduction of Teams is graded in the range from 1 to 10.

#### 2. Average Point ( $P$ )

The Average Point for any performance is calculated in the following manner. Two extreme Grades, one maximum and one minimum, are replaced with one grade equal to their arithmetic mean. In the next step, the Average Point  $P$  is determined as the arithmetic mean of the new data set of  $n-1$  grades. Any Average Point is rounded to the nearest 0.1 of a point.

#### 3. Sum of Points ( $SP$ )

The Sum of Points in a SF is equal to the arithmetic sum of all Average Points for the Team in all performances in the said SF, with any penalties applied. Any resulting Sum of Points is rounded to the nearest 0.1 of a point.

#### 4. Criterion of Victory ( $V$ )

For the Team with the highest  $SP$  in a SF Group equal to  $SP_{max}$ , the Criterion of Victory is set to  $V=1$ . For the Teams in the Group which have  $SP \geq (SP_{max}-2)$ , the Criterion of Victory is set to  $V=1$ . For the Teams in the Group which have  $(SP_{max}-10) \leq SP < (SP_{max}-2)$ , the Criterion of Victory is set to  $V=0.5$ . For the Teams in the Group which have  $SP < (SP_{max}-10)$ , the Criterion of Victory is set to  $V=0$ .

#### 5. Sum of Victories ( $SV$ )

The parameter  $SV$  of a Team equals the arithmetic sum of Criteria  $V$  in all completed SFs.

#### 6. Total Sum of Points ( $TSP$ )

The value of  $TSP$  is equal to the sum of all  $SP$ s earned by the Team in all completed SFs and in the Introduction of the Team.

#### 7. Rank ( $R$ )

The Rank  $R$  for a Team has integer values from 1 to  $N$ , where  $N$  is total number of Teams in the IYNT. It indicates the placing of a Team in the list of all Teams sorted descending. The value of  $R$  for each of  $N$  Teams is calculated after each completed Selective SF and Semi-Final SF. The top Rank ( $R=1$ ) is assigned to the Team that has the highest Sum of Victories ( $SV$ ) at the end of all preceding SFs. In case of equal  $SV$  for two or several Teams, their Rank is determined via comparison of other grading parameters in the following order:

- a. Total Sum of Points ( $TSP$ ) after all preceding SFs;
- b. the sum of Average Points ( $P$ ) for all Reports in all preceding SFs;
- c. the sum of Average Points ( $P$ ) for all Oppositions in all preceding SFs.

If the listed criteria are not sufficient to unambiguously resolve the ranking of the Teams, the GC introduces additional criteria allowing determination of a univocal ranking. Rank  $R$  is the only criterion to determine Teams that participate in Semi-Final SF and a supporting criterion to determine Teams that participate in Final SF.

### II. Penalties

#### 1. Yellow Cards and summing of the penalties

Penalties during a SF are applied only to the  $SP$  earned during the said SF. A Yellow Card is used to indicate each penalty. One Yellow Card issued to a Team reduces the  $SP$  in this SF by 10%; two Yellow Cards issued to a Team during a SF reduce the  $SP$  by 20%; three Yellow Cards reduce the  $SP$  by 30%, etc. The penalties for various violations are applied independently and sum up.

## 2. Number of rejected challenges (NR)

If the total number of rejected challenges in all (the current and all preceding) SFs exceeds the limit by one, a Yellow Card is issued; if it exceeds the limit by two, two Yellow Cards are issued, etc. If there is no rejected challenge in a particular SF, the *SP* in this SF is not penalized even if the total number of rejections in preceding SFs has exceeded the limit.

## 3. Number of individual performances in one SF (NP)

During any single SF (Selective, Semi-Final or Final) any individual Team Member takes the floor only once. If a Team Member takes the floor in two roles, one Yellow Card is issued. If a Team Member takes the floor in three roles, two Yellow Cards are issued.

## 4. Total number of individual performances in Selective and Semi-Final SFs (NT)

Throughout all SFs taken together, except for Final SF, any individual Team Member takes the floor in each role only once, i.e. once as Reporter, plus once as Opponent, plus once as Reviewer. Each violation results in one Yellow Card.

## 5. Duration of one performance (DP)

If the duration of Team performance during their Introduction at the Opening Ceremony exceeds the time limit (3 minutes), each extra minute results in one Yellow Card. The extra time is rounded up to next minute. There are no penalties for exceeding the time allowed for presentations in the SFs where time is under control of the Chairperson who stops the Phase when the time has elapsed.

## III. Results

1. The following values of grading parameters for the Teams (with penalties applied) are made public as a table after each SF:

*R*, Rank;

*SV*, Sum of Victories;

*TSP*, Total Sum of Points;

*V*, Criterion of Victory in the most recent completed SF or in all preceding SFs;

*SP*, Sum of Points in the most recent completed SF or in all preceding SFs.

2. The following grading parameters are assigned to the Team that has not taken part in a SF:  $SP=0$ ,  $V=0$ .

## Chapter 4. Brackets and Structure of the Tournament

### I. Selective SFs

1. For the three first Selective SFs, the Tournament Bracket established at the Opening Ceremony determines what Team competes in what Group and the sequence of performances in each Group. The procedure involves drawing lots and aims at scheduling all Teams in Groups such that the following criteria are fulfilled when possible, in the order of decreasing priority:

- there are no more than two two-Team Groups during any SF;
- no two Teams meet more than once (prior to Selective SF 4);
- no two Teams from one country meet at all;
- the role of each Team in Stage I of each next SF is rotated in a standard order;
- each Team competes no more than once in a two-Team Group;
- no Team competes in any Group more than once.

Below are given standard Tournament Brackets for  $2 \leq N \leq 39$  Teams, where the numbers indicate the drawn lots, columns indicate Groups, and lines correspond to each Selective SF. If  $N$  is not a multiple of 3, highlighted lots (e.g. 39) are removed. The order of Teams in each Group determines the sequence of performances in Stage I.

SF		A	B	C	D	E	F	G	H	I	J	K	L	M
SF 1	37, 38, 39	1 14 27	2 15 28	3 16 29	4 17 30	5 18 31	6 19 32	7 20 33	8 21 34	9 22 35	10 23 36	11 24 37	12 25 38	13 26 39
SF 2		17 28 13	18 29 1	19 30 2	20 31 3	21 32 4	22 33 5	23 34 6	24 35 7	25 36 8	26 37 9	14 38 10	15 39 11	16 27 12
SF 3		29 12 20	30 13 21	31 1 22	32 2 23	33 3 24	34 4 25	35 5 26	36 6 14	37 7 15	38 8 16	39 9 17	27 10 18	28 11 19

	A	B	C	D	E	F	G	H	I	J	K	L		A
34, 35, 36	1 13 25	2 14 26	3 15 27	4 16 28	5 17 29	6 18 30	7 19 31	8 20 32	9 21 33	10 22 34	11 23 35	12 24 36	2, 3	1 2 3
	16 26 12	17 27 1	18 28 2	19 29 3	20 30 4	21 31 5	22 32 6	23 33 7	24 34 8	13 35 9	14 36 10	15 25 11		2 3 1
	27 11 19	28 12 20	29 1 21	30 2 22	31 3 23	32 4 24	33 5 13	34 6 14	35 7 15	36 8 16	25 9 17	26 10 18		3 1 2

	A	B	C	D	E	F	G	H	I	J	K		A	B
31, 32, 33	1 12 23	2 13 24	3 14 25	4 15 26	5 16 27	6 17 28	7 18 29	8 19 30	9 20 31	10 21 32	11 22 33	4, 5, 6	1 3 5	2 4 6
	15 24 11	16 25 1	17 26 2	18 27 3	19 28 4	20 29 5	21 30 6	22 31 7	12 32 8	13 33 9	14 23 10		3 6 2	4 5 1
	25 10 18	26 11 19	27 1 20	28 2 21	29 3 22	30 4 12	31 5 13	32 6 14	33 7 15	23 8 16	24 9 17		6 1 4	5 2 3

28, 29, 30	A	B	C	D	E	F	G	H	I	J	7, 8, 9	A	B	C
	1 11 21	2 12 22	3 13 23	4 14 24	5 15 25	6 16 26	7 17 27	8 18 28	9 19 29	10 20 30		1 4 7	2 5 8	3 6 9
	14 22 10	15 23 1	16 24 2	17 25 3	18 26 4	19 27 5	20 28 6	11 29 7	12 30 8	13 21 9		4 8 3	5 9 1	6 7 2
	23 8 17	24 9 18	25 10 19	26 1 20	27 2 11	28 3 12	29 4 13	30 5 14	21 6 15	22 7 16		7 3 5	8 1 6	9 2 4

  

25, 26, 27	A	B	C	D	E	F	G	H	I	10, 11, 12	A	B	C	D
	1 10 19	2 11 20	3 12 21	4 13 22	5 14 23	6 15 24	7 16 25	8 17 26	9 18 27		1 5 9	2 5 10	3 7 11	4 8 12
	13 20 9	14 21 1	15 22 2	16 23 3	17 24 4	18 25 5	10 26 6	11 27 7	12 19 8		8 10 3	5 11 4	6 12 1	7 9 2
21 7 16	22 8 17	23 9 18	24 1 10	25 2 11	26 3 12	27 4 13	19 5 14	20 6 15	10 4 7	11 1 8	12 2 5	9 3 6		

  

22, 23, 24	A	B	C	D	E	F	G	H	13, 14, 15	A	B	C	D	E
	1 9 17	2 10 18	3 11 19	4 12 20	5 13 21	6 14 22	7 15 23	8 16 24		1 6 11	2 7 12	3 8 13	4 9 14	5 10 15
	12 18 8	13 19 1	14 20 2	15 21 3	16 22 4	9 23 5	10 24 6	11 17 7		10 12 4	6 13 5	7 14 1	8 15 2	9 11 3
19 6 15	20 7 16	21 8 9	22 1 10	23 2 11	24 3 12	17 4 13	18 5 14	12 5 8	13 1 9	14 2 10	15 3 6	11 4 7		

  

19, 20, 21	A	B	C	D	E	F	G	16, 17, 18	A	B	C	D	E	F
	1 8 15	2 9 16	3 10 17	4 11 18	5 12 19	6 13 20	7 14 21		1 7 13	2 8 14	3 9 15	4 10 16	5 11 17	6 12 18
	11 16 7	12 17 1	13 18 2	14 19 3	8 20 4	9 21 5	10 15 6		10 14 6	11 15 1	12 16 2	7 17 3	8 18 4	9 13 5
17 5 14	18 6 8	19 7 9	20 1 10	21 2 11	15 3 12	16 4 13	13 3 11	14 4 12	15 5 7	16 6 8	17 1 9	18 2 10		

2. In Selective SF 4, the Bracket for Teams is determined according to their Rank  $R$  after Selective SF 3. Below is given an exemplary Tournament Bracket of  $N=27$  Teams, where the numbers indicate the Rank  $R$ . This and analogous snake-pattern Tournament Brackets aim at separating top Teams, at matchmaking Teams with uncertain chances of entering Semi-Final SF, and at the closest possible sum of Ranks  $R$  in each Group. The sequence of performances is determined by winner of Captain's Contest. If  $N$  is not a multiple of 3, highlighted Ranks  $R$  (e.g. **R27**) are removed.

SF	27 Teams	A	B	C	D	E	F	G	H	I
SF 4		R1 R18 R19	R2 R17 R20	R3 R16 R21	R4 R15 R22	R5 R14 R23	R6 R13 R24	R7 R12 R25	R8 R11 <b>R26</b>	R9 R10 <b>R27</b>

## II. Semi-Final SF

1. If the total number of Teams  $N$  is **12 or more**, then only nine Teams having the highest Rank  $R$  after Selective SF 4 are participants of the Semi-Final SF in three Groups. The Tournament Bracket for the three Groups of Teams with Ranks  $R$  is given by the table below. The sequence of performances is determined by winner of Captain's Contest.

SF	9 Teams	A	B	C
Semi-Final SF		R1 R6 R7	R2 R5 R8	R3 R4 R9

Only one Team from each Semi-Final Group is allowed to Final SF. If there is more than one Team with  $V=1$  in a Group, only one of such Teams is determined as a Finalist via comparison of Ranks  $R$  after Semi-Final SF in the said Group only.

2. If the total number of Teams  $N$  is **8, 9, 10, or 11**, then only six Teams having the highest Rank  $R$  after the Selective SF 4 are participants of the Semi-Final SF in two Groups. The Tournament Bracket for the two Groups of Teams with Ranks  $R$  is given by the table below. The sequence of performances is determined by winner of Captain's Contest.

SF	6 Teams	A	B
Semi-Final SF		R1 R4 R5	R2 R3 R6

If only two Teams have  $V=1$  in the two Semi-Final Groups, both are allowed to the Final SF, while the third Finalist is determined by the highest Rank  $R$  after Semi-Final SF across both Groups. If three Teams have  $V=1$  in the two Semi-Final Groups, all three are allowed to the Final SF. If there are four or more Teams with  $V=1$ , only three of them with the highest Ranks  $R$  after Semi-Final SF are allowed to the Final SF.

3. If the total number of Teams  $N$  is **7 or less**, then the Semi-Final SF is not carried out and the three Teams with the highest Rank  $R$  after Selective SF 4 are participants of the Final SF.

4. Before the end of Selective SF 4, each Team submits their preferences of Problems for Semi-Final SF among Problems 1 through 17. Selecting a Problem reported by the Team in any preceding SF is not allowed. As to ensure that all three Problems in one Semi-Final Group are different, each Team submits three preferences; priority in case of equal choices is given to the Team with a higher Rank  $R$  after Selective SF 4. The list of selected Problems is public.

## III. Final SF

1. Three appropriately determined Teams take part in the Final SF. The sequence of performances is determined by winner of Captain's Contest.

2. Before the end of Semi-Final SF, each Team submits their preferences of Problems for Final SF among Problems 1 through 17. Selecting a Problem reported by the Team in any preceding SF, including Semi-Final SF, is not allowed. As to ensure that all three Problems in the Final SF are different, each Team submits three preferences; priority in case of

equal choices is given to the Team with a higher Rank  $R$  after Semi-Final SF (or, if the Semi-Final SF was omitted, by the Rank  $R$  after the Selective SF 4.) The list of selected Problems is public.

## **Chapter 5. Winners**

### **I. Diplomas and Medals**

1. Each Team Member and each Team Leader of a winning Team receives an own Medal and an own Diploma. Official Diplomas of the IYNT must be signed by at least two Members of the GC.
2. One or several Finalists with  $V=1$  in Final SF are awarded First Place Diplomas and Gold Medals. Only one Team with the highest  $SP$  in Final SF is declared Absolute Winner of the IYNT.
3. Other Finalists with  $V \neq 1$  are awarded Second Place Diplomas and Silver Medals of the IYNT.
4. All other Semi-Finalists are awarded Third Place Diplomas and Bronze Medals of the IYNT. If Semi-Final SF is omitted (in case of 7 or less Teams in the IYNT), Third Place Diplomas and Bronze Medals of the IYNT are awarded to two Teams with the highest Ranks  $R$  that do not pass to Final SF.

### **II. Certificates**

All other Team Members and Team Leaders receive Certificates of Participation for their Teams.

### **III. Final Ranking**

The Final Rank ( $RF$ ) for each Team is made public after the Final SF and has integer values from 1 to  $N$ , where  $N$  is total number of Teams in the IYNT. For the three Finalists, it has values of  $RF=1$ ,  $RF=2$ , and  $RF=3$  according to the  $SP$  in Final SF (equal  $SP$ s are resolved by comparing Ranks  $R$  after Semi-Final SF.) For the Semi-Finalists that do not pass to Final SF,  $RF$  is determined via comparison of Ranks  $R$  after Semi-Final SF. For the Teams that do not pass to Semi-Final SF,  $RF$  equals the Rank  $R$  after Selective SF 4. Final Rank  $RF$  is used to indicate the placing of a Team after the completion of the IYNT and the order in which Certificates and Diplomas are awarded at the Closing Ceremony, from bottom to top.

## **Chapter 6. Status of the Regulations**

### **I. Authority, Authorship and Application**

These Regulations supersede and replace any and all prior Regulations of the IYNT released by the GC of the IYNT and other Bodies in the past. By releasing these Regulations, the GC abrogates in particular the Regulations of the IYNT adopted and released on September 5, 2015. The Regulations are developed by Evgeny Yunosov and Ilya Martchenko.

### **II. Effective date**

These Regulations are adopted and take effect on March 10, 2021.

### **III. Future amendments**

These Regulations are adopted and approved by the GC and can be amended or edited only by the GC. Unless a future GC decision abrogates these Regulations, they remain in force indefinitely.

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**March 10, 2021**