

Week 3

Q38- Are we allowed to use a chemical, endothermic or exothermic reaction?

No. See Rule 2.1. The only possible energy transformations are described in 2.2, 2.3 and 2.4.

Q39- The Rules stipulate that the device must have been made by the participants. I was wondering about the scope of this rule. In other words, if for instance I need a turbine, can I buy it or do I need to build it?

You are allowed to buy material and add it to your design.

Q40- Regarding the transformer base, can we build a wind turbine and connect it to our vehicle by means of an electrical cable, for example?

Yes, but remember that your device cannot be in permanent contact with the transformer base. See Q2 b and c.

Q41- Does the device have to fit into the sheet paper box when it is assembled or when it is disassembled?

For transportation and storage before the competition, your material must fit into one

or two (separate and closed) boxes that would normally hold 5,000 sheets of paper each. You are not allowed to join the two boxes together to make a single larger box. See Rule 2.9 in the booklet. Then, during the competition, you will have 5 minutes before your turn to set up your device. From this point on, your device will not have to be put back into the boxes. See 4.1 and 4.2.

Q42- Can the moving vehicle maintain a point of contact in the departure zone at all times? The vehicle runs around the hockey pucks, but stays in contact with the floor in the departure zone. In this situation, the point of contact on the floor is not an energy transformation base but merely a support point. The Rules do not say that the entire vehicle must leave the departure zone.

It is true that the Rules do not say that the entire vehicle must leave the departure zone.

However, you must take into consideration that to complete a lap, a vehicle must leave a specific point and return to it. This would not be the case if it were to maintain a permanent point of contact in the departure zone. In such cases, we would consider that the vehicle had never left the departure zone and not completed any laps of the track.

Q43- How is lap time counted... from the time the last part of the vehicle crosses the line to the time the first part of the vehicle crosses it again? Would it then be possible to have one part of the vehicle travel more slowly and the other part more quickly so that the rear of the vehicle would cross the starting line a fraction of a second before the front of the vehicle crosses it. How would the laps be counted in a case like this?

As soon as the vehicle crosses the starting line, the timing device is activated. Once the vehicle returns to the starting line and crosses it again, the lap time is recorded. This is also how it would work for your example.

Q44- Must the vehicle face the starting line or the opposite direction?

It must face the starting line and therefore, the light beam.

Q45- Does the vehicle have to have left the preceding zone entirely before being allowed to count the next zone.

No. See Q6.

Q46- Can the vehicle cut the light beam with something else than its wheels?

Yes, as long as you cut the light beam with a part of the vehicle, it's ok. Read Q16 for more information.

Q47- Does the vehicle absolutely have to touch the track, or is it allowed to fly?

It doesn't matter. On the other hand, it must absolutely cross the light beam on each lap. See Q16 and Q42.

Q48- To complete a lap, must it (the entire vehicle) have left the departure zone?

Yes. See Q42.

Q49- Can you specify the nature of the playing field surface (wood, concrete, synthetic surface)?

It is a smooth hardwood flooring surface, painted flat black.

Q50- I would like to know if we are allowed to stack the four fans one on top of the other during the 90-second period.

You cannot stack them vertically. However, you can juxtapose them horizontally. See Q8.

Q51- Can the wind energy be transformed into mechanical energy directly on the vehicle (using, for instance, a propeller/belt system) or do we absolutely have to use a transformer base?

Yes. See Rule 2.3 in the booklet.

Q52- Are we allowed to use tracks outside the departure zone or is this contrary to Rules 2.5 or 2.8?

No, this is not allowed and it does indeed go against these two rules.