

SP14a Particles and density

Word	Pronunciation	Meaning
change of state		The changing of matter from one state to another, for example from solid to liquid.
chemical change		A change that results in the formation of new substances.
compress		To squash something together to make it shorter or smaller.
conserved		A quantity that is kept the same throughout, for example a substance does not change mass when it changes state.
density		The mass of a substance per unit volume. It has units such as kg/m^3 or g/cm^3 .
kinetic theory		The model that explains the properties of different states of matter in terms of the movement of particles.
physical change		A change in which no new substances are formed, such as changes of state.
state of matter		One of three different forms that a substance can have: solid, liquid or gas.
sublimation		When a solid changes directly to a gas without becoming a liquid first.

SP14b Energy and changes of state

Word	Pronunciation	Meaning
specific heat capacity		The energy needed to raise the temperature of 1 kg of a substance by 1 °C.
specific latent heat		The energy taken in or released when 1 kg of a substance changes state.
temperature		A measure of how hot something is.
thermal energy		A term used to describe energy when it is stored in hot objects. The hotter something is, the more thermal energy it is storing. It is sometimes called heat energy.

SP14d Gas temperature and pressure

Word	Pronunciation	Meaning
absolute zero		The temperature at which the pressure of a gas drops to zero and the particles stop moving. It is -273 °C or 0 K .
kelvin (K)		The unit in the Kelvin temperature scale. One kelvin (1 K) is the same temperature interval as 1 °C.
Kelvin temperature scale		A temperature scale that measures temperatures relative to absolute zero.
kinetic energy		A term used to describe energy when it is stored in moving things.

pascal (Pa)		A unit of pressure, $1 \text{ Pa} = 1 \text{ N/m}^2$
pressure		The force on a certain area. It is measured in pascals or N/m^2 .

SP14e Gas pressure and volume

Word	Pronunciation	Meaning
gas pressure		The force on a surface caused by the collisions of gas particles with the surface. Gas pressure acts at right angles to a surface.
work done		A measure of the energy transferred when a force acts through a distance.

SP15a Bending and stretching

Word	Pronunciation	Meaning
direct proportion		A linear relationship in which one variable doubles as the other does.
elastic		An elastic material changes shape when there is a force on it but returns to its original shape when the force is removed.
extension		The amount by which a spring or other stretchy material has stretched. It is worked out from the stretched length minus the original length.
inelastic		An inelastic material changes shape when there is a force on it but does not return to its original shape when the force is removed.
linear relationship		A relationship between two variables shown by a straight line on a graph. For a linear relationship the line does not have to go through the origin.
non-linear relationship		A relationship between two variables that does not produce a straight line on a graph.

SP15b Extension and energy transfers

Word	Pronunciation	Meaning
spring constant		A measure of how stiff a spring is. The spring constant is the force needed to stretch a spring by 1 m.
work done		A measure of the energy transferred when a force acts through a distance.

SP15c Pressure in fluids

Word	Pronunciation	Meaning
atmospheric pressure		The pressure exerted by the weight of the air around us.
density		A measure of a substance's mass per unit volume. A common unit for density is kg/m^3 .
fluid		A gas or liquid.
pascal (Pa)	<i>pas-kal</i>	A unit for pressure. $1 \text{ Pa} = 1 \text{ newton per square metre (N/m}^2\text{)}$.
pressure		The amount of force pushing on a certain area. It is a way of saying how spread out a force is.
normal		At right angles to a surface.

SP15d Pressure and floating

Word	Pronunciation	Meaning
displace		To push out of the way.
upthrust		A force that pushes things up in liquids and gases.