CHAPTER **9**

Dynamics in 1D

The scalar equation $F = ma$ introduces the concepts of motion and time derivatives to mechanics. In particular the equations of dynamics are seen to reduce to ordinary differential equations, the simplest of which have memorable analytic solutions. The harder differential equations need be solved on a computer. We explore various concepts and applications involving momentum, power, work, kinetic and potential energies, oscillations, collisions and multi-particle systems.

Contents