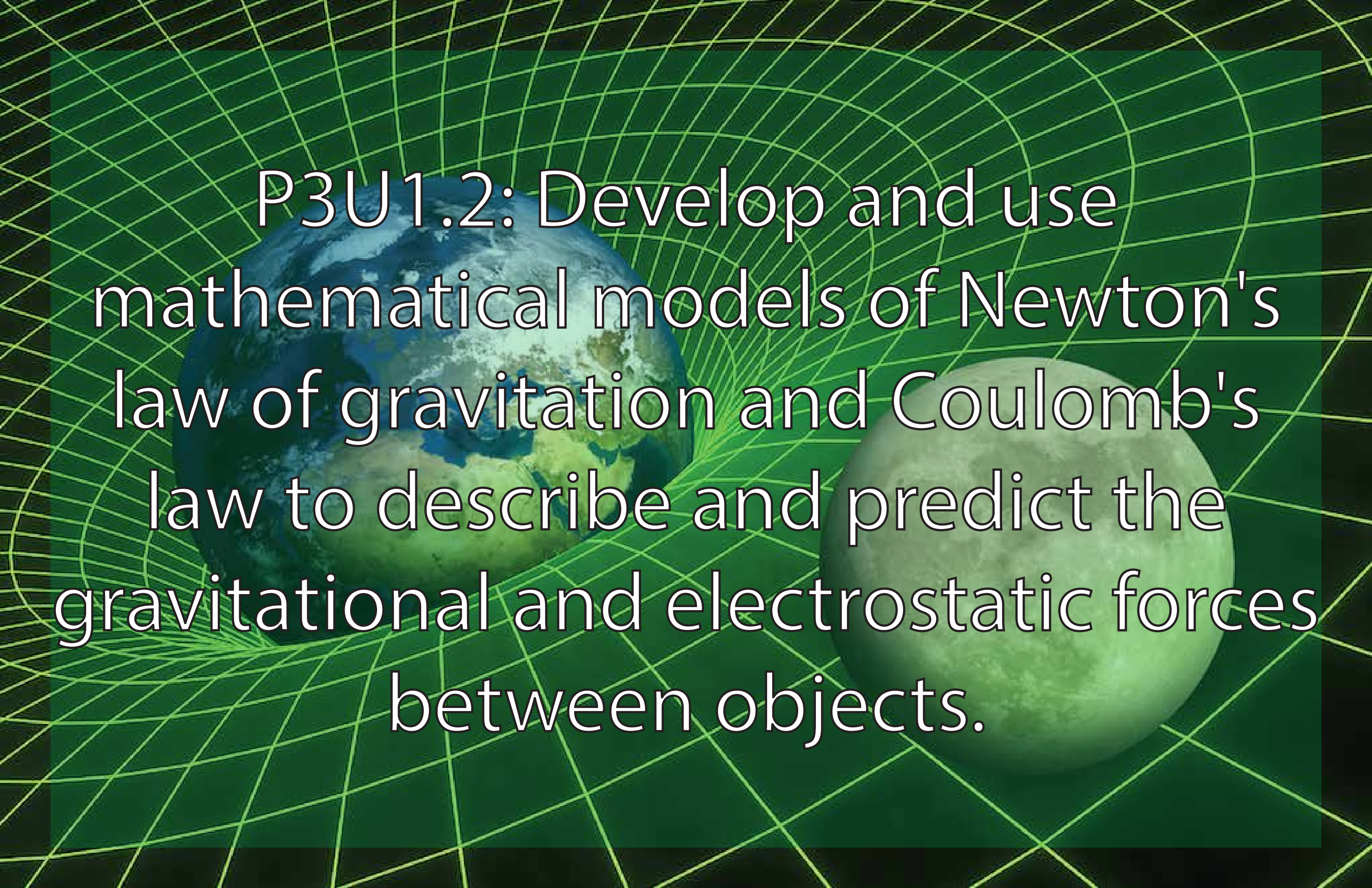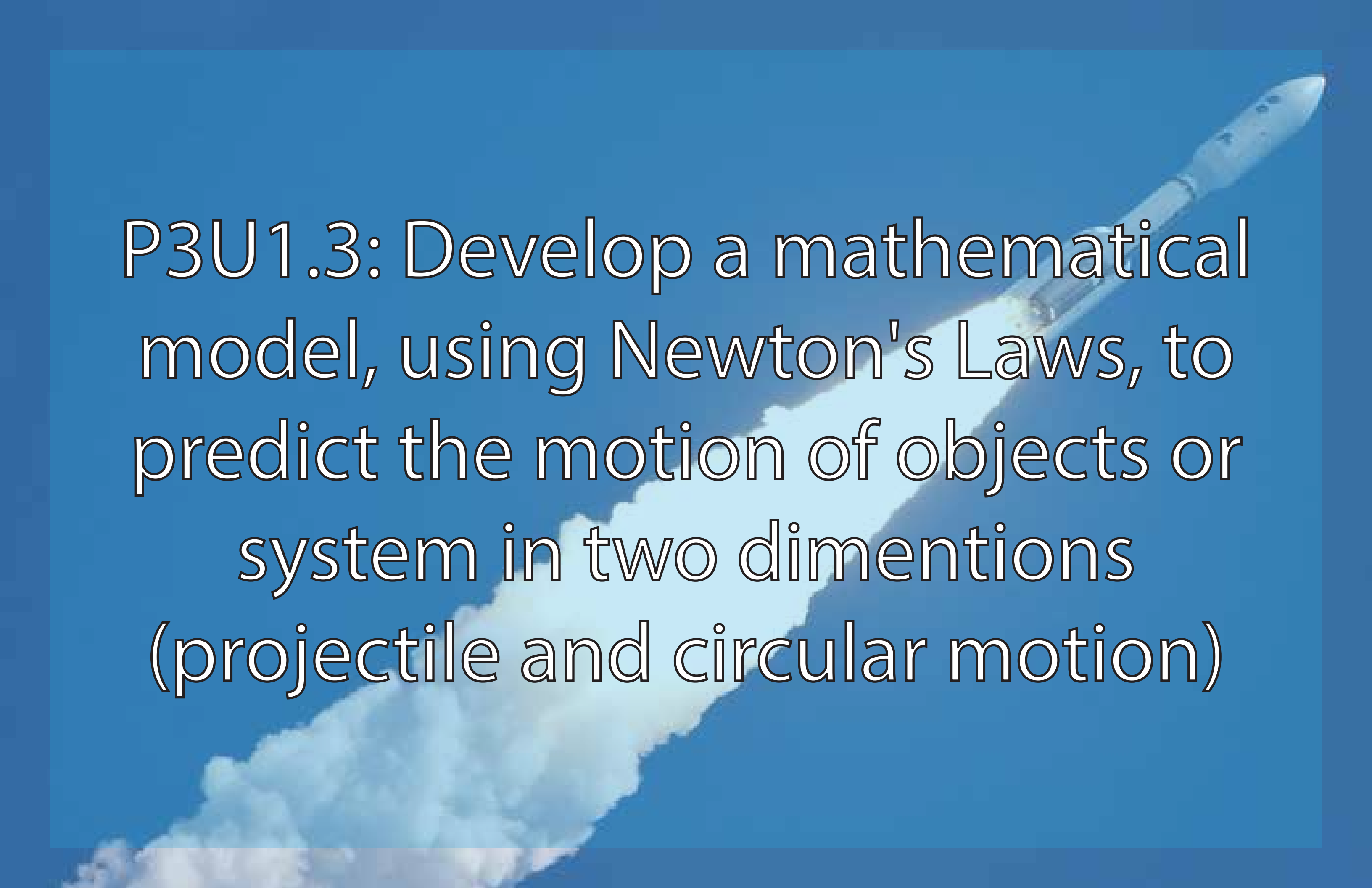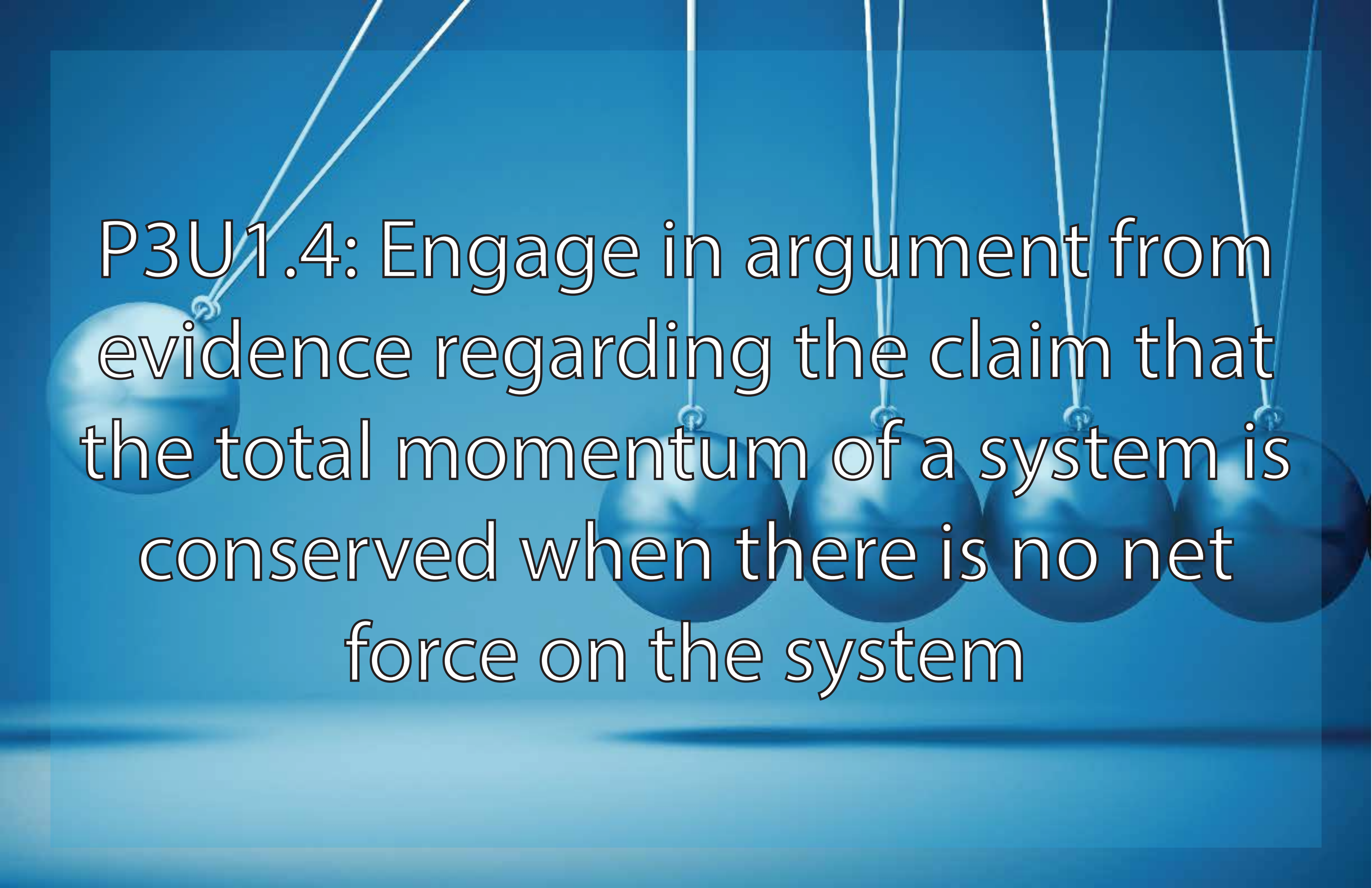P3U1.6: Collect, analyze, and interpret data regarding the change in motion of an object or system in one dimension, to construct an explanation using Newton's Laws.
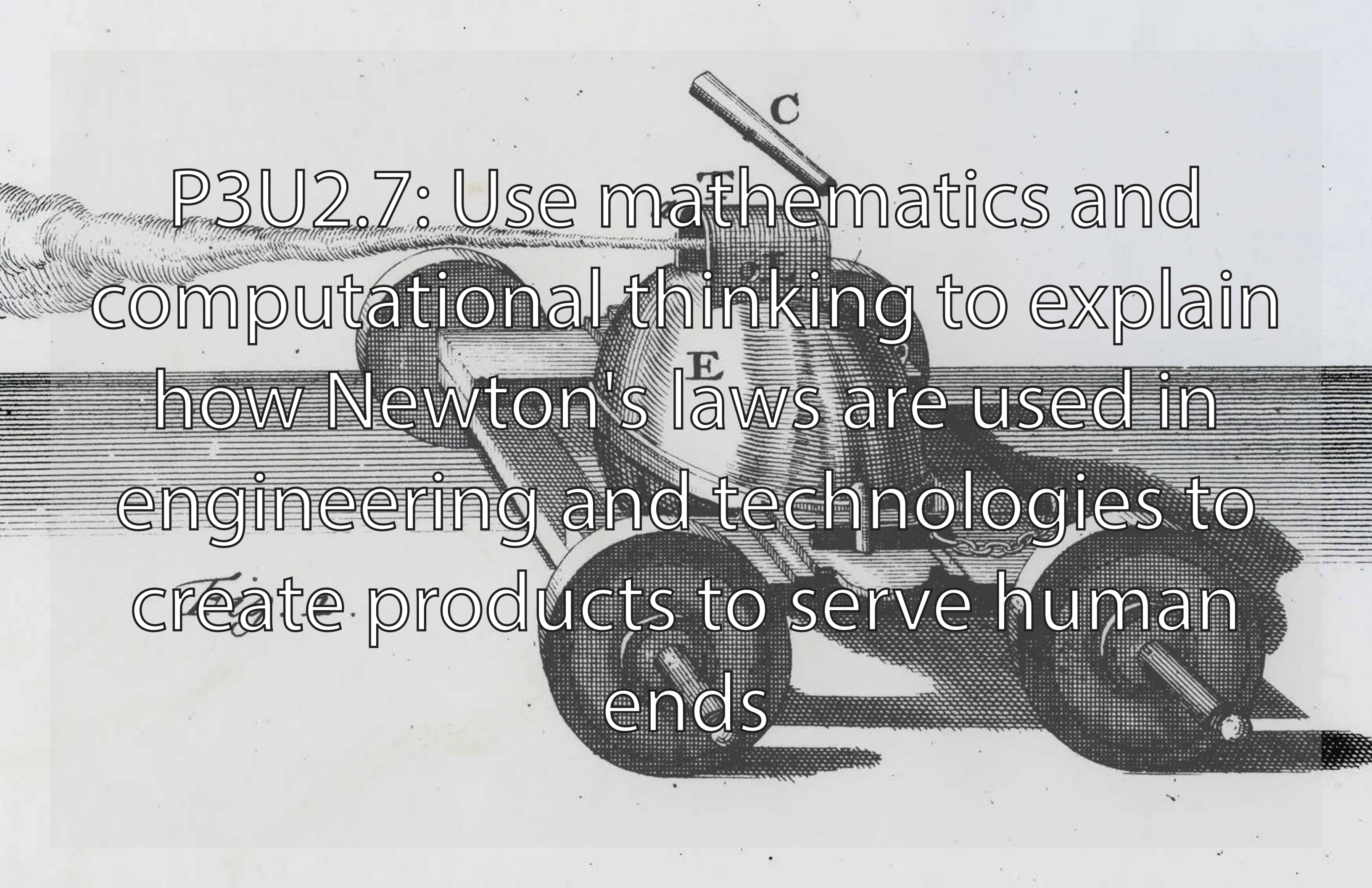
P3U1.2: Develop and use mathematical models of Newton's law of gravitation and Coulomb's law to describe and predict the gravitational and electrostatic forces between objects.
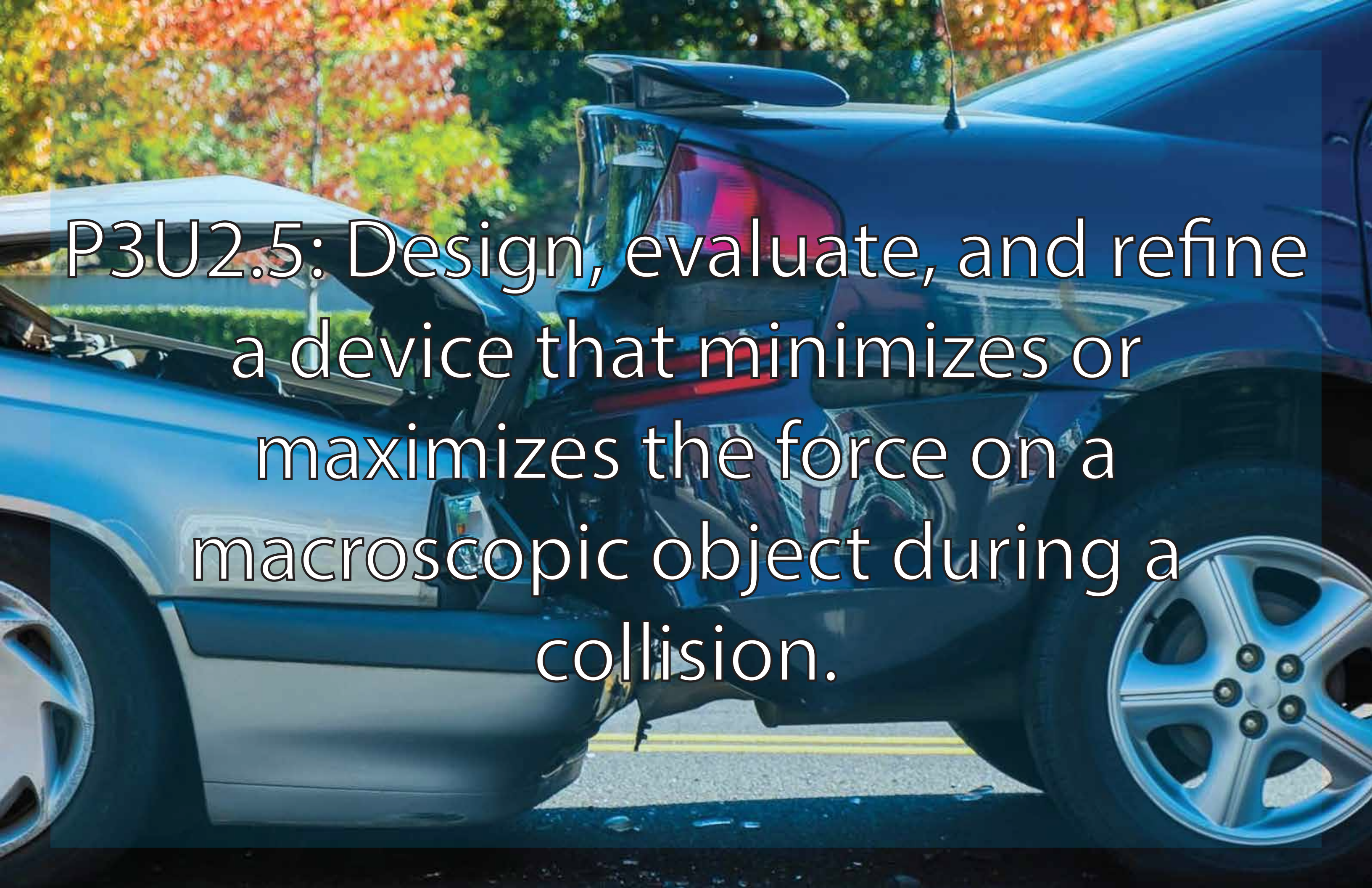
P3U1.3: Develop a mathematical model, using Newton's Laws, to predict the motion of objects or system in two dimentions (projectile and circular motion)
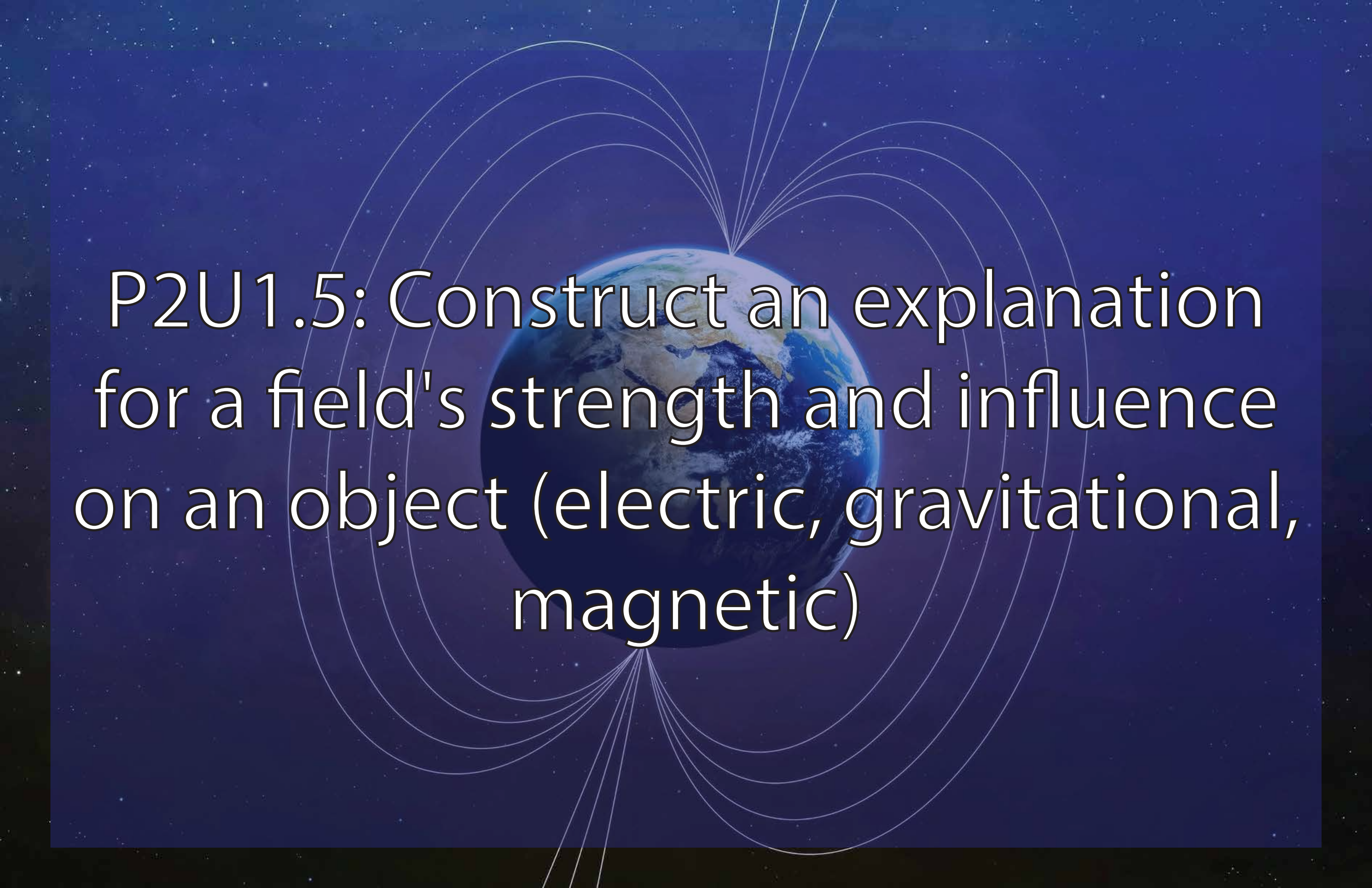
P3U 1.4: Engage in argument from evidence regarding the claim that the total momentum of a system is conserved when there is no net force on the system
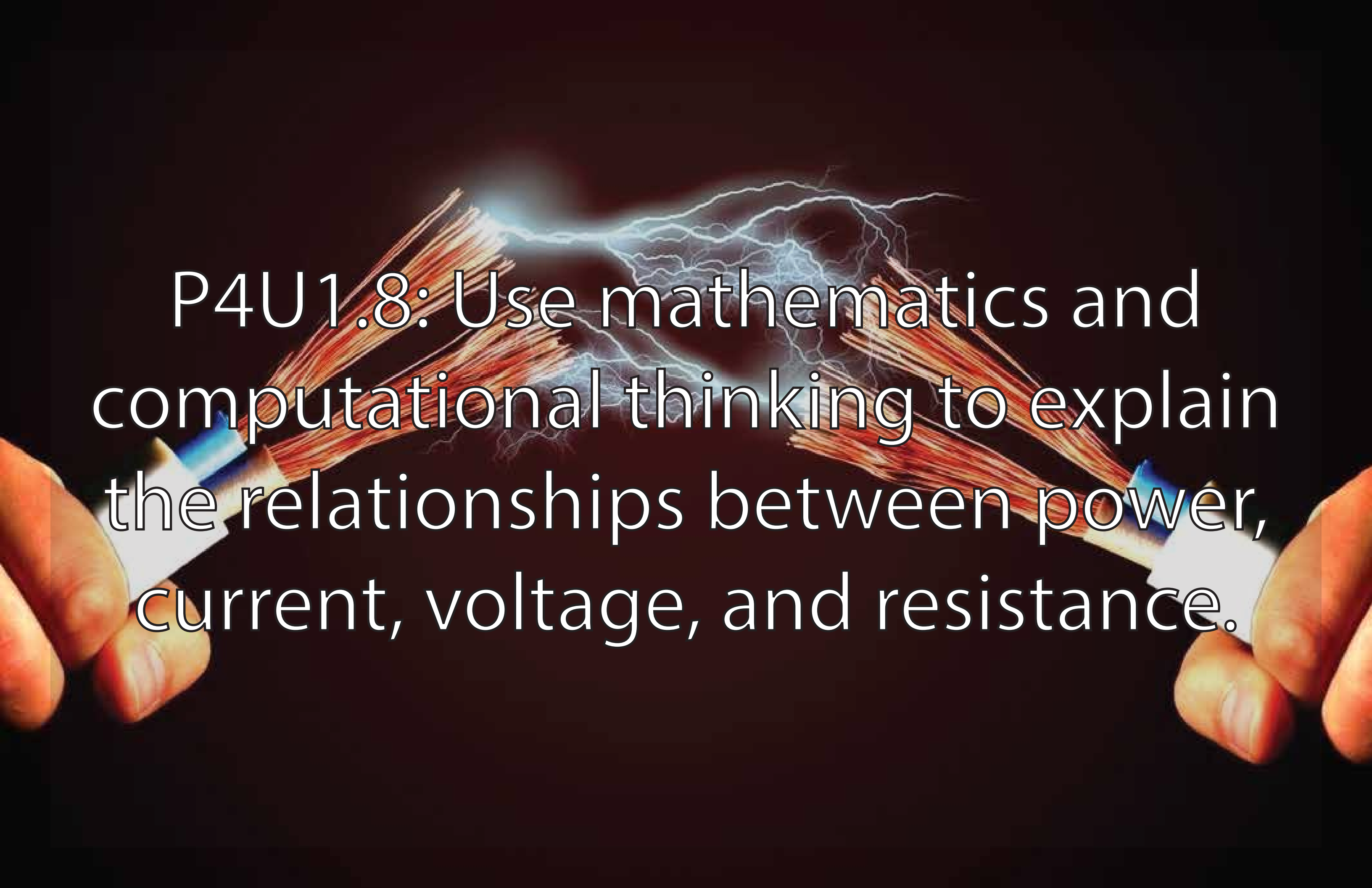
P3U2.7: Use mathematics and computational thinking to explain how Newton's laws are used in engineering and technologies to create products to serve human ends
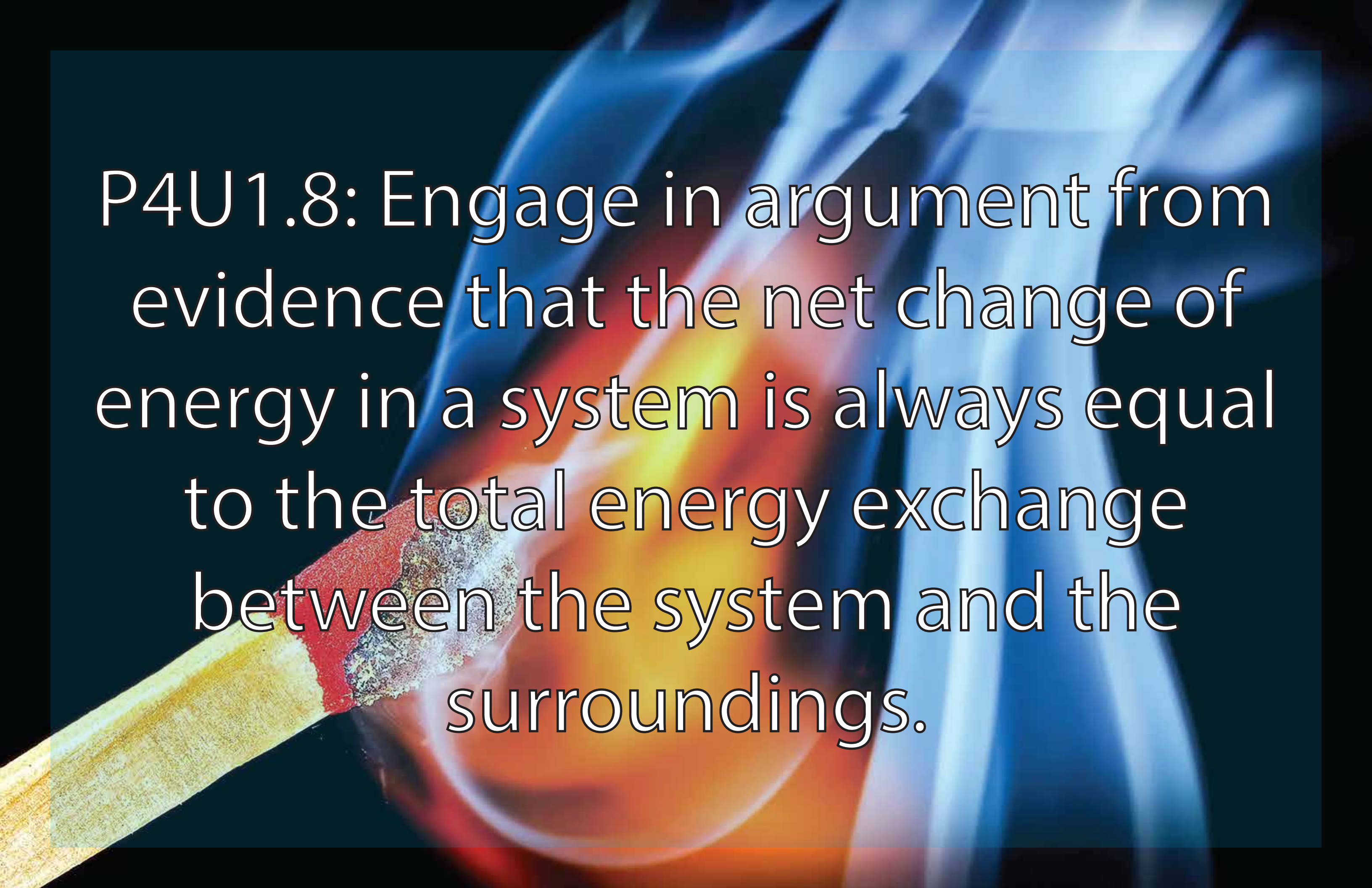
P3U2.5: Design, evaluate, and refine a device that minimizes or maximizes the force on a macroscopic object during a collision.
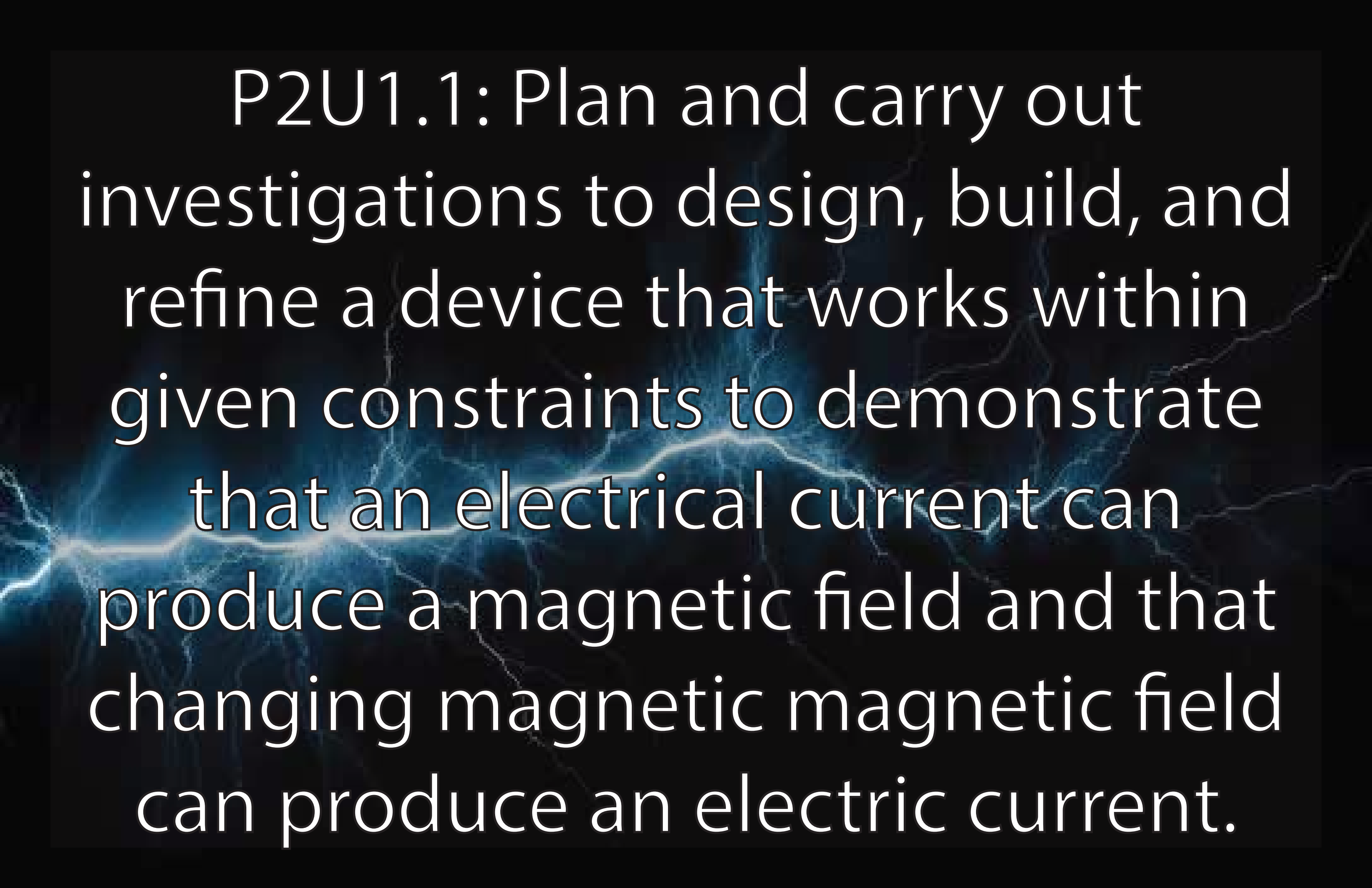
P2U1.5: Construct an explanation for a field's strength and influence on an object (electric, gravitational, magnetic)

P4U1.8: Use mathematics and computational thinking to explain the relationships between power, current, voltage, and resistance.
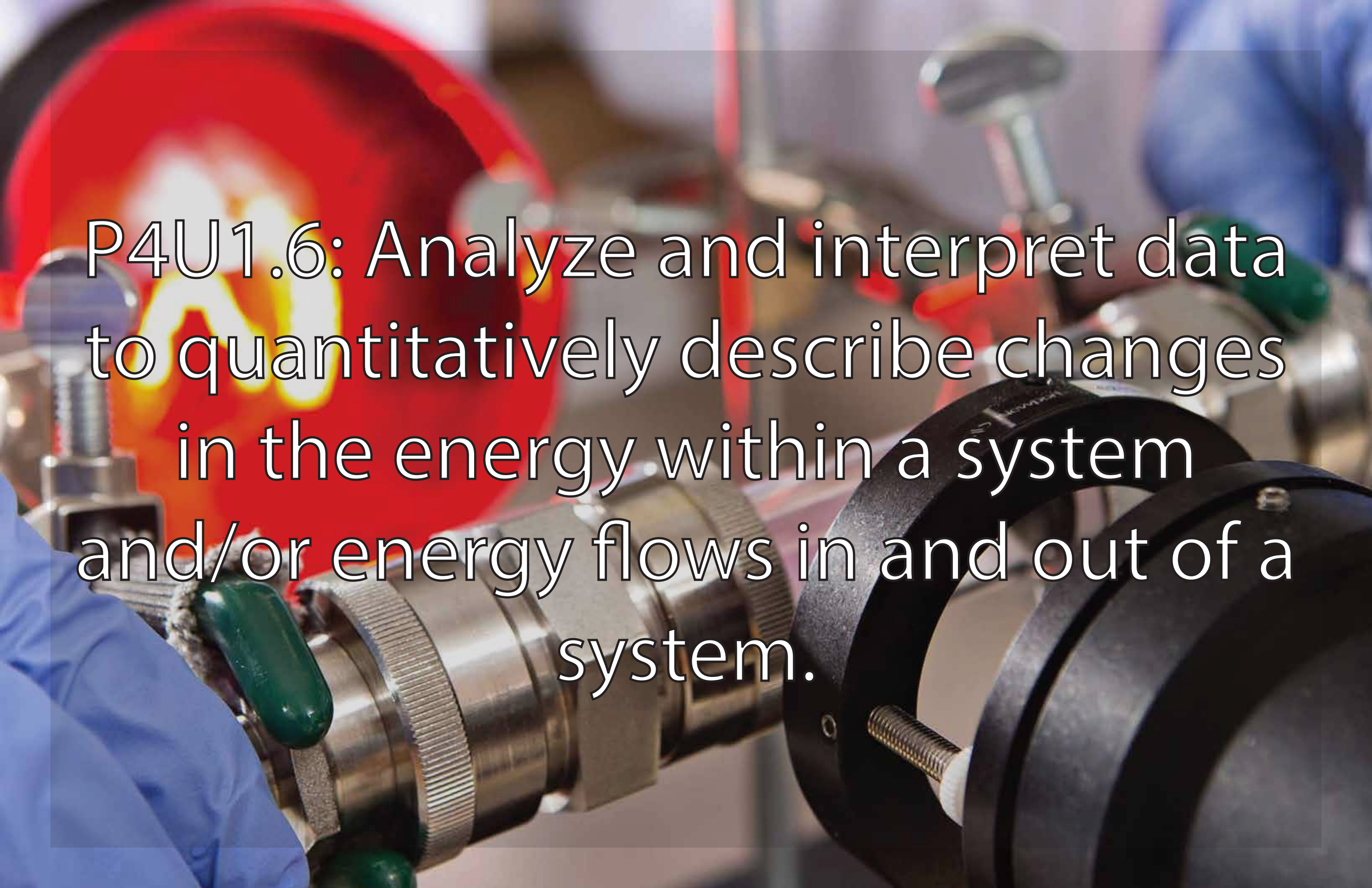
P4U1.8: Engage in argument from evidence that the net change of energy in a system is always equal to the total energy exchange between the system and the surroundings.
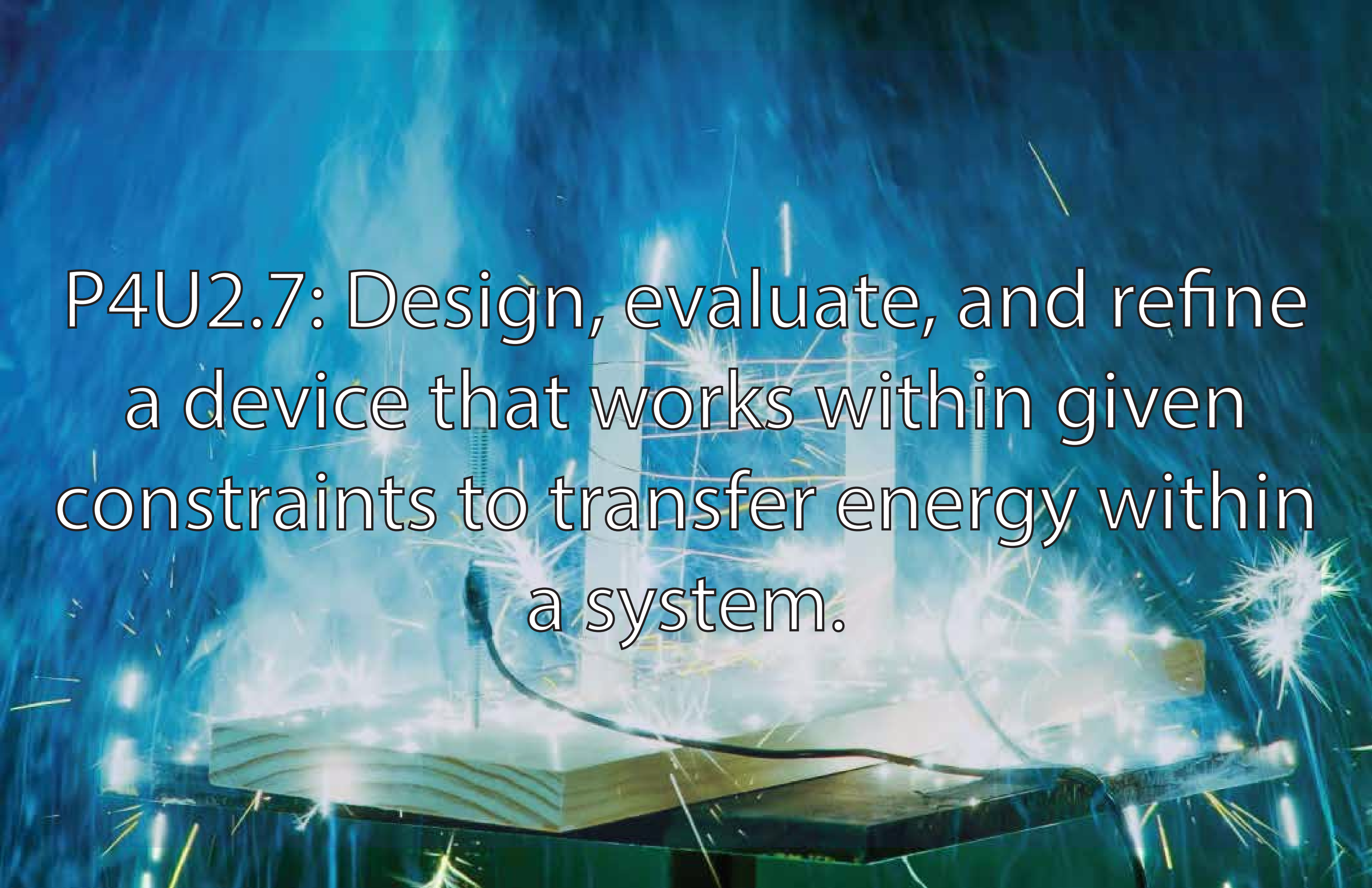
P2U1.1: Plan and carry out investigations to design, build, and refine a device that works within given constraints to demonstrate that an electrical current can produce a magnetic field and that changing magnetic magnetic field can produce an electric current.
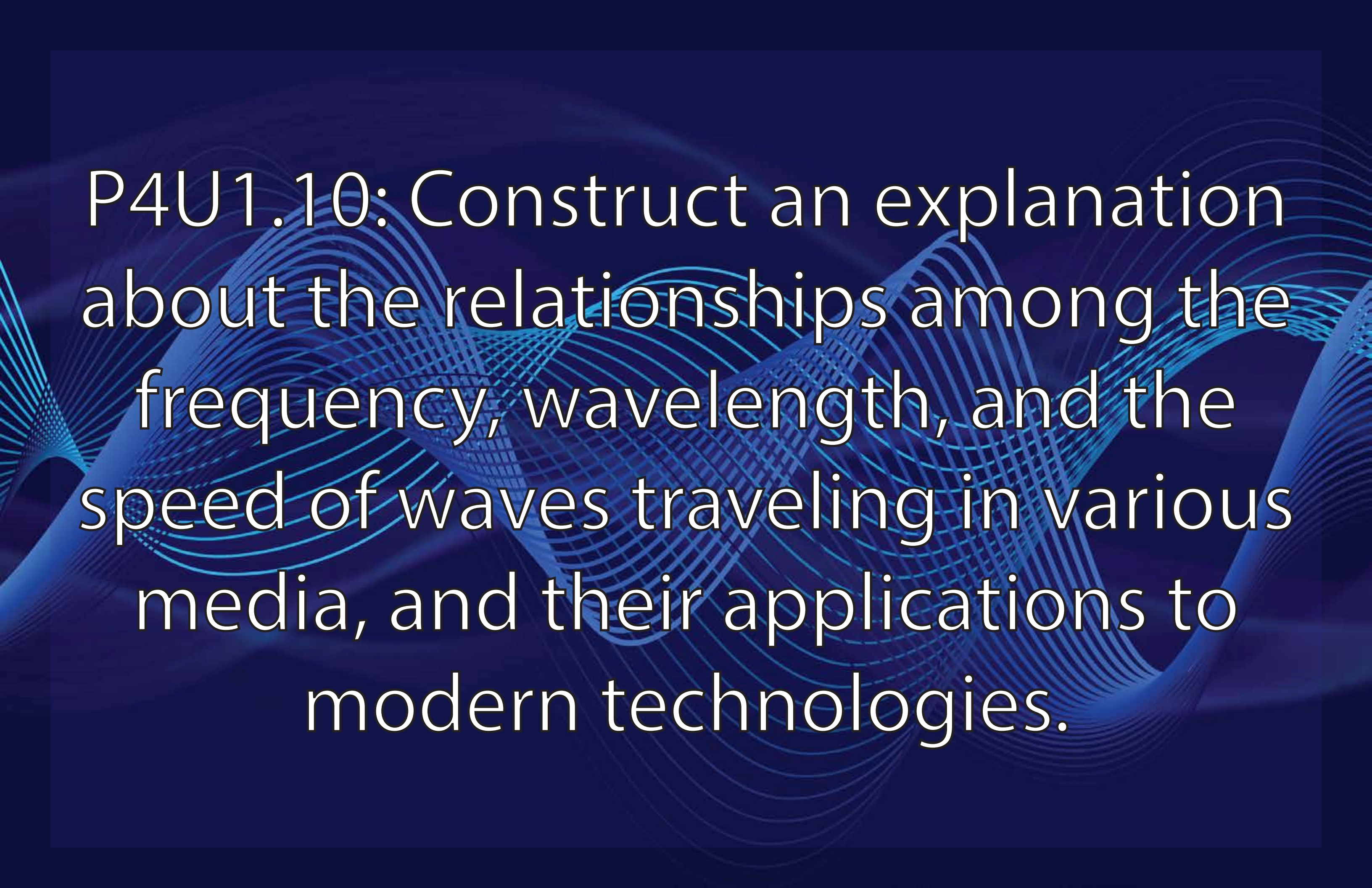
P4U3.9: Engage in argument from evidence regarding the ethical, social, economic and/or political benifits and liabilities of the energy usage and transfer.

P4U 1.6: Analyze and interpret data to quantitatively describe changes in the energy within a system and/or energy flows in and out of a system.

P4U2.7: Design, evaluate, and refine a device that works within given constraints to transfer energy within a system.

P4U1.10: Construct an explanation about the relationships among the frequency, wavelength, and the speed of waves traveling in various media, and their applications to modern technologies.