Simple Pendulum

Student's Worksheet

Watch the videos and answer the following questions:

1. Describe the motions you saw in the videos?

2. What are the forces that cause the motion of the child and the clock?

3. The equipment in front of you is called a simple pendulum and it exhibits a simple harmonic motion. The period of the pendulum is the time required to complete one complete cycle. Measure the period of the simple pendulum and record your reading.

4. Try to discover the factors that effect on the motion of the simple pendulum? Write you observation.

5. At a specific length, how is the period T is affected by a change in mass?

6. Change the length of the pendulum and record the period at the different lengths. Tabulate your results

7. Plot the relation between L and T taking into consideration the independent and dependent variables in this experiment?

8. What is the type of proportionality between L and T?

9. It is suggested the relation between the length of the pendulum and its period is given by the relation $T^2 = 4\pi^2\,L/g$, where g is the acceleration due to gravity. Using the data obtained in step 6 check the validity of this relation.

10. What should you do to the length of the string of a simple pendulum to double its period?

11. You are captured by Martians, taken into their ship, and put to sleep. You wake some time later and find yourself locked in a small room with no windows. All the Martians have left you with is your digital watch, your school ring, and your long silver-chain necklace. Explain how you can determine whether you are still on earth or have been transported to Mars?