

## CHAPTER OVERVIEW

### 15: Force

Intuitively, a force is a push or a pull. In SI units, force is measured in units of newtons (N), named for the English physicist Sir Isaac Newton. In terms of base units,

$$1 \text{ N} = 1 \frac{\text{kg m}}{\text{s}^2} \quad (15.1)$$

In CGS units, force is measured in dynes (dyn):

$$1 \text{ dyne} = 1 \frac{\text{g cm}}{\text{s}^2}. \quad (15.2)$$

In the British engineering system, force is measured in pounds (lb). This is sometimes called pounds-force (lbf) when it's important to clearly distinguish it from pounds-mass ( lbm ).

$$1 \text{ lbf} = 1 \frac{\text{slug ft}}{\text{s}^2} \quad (15.3)$$

[15.1: The Four Forces of Nature](#)

[15.2: Hooke's Law](#)

[15.3: Weight, Tension and Normal Force](#)

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