Pendulums
Period versus length

We are going to try to answer the question: How does the length of a pendulum affect the time it takes to go back and forth (the period)? Try making a prediction as to what you **think** might happen. Remember it's okay to be wrong!

In order to do this we will use timing skills, division and even graphing.

This particular exercise can be done any number of ways, but in this case (to keep things speedy), we will try 5 lengths from 0 to 100 cm.

Pendulums – our pendulums will be nuts hung off of the end of a piece of string.

Key Issues:

Counting correctly: You can't count one swing if it hasn't happened yet. That's why some people like to count Zero when they start the timer.

Measuring Accuracy: Measure from the point the pendulum swings to the middle of the nut. Try measuring it a couple of times. Notice how your measurements might change? That gives you an idea of how accurate you might be.

Timing Accuracy: Is it more accurate to time one swing, or ten swings (then divide the time by 10 to get 1 swing)?

Let's make a table and try to time the following 5 lengths:

Length of pendulum	Time for _____ swings	Time Period for 1 swing
100 cm		
75 cm		
50 cm		
25 cm		
10 cm		

If you would like to be more accurate, try multiple trials (we encourage that).

Next try graphing the Length versus the time period.