

YEAR 10



GCSE (9–1) Science

COMBINED
Assessment Booklet
Autumn Term

Name: _____

Teacher: _____

Classroom: _____

Expectations

Practical Reports

- Completed in blue or black ink
- All margins, tables & label lines are ruled
- All headings and subheadings are underlined
- Diagrams are scientifically drawn in pencil
- All components of the report are present: title, date, aim, hypothesis, materials, diagram, method, results, questions, conclusion
- All graphs drawn on graph paper in pencil and with a ruler
- Writing is legible
- Checked by a peer

Workbook

- Have feedback booklets inside cover
- All work to have a clear title & date (both underlined with a ruler)
- The margin will be used for question numbers/letters
- All writing will start next to the margin with correct use of capital letter and punctuation
- All writing in blue or black ink
- All writing will be legible and of an appropriate size
- All diagrams, tables and drawings to be completed with a pencil and a ruler
- All errors to be crossed out with a single line, no correction fluid to be used
- Do not tear pages from your book
- Each piece of work to be ruled off before starting next piece of work
- All feed forward to be completed in purple and self-correction in red
- Word processed work should be named and typed in Ariel size 12 font, size 14 for headings

Equipment

- Blue or black pen
- Red Pen
- Pencil
- Ruler
- Rubber
- Calculator
- Glue
- Scissors

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CB4 – NATURAL SELECTION & GENETIC MODIFICATION

Revision Checklist

CB4a Evidence for Human Evolution

1. Define 'evolution'.
2. Recognise binomial species names.
3. Explain how evidence from fossils and stone tools supports current ideas about human evolution.
4. Recall how stone tools are dated from their environment.
5. Describe how stone tools created by human-like species have developed over time.
6. Describe the fossil evidence for human-like species that lived 4.4, 3.2 and 1.6 million years ago.

CB4b Darwin's Theory

7. Recall the cause of genetic variation.
8. Describe how adaptations allow organisms to survive.
9. Explain how natural selection allows some members of a species to survive better than others when conditions change.
10. Explain how natural selection can lead to the evolution of a new species.
11. Explain how the development of resistance in organisms supports Darwin's theory.

CB4c Classification

12. Describe how organisms are classified into smaller and smaller groups (based on their characteristics).
13. Identify genus and species from a binomial name.
14. Identify an organism as a member of one of the five kingdoms.
15. Describe what genetic analysis is.
16. Explain why biologists often now classify organisms into three domains.

CB4d Breeds & Varieties

17. Describe why new breeds and varieties are created.
18. Describe what is meant by a 'genetically modified organism'.
19. Describe how selective breeding is carried out.
20. Explain the impact of selective breeding on domesticated plants and animals.

CB4e Genes in Agriculture & Medicine

21. **H** Describe the main stages of genetic engineering.
22. Recall some uses of selectively bred organisms (in agriculture).
23. Recall some uses of genetically engineered organisms (in agriculture, in medicine).
24. Evaluate the benefits and risks of using selective breeding and genetic engineering to produce new varieties and breeds.

CB4 – NATURAL SELECTION & GENETIC MODIFICATION

Feedback

Mark

Below Expected Progress / Making Expected Progress / Above Expected Progress

Teacher Feedback

Student Feedback

WWW:

EBI/
Target:

CB5 – HEALTH, DISEASE & THE DEVELOPMENT OF MEDICINES

Revision Checklist

CB5a Health & Disease

1. Define the term health.
2. Define the term disease.
3. Describe how communicable and non-communicable diseases differ.
4. Outline the role of the immune system in protecting against disease.
5. Explain how disease can affect the immune system.

CB5b Non-communicable Disease

6. Give examples of non-communicable diseases.
7. Define the term malnutrition.
8. Explain how diet can lead to malnutrition.
9. Describe the link between alcohol and liver disease.
10. Explain the effect of alcohol consumption on liver disease at local, national and global levels.

CB5c Cardiovascular Disease

11. Describe how obesity is measured (BMI and waist : hip calculations).
12. Describe how obesity correlates with cardiovascular disease.
13. Describe how smoking correlates with cardiovascular disease.
14. Explain why exercise and diet affect obesity.
15. Compare how cardiovascular diseases are treated

CB5d Pathogens

16. Describe some problems and diseases caused by bacteria.
17. Describe a disease caused by a virus.
18. Describe a disease caused by a protist
19. Describe a disease caused by a fungus.
20. Explain how signs of a disease can be used to identify the pathogen.

CB5e Spreading Pathogens

21. State the ways in which pathogens can be spread.
Give examples of pathogens that are spread in different ways (e.g. cholera bacteria by water,
22. tuberculosis bacteria and chalaria dieback fungi by air, malaria protist by vector, *Helicobacter* by mouth, Ebola by body fluids).
23. Explain how the spread of different pathogens can be reduced or prevented.

CB5f Physical & Chemical Barriers

24. Explain how the spread of the STIs Chlamydia and HIV can be reduced or prevented.
25. Give examples of physical barriers.
26. Give examples of chemical barriers.
27. Describe how physical barriers protect the body (e.g. skin, mucus and cilia).
28. Describe how chemical barriers protect the body (e.g. lysozymes, hydrochloric acid).

CB5g The Immune System

29. State that the immune system protects the body by attacking pathogens.
 30. Describe how antigens trigger the release of antibodies & the production of memory lymphocytes.
 31. Describe the role of antibodies in the immune response.
 32. Describe the role of memory lymphocytes in triggering a secondary response.
 33. Explain how immunisation protects against infection by a pathogen.
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CB5h Antibiotics

34. Define the term antibiotic (as medicines that inhibit cell processes in bacteria).
 35. Explain why antibiotics are useful for treating bacterial infections.
 36. Explain why antibiotics cannot be used to treat infections by pathogens other than bacteria.
 37. Describe the stages of development of new medicines.
 38. Explain why each stage of the development of a new medicine is needed.
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Feedback

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CC8 – ACIDS & ALKALIS

Revision Checklist

CC8a Acids, Alkalis & Indicators

1. Describe what the main hazard symbols mean.
2. Describe the safety precautions that should be observed when handling different acids and alkalis.
3. Name the ions present in all acidic and all alkaline solutions.
4. State the pH values associated with acidic, alkaline and neutral solutions.
5. Describe the effect of acids and alkalis on common indicators.
6. **H** Explain the link between pH and the concentration of ions in acids and alkalis.

CC8b Looking at Acids

7. **H** Describe the relationship between hydrogen ion concentration and pH.
8. **H** Explain the difference between a dilute and concentrated solution (in terms of the amount of solute present).
9. **H** Explain the difference between strong and weak acids (in terms of the degree of dissociation of the acid molecules).
10. **H** Explain how the pH and reactivity of an acid depend on the concentration and the strength of the acid.

CC8c Bases & Salts

11. Describe how a base reacts in a neutralisation reaction.
12. Describe what happens when an acid reacts with a metal oxide.
13. Write word equations for the reactions of acids and metal oxides.
14. Write symbol equations for the reactions of acids and metal oxides.
15. Explain what happens during a neutralisation reaction.
16. Describe the steps involved in preparing a soluble salt from an acid and an insoluble reactant.
Explain why: an excess of insoluble reactant is used when preparing a soluble salt the excess reactant is removed when preparing a soluble salt the remaining solution contains only a salt and water, when preparing a soluble salt from an acid and an insoluble reactant.
- 17.

CC8d Alkalis & Balancing Equations

18. Recall the chemical formulae of some common compounds.
19. Recall and use state symbols.
20. Balance chemical equations.
21. Recall that alkalis are soluble bases.
22. Describe the reactions of alkalis with acids.

CC8e Alkalis & Neutralisation

23. Explain what happens to the ions from acids and alkalis during neutralisation.
24. Explain why titration is used to prepare soluble salts.
25. Describe how to carry out an acid–alkali titration.

CC8f Reactions of Acids with Metals & Carbonates

26. **H** Write balanced ionic equations.
 27. Explain the general reaction between an acid and a metal to produce a salt and hydrogen.
 28. Explain the general reaction between an acid and a metal carbonate to produce a salt, water and carbon dioxide.
 29. Describe the test for hydrogen.
 30. Describe the test for carbon dioxide.
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CC8g Solubility

31. Recall the general rules for the solubility of common substances in water.
 32. Predict whether or not a precipitate will form from two solutions.
 33. Name the precipitate formed in a reaction.
 34. Describe how to prepare a pure, dry sample of an insoluble salt.
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Feedback

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CP4/5 – WAVES/LIGHT & THE ELECTROMAGNETIC SPECTRUM

Revision Checklist

CP4a Describing Waves

1. Recall that waves transfer energy and information but do not transfer matter.
2. Describe waves using the terms frequency, wavelength, amplitude, period and velocity.
3. Describe the differences between longitudinal and transverse waves.
4. Give examples of transverse and longitudinal waves.

CP4b Waves Velocities

5. Recall the equation relating wave speed, frequency and wavelength
6. Use the equation relating wave speed, frequency and wavelength.
7. Recall the equation relating wave speed, distance and time.
8. Use the equation relating wave speed, distance and time.
9. Describe how to measure the velocity of sound in air.
10. Describe how to measure the velocity of waves on the surface of water.

CP4c Refraction

11. Describe what refraction is.
12. Describe how the direction of a wave changes when it goes from one material to another.
13. Explain some effects of the refraction of light (explanations in terms of changing speeds are not expected).
14. **H** Explain how a change in wave speed can cause a change in direction.

CP5a Electromagnetic Waves

15. Recall examples of electromagnetic waves.
16. Describe the common features of electromagnetic waves.
17. Describe the transfer of energy by electromagnetic waves.
18. Describe the range of electromagnetic waves that our eyes can detect.
19. **H** Describe an effect caused by the different velocities of electromagnetic waves in different substances.

CP5b The Electromagnetic Spectrum

20. Recall the groups of waves in the electromagnetic spectrum in order.
21. Recall the colours of the visible spectrum in order.
22. Describe how the waves in the electromagnetic spectrum are grouped.
23. **H** Describe some differences in the ways that different parts of the electromagnetic spectrum are absorbed and transmitted.
24. **H** Describe some differences in the ways that different parts of the electromagnetic spectrum are refracted and reflected.

CP5c Using the Long Wavelengths

25. **H** Describe how long wavelength electromagnetic waves are affected by different substances.
26. **H** Explain the effects caused by long wavelength electromagnetic waves travelling at different velocities in different substances.
27. Describe some uses of radio waves.
28. Describe some uses of microwaves.
29. Describe some uses of infrared.
30. Describe some uses of visible light.
31. **H** Describe how radio waves are produced and detected by electrical circuits.

CP5d Using the Short Wavelengths

- 32.  Describe how short wavelength electromagnetic waves are affected by different substances.
 - 33.  Explain the effects caused by short wavelength electromagnetic waves travelling at different velocities in different substances.
 - 34. Describe some uses of ultraviolet radiation.
 - 35. Describe some uses of X-rays.
 - 36. Describe some uses of gamma rays.
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CP5e EM Radiation Dangers

- 37. Describe how the potential danger of electromagnetic radiation depends on its frequency.
 - 38. Describe the harmful effects of microwave and infrared radiation.
 - 39. Describe the harmful effects of ultraviolet radiation, X-rays and gamma rays.
 - 40. Recall the nature of radiation produced by changes in atoms and their nuclei.
 - 41. Recall that absorption of radiation can cause changes in atoms and their nuclei.
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