



The Rat Race

Object:

To train a laboratory (or pet) rat to run a prescribed maze in the shortest time possible.

Materials to be supplied by the student and brought the day of the contest:

Laboratory (or pet) rat, maze created to the prescribed specifications below, cage for transporting the rat, water.

Rules:

A laboratory (or pet) rat will be used.

NSTA [Guidelines for Responsible Use of Animals in the Classroom](#) must be followed.

The animal must be properly cared for at all times.

- a. Provide adequate space.
- b. Provide an exercise wheel or substitute.
- c. Provide nutritious, fresh food and water daily.
- d. Handle the animal gently.
- e. Maintain a clean cage environment.

Use only positive reinforcement during training sessions.

Contestants must submit records of animal's weekly weight. Rats shall not be allowed to drop below their *ad lib* weight (weight when provided an unlimited amount of food) by more than 10%.

Rats must be brought to the contest in a secure carrying case and may be removed from this case only in the contest room.

Timing will begin upon release of the rat at the start of the maze.

Neither the rat nor any part of the rat maze may be touched until the timing of the run has stopped.

Maze Specifications:

- a. The maze may be made of any opaque material.
- b. The base dimensions are 42 x 84 cm.
- c. The wall height is 15 cm.
- d. Runways and gates are 7 cm wide.
- e. A transparent or mesh lid is required.
- f. The maze configuration is as diagramed. (not to scale)

Scoring:

Timing will start when the rat is released with no more than its head in the start of the maze. Timing will stop when the rat arrives at the finish and/or when a trial run exceeds a previously recorded best elapsed time. The winning rat in each contest category will have the lowest elapsed time. If time permits, up to 3 runs will be allowed and the best elapsed time will be recorded.

In case of ties a run off will determine the winner. If a tie still exists, the rat with the lowest number of complete stops will be declared the winner.

Comments:

Before construction, seek adult guidance before using knives or power tools.

Maze Construction: All doorways and alleys are 7 cm wide. A cardboard maze works well and can be made without power tools. Use a knife with a retractable blade to cut a base 42 x 84 cm. Next draw the interior walls on the base using a straight edge as a guide. Cut 8 strips of cardboard 15 cm wide and 84 cm long. These can then be trimmed to length by cutting off pieces in 7 cm increments. The trimmings are used for the cross walls. Use masking tape to assemble the walls along the lines marked on your base. 1/4" plywood, 1/8" door skins or Masonite may also be used but these must be sawn to width. All construction should be at a technical level commensurate with the abilities of a student in that age category.

The rat should be obtained from a breeder, purchased through a pet shop or biological supply house.

Reward treats can be used at the finish.

Follow the NSTA [Guidelines for Responsible Use of Animals in the Classroom](#).

