THOROUGHBRED ENERGY, MOTION, AND MOVEMENT

Energy transformations occur as a horse moves.

Chemical energy ⟶ **Mechanical energy** ⟶ **Kinetic energy**

Speed = $\frac{\text{distance}}{\text{time}}$

Speed is measured in metres per second (m/s), or kilometres per hour (km/h)

Some energy is transformed into thermal (heat) energy as a by-product of muscle activity, and is lost as heat from a horse's body. Some is also lost as sound energy.

Force_{net} = mass x acceleration

(F = ma)

$\mathbf{F_{net}}$ is total force acting on an object measured in Newtons (N)
m is mass of the object (kg)
a is acceleration of the object (m/s^2)

Newton's first law of motion

(the law of inertia)

An object at rest will remain at rest, and an object in motion will continue in motion at constant velocity (the same direction and speed) unless acted upon by an unbalanced force.

Newton's second law of motion

(the law of acceleration)

The acceleration of an object depends on the mass of the object and the force applied to it.

Newton's third law of motion

(action and reaction)

For every action, there is an equal and opposite reaction.

Scan the QR code to access curriculum aligned **Thoroughbred Horses fact sheets**.

Australian Curriculum content: AC9S7U04, AC9S8U05, AC9S10U05

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