

SWSC Science Competition Rules Template

Science Competition Title: King of the Hill

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Description and Rules for Competition:

To create the tallest free-standing paper structure that is:

- Designed well enough to support a lego man (standing straight up)
- Sturdy enough to withstand the lego man's mass for 30 seconds.

II. Design Parameters:

Lab Materials: (Can be used as part of tower)

1. One sheet of standard sized card stock style paper
2. 30 cm of scotch tape

Secondary Materials: (Can not be used as part of tower)

1. One white board (to plan out design if necessary)
2. One dry erase marker
3. One pair of scissors

Testing Conditions

1. No previously made towers can be used. All participants must build their towers on site at the start of the activity. (Previously made towers may not enter the room at all).
2. The scissors, whiteboard and dry erase marker may not be part of the tower design. These are to help you construct the tower only.
3. The paper tower must be able to stand, without any additional support, for 30 seconds. You may not hold it up with your hand. If the tower collapses during testing, the participants are disqualified. Using tape to attach the tower to the table is **okay**.
4. The lego man must also be able to stand, upright, for 30 seconds. Students will have three chances to place the lego man on their tower once they are ready to test. Failed

attempts include: dropping the lego man, standing him upright but having him tip/fall over prior to 30 seconds, a collapsed tower.

- a. By “stand upright,” this means that the only part of the man’s body that may touch the paper tower is his feet. No tape may be attached to the lego man in **any way**. He may not be laying on his side, hanging from the side of the tower or leaning against the tower in any way.
5. The height of the tower is measured to the feet of the lego man, and is not measured to the tallest point of your tower. Therefore, if you construct a 100cm tower, but the lego man is standing at a height of 20cm, the height of your tower is considered to be 20cm. You are trying to give the man the highest vertical displacement from the table.

Testing Process

1. Students will have 40 minutes to complete their design. Once the tower itself is completed, the participants must call over the judge to inspect the tower. When the judge has determined that the tower meets all regulations and can stand, by itself, for 30 seconds, he will present them with the lego man.
2. Participants will then get three attempts to stand up the lego man on their tower for an additional 30 seconds. If the participants fail all three attempts, 5 points will be taken off for each additional attempt until we reach 0 points.

How Scoring will be performed:

1. Cheating, copying off of other teams, touching another team’s lab materials and using materials not provided by the judge are all grounds for immediate disqualification.
2. Tower meets all testing conditions and stands for 30 seconds: 3 points
3. Lego man is able to stand upright on tower, without additional support for 30 seconds: 3 points
4. If #2 and #3 are successful, the judge will measure the height of the tower (from table to feet of lego man) in full centimeters. 1 pt/cm

If a tower is measured as 12.5 cm, by rule, the tower receives 12 height points, since it only covered 12 full centimeters.

The winning team for this contest must have done all of the following:

1. Construct a free-standing tower that meets all guidelines and that stands upright for 30 seconds.

2. Stand a lego man somewhere on the tower for an additional 30 seconds.
3. Have more displacement from the top of the table to the feet of the lego man than any other team.

How Tie-Breaker will be performed (if needed):

In the event of a tie, the tiebreaker will be broken based on the following criteria:

First Tiebreaker: Least amount of attempts to stand the lego man upright

Second Tiebreaker: Team that finished in shortest amount of time

Third Tiebreaker: The best *A capella* performance of “Ain’t No Mountain High Enough” in the style of Marvin Gaye and Tammi Terrell as scored by the judge.

Number of students allowed in each individual team:

Up to 3 students

Number of teams allowed to compete from each individual school:

Up to 2 teams but must compete the same session