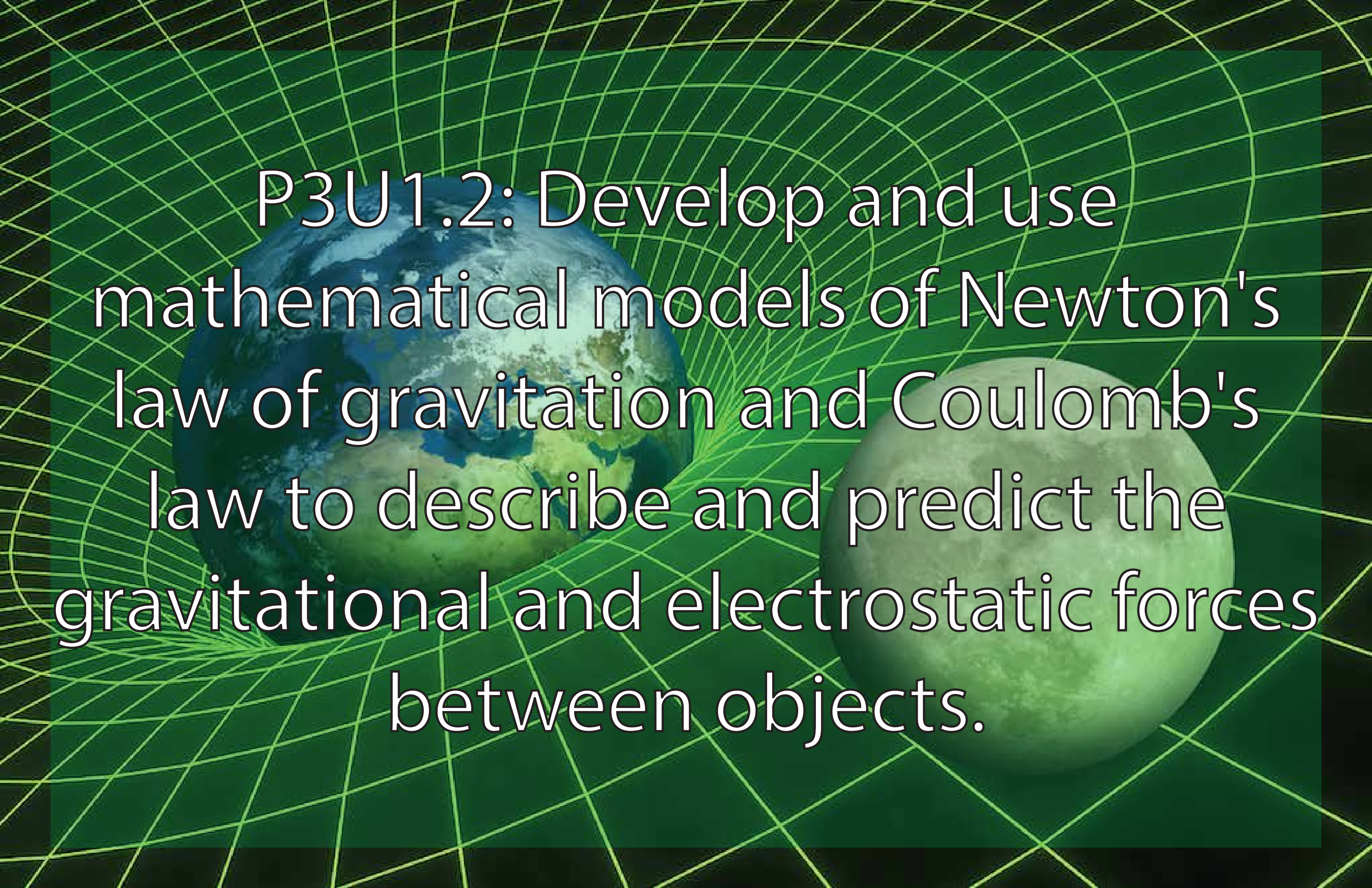
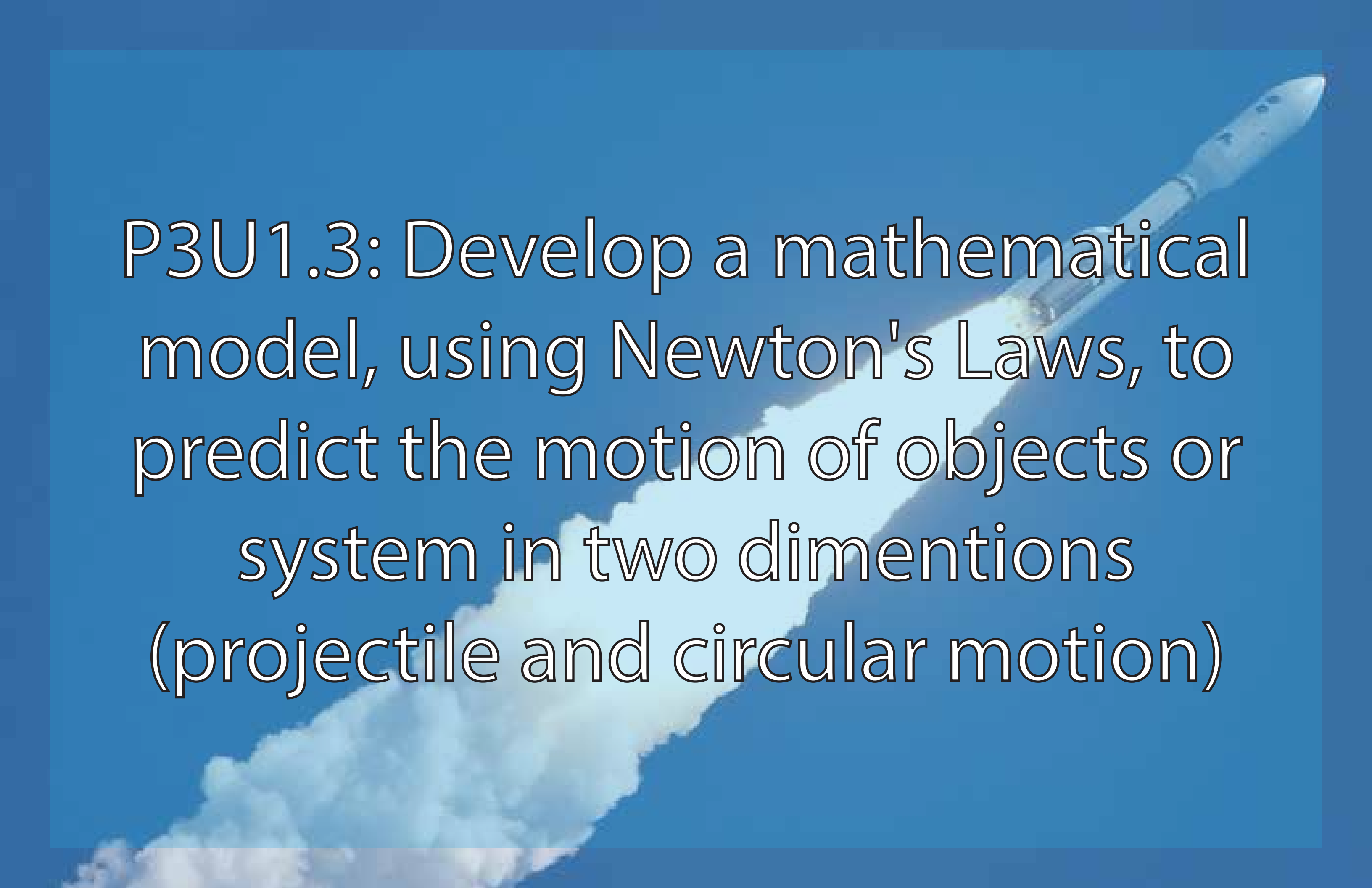


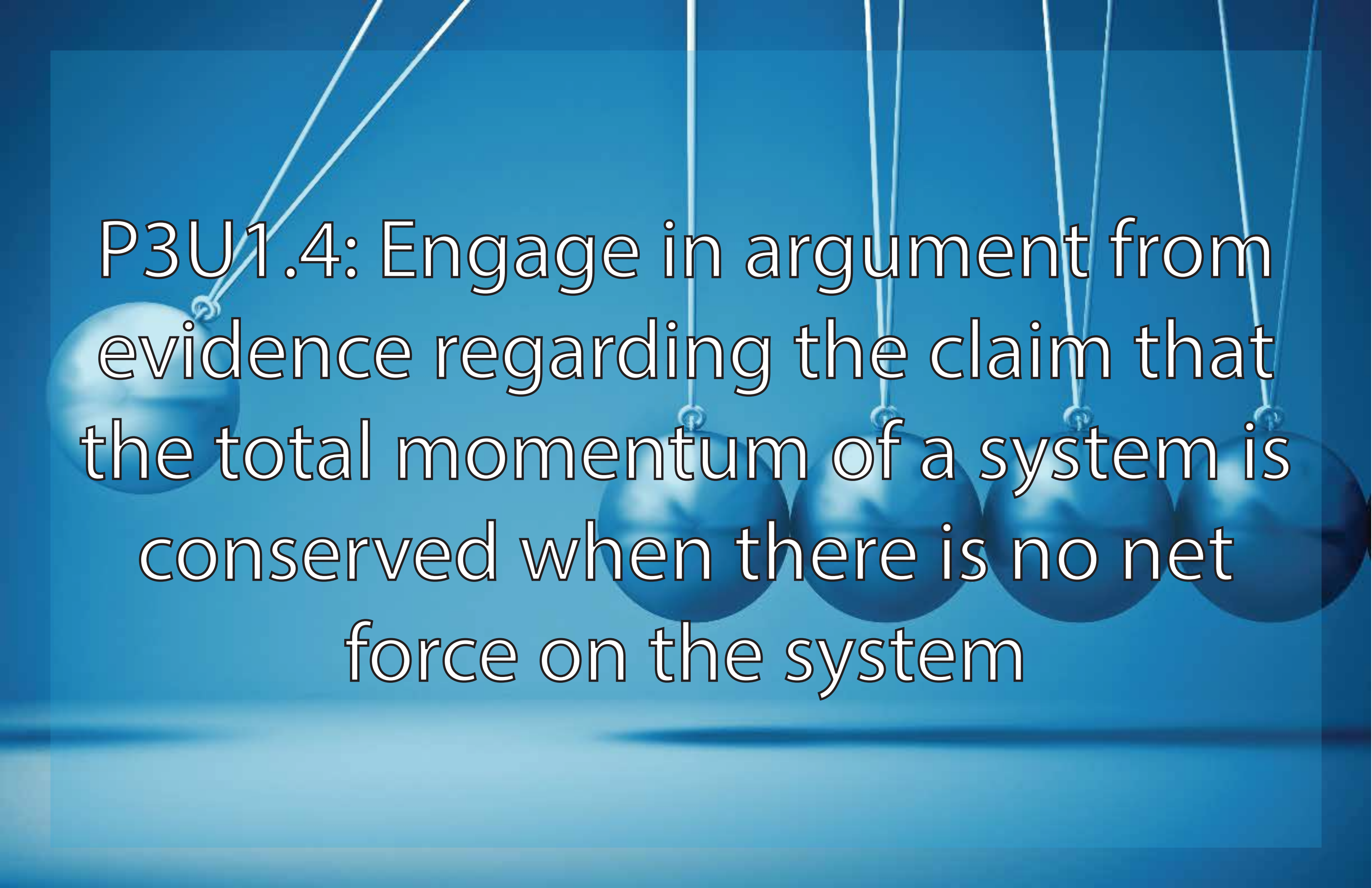
P3U1.6: Collect, analyze, and interpret data regarding the change in motion of an object or system in one dimension, to construct an explanation using Newton's Laws.



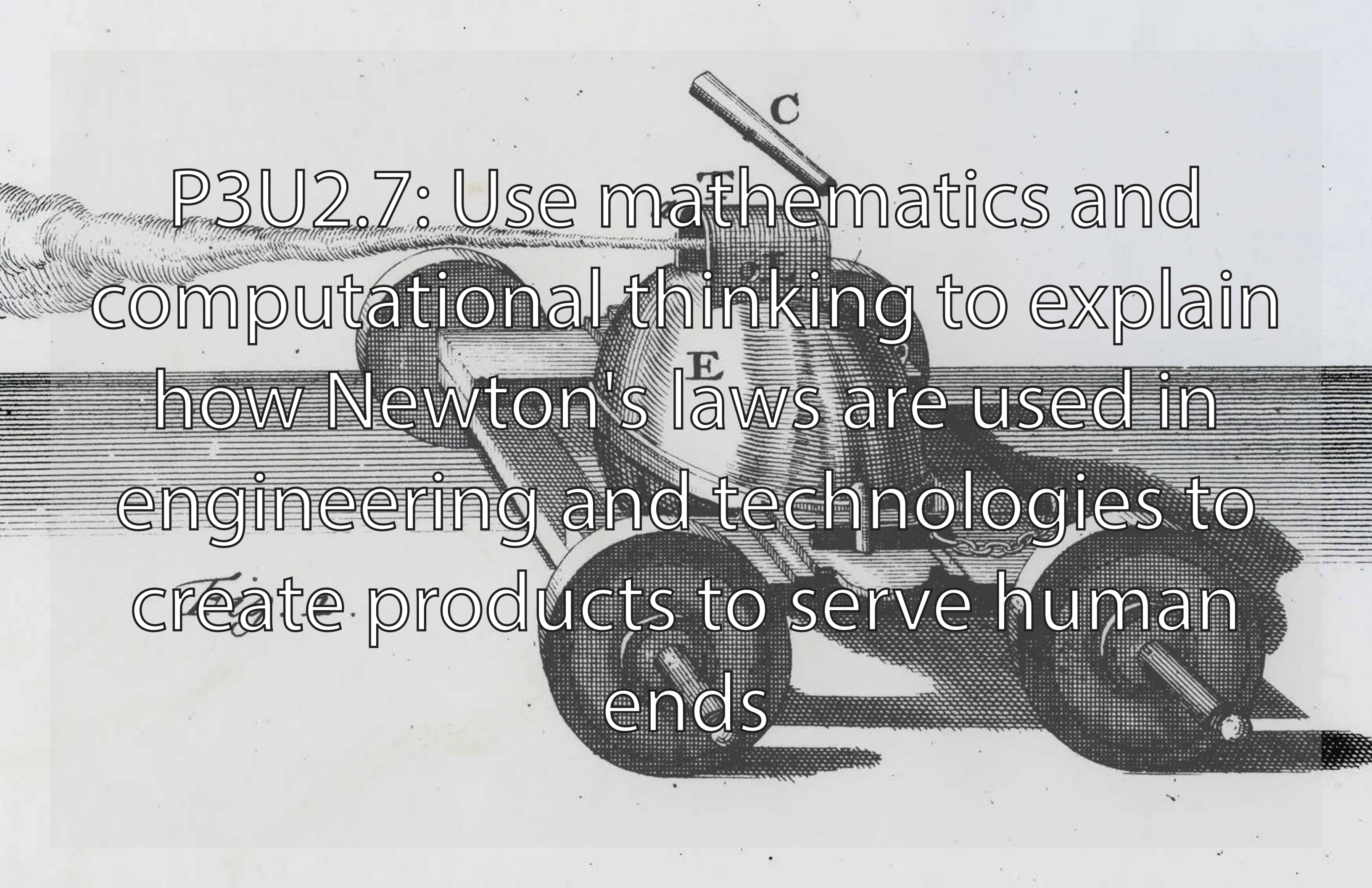
P3U1.2: Develop and use mathematical models of Newton's law of gravitation and Coulomb's law to describe and predict the gravitational and electrostatic forces between objects.



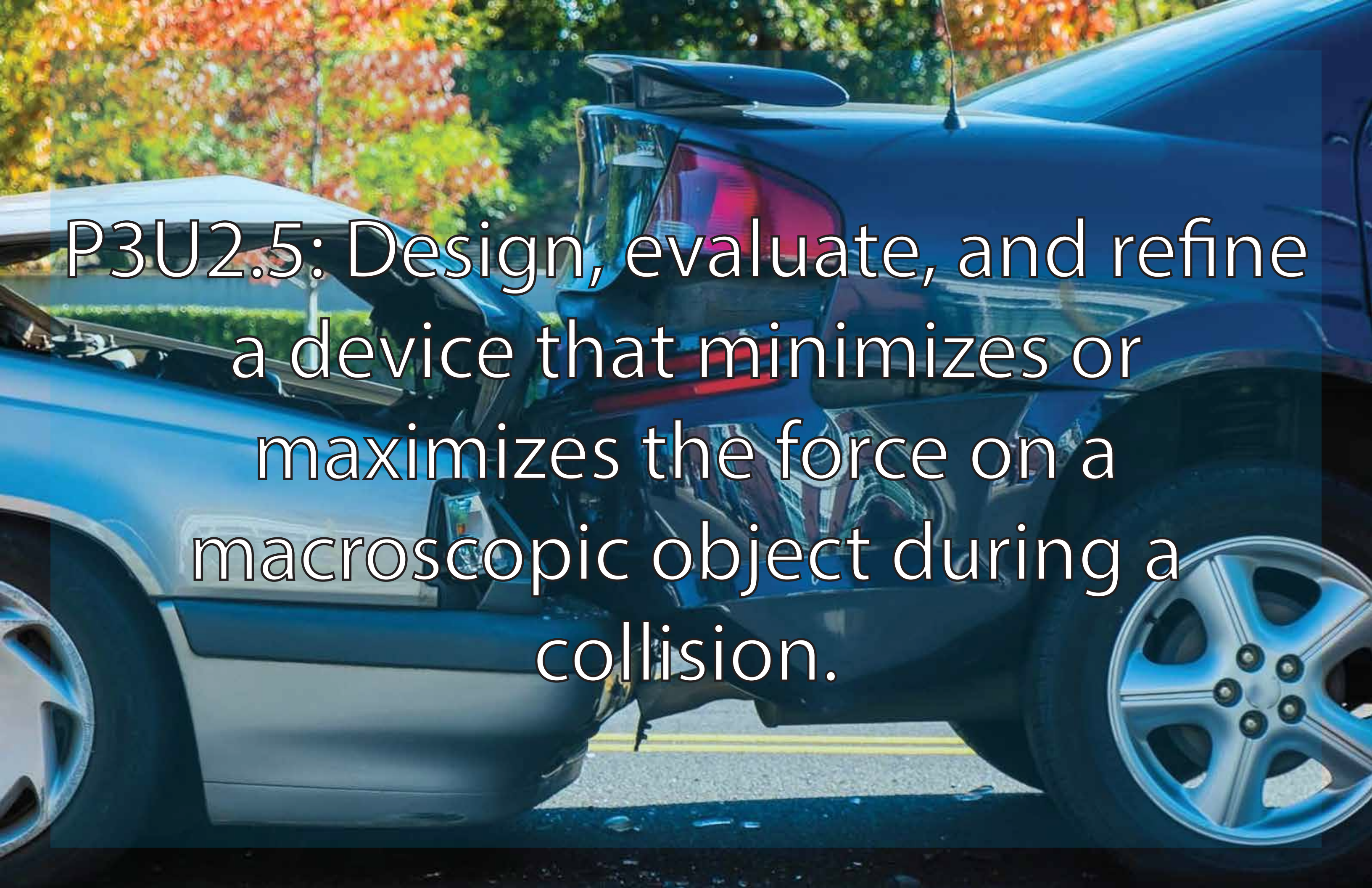
P3U1.3: Develop a mathematical model, using Newton's Laws, to predict the motion of objects or system in two dimensions (projectile and circular motion)

A Newton's cradle with five silver spheres hanging from thin wires against a blue background. The spheres are arranged in a horizontal line, with the leftmost sphere slightly higher than the others.

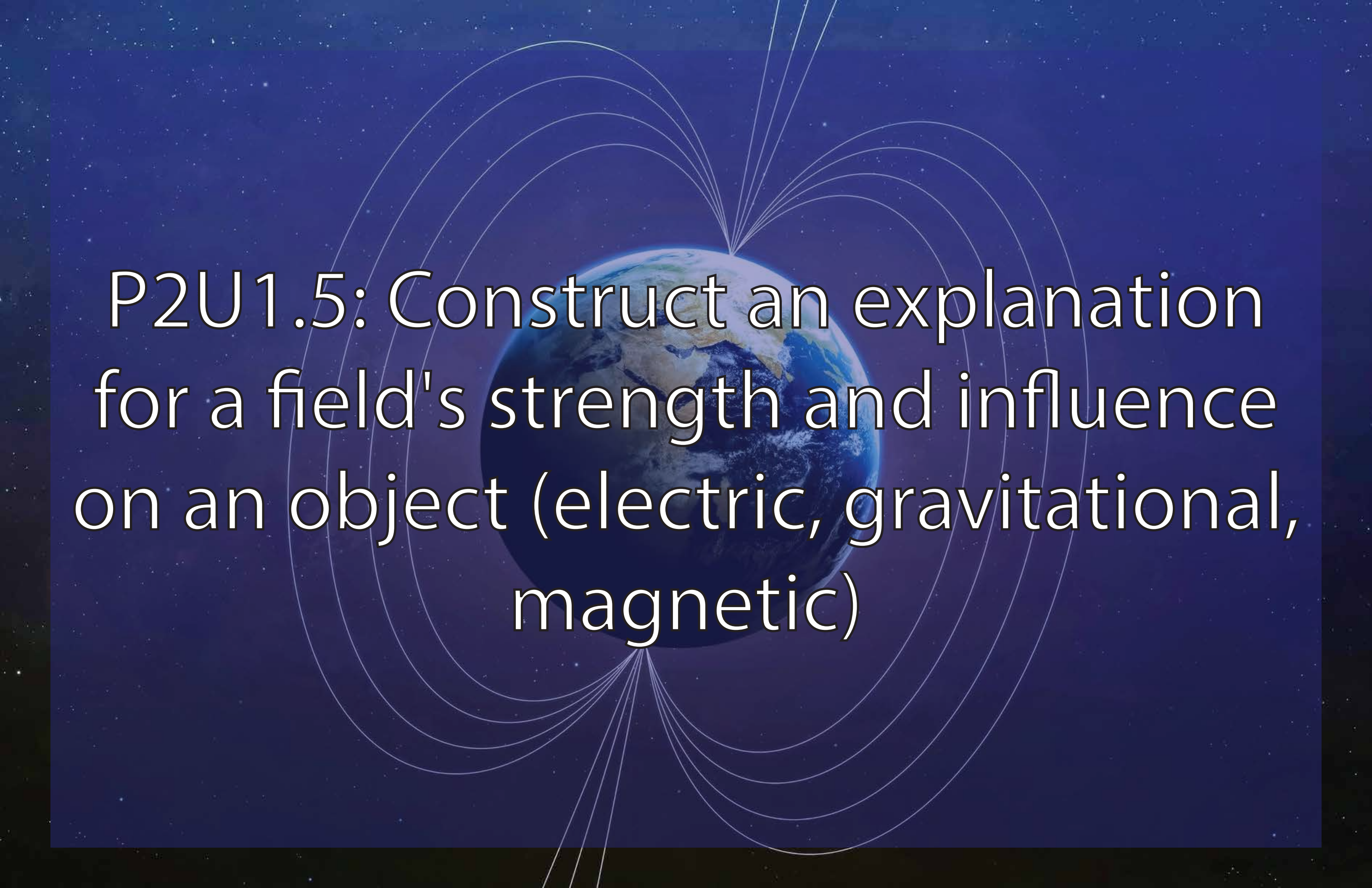
P3U1.4: Engage in argument from evidence regarding the claim that the total momentum of a system is conserved when there is no net force on the system



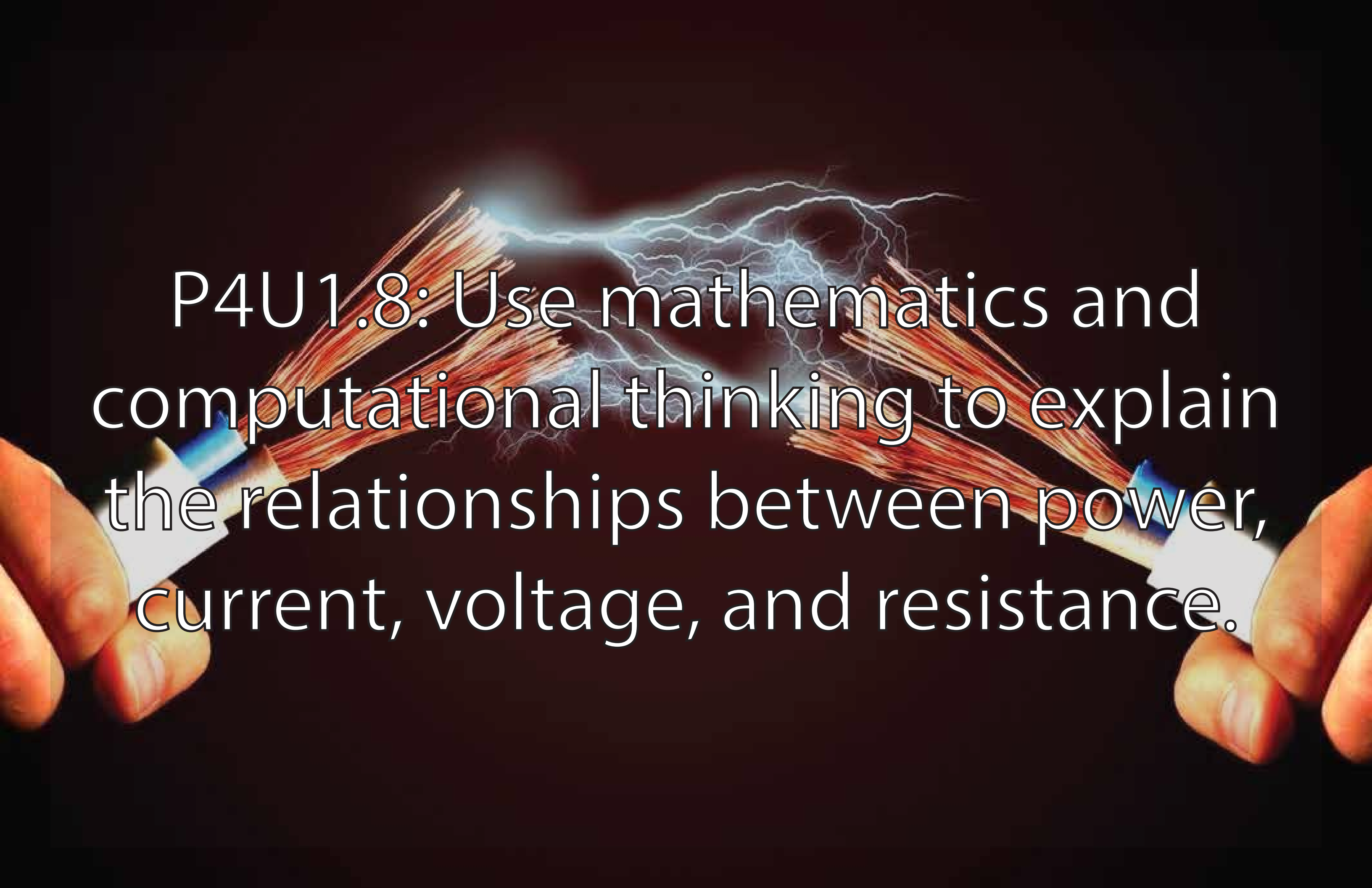
P3U2.7: Use mathematics and computational thinking to explain how Newton's laws are used in engineering and technologies to create products to serve human ends



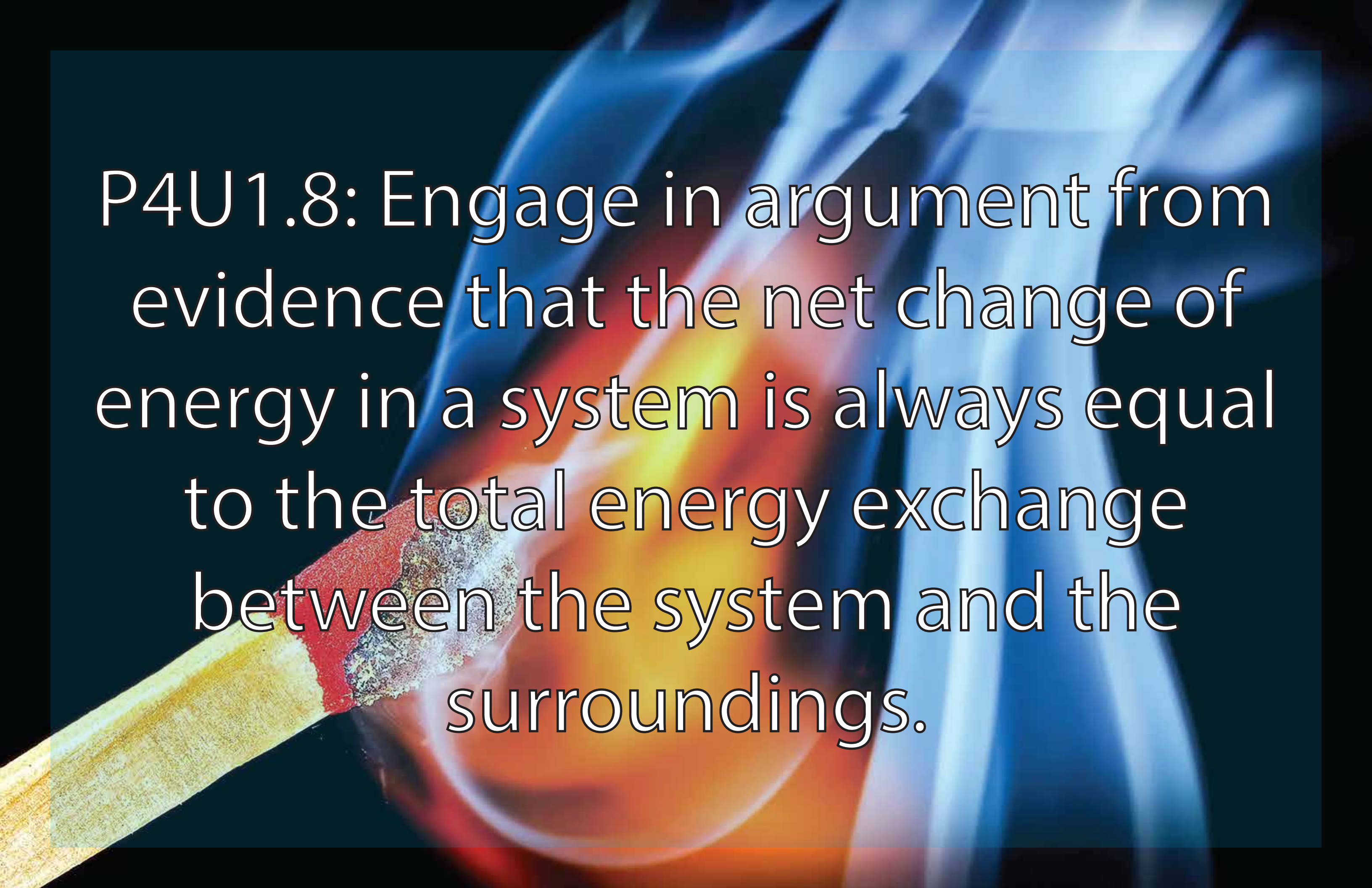
P3U2.5: Design, evaluate, and refine a device that minimizes or maximizes the force on a macroscopic object during a collision.

The background of the slide is a deep blue space filled with small white stars. In the center is a realistic image of the Earth, showing continents and clouds. Overlaid on the Earth are white, glowing magnetic field lines that curve from the top pole to the bottom pole, representing the Earth's magnetic field.

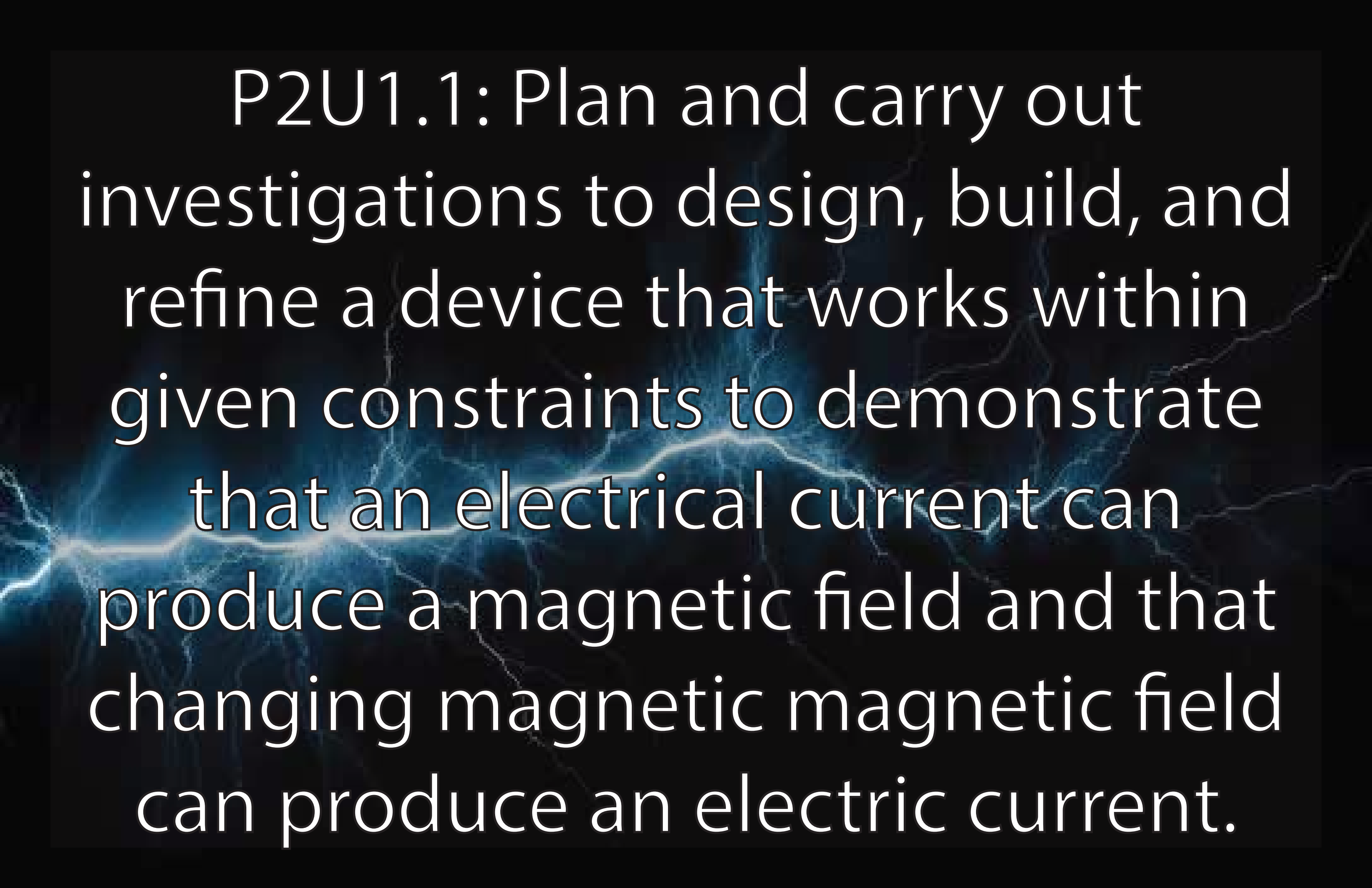
P2U1.5: Construct an explanation for a field's strength and influence on an object (electric, gravitational, magnetic)



P4U1.8: Use mathematics and computational thinking to explain the relationships between power, current, voltage, and resistance.

A lit matchstick is shown in the lower-left corner, with a bright orange and yellow flame. The background consists of abstract, flowing blue and white light rays that create a sense of energy and movement. The text is overlaid on this background, centered and written in a white, outlined font.

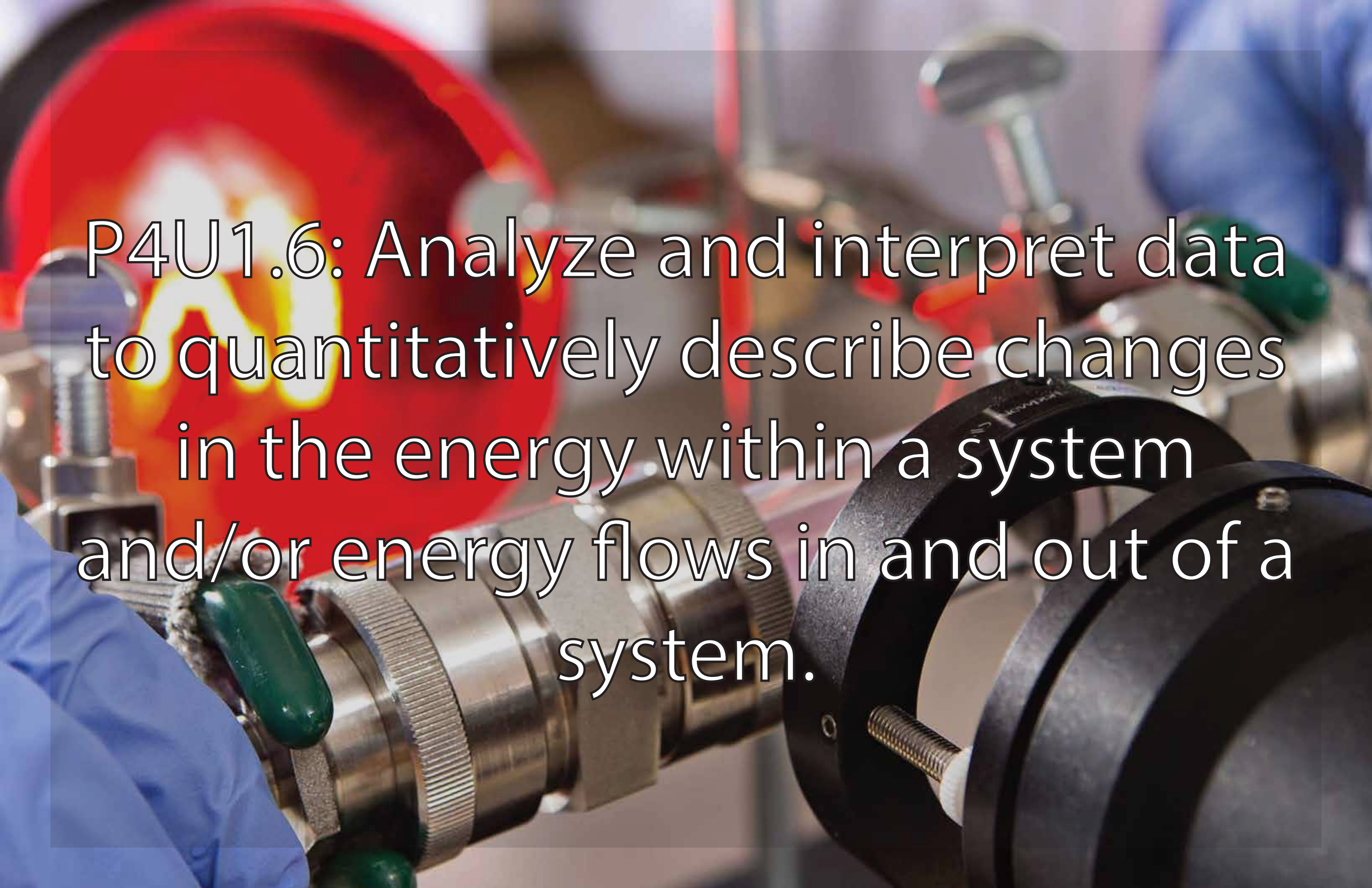
P4U1.8: Engage in argument from evidence that the net change of energy in a system is always equal to the total energy exchange between the system and the surroundings.

A background image featuring a bright blue lightning bolt striking down from the top left towards the center, with several smaller, fainter lightning bolts branching out across a dark, stormy sky. The text is overlaid on this background.

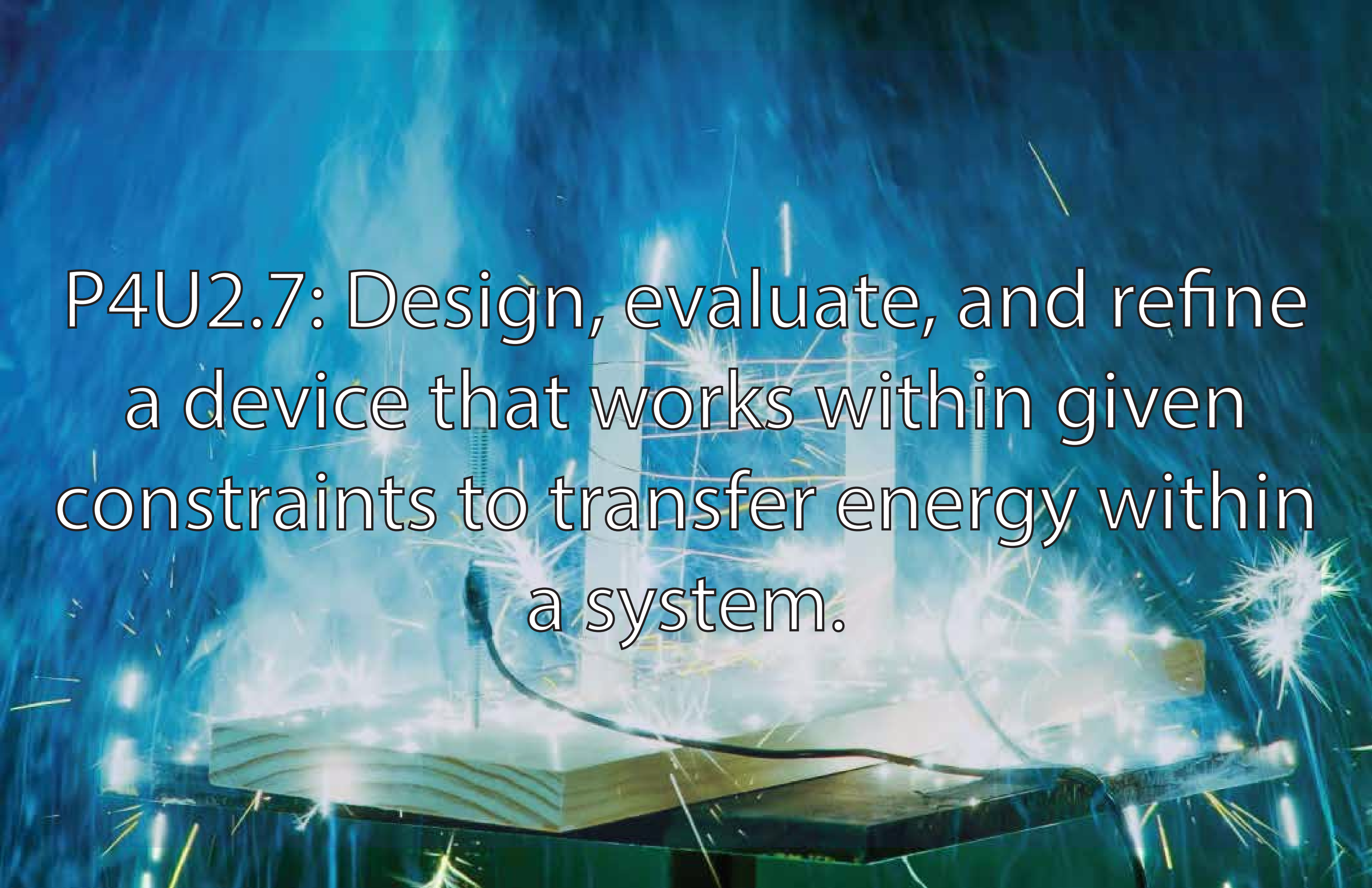
P2U1.1: Plan and carry out investigations to design, build, and refine a device that works within given constraints to demonstrate that an electrical current can produce a magnetic field and that changing magnetic magnetic field can produce an electric current.



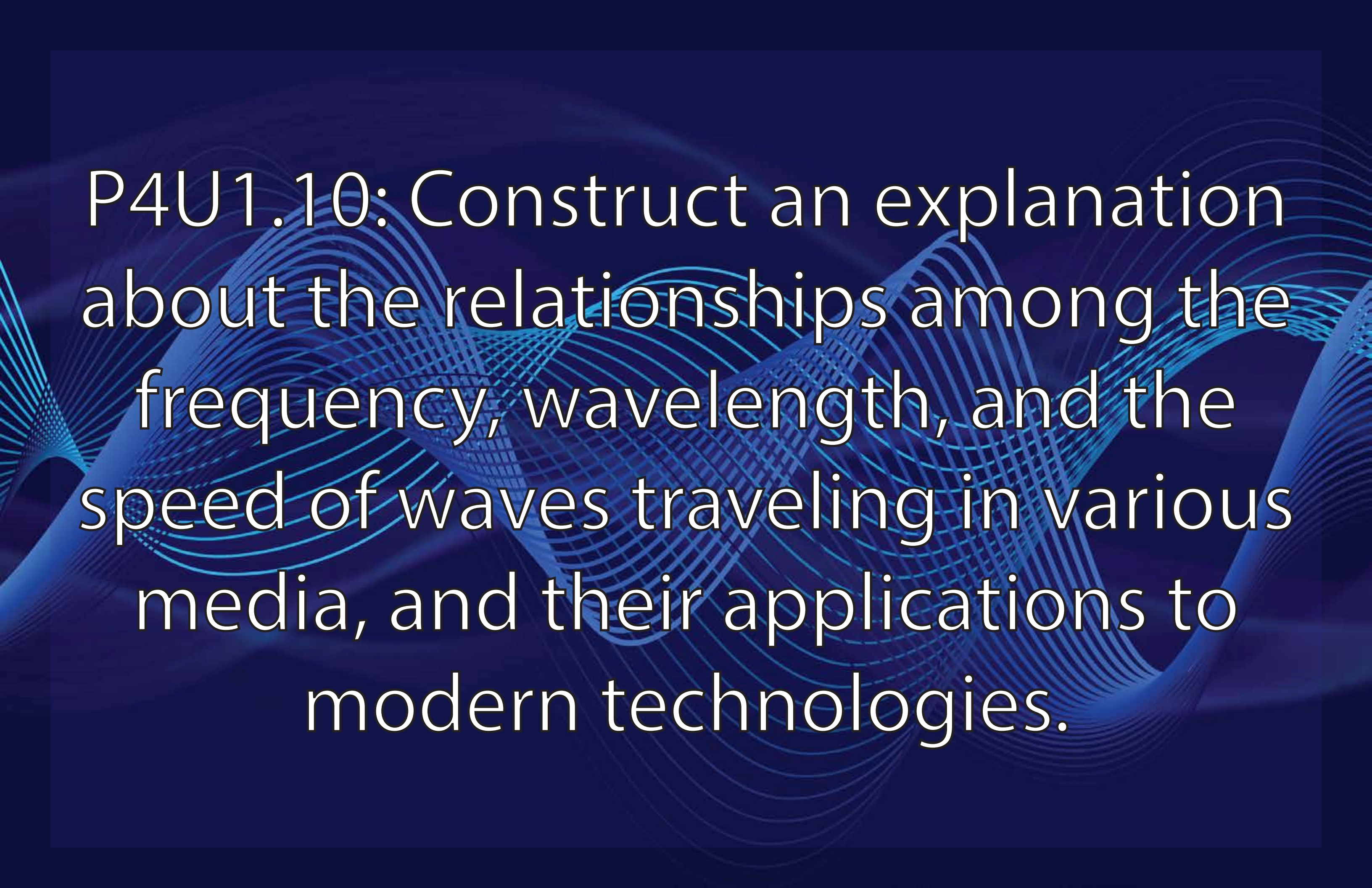
P4U3.9: Engage in argument from evidence regarding the ethical, social, economic and/or political benefits and liabilities of the energy usage and transfer.



P4U1.6: Analyze and interpret data to quantitatively describe changes in the energy within a system and/or energy flows in and out of a system.

A glowing blue book with sparks and energy lines. The book is open, and a bright blue light emanates from its pages. Numerous white sparks and energy lines radiate from the book, creating a dynamic and energetic scene. The background is a deep blue with a subtle grid pattern.

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.