THE DUSTON SCHOOL
Knowledge itself is power
TDS 4-19

Year 7 Science Knowledge Booklet

Term 6

Name:	**Class:**
Homework 1 Due: 13th June	**Homework 2 Due: 27th June**
Homework 3 Due: 13th July	

Science Homework 1

Read all of this knowledge organiser to prepare for your end of year test.

Big questions: What are forces?

What are Forces?

How can we describe forces?

What are Contact and Non- Contact Forces?

What are "pairs of forces"?

What effects do balanced and unbalanced forces cause?

What are Newton's first and second laws?

What affects the size of the friction force?

Key vocabulary

Force	A push or a pull. Forces are measured in Newtons(N)
Contact force	A force that happens when objects touch. Friction, reaction forces and air resistance are examples of contact forces.
Non-contact force	Forces that act between objects even if they are not touching. Magnetism, gravity and electrostatic forces are examples of non-contact forces.
Reaction force	The force caused when one object pushes on another. The force is always at right angles to the surfaces.
Friction	A contact force that opposes the motion of one object across or through another. Friction is always in the opposite direction to the motion.
Air resistance	The push of the air on an object that is moving through it. Air resistance is always in the opposite direction to the motion and gets bigger when the object moves faster.
Force arrow	A drawn arrow that shows the size and direction of a force in a force diagram.
Equilibrium	If all of the forces on an object add up to be zero then we say that the forces are balanced.
Unbalanced forces	If the forces on an object do not add up to be zero then we say that the forces are un-balanced.
Resultant force	The overall force acting on an object when we have added all of the forces acting.
Free-body diagram	A diagram showing all of the forces on the one object we are interested in and none of the others in the situation as a whole.

Key knowledge question	**Answer**
Describe what is meant by “contact forces”	A force produced by something that is touching something else
Describe what is meant by the term “non-contact forces”	A force produced by something that is not touching something else
In which direction does friction act?	In the opposite direction to movement
Name the apparatus used to measure force.	Newton meter
Name the three things forces can be.	Push, pull or twist
Name the unit of force	Newtons (N)
Name three effects of forces.	Change the speed, change the direction or change the shape of an object
Name two contact forces.	Friction, air or water resistance, normal contact force
Name two non-contact forces.	Magnetic force, gravitational force, electrostatic force
State Newton’s third law.	If A exerts a force on B, then B exerts an equal but opposite force on A.
Describe what is meant by “contact forces”	In the opposite direction to movement
What is a carnivore?	*Eats animals*
What is a herbivore?	*Eats plants*

Big questions: What are the states of Matter?

What are the common states of matter?

What is melting and freezing?

What happens during melting and freezing?

What is the difference between boiling and evaporating?

How do “smells” travel?

Key vocabulary

Solid	A state of matter in which particles are regularly arranged, vibrate but do not move around. The state has characteristics of holding a shape, having a fixed volume and being incompressible.
Liquid	A state of matter in which particles move around each other but are still held together by weak intermolecular forces. This state has the characteristics of taking the shape of the container, having a fixed volume.
Gas	A state of matter in which particles are free of each other and move around rapidly. This state has the characteristics of taking the shape of and filling the container, not having a fixed volume and shape.
Melt	When a solid becomes a liquid.
Melting point	The temperature at which all of a solid substance becomes a liquid. (This is the same temperature as the FREEZING POINT)
Evaporate	When a liquid becomes a gas.
Boil	A liquid becoming a gas above its boiling point
Boiling point	The temperature at which all of a liquid substance becomes a gas. (NB. This is the same temperature as the CONDENSATION POINT)
Condense	When a gas becomes a liquid.
Freeze	When a liquid becomes a solid.
Sublimation	When a solid becomes a gas with no liquid phase.

Science Homework 2

Try to answer all of these key knowledge questions. Then check your answers using the last page.

Key knowledge question	Your answer
Describe what is meant by “contact forces”	
Describe what is meant by the term “non-contact forces”	
In which direction does friction act?	
Name the apparatus used to measure force.	
Define melting point.	
Give two physical properties of a liquid.	
Give two properties of a gas.	
How can you tell from heating curve when state change occurs?	
What is the function of the mitochondria?	
How is DNA stored in a prokaryotic cell?	
What is the function of the chloroplast?	
Why is the melting point different for different substances?	
How does distillation separate substances?	
How would you separate an insoluble solid from a liquid?	

Key knowledge question	**Answer**
Define melting point.	The temperature where a solid becomes a liquid
Give two physical properties of a liquid.	Flows, fixed volume, non-fixed shape, cannot be compressed
Give two properties of a gas.	Flows, non-fixed volume, non-fixed shape, can be compressed
How can you tell from heating curve when state change occurs?	Heating continues but temperature does not change (a flat line)
In which state of matter do particles have the greatest energy?	Gas
What are the three states of matter?	Solid. Liquid and gas
What is the boiling point of pure water?	100^{o}C
What is the name for the state change from gas to liquid?	Condensation
Which out of solids, liquids, and gases can easily be compressed?	Gases
Which, out of solids, liquids and gases can the particles only vibrate?	Solids
Why is the melting point different for different substances?	Different strengths of attraction between different particles
Describe what is meant by "contact forces"	*A force produced by something that is touching something else*
Describe what is meant by the term "non-contact forces"	*A force produced by something that is not touching something else*
Name the unit of force	*Newtons (N)*

Big questions: Cells

What are cells?

How does a microscope work?

How do we calculate magnification?

What do the organelles do?

How do different cells carry out different functions?

What is the difference between prokaryotes and eukaryotes?

How do we make new cells?

What are stem cells?

Key vocabulary

Cell	The building block of living things.
Nucleus	Controls the activities of the cell. Contains chromosomes made of DNA.
Cytoplasm	Jelly-like contents of the cell where many chemical reactions take place.
Cell membrane	A thin layer around the cell that controls the movement of substances in and out of the cell.
Cell wall	Rigid layer outside the cell membrane of a plant (cellulose), fungi (chitin) or a bacterial (peptidoglycan) cell.
Chloroplast	Small disc in the cytoplasm of plants containing chlorophyll..
Permanent vacuole	Fluid-filled area in plant cell containing sap.
Mitochondria	The site of aerobic respiration in plant and animal cells.
Specialised cell	A cell that has a structure well suited to its function.
Differentiation	When a cell develops into a type that is specialised for a specific function.
Diffusion	When the net movement of particles from an area of high concentration to an area of low concentration.
Prokaryote	A small simple cell that contains no membrane bound organelles.
Eukaryote	A unicellular or multicellular organism that has a nucleus.
Resolution	The ability to distinguish between two parts of an object.
Magnification	The act or process of enlarging the physical appearance or image of something.
Cell Division	The process in which the parent cell divides to form new daughter cells – two types are mitosis and meiosis.
Stem cell	An undifferentiated cell that can become specialised into any type of cell.

Key knowledge question	**Answer**
What is the function of the cell membrane?	To control what enters or leaves the cell
What type of organisms have eukaryotic cells?	Plants, animals, fungi and protists
What is the name given to the structures inside cells?	Organelles
What is the function of the mitochondria?	Site of aerobic respiration
How is DNA stored in a prokaryotic cell?	In loops in the cytoplasm
What is the function of the chloroplast?	Site of photosynthesis
What is the function of the nucleus?	To control the cells activities, hold genetic information
What stain would you use on an onion cell slide?	Iodine
Describe how a red blood cell is adapted to its function.	Small, rounded, big surface area, full of haemoglobin
If a small leaf is 10 millimetres in diameter what is its diameter in micrometres?	10,000 micrometres
What type of organisms have prokaryotic cells?	Bacteria, cyanobacteria
What are the 7 things signs that something is alive?	*Move, respire, sensitive, grow, reproduce, excrete, nutrition. (Mrs Gren)*
Which group of animals has feathers?	*Birds*
What do we call animals that feed their young with milk?	*Mammals*

Big questions: How can we separate mixtures?

- What is the difference between a compound and a mixture?
- What is solubility?
- How can we separate soluble and insoluble solids?
- How can salt be extracted from sea water?
- How can pure water be extracted from see water?
- How can we identify if a substance is pure?

Key vocabulary

Boiling point	The temperature at which the liquid changes state into a gas.
Chromatography	A separation technique used to separate mixtures of liquids that are soluble in the same solvent.
Diffusion	The net movement of particles from a region of high concentration to low concentration until equilibrium is reached.
Distillation	A separation technique used to separate mixtures of liquids or remove the solvent from a solution based on the boiling point.
Evaporation	Where the solvent changes state into a gas before the boiling point.
Filtration	A separation technique used to separate insoluble solids from a solution or solvent.
Gas	The particles move randomly in all direction with lots of energy. They fill the container they are in as there are no / incredibly weak interactions to other particles.
Liquid	When the particles are randomly arranged, and takes the shape of the container. Particles have more energy than in solid and can slide past each other
Melting point	The temperature at which the solid changes state into a liquid.
Rf value	The distance travelled by a component in solution divided by distance moved by the solvent front, it is always less than 1.
Solid	When the particles are regularly arranged and retain its shape. Particles cannot move only vibrate.
Solubility	How well a substance dissolves in a solvent.
Solute	A solid, liquid or gas (a substance) that dissolves in a solvent to form a solution.
Solution	The resulting mixture when a solute dissolves in a solvent. It is evenly distributed (same concentration throughout).
Solvent	The liquid in which a solute dissolves (typically water) to form a solution.

Key knowledge question	**Answer**
Why is the melting point different for different substances?	Different strengths of attraction between different particles
How does distillation separate substances?	By different boiling points
How would you separate an insoluble solid from a liquid?	Filtration
In chemistry what do we mean by pure?	Made up of only one thing (only one type of atom or only one type of molecule)
What do we call the separation technique used to separate mixtures that are soluble in the same solvent?	Chromatography
What does solubility mean?	How well a substance dissolves in a solvent
What is a solute?	Something that has been dissolved
What is a solution?	A solute dissolved in a solvent
What is the equation to calculate R_f?	R_f = distance from the base line to the spot / distance from baseline to solvent front
When a solvent changes state into a gas before the boiling point we call it?	Evaporation
Describe what is meant by "contact forces"	*A force produced by something that is touching something else*
Describe what is meant by the term "non-contact forces"	*A force produced by something that is not touching something else*
In which direction does friction act?	*In the opposite direction to movement*
Name the apparatus used to measure force.	*Newton meter*

Big questions: Body systems and reproduction

How do substances move?
How do substances move in and out of cells?
How can we investigate osmosis?
What do our osmosis investigation results show us?
How is active transport different to diffusion and osmosis?
In biology, what do we mean by levels of organisation?
How do we move?
How does air move in and out of the lungs?
What goes on in the lungs?
What happens at puberty?
What are the reproductive organs of humans?
What are periods?
How do mammals reproduce?
How do flowering plants reproduce?

Key vocabulary

Diffusion	net **movement of particles** from an area of **higher concentration** to an area of **lower concentration**
Temperature	The **higher** the temperature, the faster diffusion happens
Concentration gradient	The **greater** the difference in concentration, the faster diffusion happens
Surface area	The **larger** the surface area, the faster diffusion happens
Diffusion pathway thickness	The **thinner** the diffusion pathway, the faster diffusion happens
Osmosis	The net movement of water molecules across a partially permeable membrane from a dilute (more water) to a concentrated (less water) solution
Flaccid	drooping through lack of water
Turgid	rigid with fluid, usually water
Active transport	movement of molecules across a **partially permeable membrane** moving **against** a concentration gradient (low to high), requires **energy** from **respiration**
Cell	building blocks of life
Tissue	groups of similar cells working together to perform a function
Organ	groups of tissues working together to perform a function
Organ system	groups of organs working together to perform a function
Cartilage	strong smooth tissue, reduces wear and tear on the end of bones
Antagonistic pairs	pairs of muscles working to move joints e.g. bicep and tricep
Respiratory system	**organs** & **tissues** that help your body **exchange gases** between the **air** and **blood**
Diaphragm	sheet of muscle involved in changing the air pressure of our lungs to move air in and out
Exchanging	to replace one thing with another

Key vocabulary

Adolescence	**changing from a child to an adult**
Puberty	**physical changes that the body goes through during adolescence**
Hormones	**chemical messengers, transported via the bloodstream to targeted cells**
Gamete	**sex cell**
Male reproductive system	**produces male sex hormones, sperm cells and insert sperm cells into females**
Sperm cell	**male sex cell (animals only)**
Female reproductive system	**produces female sex hormones, egg cells and grow a baby**
Egg cell / Ova	**female sex cell (plants and animals)**
Semen	**mixture of sperm cells with fluid released by male sex glands**
Fertilisation	**fusing of the sperm and egg cell nuclei in the female oviduct**
Zygote	**fertilised egg**
Contraception	**the deliberate use of artificial methods or other techniques to prevent pregnancy**
Period	**part of the menstrual cycle, where uterus lining thickens, breaks down then leave the body if the egg is not fertilised**
Menstruation	**scientific term for period**
Mammal	**warm blooded, females normally birth live babies and feed them by making milk e.g. breastmilk in humans**
Sexual intercourse	**sexual contact between individuals involving penetration**
Sexual reproduction	**production of new organisms by combining genetic information from 2 individuals of different sexes**
Implantation	**attachment of a fertilised egg to the uterus wall at the start of pregnancy**
Embryo	**zygote (fertilised egg) divides rapidly until it forms a ball of cells called an embryo**
Chromosome	**found in the nucleus of a cell, carries genetic information in the form of genes**
Ovulation	**release of a mature egg cell (ova)**
Pollen	**male sex cell in plants**
Pollination	**pollen grains transfer from the plant's male part to the female part**
Self-pollination	**pollen and egg cell are from the same plant**
Cross-pollination	**Pollen and egg cell are from different plants**

Key knowledge question	**Your answer**
Describe the 3 adaptions of gas exchange surfaces	Short diffusion pathway (thin surface), Large concentration gradient maintained (eg blood supply), large SA
Describe the function of the placenta and umbilical cord	Placenta- exchange of nutrients, oxygen and waste between mothers and fetus' blood.
Give an example of active transport in plants	Mineral ions entering roots
Give the definition of active transport	Movement of particles from an area of low concentration into an area of high concentration, across a partially permeable membrane, involving energy
Give the definition of osmosis	Movement of WATER from dilute solution to concentrated solution across a partially permeable membrane
How long is an average human pregnancy?	40 weeks (9 months)
Name the gametes for animals and plants	Animal- sperm and egg, Plant- Pollen and egg/ ovule
State happens on day 14 of the menstrual cycle?	Ovulation/ egg released from ovary
State the function of the testes	Produce sperm and testosterone
The monthly hormonal cycle of female humans is called the _____ cycle.	The menstrual cycle
Two muscles working in pairs are called?	Antagonistic
What 4 things does your skeleton/ bones do?	Structure, movement, protection, making blood cells
What do we call 2 or more different tissues working together to carry out a function?	An organ

Big questions: Chemical Reactions

How do we recognise chemical reactions?

How do scientists represent chemical reactions?

How do scientists represent chemicals?

What happens to mass in chemical reactions?

How does temperature change in chemical reactions?

What happens when fuels burn?

Does the type of combustion matter?

Do all fuels release the same amount of energy?

What are decomposition reactions?

Key vocabulary

Chemical formulae	Shows the elements present in a molecule in the exact proportions. CO_2 means 1 carbon atom 2 oxygen atoms bonded together.
Chemical Reactions	When atoms are rearranged to form a new product.
Combustion	An exothermic chemical reaction where an element or compound is reacted with oxygen forming new compounds.
Conservation of mass	Where the total mass of the reactants is equal to the total mass of products. Atoms cannot be gained or lost in a reaction.
Crude oil	A mixture of hydrocarbons. it is a very viscous black liquid.
Decomposition	A chemical reaction where one substance is broken down into two or more substances.
Endothermic	A reaction where energy is taken in from the surroundings, they get colder.
Exothermic	A reaction where energy is released to the surroundings, they get warmer.
Hydrocarbon	A compound containing only carbon and hydrogen atoms.
Incomplete combustion	When there is a limited oxygen supply so only partial oxidation is achieved.
Products	The new chemicals made after a chemical reaction.
Reactants	The starting chemicals in a reaction.

Key knowledge question	**Answer**
A chemical reaction starts with reactants and ends with?	Products
Combustion is the reaction of something with which gas?	Oxygen
Complete this equation for the complete combustion of carbon - carbon + oxygen →	carbon + oxygen → carbon dioxide
How many atoms are there in a molecule of H_2O?	3
Is freezing a physical or chemical change?	Physical
Name 3 things we might see if a chemical reaction is happening.	A colour change, a temperature change, a gas produced (fizzing)
What do we call a chemical reaction where energy is given out?	Exothermic reactions
What do we call a compound containing only hydrogen and carbon?	A hydrocarbon
What do we call a reaction that takes in energy?	Endothermic
What do we know about the mass of chemicals before and after they have reacted?	It is conserved (they are the same)
What is a chemical reaction?	When atoms are rearranged to form new products
What word describes a reaction where something is broken down into 2 or more products?	Decomposition
Osmosis is the movement of water across what?	*A partially permeable membrane*
What is diffusion?	*The movement of particles from an area of high concentration to an area of lower concentration*
What is the function of the cell membrane?	*To control what enters or leaves the cell*

Big questions: Forces at a distance

What is a magnet and what sort of materials are magnetic?

What is a magnetic field?

How can we make an electromagnet?

What is static electricity?

How do charges cause a force?

What is the difference between mass and weight?

How does gravity keep moons and planets in orbit?

Key vocabulary

Force	**A push or a pull**
Force at a distance	**A force that exerts a push or pull on objects without touching them.**
Gravitational force	**A force that attracts all masses to all others. The force is weak and is only noticed if one of the mases is really big!**
Magnetic force	**The push or pull of one magnet on another or the pull of a magnet on a magnetic material.**
Magnetic field	**The region around a magnet where the magnetic force acts.**
Magnetic material	**A material attracted to magnets. Iron, nickel and cobalt are the strongest magnetic materials.**
Electromagnet	**A temporary magnet made by passing electric current through a coil of wire.**
Static electricity	**Unbalanced charge caused by friction.**
Mass	**The amount of matter an object contains - measured in kilograms, kg.**
Weight	**The force of gravity on a mass – measured in Newtons, N.**
Satellite	**An object in orbit around a planet. Can be natural (moons) or man-made.**

Key knowledge question	**Answer**
A magnet can attract another magnet, what else can it attract?	A magnetic material
If you travelled to the moon which would change, your mass or your weight?	Weight
Name four magnetic materials	Iron, steel, cobalt and nickel
The force of gravity on a mass is called it's?	Weight
What combination of electrostatic charges attract each other?	A positive and a negative (unlike or opposite charges)
What combination of magnetic poles attract each other?	North and South (unlike poles)
What do we call an unbalanced charge caused by friction?	Static electricity
What do we call the pull of one mass on another?	Gravitational force
What equation links gravitational field strength, mass and weight?	weight (N) = mass (kg) x gravitational field strength (N/kg), w=mg
What is mass?	The amount of matter an object contains
What is the unit of mass?	Kilograms (kg)
What is the unit of weight?	Newtons (N)

Big questions: Waves

What are waves?
What are the properties of waves?
How do sound waves travel?
How does light travel?
What are the differences between light and sound?
What happens when light hits a surface?
How can we use reflection?
What happens when light goes through an object?
How do lenses work?
What is the electromagnetic spectrum?

Key vocabulary

Amplitude	The maximum displacement of a point on the wave. (measured form the undisturbed position)
Electromagnetic spectrum	The range of radiations in the same family as visible light. All electromagnetic radiations are transverse waves and travel at the speed of light.
Frequency	The number of complete waves passing every second. Measured in Hertz (Hz)
Longitudinal wave	A wave whose vibrations are along the direction of wave travel. Sound waves are longitudinal waves.
Normal	A line drawn at right angles to a boundary where the wave crosses the boundary. All angles of waves are measured from the normal.
Reflection	When a wave bounces off a surface.
Refraction	The change of direction of a wave when it crosses a boundary. Caused by a change in wave speed.
Specular reflection	Reflection from a smooth surface like a mirror. All waves coming from the same direction are reflected at the same angle.
Transverse wave	A wave whose vibrations are at right angles to the wave direction. Light and all electromagnetic radiations are transverse waves.
Wave	Ways of transferring energy and information through a medium without overall movement of the medium.
Wave speed	The speed that wave crests travel. In metres per second.
Wavelength	The length of one complete wave. Measured in metres.

Science Homework 3

Try to answer all of these key knowledge questions. Then check your answers using the answer page at the end.

Key knowledge question	Your answer
Why is the melting point different for different substances?	
How does distillation separate substances?	
How would you separate an insoluble solid from a liquid?	
What are the three states of matter?	
What is the boiling point of pure water?	
What is the name for the state change from gas to liquid?	
Name the gametes for animals and plants	
State happens on day 14 of the menstrual cycle?	
State the function of the testes	
Name four magnetic materials	
The force of gravity on a mass is called it's?	
What combination of electrostatic charges attract each other?	
Light, X-rays and radio waves are all part of what?	
The length of one complete wave measured in metres is its?	

Key knowledge question	**Answer**
Waves can be divided into 2 types, one is transverse, what is the other?	Longitudinal
What do we call a wave bouncing off a surface?	Reflection
What is the unit of frequency?	Hertz (Hz)
What equation links frequency, wavelength and wave speed?	wave speed(m/s) = frequency (Hz) X wavelength (m)
At what angle to wave direction are the vibrations in transverse waves?	Right angles/ 90 degrees
Light, X-rays and radio waves are all part of what?	The electromagnetic spectrum
The length of one complete wave measured in metres is its?	Wavelength
The maximum displacement of a point on a wave is called its?	Amplitude
What do we call a wave changing direction as it moves from one material to another?	Refraction
What do we mean by a waves frequency?	The number of complete waves passing per second
Which, out of solids, liquids and gases can the particles only vibrate?	***Solids***
How can you tell from a heating curve when state change occurs?	***Heating continues but temperature does not change (a flat line)***
In which state of matter do particles have the greatest energy?	***Gas***
Which out of solids, liquids, and gases can easily be compressed?	***Gases***

Big questions: What are acids and alkalis?

What household items are acids?

How do metals react with acids?

What household items are alkalis?

What natural substances can be used as indicators?

Would bee and wasp stings be treated the same?

What is a salt?

How can we make a salt?

Key vocabulary

Acids	Acids are substances that neutralise bases/alkalis. They release at least one H^+ ion
Alkalis	Alkalis are substances that neutralise acids. They are soluble bases, which release OH^- ions.
Bases	Substance that neutralise acids
Evaporation	Separation technique used to separate dissolved substances from solutions
Filtration	Separation techniques used to remove solids from liquids / solutions
Neutralisation	A reaction when an acid and a base/alkali react together to form a salt and water
pH scale	A scale used to determine the acidity or alkalinity of a solution. 7 is neutral. Less than 7 is acidic, More than 7 is alkaline
Salt	Salts are compounds formed from the reaction between acids and bases. It is an ionic compound

Key knowledge question	**Answer**
What pH would show something was an acid?	A number below 7
What pH would show something was an alkali?	A number above 7
What pH would pure water have?	7
What do we call chemicals that change colour at different pH values?	Indicators
What colour is universal indicator in an acid?	Red
What colour is universal indicator in an alkali?	Purple
What colour is universal indicator in pure water?	Green
When a metal reacts with an acid what two products do we get?	A salt and hydrogen
When an alkali reacts with an acid what two products do we get?	A salt and water
What name do we give to a reaction between an acid and an alkali?	Neutralisation
Describe what is meant by "contact forces"	*A force produced by something that is touching something else*
Describe what is meant by the term "non-contact forces"	*A force produced by something that is not touching something else*
In which direction does friction act?	*In the opposite direction to movement*
Name the apparatus used to measure force.	*Newton meter*

Science Homework 2 Answers

Key knowledge question	Your answer
Describe what is meant by “contact forces”	A force produced by something that is touching something else
Describe what is meant by the term “non-contact forces”	A force produced by something that is not touching something else
In which direction does friction act?	In the opposite direction to movement
Name the apparatus used to measure force.	Newton meter
Define melting point.	The temperature where a solid becomes a liquid
Give two physical properties of a liquid.	Flows, fixed volume, non-fixed shape, cannot be compressed
Give two properties of a gas.	Flows, non-fixed volume, non-fixed shape, can be compressed
How can you tell from heating curve when state change occurs?	Heating continues but temperature does not change (a flat line)
What is the function of the mitochondria?	Site of aerobic respiration
How is DNA stored in a prokaryotic cell?	In loops in the cytoplasm
What is the function of the chloroplast?	Site of photosynthesis
Why is the melting point different for different substances?	Different strengths of attraction between different particles
How does distillation separate substances?	By different boiling points
How would you separate an insoluble solid from a liquid?	Filtration

Science Homework 3 Answers

Try to answer all of these key knowledge questions. Then check your answers using the answer page at the end.

Key knowledge question	Your answer
Why is the melting point different for different substances?	Different strengths of attraction between different particles
How does distillation separate substances?	By different boiling points
How would you separate an insoluble solid from a liquid?	Filtration
What are the three states of matter?	Solid. Liquid and gas
What is the boiling point of pure water?	100^{o}C
What is the name for the state change from gas to liquid?	Condensation
Name the gametes for animals and plants	Animal- sperm and egg, Plant- Pollen and egg/ ovule
State happens on day 14 of the menstrual cycle?	Ovulation/ egg released from ovary
State the function of the testes	Produce sperm and testosterone
Name four magnetic materials	Iron, steel, cobalt and nickel
The force of gravity on a mass is called it's?	Weight
What combination of electrostatic charges attract each other?	A positive and a negative (unlike or opposite charges)
Light, X-rays and radio waves are all part of what?	The electromagnetic spectrum
The length of one complete wave measured in metres is its?	Wavelength