

Unit Learning Targets

Department: Science

Course: Physics/Physics with Technology

Instructor(s): Jessica Rodriguez

Standard II: Students will understand the relation between force, mass, and acceleration. (Unit 3: Newton's Laws, A: 1st, 3rd laws, B: 2nd Law)

Student-Friendly Learning Target Statements

Know	Knowledge Targets <i>"What I need to know"</i>	I know Newton's first law and the definition of inertia and equilibrium.
		I know that Newton's second law describes the relationship between force, mass and acceleration.
		I know that acceleration and mass are inversely proportional.
		I know that acceleration is directly proportional to force.
		I know that Newton's third law describes equal and opposite paired forces.

Do	Reasoning Targets <i>"What I can do with what I know."</i>	I can compare the acceleration of objects experiencing different forces, or objects of different mass experiencing the same force.
		I can determine whether or not an object will accelerate due to a net force.
		I can determine the magnitudes of forces acting on an object by setting up equations from a force diagram.
		I can distinguish between action and reaction forces, objects they act upon, and their results on the acceleration of the objects.
Skill Targets <i>"What I can demonstrate."</i>	Skill Targets	I can calculate the net force on an object.
		I can solve equations involving forces, mass and acceleration using Newton's second law.
		I can use the kinematical equations to determine the velocity or displacement of an object once the acceleration is known.
Product Targets <i>"What I can make to show my learning."</i>	Product Targets	I can draw a force diagram for an object and describe each force acting on it.
		I can make a graph of force vs. acceleration and mass vs. acceleration for an object being accelerated by a force.
		I can draw acceleration vs. time and force vs. time graphs given a velocity vs. time graph.

Essential Learning: The critical knowledge, skills, and dispositions each student must acquire as a result of this unit of instruction.

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