



presents

National All Rounder Championship

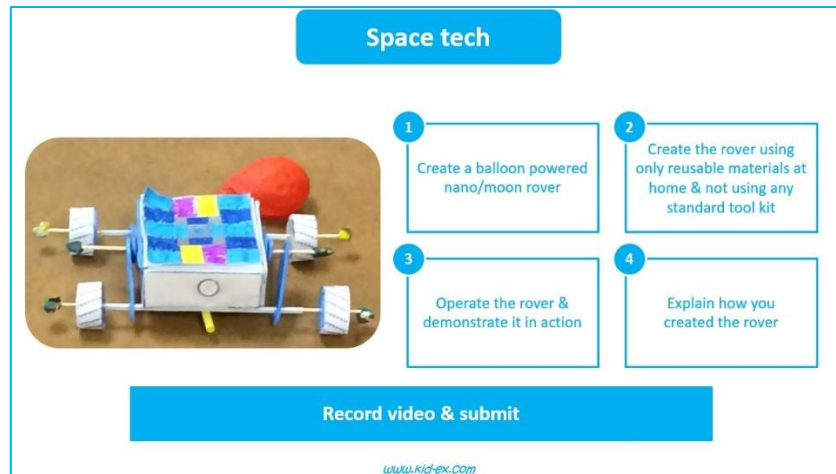
1 May 2021 - 31 July 2021

Self-Learning Manual: Activity 14

Cognitive skills:

Space tech

Age: 15-17 years



Activity description

The child is required to create a balloon powered nano/mars rover. A Mars rover is a motor vehicle that travels across the surface of the planet Mars upon arrival to help examine the territory & collect data. For the purpose of this activity, the object designed should look like a Mars rover instead of having capability of collecting any data. Multiple videos shared in web resources to visualize & understand.

The child is expected to create a Mars rover structure & propel it using a balloon. All the material used for building should be reusable material from home and not any standard kit specially procured for this activity.

The child is required to make the rover, inflate connected balloon & release to show the rover in motion for at least 2 seconds in the video. In the same video, either before or after the demonstration, the child is required to talk explaining how the child made the Mars rover and what variations did the child try to improve the run time of the rover. The video narration should not be through reading/prompts. Video editing is not allowed & entire video should be recorded at one go.

Record video & submit. Total video length should be less than 90 seconds (even for Ex submissions).

Assessment guidelines

The total non-bonus points for this activity is 30. Every submission would be rated as either of below.

M = Master
(100%)

Rover runs for at least 2 secs continuously, child has used all reusable material & video covers (1) how rover was made & (2) variations for higher runtime

Rover runs for at least 1 sec continuously, child has used all reusable material & video covers (1) how rover was made & (2) variations for higher runtime

I = Intermediate
(80%)

B = Beginner
(50%)

Rover runs for at least 1 sec, child has used all reusable material & video covers (1) how rover was made

For participating in the event & making an event relevant submission which does not meet assessment guidelines for M, I or B.

A = Aspirant
(25%)

NA (Not applicable)

No submissions or any submission which is irrelevant for the activity.

50% bonus marks: If the child securing an M can run the designed rover for at least 3 second continuously

Expert coach speaks

With all the talks about Earth going to be inhabitable for humans in the next few 100 years & human race being required to find another planet to live, Space Tech & Research is expected to be a key emerging trend in the next couple of decades which would see a lot of investment & economic opportunity.

It is not just a future employment/career opportunity, it is equally important as a topic which brings the best of cognitive skills & creativity/imagination into practice. Children/youth developing interest in this space will find themselves at centre of exciting opportunities soon.



Key benefits of this activity

The activity benefits in many ways:

- Improves scientific knowledge & application
- Teaches problem solving skills
- Develop creativity & ignite curiosity
- Improve future employability and/or entrepreneurship prospects
- Develops an environment friendly mindset

Common mistakes to avoid

- *Rover structure not balanced*
- *Rover not moving in straight line*
- *Created structure does not look like a rover*
- *Tyres not smooth / placed improperly*
- *Weight of the structure too high*
- *Balloon air release not controlled*

Useful web resources

- [Balloon powered rover: Video 1](#)
- [Balloon powered rover: Video 2](#)
- [Balloon powered rover: Video 3](#)
- [Car powered by balloon](#)
- [Air powered car](#)
- [Balloon powered car](#)
- [Text article on building rover](#)

To submit your entry, visit our website (www.kid-ex.com). For any queries, email us at info@kid-ex.com.

Keep learning! Keep growing! Stay happy! Be successful!