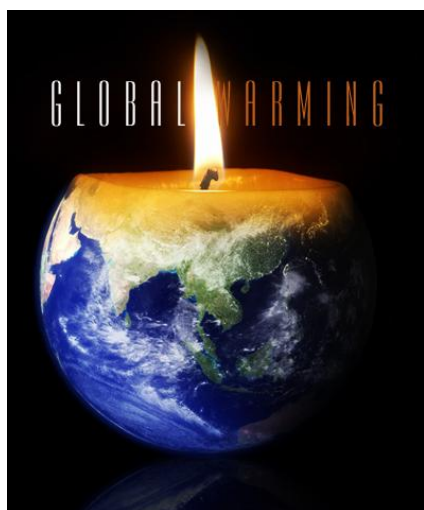


## CONTRAPTIONS

### 1. THEME

In the past years, mankind has made enormous development in all the frontiers of humanity. The industrial revolution and technological development has enabled us to improve our lifestyle significantly. But in the process we have spoiled the nature, the mother earth. We are facing different environmental issues as a result of this. Hence the theme for this year is '**Socio-Scientific issues**' wherein participants have to display the issues through their contraption.



### 2. OUTLINE

- 1) Displaying of any issue should be done through an action or task, not by displaying a message related to that issue. For example, issue of air pollution can be displayed by burning a paper.
- 2) One issue should be displayed after another in a chain. There can be multiple actions displaying one issue. It is not necessary to display all the issues listed below.
- 3) **Between actions depicting two issues maximum three subtasks can be shown. These subtasks can be completely generic and may not be related to any issue.** So, subtasks are the tasks which may not be related to the theme but will be helpful in taking contraption forward.
- 4) The Socio-Scientific issues which may be displayed in the contraption are:
  1. **Global warming:** Relates to temperature rise of globe and its effects such as rise in sea level.

2. **Deforestation:** Relates to the enormous depleting of forest across the globe.
  3. **Scarcity of conventional energy resources:** Relates to depleting fossil fuel resources in the earth crust.
  4. **Pollution:** Relates to different types of pollution such as air pollution, water pollution, noise pollution, etc.
  5. **Lack of sufficient electricity:** Relates to the frequent power cuts and insufficient electricity production in most parts of India.
  6. **Loss of biodiversity/wild animals:** Relates to the fast rate of extinction of different biological species and especially wild animals due to human intervention and deforestation.
  7. **Plastic waste:** Relates to increasing amount of hazardous and non-degradable plastic waste being produced every day.
  8. **E-Waste:** Relates to the increasing amount of hazardous e-waste like electronic circuits, mobile phones, etc.
  9. **Excessive use of chemical fertilizers and pesticides:** Relates to harmful effects of excessive use of chemical fertilizers and pesticides on groundwater and soil.
  10. **Mining and its effects:** Relates to excessive mining and its effects on the nature.
  11. **Damming of rivers:** Relates to extinction of many villages due to building of large dams.
- 5) The end of contraption should be done by displaying a message relevant with the theme.
- 6) **Bonus task:** Even as it is not necessary to display a solution to these issues, bonus points will be given for a task/action displaying a possible solution to any of the issues.
- 7) Participants can also include issues which are not mentioned above, but those must be relevant with the theme.
- 8) **Examples of the tasks displaying issues:**
1. A ball comes and bulldozers some animal shapes displaying threats to wildlife and then the shapes fall on something triggering next task.
  2. Oil kept in a beaker/bottle drains out in a hidden vessel depicting depletion of fossil fuels.

### 3. SCORING

1. Marking for the **actions/tasks depicting issues** will be done in **arithmetic progression as +50, +75, +100...**
2. Each successful **sub task will be awarded +75 points.**
3. Bonus tasks will be marked along the line with tasks depicting issues. But, 50 extra points will be given for such a task.

4. In case of human intervention or failure of an action/task 100 points will be deducted and the **arithmetic progression will restart as +50, +75, +100...** And will continue in that manner.
5. Ambience carries 50 points and depends entirely on judges.
6. The end of contraption, i.e. **displaying a message carries 50 marks.**

#### 4. RULES AND RESTRICTIONS

1. Two or more actions displaying issues may not be triggered in parallel. Only the subtasks can be triggered in parallel if required.
2. Between actions depicting issues **maximum three generic subtasks** can be included.
3. The tasks/actions should be clearly visible and slow enough to be observed.
4. No actions depicting issues or subtasks should be repeated. Similar tasks/actions will not be provided any points.
5. There should be minimum 7 actions/tasks displaying issues apart from sub tasks.
6. Only **two trials** are allowed and the best among two will be considered.
7. There is no limit on number of human interventions.
8. **Workspace of 8ft\*8ft** will be provided for each team. There is no vertical barrier.
9. **Use of chemicals or hazardous materials is prohibited.** The contraption must be safe to the satisfaction of judges and coordinators.
10. Maximum **6 members** are allowed in a team.
11. Teams should fill the TDP (Team Description Paper) explaining their contraption in brief.
12. Judges' and coordinators' decision shall be final and binding to all.