Unit 1 – Module 2

An accelerated motion activity which leads to graphing motion data

RATIONALE

In the previous graphing activity students encountered curved graphs, or graphs depicting accelerated motion. In this activity the goal is collect data on accelerated motion for the purpose of graphing. The most typically cases rely on gravity to cause constant acceleration whether in freefall or on an inclined plane.

PRIOR KNOWLEDGE AND SKILLS

* experience collecting data in tables
* experience graphing
* experience with accelerated motion though typically qualitative but not quantitative

CE’s AND PE’s

34. Know the relationships between acceleration, displacement, initial and final velocity and time for uniformly accelerating objects when the initial velocity is zero

*35. Use the definition of acceleration in order to determine the acceleration, initial velocity, final velocity, or time elapsed for an object in motion*

*36. Identify scenarios where the motion of objects has acceleration that is in the same or in the opposite direction as their velocity*

38. Know that gravity causes objects to accelerate

* This is a phenomenological observation prior to the explanation provided by the concept of force in Unit 3.

39. Know that gravity must be a consideration for any object near the surface of the earth

40. Know the magnitude and direction of the acceleration due to gravity near the surface of the earth

PHYSICS CONVENTIONS

* The positive y-axis is typically pointed radially away from the center of the Earth
* Vertical distance can be labeled as y, h, d, or confusingly at times x.