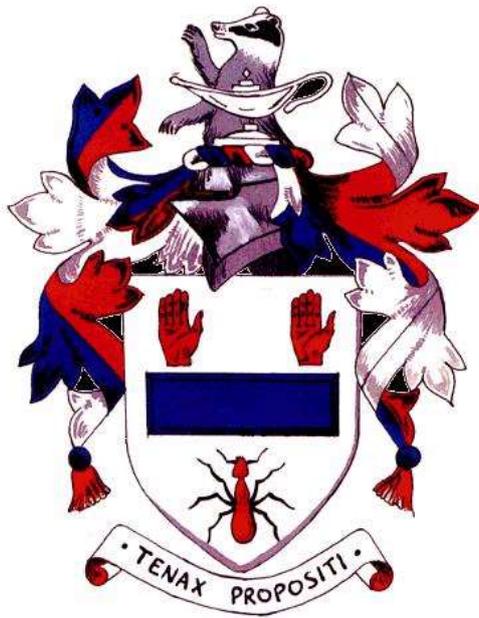


Year 8 Science



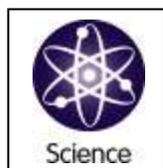
Summer Exam Revision Checklist

Note - These are the learning outcome from you pupil booklet. There is no need to print all of this document.

Your Year 8 summer exam will be 80 minutes long. You will need to remember...

**2 Pens
Pencil, rubber and sharpener
30cm Ruler
Calculator**

Topic 1: Being A Scientist



Learning Objective	Answer/ Location of answer in Year 8 Pupil Booklet 1.
1. Draw/describe your ideas of what a scientist looks like.	-----
2. List 5 safety rules to be observed in the laboratory.	P 3
3. State reasons for some of the main safety rules in the laboratory.	<ul style="list-style-type: none"> • Keep all lab users safe. • Reduce the risk of accidents.
4. Pick out the appropriate hazard warning symbol for certain types of substances.	Not in Pupil booklet – can be located on a separate cut and stick activity.
5. Recall some of the skills a scientist uses.	P 5
6. Label a diagram of the parts of the Bunsen burner.	P 7
7. Light a Bunsen burner safely and adjust its flame.	P 7
8. Observe and record 3 different types of Bunsen burner flames.	P 8
9. Carry out a W5 search on Robert Bunsen.	P 6 Completed as a HW on a separate page.
10. Identify pieces of laboratory apparatus.	P 9-10 and a separate page.
11. Draw and label diagrams of laboratory apparatus.	P 9-10 and a separate page.
12. Carry out an experiment to boil water safely and recall the apparatus used.	P 10 shows the diagrams of boiling water. <i>Pupils may also have written about the experiment on a separate page.</i> <i>Yellow Big Picture sheet shows how to draw and label diagrams.</i>
13. Carry out a flame test safely.	P 11
14. Record and recall the colours of the flames for some different metals.	P 11
15. List the appropriate units for length, area, volume, mass, temperature and time.	P 11
16. Measure the volume of a regular shape using a ruler.	<ul style="list-style-type: none"> • Measure the length, width and height of the object. • Multiply the 3 values together to obtain the volume.
17. Measure the volume of a liquid using a suitable measuring cylinder.	<ul style="list-style-type: none"> • There are different sizes of measuring cylinders – obtain one closest to the amount of liquid you are measuring. • ie: Do not use a 100cm³ cylinder to measure 5cm³ of liquid. • Read the value using the bottom of the meniscus. <p>DIAGRAM NEEDED TO SHOW MENISCUS.</p>
18. Measure the volume of an irregular solid by displacement of water.	P 13
19. Measure mass accurately using a digital top pan balance.	<ul style="list-style-type: none"> • Digital top pan balance needs to be tared/ reset a 0g before anything it placed on it. • Read and record the value.
20. Measure temperature safely and accurately using an alcohol in glass thermometer.	<ul style="list-style-type: none"> • Practical carried out in class. • Read and record the value from the thermometer.

21. Measure time accurately using a stop clock.	<ul style="list-style-type: none"> Reset the stop clock. Start. Read and record time from the stop clock. 	
22. Solve a variety of measurement problems.	P 17	
23. Interpret a branching key.	P 18-20	
24. Interpret a statement key.	P 18-20	
25. Use a key to give 'silly science' names to familiar objects.	-----	
26. Use a branching key to identify pond animals.	P 19	
27. Use a statement key to identify fish.	P 19	
28. Use a branching key to identify materials and describe their properties.	P 20	
29. Construct a branching key.	HW – on a separate page.	
30. Look at a website and evaluate its strengths and weaknesses.	P 21	
31. Select, classify, compare and evaluate information from a range of tables.	P 22-25	
32. Plan a scientific investigation.	P 26-27 The investigation involved is heating water to a temperature of 60-70°C and may be written up on a separate page.	
33. Pick variables to change, keep the same and measure in an investigation.	P26 The investigation involved is heating water to a temperature of 60-70°C and may be written up on a separate page.	
34. Carry out a scientific investigation safely.	Practical carried out in class. Safety rules P 3 need to be followed.	
35. Construct a results table and record results appropriately.	The investigation involved is heating water to a temperature of 60-70°C and may be written up on a separate page.	
36. Interpret result and make a conclusion.	P 27 The investigation involved is heating water to a temperature of 60-70°C and may be written up on a separate page.	
37. Write a short scientific report.	The investigation involved is heating water to a temperature of 60-70°C and may be written up on a separate page. Yellow Big Picture sheet shows how scientific reports should be written.	
38. Recall the names of some famous Northern Ireland scientists.	P 28	
39. State some jobs carried out by scientists locally and further afield.	P 28-29	
40. Use a website to research the jobs that scientists carry out.	P31 – HW task.	



Topic 2: Exploring Energy



Learning Objective	Answer/ Location of answer in Year 8 Pupil Booklet 1.
1. State 8 different types of energy	You may have summarised the 8 types in a spider diagram on page 36 but they are also listed in a table on page 35.
2. Give an example of an object that possesses each type of energy	See page 35
3. State a rule about how energy is conserved	Energy cannot be created or destroyed, only changed from one form to another form
4. Explain circumstances in which energy becomes less useful	Heat can be produced when things moves or sound when things collide which is less useful forms of energy
5. State the two main forms of waste energy	Heat and sound
6. State the unit of energy	Joules (unit J)
7. Give examples of at least 5 energy changers	Select any 5 from "Changing energy Experiments" on pages 38-41. Energy changers just change energy form one form to another.
8. State the energy changes occurring in a number of devices	You should be able to identify the energy going into a device and what energy form comes out. For example, chemical energy in the petrol of a car changes into kinetic energy
9. Distinguish between "types of energy" and "energy resources"	See p43 for energy resources
10. Define polluting and non-polluting energy sources	Page 43
11. Define renewable and non-renewable energy resources	Page 43
12. Explain why it is necessary to increase our use of renewable energy resources	Will fossil fuels last forever or are they running out?
13. Give examples of polluting and non-polluting energy sources	Page 44
14. List 6 renewable energy resources	Be able to list 6 from Page 44
15. List 4 major non-renewable energy resources	Be able to list 4 from Pages 43-44 (remember fossil fuels are made up of separate resources like Coal etc)
16. Explain what is meant by "carbon footprint"	This is how much carbon dioxide each of us releases into the environment because of our lifestyles.
17. Give examples of three activities that add to the "carbon footprint" for your family	Examples can be found in the right hand box on page 47 about Sam Smith.
18. List 3 ways of reducing your carbon footprint	What did you find from the Tearfund leaflets at the bottom of page 47?



Topic 3: Healthy body and mind



Learning Objective	Answer/ Location of answer in Year 8 Pupil Booklet 2.
1. State the type of energy food contains.	Food contains chemical energy.
2. Recall the name of the original source of energy.	The sun.
3. State that the human body needs energy for three main processes and recall the names of them.	See the three main points at the bottom of page 49.
4. Select information about energy content of food.	You should be able to extract information from a table from the 'Being a scientist' topic. Try getting someone at home to ask you questions about the energy content on food packets.
5. Make a fair comparison of the energy content of different foods.	Make sure you compare the same amount of food, for example energy content per 100g. Also make sure the unit is the same for energy, kilojoules or calories may be used!
6. Release energy from food by burning it.	Experiment on page 52.
7. Compare the energy content of the three macronutrients and recall which one releases the greatest amount of energy.	Results of experiment on page 54 and 55.
8. State which types of people require the greatest amount of energy per day and why.	The table at the bottom of page 56 gives this information. Remember the more active the person is through the day, the more energy the person will need each day.
9. Know how to compare the alcoholic strength of wine, beer, spirits and Alco pops	Know how to compare 'units' of alcohol and what this means.
10. State the recommended limits on alcohol consumption for an adult in a week (male and female)	21 units per week for men and 14 units a week for women.
11. List three short term and three long term effects of alcohol on the body	Short term effects are listed in a table on page 58. The Long term effects are the effects on the brain, heart, liver and stomach.
12. Explain why some people (e.g. young people, pregnant women) are more at risk from the effects of alcohol than others	See "Who is most at risk and why?" on page 58.
13. Describe the dangers of binge drinking for an individual	'Kick it - binge drinking' on page 59. See question 3.
14. Recall some of the costs to society of binge drinking	Costs due to litter problems, noise disturbance and the cost of policing and hospital staff.
15. List some reasons why young people drink alcohol and suggest some possible ways of reducing binge drinking	Peer pressure from friends makes some young people think it is 'cool' or makes them look older.
16. Mark the position of the 6 lobes of the brain and state one function of each.	Learn the 6 lobes and they're function from the diagram of the brain on Page 60.

Topic 3: Healthy body and mind

Learning Objective	Answer/ Location of answer in Year 8 Pupil Booklet 2.
17. Recall which side of the brain controls logical processes and which one controls creative and visual processes.	Right side controls the creative and visual Left side controls the logical.
18. State some of the functions of the left brain	See the table at the bottom of page 60. Functions include language, numbers etc.
19. State some of the functions of the right brain	See the table at the bottom of page 60. Functions include creativity, music etc.
20. Describe an experiment to investigate reaction time	Dropping the sheet of paper and catching it experiment.
21. List some foods that are good for the brain	See page 61.
22. Give one reason why brain gym exercises aid learning	See Page 61.
23. Recall the 3 learning styles and how they aid learning	See Page 61.



Topic 4: Solids, Liquids and Gases



Learning Objective	Answer/ Location of answer in Year 8 Pupil Booklet 2.
1. Name the three states of matter	Solids, Liquids and Gases.
2. Describe properties of solids, liquids and gases in terms of shape and volume	See table on page 65.
3. Compare the properties of solids, liquids and gases	Make comparisons between the properties of solids, liquids and gases.
4. Describe uses of materials based on their characteristics	
5. Explain that matter is made up of tiny pieces	Tiny particles called atoms or molecules.
6. State in simple terms what an atom is	The smallest part of an element.
7. State in simple terms what a molecule is	A group of atoms chemically joined together.
8. Describe properties of solids, liquids and gases in terms of particle arrangements, spacing and movement	See particle diagram on page 66.
9. List the terms used to describe changes of state	Evaporation, condensation, melting and freezing.
10. Describe whether energy is supplied or removed during different changes of state	Solid → Liquid → Gas, energy is supplied Gas → Liquid → Solid, energy is removed
11. State the meaning of the "Melting point" of a solid	The point/temperature at which the solid becomes a liquid.
12. State the meaning of the "Boiling point" of a liquid	The point/temperature at which the liquid becomes a solid.
13. State that liquids and gases diffuse	---
14. Explain what diffusion means	When a gas moves from an area of high concentration to an area of low concentration. An example of diffusion is how perfume smell moves throughout a room freely.
15. Carry out experiments to show that liquids and gases diffuse	---
16. State what produces air pressure.	The air particles pushing down on us.
17. Describe experiments to demonstrate air pressure.	Remember the tunnocks marshmallow in the bell jar and how it grew?
18. List examples of when and how air pressure needs to be measured.	Tyres in cars and measuring the weather.
19. State how solids, liquids and gases can be made to expand.	Heating makes the particles move further apart.

Learning Objective	Answer/ Location of answer in Year 8 Pupil Booklet 2.
20. Carry out experiments to demonstrate the expansion of solids, liquids and gases.	These experiments are written up on page 68.
21. State that different substances expand by different amounts.	This is the reason why a bimetallic strip works.
22. Describe situations where expansion can cause problems.	Bridges and roads can collapse because of expansion or railway lines can bend as the metal tracks expand. To stop this, small gaps are left to allow room for expansion without warping.
23. State how solids, liquids and gases can be made to contract.	Cooling will make these particles contract. Remember contracting is the opposite of expansion.
24. State the meaning of density	The mass of 1cm ³ of a given material
25. Carry out experiments to find the mass of 1cm ³ of solids, and liquids	See page 72
26. Explain that the mass of 1cm ³ of a material is called its density	---
27. State and use the equation for density	Density = Mass ÷ Volume
28. Carry out experiments to find the density of solids	See page 72
29. Carry out an experiment to find the density of a gas	See page 73
30. Carry out an experiment to find the density of liquids	See page 73
31. Explain in simple terms why an object floats or sinks	If a solid has a lower density than a liquid, it will float. If a solid has a higher density than a liquid it will sink.



Topic 5a: Cells



Learning Objective	Answer/ Location of answer in Year 8 Pupil Booklet 3.
1. Label the parts of a monocular microscope	Learn the parts as they are labelled on page 78.
2. State the function of each of the following parts; stage, light source, objective lens, eyepiece lens, coarse focus, and fine focus	A list of these pieces and they're function is on page 78.
3. State two differences between a monocular and a binocular microscope	See the compare and contrast activity on page 79
4. Use a binocular microscope to look at fingerprints	---
5. State what is meant by magnification and explain how it is calculated	Magnification is the number of times larger than normal an image appears as you look down the microscope. It is calculated by $\text{Magnification} = \text{Eyepiece Lens} \times \text{Objective Lens}$
6. List the 7 characteristics of life.	That's MRS GREN for short! See page 80
7. Recall the level of organisation in an organism.	Cells → Tissue → Organ → Organ systems → Organism. Page 80
8. State that all organisms are made up of cells	---
9. State that some organisms are made from a single cell	e.g bacteria or amoeba
10. Recall that an amoeba is a single-celled organism	---
11. Use a monocular microscope to view a sample of single-celled organisms	Can you recall how to use a microscope? If not see page 82.
12. Describe how to prepare a slide using the terms coverslip, slide and specimen	See page 82.
13. Describe how to view a prepared slide up to X400 magnification	Remember how magnification is calculated. See learning outcome 5.
14. Draw and label a diagram of a plant cell	See page 83.
15. Prepare a sample of plant cells for viewing under a microscope	Look in your blue workbook how you prepared a sample of onion cells to view under the microscope.
16. Draw and label a diagram of an animal cell	See page 83.
17. Prepare a sample of animal cells for viewing under a microscope	Look in your blue workbook how you prepared a sample of cheek cells to view under the microscope.

Learning Objective	Answer/ Location of answer in Year 8 Pupil Booklet 3.
18. State the function of the cell membrane, nucleus, cytoplasm, cell wall, vacuole, and chloroplasts	The function for each of these parts of the cell can be found on Page 83.
19. List the similarities and differences between plant and animal cells	<p>What are the common structures between a plant and animal cell? (There are three common ones)</p> <p>What parts of a cell are only found in a plant cell? (There are 3 parts only found in plant cells) See page 83 to help you.</p>
20. State that cells can be specialised for a particular job (examples root hair cell, ciliated epithelial cell, sperm cell, egg cell)	These are called specialised cells. See page 84.
21. Name the harmful component of sunlight	Ultraviolet (or UV) light. Remember both UVA and UVB rays damage your skin but in different ways. Your notes to this part of the topic are in your blue workbook.
22. State what our skin produces to protect us	Our skin produces a pigment to protect us called melanin .
23. List 4 ways sunlight can affect us	Skin cancer, Wrinkling, Sunburn and Eye damage.
24. Name one useful vitamin made by our skin when exposed to sunlight	Vitamin D.
25. Describe ways to reduce the damage caused by sunlight	Spend less time in the sun, Wear a hat, Wear sunglasses and/or Apply sunscreen.
26. Recall that sun beds increase the risk of skin cancer	---
27. Select, classify, compare and evaluate information from tables of data about malignant melanoma	See page 89-91.



Topic 5b: Reproduction



Learning Objective	Answer/ Location of answer in Year 8 Pupil Booklet 3.
1. State that gametes are the cells involved in sexual reproduction	Examples include sperm cells and ova.
2. Explain what is meant by fertilisation	See Page 95
3. State which vertebrates use external fertilisation	See Page 95
4. State which vertebrates use internal fertilisation	See Page 95
5. Label a diagram of the human male reproductive system	This is shown on page 97. You should be able to label it.
6. State the function of each part of the male reproductive system	This is shown on page 97
7. Label a diagram of the human female reproductive system	This is shown on page 97. You should be able to label it.
8. State the function of each part of the female reproductive system	This is shown on page 97
9. Explain what is meant by ovulation and recall when and where it takes place	this is when an egg is released from an ovary (One egg is released a month from alternating ovaries)
10. State where fertilisation takes place	Fertilisation occurs in the Oviduct
11. Explain what is meant by implantation and recall where a baby develops	This is when a fertilised egg joins to the lining of the uterus.
12. Describe what happens to the lining of the uterus during the 28 day menstrual cycle	See Page 98
13. Explain what is meant by the term puberty	This is the changes which take place in boys and girls during adolescence.
14. List the changes that occur during puberty in boys and girls	See Page 99
15. State what is meant by contraception and recall three examples.	See Page 99