

S1 & S2 Science

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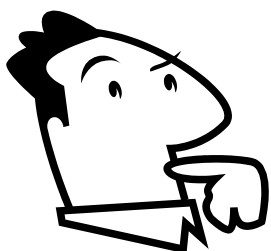
Progress Checks

2017-18

Name:

## Contents

Nº	Topic	Covered	Assessed
1	Science Skills	Throughout S1 & S2	
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3	Numeracy		
4	Topical Science		
5	Model of Matter	S1 block 1	S1 block 1 Test
6	Heat and Energy		
7	Human Body		
8	Periodic Table	S1 block 2	S1 block 2 test
9	Forces		
10	Chemical Reactions		
11	Habitat		
12	Sexual Reproduction	S1/S2	Topic test
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16	Light and waves	S2 block 2	S2 block 2 test
17	Photosynthesis		
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## "Science Skills" Progress Check

	Learning Outcomes	✓😊	?😐	✗😞
1	I can develop and state the aim of an experiment.			
2	I can make predictions and hypotheses based on information, observations, and my knowledge.			
3	I can define the independent variable as the variable that is controlled over a set range.			
4	I can define the dependent variable as the variable that is being measured.			
5	I can identify the independent and dependent variables in an investigation.			
6	I can identify variables to control to make sure my experiment is a fair test.			
7	I can identify safety hazards when planning and carrying out practical work			
8	I can plan experiments, using appropriate practical techniques.			
9	I can write a step by step plan for my experiment.			
10	I can draw a labelled sectional diagram of an experiment.			
11	I can carry out practical work safely, and in an organized manner.			
12	I can make accurate measurements and record them in a table with headings and units.			
13	I can state that a control experiment is when only one variable is altered at a time, so that the results can be clearly observed.			
14	I can identify when a control experiment is needed.			
15	I can choose an appropriate method to present my results (bar graph, line graph, table, chart, diagram)			
16	I can draw a bar graph with labels, units, and a uniform scale.			

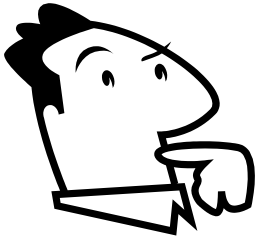
17	I can draw a line graph with labels, units, a uniform scale, and a best fit line or curve.			
18	I can analyse data to find a relationship between the independent and dependent variable.			
19	I can make links between my findings, aim and hypothesis.			
20	I can draw conclusions based on my results and my aim.			
21	I can explain the science related to my investigation.			
22	I can apply the information I found out in an investigation to a new situation.			
23	I can identify gaps in my investigation, and further research that would be required.			
24	I can consider alternate explanations for my experimental results.			
25	I can evaluate my investigation, and can suggest at least two ways of improving it.			
26	I can evaluate the relevance and reliability of data that I have gathered.			
27	I can communicate scientific information orally and through report writing.			
28	I can select an appropriate method of communication, based on my audience.			
29	I can provide evidence to support my ideas.			
30	I can make links between different topics in science.			
31	I can make links between what I have learned in science and what I have learned in other subjects or outside of school.			
32	I can apply my knowledge of science to new situations.			
33	I can use my knowledge of science to solve problems.			
34	I can apply my knowledge of science and creativity to the process of designing, constructing, testing, and modifying.			

35	I can identify different ways that science has impacted society.			
36	I can debate scientific issues, demonstrating respect for the views of others.			
37	I can discuss the ethical implications of a scientific issue.			
38	I can select relevant information from a source.			
39	I am able to identify reliable sources of scientific communication by considering the reputation of the author and the purpose of communication.			
40	I am able to separate fact from opinion by considering the author's perspective, the purpose of the communication, and the quality of supporting evidence.			

In this topic I have successfully.....

To make further progress I should.....

Target: In the next topic I will.....



## Literacy Progress Check

Literacy Outcomes		✓😊	?😐	✗😞
Listening and Talking	I contribute regularly to group discussions or when working with my partner by listening and talking			
	I can ask and answer questions within my group, or add to what others have said			
	As I listen or watch I can make notes in my own words by selecting key information			
	I can summarise what I've watched and listened to verbally in my own words to show understanding			
	I can present ideas or information including appropriate detail/evidence.			
	I can structure my talk so that it makes sense to my audience			
	I can use appropriate language in my talk for my audience			
	I can use non-verbal communication skills to engage with my audience			
Reading	I can read and understand some specialist and more complex vocabulary			
	I can find and select relevant information from a variety of sources when I read			
	I can link information from more than one source in my own words			
	I can use my notes to make a summary paragraph/poster that shows I've understood the topic.			

Writing	I write almost all sentences in a grammatically accurate way			
	I can write in a fluent and legible way			
	I can edit and revise my writing to ensure it is clear and accurate or to put in more detail.			
	When I write I can explain my answers using appropriate detail.			
	When I've carried out research I include appropriate references.			
	I can organise my writing in a coherent way to show logical thinking.			
	I can use appropriate and science key words to make my meaning clear and to improve the quality of my writing.			

In this topic I have successfully.....

To make further progress I should.....

Target: In the next topic I will.....

L2	Learning Outcomes	✓😊	?😊	✗😞
1	<i>I can round whole numbers and decimal fractions up to and including at least 2 decimal places.</i>			
2	<i>I can add, subtract 10,100 and 1000 mentally to and from whole numbers and decimal fractions with at least 3 decimal places.</i>			
3	<i>I can multiply and divide whole numbers and decimal fractions with at least 3 decimal places mentally by 10,100 and 1000</i>			
4	<i>I can give answers as decimal fractions when dividing a whole number by a single digit.</i>			
5	<i>I can identify multiples and factors of whole numbers.</i>			
6	<i>I can convert fractions into decimal fractions into percentages</i>			
7	<i>I can calculate simple percentages and use this knowledge to solve everyday problems</i>			
8	<i>I can calculate simple fractions of a quantity and use this knowledge to solve everyday problems.</i>			
9	<i>I can express fractions in their simplest form</i>			
10	<i>I can calculate the volume of simple 3d objects in <math>cm^3</math> and <math>m^3</math></i>			
11	<i>I can convert between common units of measurement e.g cm to m</i>			
12	<i>I can measure and draw a range of angles</i>			
13	<i>I can collect, organise and display data in a variety of ways e.g. bar graphs, line graphs and pie charts</i>			
14	<i>I can analyse, interpret and draw conclusions from data and communicate findings effectively.</i>			



15	<i>I can draw conclusions about the reliability of data taking into account the author, audience, the scale and the sample size used.</i>			
16	<i>I can display data accurately making effective use of technology.</i>			
17	<i>I can choose suitable scales for graphs.</i>			

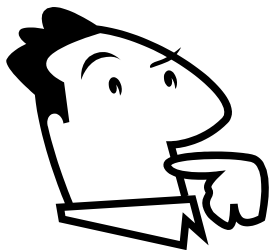
L3	Learning Outcomes	✓😊	?😐	✗😞
1	I can round numbers to at least 3 decimal places.			
2	I can round numbers to at least 3 significant figures			
3	I can use rounding to routinely estimate the answers to calculations.			
4	I can round in a way that is appropriate for the context.			
5	I can quickly recall number facts including at least the 12 <sup>th</sup> multiplication table and square numbers up to 144.			
6	I can solve written addition, subtraction, multiplication and division problems accurately working with whole numbers and decimal fractions containing at least 3 decimal places.			
7	I can solve mental problems accurately using the 4 operations.			
8	I can identify common multiples for whole numbers.			
9	I can identify common factors for whole numbers.			
10	I can solve problems using multiples and factors.			
11	I can convert any fraction, decimal fraction or percentage into an equivalent fraction, decimal fraction or percentage.			

12	I can add and subtract commonly used fractions.			
13	I can convert between whole of mixed numbers, improper fractions and decimal fractions			
14	I can use knowledge of fractions, decimal fractions and percentages to carry out calculations with or without a calculator.			
15	I can interpret and analyse data to draw appropriate conclusions.			
16	I can determine if data is robust, vague or misleading			
17	I can collect data by choosing a representative sample to avoid bias.			
18	I can organise and display data appropriately as bar graphs, line graphs, pie charts, making effective use of technology.			
19	I can describe trends in data using appropriate language.			

In this topic I have successfully.....

To make further progress I should.....

Target: In the next topic I will.....



## "Topical Science" Progress Check

	Learning Outcomes	✓😊	?😊	✗😞
1	I can give examples of how the skills developed through science are used in a wide variety of jobs and careers.			
2	I can give name some scientists and can describe the contribution they have made to scientific development.			
3	I can present my research in an appropriate way.			
4	I can communicate scientific information clearly using headings and subheadings.			
5	I am able to identify reliable sources of scientific communication by considering the reputation of the author and the purpose of communication.			
6	I am able to select relevant information from sources.			
7	I am able to separate fact from opinion by considering the author's perspective, the purpose of the communication, and the quality of supporting evidence.			
8	I can recognise what selective sampling is and how this may affect the reliability of scientific content in the media.			
9	I can state that bias is when one side of an argument is favoured.			
10	I can state that bias takes place when personal opinions affect judgements about the gathering, analysis, and use of data.			
11	I can identify bias in a source by considering the purpose of the source, the			

	author's perspective, sampling methods, and omissions (missing information).			
12	I can state that ethics are a set of moral principles that affect how people make decisions and live their lives.			
13	I can state that ethics are concerned with what is good for individuals and society.			
14	I can identify the ethical implications of scientific issues, by considering effects and future consequences on the environment and society.			

In this topic I have successfully.....

To make further progress I should.....

Target: In the next topic I will.....



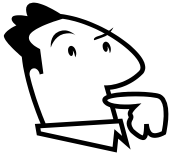
	Learning Outcomes	✓😊	?😐	✗😞
L2	<i>I can state that solids, liquids, and gases are the three states of matter, and define all substances as being either a solid, liquid, or gas.</i>			
	<i>I can describe the following changes of state: freezing, melting, evaporating, condensing</i>			
	<i>I can use the terms soluble, insoluble, dissolve and solution correctly</i>			
	<i>I can describe how heat can affect the rate of dissolving.</i>			
	<i>I can describe how particle size affects rate of dissolving.</i>			
	<i>I can select the most appropriate practical technique for separating mixtures such as sieving, filtering, using a magnet, evaporating etc</i>			
1	I can describe how the particles are arranged in solids, liquids, and gases.			
2	I can use my ideas about particles to explain the properties of solids, liquids, and gases.			
3	I can state that a solid turning directly to gas is called subliming, and a gas turning back to solid is called reverse subliming.			
4	I can use my knowledge of particles to explain what happens when solids melt, liquids freeze or evaporate, and gases condense.			
5	I can describe everyday examples of changes of state and explain why they happen.			
6	I have carried out experiments to show that solids, liquids and gases expand when they are heated			
7	I can use my knowledge of particles to explain why solids, liquids and gases expand when heated			

8	* I can state that air pressure is caused by moving gas particles, and can explain why heating increases pressure and cooling decreases pressure.			
9	I can separate mixtures of substances by identifying differences in properties like solubility, magnetism, state, particle size, boiling point and solubility			
10	I can describe how distillation can be used to separate of a mixture of liquids with different boiling points. E.g ethanol and water			
11	I can separate a mixture of dyes using chromatography.			
12	I can state that chromatography works because some dyes are more soluble than others.			
13	I can state definitions of each of the keywords: solute, solvent, solution, soluble, insoluble, saturated solution			
14	I can use each of the key words appropriately when describing experiments or everyday examples			
15	I can use my knowledge of particles to explain what happens to solids when they dissolve.			
16	I can describe how to carry out a fair test.			
17	I have carried out an experiment to compare the solubility of a solute in various solvents, and recognize that not all solvents will dissolve the same solute.			

In this topic I have successfully.....

To make further progress I should.....

Target: In the next topic I will.....



# Heat and Energy Progress Check

Date \_\_\_\_\_

	Learning Outcomes	✓😊	?😐	✗😞
L2	<i>I can name the following 7 types of energy: light, heat, electrical, sound, chemical, kinetic, gravitational potential and * elastic potential.</i>			
	<i>I can identify and describe some examples of energy transfer and pick out useful energy products and wasted energy products</i>			
	<i>I can state that energy is always conserved, not produced and/or destroyed.</i>			
1	I can state that the unit for energy is a Joule (J).			
2	I can state that heat energy travels from hot to cold.			
3	I can state that temperature is a method of measuring heat energy, and has units ( $^{\circ}\text{C}$ ).			
4	I can state that heat can be transferred by conduction, convection, or radiation.			
5	I can describe how heat travels through solids by conduction.			
6	I have carried out an experiment to compare the conductivity of different solids.			
7	I can give definitions for the terms "conductor" and "insulator", and can apply these terms to metals and non-metals.			
8	I have carried out an experiment to compare how effective different insulators are.			
9	I can describe how heat travels through liquids and gases by convection.			
10	I can state some everyday examples of convection			
11	I can describe how heat is transferred through a vacuum by radiation			
12	I can state that heat energy from the sun is transferred by radiation.			

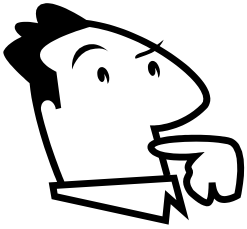
13	I have carried out an experiment to show how the colour of a substance affects its capacity to absorb radiated heat.			
14	I can describe the main sources of heat loss in a house, and can suggest ways to reduce heat loss.			
15	I can state that houses lose heat because there is a difference in temperature between the inside and outside.			
16	I can describe the energy transfers in coal and oil fired power stations, and state that lots of energy is lost as heat.			
17	I can describe an efficient energy transfer as one where there is very little energy wasted.			
18	I can state that coal and oil are examples of fossil fuels, which are non-renewable sources of energy.			
19	I can identify the products of combustion of fossil fuels, and have successfully carried out a test for carbon dioxide.			
20	I can describe trends in the levels of carbon dioxide and global temperatures over the past 100 years, and can explain why global temperatures have increased.			
21	I can describe the effects of global warming, focusing on climate change.			
22	I can state the following are sources of renewable energy: solar, wind, geothermal, biomass, hydroelectric, tidal, and wave. *I can describe how some of these renewable energy sources work.			
23	I can describe the energy changes taking place in each source of renewable energy listed above.			
24	I can suggest advantages & disadvantages of each of the renewable energy sources listed above.			

In this topic I have successfully.....

To make further progress I should.....

Target: In the next topic I will.....





# Human Body Progress Check

Date

	Learning Outcomes	✓😊	?😐	✗😞
1	I can state the 7 characteristics of all living things (MRS GREN)			
2	I can state that a cell is the basic building block of the human body.			
3	I can draw a diagram of an animal cell and label the nucleus, cell membrane, and cytoplasm.			
4	I can describe the roles of the nucleus, cell membrane, and cytoplasm in an animal cell.			
5	I can use a microscope safely, and can identify the eyepiece lens, objective lens, stage, light, diaphragm, clips, condenser, and the coarse and fine focus.			
6	I can prepare and stain a microscope slide.			
7	I can draw a diagram of a plant cell and label the nucleus, cell membrane, cytoplasm, cell wall, chloroplasts and vacuole			
8	I can describe the roles of the nucleus, cell membrane, cytoplasm, cell wall, and chloroplasts in a plant cell.			
9	I can describe differences between plant cells and animal cells			
10	I can explain what is meant by the term 'specialised cell.'			
11	I have researched at least one specialised cell e.g nerve cells, root hair cells, red blood cells, sperm cells, egg cells			
12	I can state examples of specialised cells and identify features that make them specialised.			
13	I can state that a group of similar cells is called a tissue.			

14	I can state that a group of tissues working together is called an organ.			
15	I can state that a group of organs working together is an organ system, and I can give examples of organ systems.			
13	I can explain that respiration is a chemical reaction that takes in cells, where oxygen reacts with glucose to produce carbon dioxide and water, and energy is released.			
14	* I can write a word equation to represent respiration			
15	I can state that the purpose of the respiratory system is to take oxygen in from the air for respiration, and to release carbon dioxide.			
16	I can identify the key parts of the respiratory system, and can describe the function of each one: mouth, nose, trachea, bronchi, bronchioles, alveoli			
17	* I can describe the gas exchange using my knowledge of diffusion, and can list some adaptations of the alveoli related to this.			
18	I have carried out an experiments to compare lung capacity, use peak flow meters, measure pulse rate, blood pressure and oxygen levels.			
19	I can describe other examples of aspects of health that may be monitored such as BMI and cholesterol.			
20	I can identify the key parts of the circulatory system, and can describe the function of each one: heart, arteries, veins, capillaries.			
21	I can state that circulatory system transports gases and chemicals around the body.			
22	I can explain the difference between oxygenated and deoxygenated blood.			
23	* I can describe how gases diffuse from capillaries to cells.			
24	I can describe at least one disease that affects the respiratory or the circulatory systems, and can list some treatments.			

In this topic I have successfully.....

To make further progress I should.....

Target: In the next topic I will.....



	Learning Outcomes	✓😊	?😐	✗😞
	<i>I can state examples of everyday forces such as magnetism, gravity, friction and electrostatic forces.</i>			
	<i>I can use a Newton meter to measure forces and state that the units of force are Newtons (N)</i>			
L2	<i>I know that friction is a force that opposes movement</i>			
	<i>I can suggest everyday examples of where friction is desirable and undesirable and explain why.</i>			
	<i>I can describe efficient movement as that which requires the least possible energy</i>			
1	I can carry out experiments to investigate factors which affect friction			
2	I can explain how friction arises			
3	I can describe ways of reducing friction between solids used in everyday life such as lubrication and sanding surfaces.			
4	I can describe some everyday examples of objects being streamlined in order to reduce air resistance or drag.			
5	I can use my knowledge of friction/air resistance/drag to improve the design of a moving object.			
6	I can state that unbalanced forces can cause a change in direction, shape or speed of an object			
7	I can state that where forces are balanced there is no change in shape, speed or direction of an object			
8	I can mark arrows on a diagram to show the direction in which forces act			
9	I can draw force diagrams to show balanced forces			

10	I can draw force diagrams to show unbalanced forces			
11	*I can calculate the size and direction of resultant forces.			
12	I can state that the weight of an object is the force pulling it down due to gravity			
13	I can state that mass is the amount of matter an object is made up of and is measured in kg.			
14	I can carry out an experiment to find out the link between the mass of an object and its weight. ( $w = m \times g$ )			
15	I can state the value of gravity as 10 N/kg on earth			
16	I can explain why the value of gravity is different on other planets			
17	I can calculate the weight of objects on other planets			
18	I can state that an object that is further from the earth experiences reduced gravity.			
19	I can predict how my weight might be affected at different altitudes on earth.			
20	I can state that in deep space objects would be weightless			
21	I can describe how my weight would change if I travelled to each of the planets in our solar system and then entered deep space.			

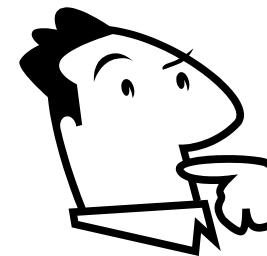
In this topic I have successfully.....

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Target: In the next topic I will.....

# Chemical Reactions Progress Check

Date



	Learning Outcomes	✓😊	?😐	✗😞
1	I can make observations of chemical reactions to deduce signs of a chemical reaction: a colour change, a gas given off, a precipitate formed, and an energy change.			
2	I can state that in a chemical reaction, something new is always formed.			
3	I can state that many chemical reactions are difficult to reverse.			
4	I can state that in a physical change, nothing new is formed.			
5	I can give some examples of physical changes, including changes of state and dissolving.			
6	I can state everyday examples of fast and slow chemical reactions			
7	I can carry out an experiment to monitor the rate of a chemical reaction.			
8	I can carry out an experiment to investigate the effect of concentration on rate of reaction.			
9	I can carry out an experiment to investigate the effect of temperature on rate of reaction.			
10	I can carry out an experiment to investigate the effect of particle size on rate of reaction.			
11	I can describe the effect of increasing concentration on reaction rate.			

12	I can describe the effect of increasing temperature on reaction rate.			
13	I can describe the effect of increasing particle size on rate of reaction			
14	I can state that a catalyst is a substance that speeds up a chemical reaction but is not itself used up.			
15	I can describe 2 everyday examples of catalysts.			

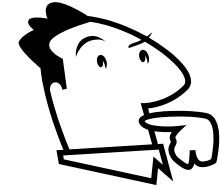
In this topic I have successfully.....

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Target: In the next topic I will.....

# Habitat Progress Check

Date



	Learning Outcomes	✓😊	?😐	✗😞
L2	<i>I can use food chains and food webs to show how energy flows between plants and animals.</i>			
	<i>I can give definitions for the following keywords, and can identify them in a food chain or food web: producer, primary consumer, secondary consumer, herbivore, omnivore, carnivore, predator, prey.</i>			
	<i>I can use the characteristics of living things to classify them as vertebrates, invertebrates, mammals, birds, fish, reptiles, and amphibians.</i>			
	<i>I can describe adaptations of living things and relate them to survival in their habitat.</i>			
	<i>I can use simple keys to identify particular plants or animals</i>			
1	I can define a habitat as the natural home or environment of an animal, plant or other living thing.			
2	I can state examples of different habitats and the organisms that might live there.			
3	I can define the terms biotic and abiotic, and			
	I can identify biotic (living) and abiotic (non-living) features in different habitats.			
4	*I can suggest consequences to changes in habitat.			



5	I can use keys to identify living things.			
6	I can describe random sampling as a method of collecting representative data.			
7	I can use random sampling methods (such as quadrats or pitfall traps) to sample the biotic features in 2 different habitats.			
8	I can collect data on various abiotic factors such as pH, light intensity, moisture, temperature, and soil composition using appropriate equipment.			
9	I can present results from sampled habitats in a suitable format.			
10	I can analyse my data to draw links between the biotic and abiotic features found in different habitats, and can use this information to suggest reasons for the distribution of organisms in different habitats.			

In this topic I have successfully.....

To make further progress I should.....

Target: In the next topic I will.....

# Periodic Table Progress Check

Date



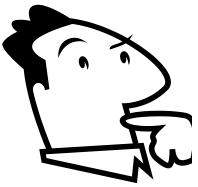
	Learning Outcomes	✓😊	?😐	✗😞
1	I can define elements as pure substances made of 1 type of atom only.			
2	I can define atoms as the simplest type of particles.			
3	I can state that there are approx 110 different elements.			
4	I can state that elements are organised in the periodic table by atomic number.			
5	I can recognise that each element has its own unique atomic number and symbol.			
6	I can describe the location of the metallic/non-metallic elements on the periodic table.			
7	I can identify examples of solid, liquid and gaseous elements.			
8	I can identify the state of an element given melting point and boiling point data.			
9	I can state that a group in the periodic table is a column whilst a period is a row.			
10	I can state that elements within the same group have similar physical and chemical properties.			
11	I can describe the physical and chemical properties of group 1 elements.			
12	I can describe the physical and chemical properties of groups 7 elements.			
13	I can describe the properties of group 0 elements.			
14	I can define a compound as 2 or more different elements chemically joined.			

15	I can make compounds by combining metals with non-metals and contrast the properties of the elements with the properties of the compound			
16	I can represent chemical reactions as word equations.			
17	I can name compounds from constituent elements.			
18	I can recognise elements present within compounds from formulae			
19	I can recognise number of atoms present of each element within formula.			
20	I can carry out experiments to break up compounds by electrolysis.			
21	I can define mixtures as 2 or more different substances put together that are not chemically joined.			
22	I can state examples of mixtures as air, solutions, sea water.			
23	I can suggest ways to separate different mixtures (link to model of matter topic)			

In this topic I have successfully.....

To make further progress I should.....

Target: In the next topic I will.....



## Sexual Reproduction Progress Check

Date

	Learning Outcomes	✓😊	?😐	✗😞
L2	<i>I can describe how every living thing has its own DNA fingerprint.</i>			
1	I can define puberty as the period of time when the body changes in preparation for reproduction.			
2	I can describe the changes that take place during male and female puberty.			
3	I can state the names and functions of the female reproductive system (ovaries, oviducts, uterus, uterus lining, cervix, and vagina).			
4	I can describe menstruation and explain why it occurs.			
5	I can state the names and functions of the male reproductive system parts (testes, scrotum, sperm duct, glands, urethra & penis).			
6	I can describe and explain adaptations of the specialised egg and sperm cells.			
7	I can state that egg and sperm cells contain half of the genetic information needed to make a complete individual and are known as gametes.			
8	I can state that the nucleus contains the DNA.			
9	I can define a gene as a piece of DNA which controls the specific characteristics of an individual			
10	I can state that chromosomes are long coiled strands of DNA			
11	I can state that DNA contains all the coded information needed for development and growth.			

12	I can carry out an experiment to extract DNA from plants.			
13	I can state that the DNA of individuals is unique and can be used to identify them.			
14	I can suggest advantages and disadvantages of building up a bank of DNA profiles (for use in criminal investigations, medicine, etc.).			
15	I can present my own opinion on the collection, storage and use of DNA profiles by relating it to advantages and disadvantages.			
16	I can define fertilisation as the fusing of the nuclei from an egg and a sperm cell.			
17	I can state that fertilisation is most likely to occur in the oviduct.			
18	I can state that when a fertilised egg embeds in the uterus lining, it is called pregnancy.			
19	I can describe the mechanism of sexual intercourse.			
20	I can suggest factors that might reduce chances of fertilisation (blocked oviducts, ovulation not occurring, and menopause).			
21	I can describe early signs of pregnancy.			
22	I can state that in the early stages of pregnancy the bundle of cells is called an embryo, and later is called a fetus.			
23	I can label a diagram of embryonic development.			
24	I can state that the time from fertilisation to birth is approximately 40 weeks, and is known as the gestation period.			
25	I can describe the changes that occur to a foetus over time.			
26	I can describe the signs of labour and birth.			
27	I can describe the effects of alcohol, nicotine, or other drugs on embryonic development.			

28	I have researched one condition that a new born baby may be screened for and can describe how the test is carried out, the symptoms of the condition and likely actions/treatment if a positive test occurs			
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In this topic I have successfully.....

To make further progress I should.....

Target: In the next topic I will.....



## Electricity Progress Check

Date

	Learning Outcomes	✓😊	?😐	✗😞
L2	<i>I can build basic circuits using bulbs, switches, buzzers, wires and batteries</i>			
	<i>I can represent a circuit using a circuit diagram</i>			
	<i>I can describe energy changes in a circuit</i>			
	<i>I have built simple cells and know that they are portable energy sources</i>			
1	I have reviewed electrical symbols.			
2	I can define and set up a series circuit.			
3.	I can draw circuit diagrams to represent series circuits			
4.	I can measure current in a series circuit and state that it is the same throughout			
5.	I can define and explain current as 'the rate of flow of electrons measured in amps', using an ammeter.			
6	I can measure voltage in a series circuit and state that it is different across different components			
7	I can define and explain the term voltage as the amount of energy each electron carries, measured across a component using a voltmeter.			
8	I can define and set up a parallel circuit.			
9	I can draw circuit diagrams to represent parallel circuits			
10	I can measure currents and voltages in parallel circuits			

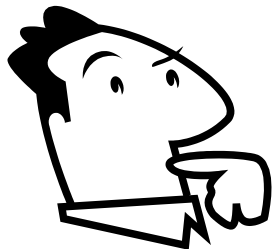
11	I can state that current in a parallel circuit is different in the different branches			
12	I can state that the voltage in a parallel circuit the same in each branch (as the supply voltage)			
13	I can state uses for each type of circuit and advantages/disadvantages.			
14	I can design a simple chemical cell and test its voltage.			
15	I can identify factors affecting voltage produced by a simple chemical cell. (e.g type of metal, electrolyte etc)			

In this topic I have successfully.....

To make further progress I should.....

Target: In the next topic I will.....





## Microbes Progress Check

Date

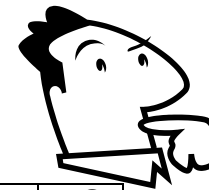
	Learning Outcomes	✓😊	?😐	✗😞
L2	<i>I know that bacteria, viruses and fungi are all examples of microbes.</i>			
	<i>I know that microbes can multiply rapidly.</i>			
	<i>I can state that some microbes are useful (and give some examples) whilst others are harmful</i>			
1	I can define a microbe as an organism that cannot be seen with the naked eye.			
2	I can state the three types microbe: bacteria, fungi, and viruses and give an example of each			
3	I can state that all viruses cause diseases. (e.g .colds, flu and chickenpox)			
4	I can state some examples of diseases caused by bacteria (e.g. sore throat and food poisoning).			
5	I can state some examples of diseases causes by fungi (e.g. athletes foot and ring worm)			
6	I can carry out an experiment to investigate how moisture or temperature affect microbe growth.			
7	I can describe an experiment to investigate how pH and food available affects microbe growth.			
8	* I can carry out exponential calculations to represent the growth rate of bacteria and fungi.			
9	I can state that the growth of bacteria can be controlled with antibiotics			

10	I can state that some types of fungi can be controlled with antifungal chemicals (creams/sprays)			
11	I can carry out an experiment to swab for microbial growth in different environments.			
12	I can state that the growth of bacteria can be controlled with antibiotics.			
13	I can state the growth of fungi can be controlled with antifungal chemicals (creams, sprays).			
14	I can state that illness due to viruses can be prevented with vaccines.			
15	I can describe my body's first line of defences to prevent infection			
16	I can describe how white blood cells defend the body against harmful microbes			
17	I can state that antibodies are specific to individual types of microbe and that it takes time to produce them.			
18	I can state that antibiotics have no effect on viruses, so the body needs to produce antibodies.			
19	I can state that vaccines are a weakened form of virus sufficient to promote production of antibodies without causing illness.			

In this topic I have successfully.....

To make further progress I should.....

Target: In the next topic I will.....



## Acids and Alkalis Progress Check

Date

	Learning Outcomes	✓😊	?😐	✗😞
1	I can recognise and describe the meanings of the hazard symbols corrosive, irritant, flammable, toxic and harmful			
2	I can state that acids and alkalis are corrosive.			
3	I can describe a base as a substance that neutralises acids			
4	I can describe the colours of different substances with universal indicator and assign them pH numbers			
5	I can describe properties of acids and bases and state everyday examples and laboratory examples			
6	I can recognise that acids have a $\text{pH} < 7$ , bases have a $\text{pH} > 7$ and the neutral substances have $\text{pH}=7$			
7	I can carry out an experiment to neutralise an acid with an alkali			
8	I can carry out an experiment to neutralise an acid with a metal oxide or metal carbonate			
9	I can state the products of the 3 types of neutralisation reactions			
10	I can name salts produced in specific neutralisation reactions.			
11	I can represent the 3 types of neutralisation reactions as word equations			
12	I can describe some everyday applications of neutralisation reactions			
13	* I can decide which type of neutralisation reaction each everyday example is			

In this topic I have successfully.....

To make further progress I should.....

Target: In the next topic I will.....

# Light Progress Check

Date



	Learning Outcomes	✓😊	?😐	✗😞
L2	<i>I know that light travels in straight lines</i>			
	<i>I know that white light can be dispersed to make the colours of the spectrum.</i>			
	<i>I can state the colours of the spectrum (in a rainbow) in their correct order. (RIYGBIV)</i>			
1	I know that we see things because light reflected by objects enters our eyes			
2	I can explain that objects that emit their own light are luminous whereas other objects can only be seen because they reflect light into our eyes.			
3	I can identify the incident ray, reflected ray, angle of incidence, angle of reflection and normal on a ray diagram showing reflection			
4	I can state the law of reflection			
5	I can state that light changes direction when it moves from air to glass and vice versa. This is called refraction.			
6	I can draw a ray diagram to show refraction and label the normal lines.			
7	I can explain that refraction occurs when the speed of light is changed by the density of the material.			
8	I can describe white light as made up of all the colours of the spectrum.			
9	I know that different colours are refracted by different amounts through a prism. This is called dispersion.			
10	I can label the parts of the eye and explain their function including: pupil, iris, cornea, retina, lens, optic nerve.			
11	I can state that convex lenses converge light and concave lenses diverge light.			

12	I can state that long sight is caused by light not being refracted enough by the lens and short sight is caused by light be refracted too much by the lens.			
13	I can state that convex lenses can be used to correct long sightedness and concave lenses can be used to correct short sightedness.			
14	I know that visible light is a wave and carries energy.			
15	I know that light is part of a family of waves called the electromagnetic spectrum.			
16	I know that all parts of the electromagnetic spectrum are made of waves that travel at the same speed but have different wavelengths			
17	I can draw a diagram of a wave and mark on the wavelength.			
18	I can state that the shorter the wavelength the higher the energy carried by the wave.			
19	I can draw an electromagnetic spectrum to show the position of Radio and TV waves, X-rays, microwaves, visible light, infrared light, ultra violet light, and gamma rays.			
20	I can have researched at least one type of electromagnetic radiation and can state an application in everyday life			
21	I can evaluate the advantages and limitations of an application of electromagnetic radiation.			

In this topic I have successfully.....

To make further progress I should.....

Target: In the next topic I will.....

# Photosynthesis Progress Check

Date



	Learning Outcomes	✓😊	?😐	✗😞
1	I have reviewed the structure of plant cells, identifying the cell wall, cytoplasm, nucleus, and chloroplasts.			
2	I can state that plants make their own food through photosynthesis.			
3	I can state the word equation for photosynthesis.			
4	I can describe the role of chloroplasts as trapping sunlight for photosynthesis.			
5	I have carried out an experiment to show that starch is made during photosynthesis.			
6	I can describe the test for starch.			
7	I can state that plants store glucose as starch.			
8	I know that the sun is the source of all energy for food production.			
9	I have investigated how plants help to sustain life and can present my findings. (e.g by providing oxygen, food, habitats, raw materials, medicines)			
11	I can state that nitrogen, potassium and phosphorous are needed for healthy growth.			
12	I can explain that nutrients are absorbed through the roots of plants so they must be soluble.			
13	I can state that the necessary nutrients should come from the soil but are sometimes lacking and that fertilisers can be used to replace them			
14	I can state 2 examples of natural fertilisers			
15	I know artificial fertilisers are made in a laboratory.			
16	I can interpret data to help me describe a link between fertiliser use and plant yield.			

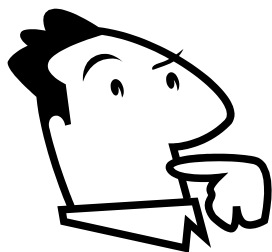
17	I can state at least 2 reasons why the use of fertilisers has increased.			
18	*I can describe how fertiliser use affects the environment.			
19	I have carried out some research into one method used in agriculture from chemical fertilisers, organic fertilisers, herbicides, pesticides, fungicides, insecticides. I can describe its use and evaluate its impact on food production.			

In this topic I have successfully.....

To make further progress I should.....

Target: In the next topic I will.....





## Earth Materials Progress Check

Date

	Learning Outcomes	✓😊	?😐	✗😞
1	I can describe the earth's structure			
2	I can label the inner core, outer core, mantle and crust and describe the composition of each.			
3	I can describe a rock as a mineral or mixture of minerals found in the earth's crust.			
4	I can describe a mineral as a solid element/compound that occurs naturally.			
5	I have researched the formation, characteristics and uses of at least 2 common minerals			
6	I can state that most metals are found in the Earth's crust in the form of compounds.			
7	I can state that rocks that contain large amounts of particular metal compounds are known as ores.			
8	I can state 3 examples of ores and metals that come from them (aluminium from bauxite, iron from haematite, and copper from malachite).			
9	I can state that some metals can be extracted by electrolysis. (e.g aluminium)			
10	I can carry out an experiment to electrolyse copper chloride and hence extract copper			
11	I can write a word equation for the electrolysis of aluminium oxide			
12	I can state that some metals (e.g silver) are extracted from their ores by heat			

13	I can state three uses of aluminium, iron, copper and explain why they are suitable for these uses.			
14	I can classify the three rock types as igneous, sedimentary and metamorphic			
15	I can state at least 1 example and use of each rock type			
16	I can describe physical, chemical and biological weathering			
17	I can draw a rock cycle to show how all rocks started initially as igneous rocks.			
18	I can extract chlorine from sea water through electrolysis.			
19	I can describe the composition of soil as made up of minerals from weathered rocks and organic matter			
20	I can state that loam, sand and clay are all different types of soil.			
21	I can describe the formation and characteristics of loam, sandy, peaty and clay soil types			
22	I can state uses of loam, sand and clay.			

In this topic I have successfully.....

To make further progress I should.....

Target: In the next topic I will.....



# Space Progress Check

Date

	Learning Outcomes	✓😊	?😐	✗😞
1	I have reviewed the 7 processes that all living things have in common. (MRS GREN)			
2	I can describe how oxygen, food, warmth and water are needed for survival of living things.			
3	I can state that the earth is unique in terms of being the only known planet in our solar system to contain water in all 3 states and can related this to its distance from the sun.			
4	Define the 'Goldilocks' zone as the zone in a solar system where liquid water exists.			
5	I can describe examples of different life forms that exist in extreme environments on earth such as in nuclear reactors and deep sea vents			
6	I recognise that some organisms that live in extreme environments do not follow MRS GREN.			
7	Understand that the earth is one of millions of planets and that research is being carried out to find similar "earth-like" planets that may also support life.			
8	I can state that alternatives to earth would need to contain water, nutrients and an energy source.			
9	I have carried out some research to investigate the likelihood of life existing elsewhere.			
10	I can present my opinion of whether life exists elsewhere and relate it to my research.			

In this topic I have successfully.....

To make further progress I should.....

Target: In the next topic I will.....

## My Science Assessment Record

Date	Key Area	Component Marks	Mark (%)	Strengths	Weaknesses
Block 1 Test	Model of matter				
	Heat & Energy				
	Human body				
Block 2 Test	Periodic Table				
	Habitat				
	Forces				
	Chemical Reactions				
Block 3 Test	Electricity				
	Microbes				
	Acids & Alkalis				
Block 4 Test	Light & Waves				
	Photosynthesis				
	Earth Materials				