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5) The FLYING CROWN and BALLOON demonstrate the conservation of momentum.

6) Introduce the study of trajectories by using the SUPER PITCHER.

7) The WHEELED SAILBOAT can be used to demonstrate applications of vectors, for example, to determine what angle at which to set a sail for maximum speed in a given wind direction.

The three remaining toys are the front wheeled propeller car, which is set rotating by blowing on it, and the two vehicles driven by a fifth wheel, which is set rotating by pulling on a length of notched plastic. These are good examples in a discussion of work and energy: the work done to set the wheel rotating; rotational kinetic energy; translational kinetic energy; and energy lost to frictional forces.

Additional recent acquisitions of mine include: an inch/centimeter tape measure; a flying propeller; and a blow pipe which suspends a ball in a stream of air using Bernoulli's principle.

Food and toys . . . excellent invitations for physics study!

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Fast food fysics

The national chain of Burger King Restaurants regularly distributes, free of charge, toys which physics teachers could use to demonstrate and/or discuss physical concepts. Following are examples of what I call "Fast Food Fysics."

1) A discussion of angular momentum can be illustrated with the GYROSCOPE and the TIPPY TOP.

2) The BINOCULARS are useful in studying optics.

3) The WAVING FLAG is an interesting device which converts rotational motion into linear simple harmonic motion.

4) By looking at the RULERS through different angles, students can convert inches to centimeters.

Put the solution on the heat source and heat it, stirring constantly until all the sugar is dissolved in the solution. Continue heating and stirring until the solution begins to boil. Remove the beaker from the heater and place it in an easily accessible location where it will be able to remain undisturbed for about a week. Using the stick and paper clip (as shown in diagram) set a string into the centre of the beaker. Check the beaker daily and watch the crystals grow!

IDEA NO. 470

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FAST FOOD PHYSICS

Students, of all ages, are simultaneously curious and bemused by a teacher who plays with toys. A shelf full of toys will turn almost any student's head, arouse his curiosity, bring a smile to his face, and like a magnet, pull him over to play with the toys.

The national chain of Burger King Restaurants regularly distributes, free of charge, toys which can be used to demonstrate and/or discuss physical concepts. These toys and their associated connotation of food provide an excellent mix of attraction. It is their use of physics which I have named "Fast Food Physics".

Each of the toys I have collected can be used to illustrate a particular concept in physics.

- 1) The GYROSCOPE and the TIPPY TOP can be used in a discussion of angular momentum.
- 2) The BINOCULARS are useful in studying optics.

- 3) The WAVING FLAG is an interesting device which converts rotational motion into linear simple harmonic motion.
- 4) The RULERS can be used to convert inches to centimetres and visa-versa by looking at the rulers through different angles.
- 5) The FLYING CROWN and BALLOON demonstrate the conservation of momentum.
- 6) The SUPER PITCHER can be used for an introduction to the study of trajectories.
- 7) The WHEELED SAILBOAT can be used to demonstrate applications of vectors, as in answering the question of what angle to set a sail for maximum speed in a given wind direction.

The three remaining toys are the front wheeled propeller car which is started rotating by blowing on it, and the two vehicles driven by a fifth wheel which is set rotating by pulling on a length of notched plastic. These can be used in a discussion of work and energy, the work done to set the wheel rotating, rotational kinetic energy, translational kinetic energy, and energy lost to frictional force.

Additional recent acquisitions include an inch/centimetre tape measure, a flying propeller, and a blow pipe which suspends a ball in a stream of air using Bernoulli's principle.

Food and toys excellent stimulants for physics.

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