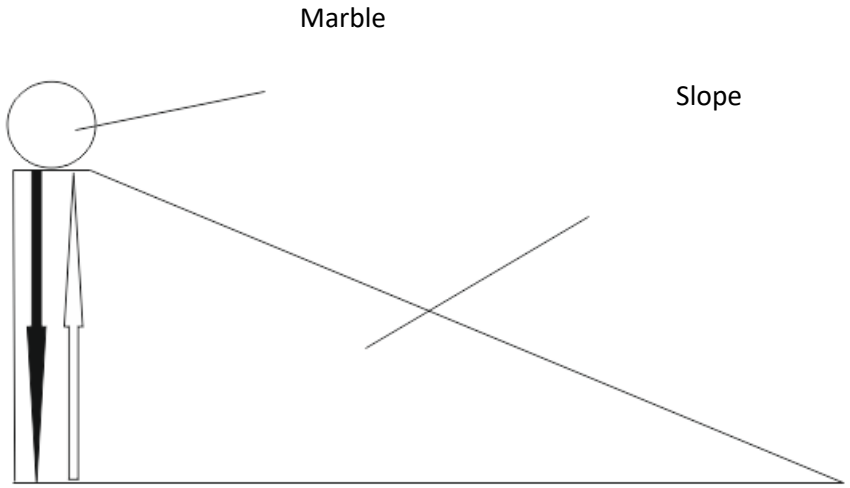
E01 – Marble Run - Pupil Sheet



1. What force is shown by the black arrow in the diagram above?
2. What force is shown by the white arrow?
3. What type of energy does the marble have in the diagram above?
4. Why wouldn't the marble show in the diagram move without an additional force being applied; for example, a push?
5. What energy change will happen when the marble rolls down the slope?

At the top of a slope marbles have _____energy. When placed onto the run _____ will pull down on the marbles, but the inclined plane of the run will _____ this force. As a result the marbles can only move down the incline and not straight down towards the floor. This means that the gravitational potential energy slowly becomes _____. _____ between the marbles and the track converts some of the kinetic energy into_____– we can hear the marbles rolling. When the track changes direction the marble _____ against its outside edge. The marble run matches this push (_____Law of equal and opposite _____) and the marble is slowed. It then changes direction and more potential energy is _____ to kinetic as the marble begins to _____ again.

Newton's	roll	gravity	converted	friction	sound
forces	energy	gravitational potential		oppose	
kinetic energy		pushes			