Appendix 1

"Science & Technology Stars of Tomorrow" Invitational Tournament

Challenge

1. Challenge Summary

Teams have up to 3 hours to create a set of devices that let Egg "travel" from Departure Zone to the Arrival Zone. Teams will demonstrate the team's devices to the appraiser and complete related tasks. Appraisers will score the team's demonstration results.

1. Setup

Before the start of the tournament, teams need to use black tape to setup Demonstration Area as shown in Figure 1.



The width of the tape may not exceed 20mm, and tape should be included in the area of 4000mm \* 1600mm. The setup should clearly distinguish each key area (key area refers to all the Departure Zone, Task Zones, and Arrival Zone, as shown in Figure 1)

1. Time Limit
2. Preparation: 3 hours. Teams design and create a set of devices that let Egg "travel" from Departure Zone to Arrival Zone and Task Props in Task Zone.
3. Demonstration: up to 5 minutes. Teams have 3 attempts. The attempt would be terminated if:
	1. Egg breaks on the track;
	2. Egg remains stationary for more than 10 seconds; or
	3. Egg flies out of the track.

Teams may start their next attempt regardless of any adjustment, but demonstration timing continues.

1. Challenge Rule

Teams need to design and create a set of devices including Departure Zone, Task Zones, and Arrival Zone. All materials used to create devices must be their original status and may not be processed before Tournament.

1. Departure Zone: the altitude of egg at departure location should be higher than 600 mm. At the beginning of each attempt, a team member may deliver Egg to departure location. After Egg starts to "travel", the teams could not touch Egg.
2. Task Zone: Teams need to guide Egg through three task zones by laying tracks and complete the assigned task in each task zone. The order of completing tasks must be Task Zone 1, Task Zone 2, and then Task Zone 3. **Task Zone Assignment of each task will be announced on the day of Tournament**.
Task Requirement:

|  |  |  |
| --- | --- | --- |
| Task | Requirement | Figure |
| Go Through Door | Door must be a closed shape. Door must be placed perpendicular to task zone plane (horizontal plane). Points are awarded for both Height and Width of Door of less than 150 mm. Bonus are award for both of less than 80 mm. | 形状, 多边形  描述已自动生成 |
| Cross Bridge | Two ends of the bridge must be on the same level. Egg’s bottom should be on the level before it crosses Bridge. Egg needs to go up Bridge from the level. After crossing Bridge, Egg needs to return to the level. Height of Bridge refers to the distance from the highest point of Bridge Deck to the level. Points are awarded for Height of over 30mm. Bonus are awarded for one of over 60mm.  |  |
| Raise Flag | Initial Status and Final Status of Flag must be stationary. Raised Height refers to the difference between height of highest point of Flag at Final Status and one of highest point of Flag at Initial Status.Points are awarded for visible Raised Height. Bonus are awarded if Raised Height of over 300 mm. |  |

1. Task Props: Teams need to design and create Task Props for completing three tasks in D.2. Teams must follow Task Zone Assignment released on the day of Tournament to place Task Props in corresponding Task Zones.
2. Arrival Zone: There should be a container with volume of no more than 600 ml in Arrival Zone. The container must be purchasable and may not be processed or re-created. Container must be empty before putting Egg in. Scores are awarded if Egg is placed in container without any damage.
3. Teams may set obstacles and traps on the track to control speed of Egg in order to assist Egg completing tasks.
4. During Preparation, Teams may place tracks, obstacles, and traps in Demonstration Area to test. However, at any moment of Demonstration, Teams may not touch these tracks, obstacles, and traps in any ways nor take any proactive actions to affect Egg’s “travel”, such as: blowing (including using fan or hair dryer), vibrating, etc.
5. At any moment of Demonstration, Egg may not leave the area of 4000mm \* 1600mm, as shown in Figure 1.
6. Egg used in Demonstration must be raw egg.
7. Teams need to use painting to beautify Egg to reflect cultural characteristics or styles of the country or city where Teams are located. Bonus are awarded for beautifying Egg. Only paint may be added to surface of Egg.
8. Team may receive deduction for violation of Challenge.
9. Material Requirement

Teams need to prepare Egg by themselves.

Teams may only use following materials to create tracks and frames for supporting tracks:

|  |  |  |
| --- | --- | --- |
| Content | Eligible Material | Note |
| Track | Cardboard, EPS Foam Board | May not use wood, metal, or plastic products to create tracks and frames.  |
| Track Frame | Cardboard, EPS Foam Board, Core of Paper Tower |

Materials for creating obstacles, traps, and Task Props are unlimited. Teams may paste rubber and/or soft plastic on the inner side of tracks to reduce impact.