

We Could Be Swinging

Problem:

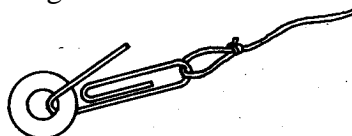
What variables affect the operation of a swinger?

Materials:

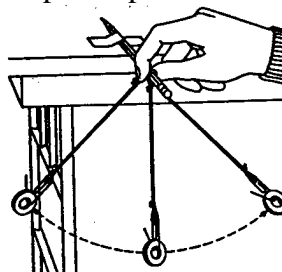
washers or small weights, assorted lengths of string, large paper clips, masking tape, a pencil and graph paper, stop watches, meter stick or ruler.

Procedure:

1. Attach a paper clip on one end of the swinger you received as shown. Add from one to four washers or from 50 to 200 grams.



2. Secure the string to a pencil and tape the pencil to the table as shown.



3. Hold the washer or weight at any angle from the vertical.
4. When directed by your lab partner let go and count the nearest whole number of swings. (1 swing is over and back). Do 3 trials and take an average to the nearest whole number.
5. Tape your swinger to the number line on the chalkboard at the number that tells you how many swings it made in 15 seconds.
6. Repeat the above steps 1 to 5 for a second swinger that you received from your teacher.
7. Utilizing the class data make a graph that compares the independent variable, the length of the swinger, to the dependent variable, the number of swings. Draw the best line of fit that connects as many points as possible.

Summing Up:

1. What did you change when working with the swingers?
2. What did you not change?
3. How did changing the above variables affect the number of swings in 15 seconds?