

Scope Document – **Potential Energy Vehicle**

Junior Skills (Team Competition)

Number of Competitors: six teams of two

Contest Length: 2 hours

Check in time: 11:30 pm

Contest Start: 12:00 noon

Purpose of the Challenge:

Working in teams of two, contestants will use the potential energy of a 1-kg mass suspended 1 meter above the ground to propel a pre-built cart as far as possible across a level surface. This will be a distance event and the cart that covers the greatest distance along the course will be the winner. If more than one of the carts travels the entire length of the track, the fastest recorded time will determine the winner.

Eligibility:

Contestants must be in Grade 6 to 10

Project Description:

The energy to move the cart must come exclusively from the potential energy of the 1-kg mass. The 1-kg mass will be provided and will be a standard physics hooked mass (http://store.pasco.com/pascostore/showdetl.cfm?&DID=9&Product_ID=1607&Detail=1)

The student team will attach the provided mass to the cart system, at most 1 meter above ground (measured from the base/bottom of the mass to the floor). The height will be verified by Skills Canada volunteers.

Once prompted by the officials, the student team will release their cart. (The cart must not be pushed). The cart must be released and begin its motion entirely behind the start line and must not be touched after release.

The design must have the 1-kg mass transport on the cart all the way to the cart's stopping point.

The cart must remain on the ground and roll over the entire length of the course - no projection or vaults are allowed.

The course will be approximately 6-feet wide and carts that hit the PVC pipe side walls are allowed to deflect and keep going, but must do so on their own. (Remember, no touching the cart after it is released.) The cart must fit the width of the track.

Teams will be allowed two trials; the better distance will count. Teams will have 5 minutes between trials to make modifications.

Equipment / Tools / Materials

Carts are to be constructed before coming to the event using any materials. Repairs may be made between the two trials using materials similar to those used in the original. The basic design may not be changed. Contestants are responsible to bring their own tools.

Safety

Contestants will behave in a safe, courteous manner during the event. Any horseplay by a team member will result in disqualification of the entire team.

The Tech Chair will have final authority over matters of safety.

Judging Criteria

The cart that covers the greatest distance along the course will be the winner. If more than one of the carts travels the entire length of the track, the fastest recorded time will determine the winner.

Technical Committee

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