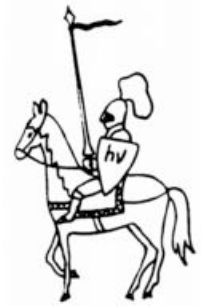




New Zealand Young Physicists' Tournament 2014



Entries are now open for the 2014 New Zealand Young Physicists' Tournament.

Saturday 15 th March 2014	Regional tournaments (Auckland/Wellington/Christchurch)
Saturday 29 th March 2014	National final (Christchurch)
Tuesday 15 th April 2014	NZ squad selection (venue t.b.a)

The 7 problems for the NZYPT 2014 are:

1. Candle Power Plant

Design a device that converts the heat of a candle flame into electrical energy. Investigate how different aspects of the device affect its efficiency.

2. Rubber motor

A twisted rubber band stores energy and can be used to power a model aircraft for example. Investigate the properties of such an energy source and how its power output changes with time.

3. Pot-in-pot refrigerator

The 'pot-in-pot refrigerator' is a device that keeps food cool using the principle of evaporative cooling. It consists of a pot placed inside a bigger pot with the space between them filled with a wet porous material, e.g. sand. How might one achieve the best cooling effect?

4. Twisted rope

Hold a rope and twist one end of it. At some point the rope will form a helix or a loop. Investigate and explain the phenomenon.

5. Ball sound

When two hard steel balls, or similar, are brought gently into contact with each other, an unusual 'chirping' sound may be produced. Investigate and explain the nature of the sound.

6. Loaded hoop

Fasten a small weight to the inside of a hoop and set the hoop in motion by giving it an initial push. Investigate the hoop's motion.

7. Magnetic brakes

When a strong magnet falls down a non-ferromagnetic metal tube, it will experience a retarding force. Investigate the phenomenon.

Important information:

During the physics fights (PFs) the Reporter may reject the challenge of **two different problems** in total without penalty. For every subsequent rejection, the coefficient of the Reporter (see section X), is decreased by 0.2. Any school in New Zealand is able to request entry into NZYPT prior to the published deadline. In cases where a school does not have enough suitable students, schools may combine, at the discretion of the NOC, to form a team. An NZYPT team is composed of three secondary school students. The composition of the team cannot be changed during the tournament

Students are encouraged to get advice from any source to develop their own solution, but they should be prepared to answer the question “where did you get that from?”. Significant sources should be acknowledged. The jurors will judge all PFs according to the international juror guidelines http://www.iypt.org/images/4/43/scoring_guidelines.pdf