

**\* General Rule:** Please check the general rule first before read this rule. General rule take precedence over any rules.

**\*Attention:** Please be aware that this is provisional version of the rules, there may be some changes. Specially testing material of size and weight is till on progress, there will be new updates.

# Physical Computing

League  
Junior/  
Challenge

Participation  
1~2 Person  
1 Robot

Construction  
On  
Site

## 1. Game Description

Participants are required to compose their physical and express their topic with storytelling through various types of physical (hardware) and computing (software). It is competition that focuses on use of proper algorithms and coding commands through universal coding program. **This game is conducted face-to-face or non-face-to-face.**

## 2. Robot rule

### 2-1. Robot type

Scratch and entry that is controllable in the embedded code is controllable , but anything that may pose a threat to other people is prohibited.

### 2-2. Robot size

Size of the robot must be able to be presented in given size of the area, participants take full responsibility of disadvantages occurred by size of the robot

| Classification       | Sensor                           | Driving Unit(Output) |
|----------------------|----------------------------------|----------------------|
| Junior(Age 8~10)     | 0 (If use any, will get penalty) |                      |
| Junior(Age 11~13)    | Not more than two                |                      |
| Challenge(Age 13~16) | Two or more                      |                      |

### 2-3. Power source

Individual power source or power supply via laptop USB.

**2-4. Size:** No restriction in space, any problem caused by robot size is under responsibility of individual



\* **General Rule:** Please check the general rule first before read this rule. General rule take precedence over any rules.

\***Attention:** Please be aware that this is provisional version of the rules, there may be some changes. Specially testing material of size and weight is till on progress, there will be new updates.

### 3. Playfield Regulation

3-1. **Stadium:** If operated online(Non-face-to-face), there is no specific stadium. However, tripod must be prepared for conference call ZOOM, to make sure presenter and robot can be seen well on the screen.

3-2. **Space:** Participants can use freely under his/her judgement.

### 4. Competition

#### 4-1. Main Theme

Main theme will be posted on the website, and the sub theme will be given on the competition day.

##### 4-1-1. Example of theme

| Main Theme                   | Sub Theme  |
|------------------------------|--|
| Biomimetic                   | ▶ Robot Making people to enjoy life and their spare time         |
|                              | ▶ Robot Helping office workers to increase their work efficiency |
|                              | ▶ Robot Working in place where people can't                      |
|                              | ▶ Robot recovering patient and helping disabled                  |
| The robot for the woman kind | ▶ Robot for grandmother  |
|                              | ▶ Robot for housewife  |
|                              | ▶ Robot for mother   |
|                              | ▶ Robot for pregnant   |
|                              | ▶ Robot for sister   |

##### 4-1-2. Main theme of 2020

## Social Robot

#### 4-2. Robot and Laptop Inspection.

4-2-1. **Robot Inspection(Non-face-to-face):** The understanding of the driving technology and coding is reviewed intensively, and extra robot inspection will not be conducted

**\* General Rule:** Please check the general rule first before read this rule. General rule take precedence over any rules.

**\*Attention:** Please be aware that this is provisional version of the rules, there may be some changes. Specially testing material of size and weight is still on progress, there will be new updates.

**4-2-2. Laptop Inspection(Non-face-to-face):** The understanding of the driving technology and coding is reviewed intensively, and extra laptop inspection will not be conducted

**4-2-3. Robot Inspection(Face-to-face):**

**4-2-4. Laptop Inspection(Face-to-face):**

**4-3. Construction Time:** Maximum 4 hours.

Each team will control their own production, planning and editing time within 4 hours.

**4-4. Submit:** After constructing robot, hand in production plan and coding file to the HQ.

**4-4-1. Face-to-face**

Each Team will save their work in USB Memory Stick with production plan, then submit to organizer (USB Memory Stick will be returned after saving the data)

**4-4-2. Non-face-to-face**

Each Team will save their work and if you submit late at submit date, it deducts points every 10 minutes. Submit time will be upload in website at competition day.

Organizer's e-mail address : [support@iroc.org](mailto:support@iroc.org)

**4-5 Presentation**

4-5-1. Judges will evaluate according to presentation and robot's movement. If there are any delays due to participant's fault. Points will be deducted. His/her presentation order will be postponed.

4-5-2. During presentation, modification of robot is prohibited. In case of inevitable battery replacement or component damage, repair is admitted with the permission and observation of the judges or staff.

4-5-3. Judge can ask question to the participation during presentation. If failed to answer properly, points can be deducted.

4-5-4. Points will be deducted for participant whom with insincere attitude toward the competition.



## 5. Evaluation and Rank decision

Copyright©. All right Reserved.

\*If you copy the regulations and use them arbitrarily, you may be held liable for copyright infringement.

**\* General Rule:** Please check the general rule first before read this rule. General rule take precedence over any rules.

**\*Attention:** Please be aware that this is provisional version of the rules, there may be some changes.

Specially testing material of size and weight is till on progress, there will be new updates.

### 5-1. Evaluation criteria

Judges will evaluate according to below criteria, and will sum up the points to decide final rank.

| Topic(20)      |            | Physical(20)    |              | Computing(60) |             |   |                             |
|----------------|------------|-----------------|--------------|---------------|-------------|---|-----------------------------|
| Story matching | Creativity | Use of Physical | Robot Motion | Robot Motion  | Cooperation | Use of coding (Variable, List, Function)) | Expression (Display, Sound) |
| 0/10           | 0/10       | 2/4/6/8/10      | 2/4/6/8/10   | 2/4/6/8/10    | 2/4/6/8/10  | 6/12/18/24/30                             | 2/4/6/8/10                  |

**5-1-1. When aggregating the score, the highest and lowest scores are excluded from the final score.**

### 5-2. Draw

If points are draw, rank will be decided by the following.

5-2-1. No.1: Result with no deductive point will have higher rank than below

5-2-2. No.2: Result with higher use of coding will have higher rank than below

5-2-3. No.3: Result with higher use of storyboard will have higher rank than below.

5-2-4. No.4: If both teams still have earned same point. It will be accepted as the same rank.

