

CAN RACE

Description:

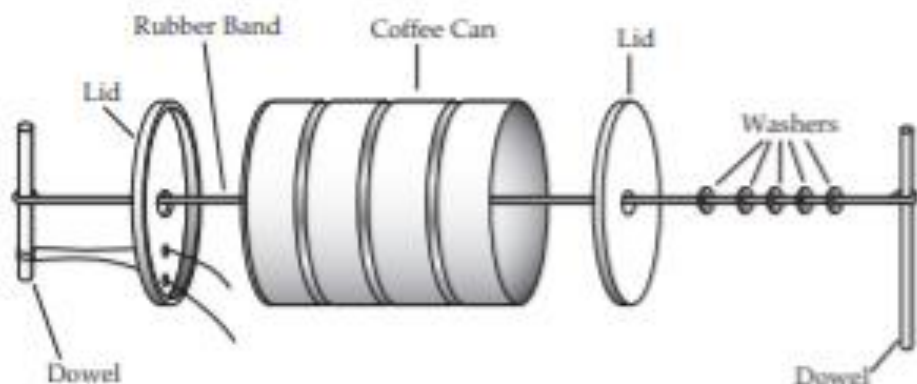
A team of two students will race a can against other teams in a drag race format.

Number of Participants: 2

Approximate Time: 20 minutes

The Competition:

1. Students will make and bring to the contest one can racer for each team of two students.
2. The racers will be run on a course approximately three meters in length and thirty centimeters in width. The racing surface could be a gym floor, hallway, concrete or close nap carpet. Lane control will be provided by boards or other barriers along the outer edges of each lane.
3. Any can (small or large size) may be used. Racer surfaces may not be modified by addition of any substance.
4. Lollipop, Popsicle or other similar sticks may be used as the running arm. Tape and washers may be used.
5. Racers will be released by contestants without any assisting push and must not be touched by anyone until they cross the finish line. Racers stuck against lane barriers will have their "run length" measured at that point. Those jumping off of the course will be ranked after those that stay on the course.



CHOPPER CHALLENGE

Description:

Contestants will build and test 3 choppers (rotary flying devices) using only the materials provided at the competition. They may bring pencils, a ruler/straight edge and scissors. No other equipment/supplies are allowed.

Number of Participants: 2

Approximate Time: 45 minutes

Construction:

1. Each team will be given one sheet of 8 1/2 x 11 inch 60-90 lb. card stock and 3 standard paper clips to construct 3 choppers that use rotation to slow their descent.
2. Each chopper must be made using a single piece cut from the sheet of cardstock provided and one paper clip. The pieces for the 3 choppers need not be the same size and shape.
3. Each chopper must rotate in a different direction, as shown below, and they must be labeled with the direction they are intended to rotate. The drawings only illustrate the direction of rotation. The choppers may be any design.



Clockwise Rotation



Counter-Clockwise Rotation



Vertical Rotation

4. Contestants may test their devices in the building area but will not be allowed to test them from the official drop location.

The Competition:

1. When it is their turn, contestants will release their choppers, one at a time, from the height specified by the judges. All teams will release their choppers from the same height.
2. The judges will measure and record the time required for each chopper to reach the ground/floor. Time will continue if the chopper bounces off an object, but will stop if the chopper gets stuck and stops.
3. A chopper's flight time will be divided by 2 if it does not rotate in the direction labeled.

Scoring:

The team's score will be the sum of the flight times for all three choppers. Longest total time wins. Ties will be broken by comparing each team's single longest flight times.



CLAY BOATS

Description:

Students will construct a clay boat from a wad of clay with a total mass of 25 grams. Students will then float their clay boat in a tub of water. Plastic centimeter cubes (mass of 1 gram each or other objects of uniform weight) will be loaded in the hull of the clay boat one at a time until the boat sinks.

Number of Participants: 2

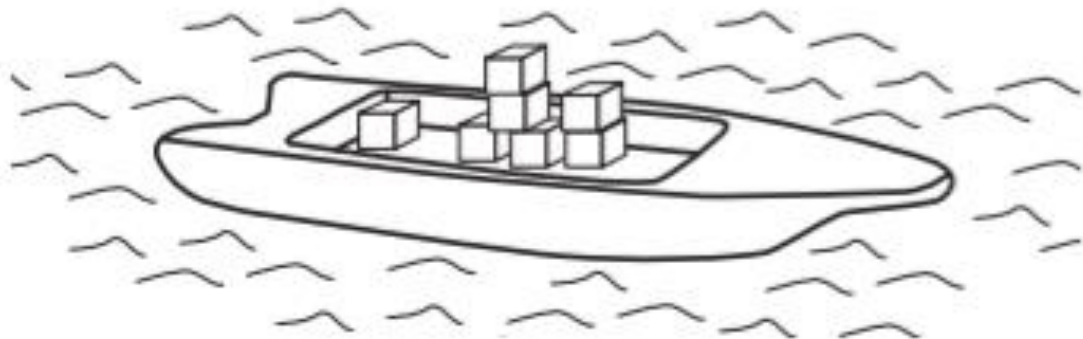
Approximate Time: 30 minutes

The Competition:

1. Clay boats must be built on site with the clay provided by the Science Olympiad officials. Each team will be given the same amount (25 grams) of unused and unworked Plasticine clay.
2. Participants may not practice filling the boat during the 10-minute building period. Teams will be timed during this period for purposes of tiebreakers. All boats must have a dry start. The plastic cubes or other objects must be dried between testing trials. All students will be given dry objects to load.
3. During the test period, team members will load their own clay boats. Loading some objects before floating the boat will be allowed; but if it sinks when launched, the team will receive a score of zero. All objects loaded after launching will be added one at a time with officials counting the objects as they are loaded. All boats must be loaded within the 10-minute test period.

Scoring:

The number of objects on board the clay boat as the boat sinks is the team's score. The highest score wins. In case of a tie, shortest elapsed time during the construction period will determine the final score.

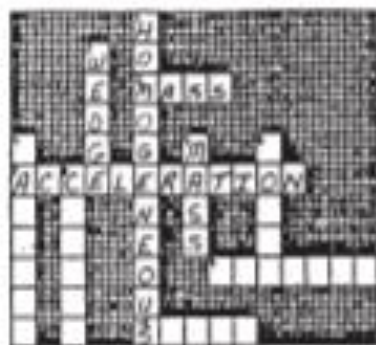


CROSSWORD SCIENCE

Description:

The purpose of this event is to test the student's knowledge of scientific terminology. Definitions of science vocabulary words will be presented to students in a crossword puzzle format as illustrated below.

Note: In this example there are fill-in-the-blank type questions. At the Science Olympiad the students will be given only definitions in the ACROSS and DOWN sections of the crossword.



Across

1. Meter takes up space and has _____.
7. One of Newton's laws states that if the force remains unchanged, as the mass of an object decreases, the _____ increases.
9. A stone resting on the edge of a cliff has no _____.

Down

1. Solids are _____ materials.
4. The idea that all objects fall at the same rate if air resistance is neglected was stated by _____.
5. The maximum of _____.

Number of Participants: 2

Approximate Time: 30 minutes

The Competition:

1. Students will work in teams of two to complete a crossword puzzle of science vocabulary. Definitions of science words will be given in numbered columns marked **Across** and **Down**. (See illustration.) Students will cooperate to complete the crossword puzzle. Talking in quiet voices will be allowed.
2. Students will be timed. The start time and end time will be recorded on their answer sheet.
3. All words placed in the crossword puzzle will be taken from Elementary science textbooks.
4. Between 30 to 50 words will be placed in the crossword puzzle.

Scoring:

1. One point will be scored for each correct word placed in the puzzle.
2. The most points earned in the shortest time will determine the winners.

