



# THE COLESHILL SCHOOL

## CURRICULUM OVERVIEW

### SCIENCE

## CURRICULUM

Our provision is a coherent and carefully sequenced “knowledge-engaged” curriculum based on the principles of cognitive science. There is a focus on development of literacy and the application of acquired knowledge to ensure children access the curriculum at a depth to ensure a deep and enduring understanding in discrete subject areas. The curriculum framework of cognitive education is planned to enable children to think independently and contribute positively to society and the wider world.

## CURRICULUM HOURS

Key Stage	Hours per fortnight
3	7
4	9
5	10

## HOW DO WE ASSESS?

At TCS, all subjects follow the ‘Assessment Cycle’ when completing key significant marked pieces. Each assessment cycle has a block of initial teaching, a revision lesson, an assessment lesson and a review lesson (Nb. Dept. are free to flex when assessments take place around the term to fit best with curriculum schemes of work and subject demands).

These serve several purposes:

- To highlight the importance of all formal assessments.
- To ensure all assessments are preceded by thorough revision.
- To ensure all assessments are followed-up with detailed feedback and subsequent intervention or support
- To ensure parents are kept informed of their child’s progress to Age Related Criteria

ALL students will complete a minimum of 3 Key Assessments during the Academic Year, one per Term. It is expected that subjects follow the TCS Assessment Cycle when designing and implementing their assessments:



# THE COLESHILL SCHOOL

## KS3 CURRICULUM PLAN

SCIENCE

### CURRICULUM INTENT

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The Coleshill School's Science curriculum inspires in pupils a curiosity and fascination about knowing the truth of science and being able to draw on this to do their own research and formulate their own opinions rather than following popular social theories that may not be valid.

Teaching equips pupils with knowledge about how to question what they see, enquire for themselves, analyse data and communicate their ideas effectively to discover the truth of science. They can use these skills to solve complex situations and discover knowledge for themselves

The curriculum is designed to ensure that children are able to acquire key scientific knowledge through practical experiences; using equipment, conducting experiments, building arguments and explaining concepts confidently.

### TERM 1

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#### YEAR 7:

BIOLOGY-CELLS

CHEMISTRY-PARTICLES

PHYSICS FORCES 1

#### YEAR 8:

BIOLOGY-NUTRITION

CHEMISTRY-PERIODIC TABLE

PHYSICS-ENERGY 2

#### YEAR 9:

BIOLOGY-CELLS

CHEMISTRY-ATOMS & ELEMENTS

PHYSICS FORCES 2

### TERM 2

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#### YEAR 7:

BIOLOGY-REPRODUCTION

CHEMISTRY-SEPERATION

PHYSICS ENERGY 1

#### YEAR 8:

BIOLOGY-BIOENERGETICS

CHEMISTRY-CHEMICAL REACTIONS

PHYSICS ELECTRICITY 2

#### YEAR 9:

BIOLOGY-HEALTH AND DISEASE

CHEMISTRY-CHEMICAL ENERGY

PHYSICS WAVES 2

## **TERM 3**

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### **YEAR 7:**

BIOLOGY-INTERDEPENDANCE

CHEMISTRY-CHEMICAL REACTIONS

PHYSICS ELECTRICITY AND MAGNETISM

### **YEAR 8:**

BIOLOGY-GENETICS AND EVOLUTION

CHEMISTRY-EARTH AND ATMOSPHERE

PHYSICS WAVES

### **YEAR 9:**

BIOLOGY-ECOLOGY

CHEMISTRY-SUSTAINABLE DEVELOPMENT

PHYSICS PARTICLES



# THE COLESHILL SCHOOL

## KS4 CURRICULUM PLAN

BIOLOGY, CHEMISTRY AND PHYSICS

### EXAMINATION BOARD

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GCSE: AQA

CODE:

8461 Triple Biology

8462 Triple Chemistry

8463 Triple Physics

8464 Combined Science Trilogy

### COMBINED PAPER BREAKDOWN

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Paper 1 and Paper 2 per subject

6 exams

2 Biology

2 Chemistry

2 Physics

Each exam is 70 marks and is 1h 15 minutes long. Each exam counts as 16.7% of the total GCSE for both foundation and higher tier

Question type

Multiple choice, structures, closed short answer and open response

2 science GCSE grades awarded based on a combination of all 6 exams

### PAPER 1

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WHAT'S ASSESSED

**BIOLOGY**

TOPIC 1 – CELL BIOLOGY (COMBINED AND TRIPLE)

TOPIC 2 – ORGANISATION (COMBINED AND TRIPLE)

TOPIC 3 – INFECTIOUS DISEASE AND RESPONSE (COMBINED AND TRIPLE)

TOPIC 4 – BIOENERGETICS (COMBINED AND TRIPLE)

**CHEMISTRY**

TOPIC 1 – ATOMIC STRUCTURE (COMBINED AND TRIPLE)

TOPIC 2 – BONDING (COMBINED AND TRIPLE)

TOPIC 3 – QUANTITATIVE CHEMISTRY (COMBINED AND TRIPLE)

TOPIC 4 – CHEMICAL CHANGES (COMBINED AND TRIPLE)

TOPIC 5 – ENERGY CHANGES (COMBINED AND TRIPLE)

**PHYSICS**

TOPIC 1 – ENERGY (COMBINED AND TRIPLE)

TOPIC 2 – ELECTRICITY (COMBINED AND TRIPLE)

TOPIC 3 – PARTICLES (COMBINED AND TRIPLE)

TOPIC 4 – ATOMIC STRUCTURE (COMBINED AND TRIPLE)

## **TRIPLE PAPER BREAKDOWN**

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2 exams per subject.

2 Biology

2 Chemistry

2 Physics

Each exam is 100 marks and is 1h 45 minutes long. Each exam counts as 50% of the individual subject.

Biology paper 1 and paper 2 are added together to give a grade for Biology only. Each subject is individual of each other

Question type

Multiple choice, structures, closed short answer and open response

3 separate science grades are awarded.

## **PAPER 2**

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### **WHAT'S ASSESSED**

#### **BIOLOGY**

**TOPIC 5 – HOMEOSTASIS AND RESPONSE (COMBINED AND TRIPLE)**

**TOPIC 6 – INHERITANCE AND EVOLUTION (COMBINED AND TRIPLE)**

**TOPIC 7 – ECOLOGY (COMBINED AND TRIPLE)**

#### **CHEMISTRY**

**TOPIC 6 – RATES OF REACTION (COMBINED AND TRIPLE)**

**TOPIC 7 – ORGANIC CHEMISTRY (COMBINED AND TRIPLE)**

**TOPIC 8 – CHEMICAL ANALYSIS (COMBINED AND TRIPLE)**

**TOPIC 9 – CHEMISTRY OF THE ATMOSPHERE (COMBINED AND TRIPLE)**

**TOPIC 10 – USING RESOURCES (COMBINED AND TRIPLE)**

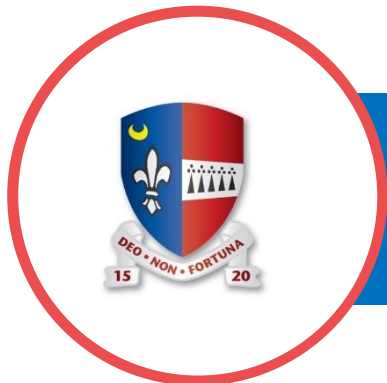
#### **PHYSICS**

**TOPIC 5 – FORCES (COMBINED AND TRIPLE)**

**TOPIC 6 – WAVES (COMBINED AND TRIPLE)**

**TOPIC 7 – MAGNETISM AND ELECTROMAGNETISM (COMBINED AND TRIPLE)**

**TOPIC 8 – SPACE (TRIPLE ONLY)**



# THE COLESHILL SCHOOL

## KS5 CURRICULUM PLAN

Biology

### EXAMINATION BOARD

A LEVEL: AQA  
CODE: 7402

### PAPER 1 BIOLOGY

#### WHATS ASSESSED

**3.1 BIOLOGICAL MOLECULES**

**3.2 CELLS**

**3.3 ORGANISMS EXCHANGE SUBSTANCES WITH THEIR ENVIRONMENT**

**3.4 GENETIC INFORMATION, VARIATION AND THEIR RELATIONSHIPS BETWEEN ORGANISMS  
RELEVANT PRACTICAL SKILLS**

### PAPER

#### PAPER 1:

Written exam 2 hours

91 marks

76 marks mix of short and long answer

15 marks extended response

35% of A level

#### PAPER 2:

Written exam 2 hours

91 marks

75 marks of long questions and 15 comprehension

Questions

35% of A Level

#### PAPER 3:

Written exam 2 hours

78 marks

48 marks of structured questions, including practical techniques

25 marks essay from a choice of two titles

30% of A Level

### PAPER 2 BIOLOGY

**3.5 ENERGY TRANSFERS IN AND BETWEEN ORGANISMS**

**3.6 ORGANISMS RESPOND TO THEIR INTERNAL AND EXTERNAL ENVIRONMENTS**

**3.7 GENETICS, POPULATION, EVOLUTION AND ECOSYSTEMS**

**RELEVANT PRACTICAL SKILLS**

### PAPER 3 BIOLOGY

**ANY CONTENT FROM 3.1-3.8**

**RELEVANT PRACTICAL SKILLS**



# THE COLESHILL SCHOOL

## KS5 CURRICULUM PLAN

### PHYSICS

## EXAMINATION BOARD

A LEVEL: AQA  
CODE: 7408

## PAPER

### PAPER 1:

Written exam 2 hours

85 marks

60 marks of long questions and 25  
multiple choice questions

34% of A Level

### PAPER 2:

Written exam 2 hours

85 marks

60 marks of long questions and 25  
multiple choice questions

34% of A Level

### PAPER 3:

Written exam 2 hours

80 marks

45 marks of short and long questions  
based on practicals and data analysis

35 marks of short and long question on  
optional topic

32% of A Level

## PAPER 1 PHYSICS

### WHAT'S ASSESSED

**SECTION 1 MEASUREMENTS AND ERRORS**

**SECTION 2 PARTICLES AND RADIATION**

**SECTION 3 WAVES**

**SECTION 4 MECHANICS AND MATERIALS**

**SECTION 5 ELECTRICITY**

**SECTION 6.1 FURTHER MECHANICS**

## PAPER 2 PHYSICS

### WHAT'S ASSESSED

**SECTION 6.2 THERMAL PHYSICS**

**SECTION 7 FIELDS AND THEIR CONSEQUENCES**

**SECTION 8 NUCLEAR PHYSICS**

## PAPER 3 PHYSICS

### WHAT'S ASSESSED

**SECTION A COMPULSORY: PRACTICAL SKILLS AND DATA ANALYSIS**

**SECTION B: OPTION SECTION FROM ONE OF THE FOLLOWING**

DECIDED BY THE DEPARTMENT

1. ASTROPHYSICS
2. MEDICAL PHYSICS
3. ENGINEERING PHYSICS
4. TURNING POINTS IN PHYSICS



## EXAMINATION BOARD

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A LEVEL: AQA  
CODE: 7405

## PAPER

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### PAPER 1:

Written exam 2 hours  
85 marks  
60 marks of long questions and 25  
multiple choice questions  
34% of A Level

### PAPER 2:

Written exam 2 hours  
85 marks  
60 marks of long questions and 25  
multiple choice questions  
34% of A Level

### PAPER 3:

Written exam 2 hours  
80 marks  
45 marks of short and long questions  
based on practicals and data analysis  
35 marks of short and long question on  
optional topic  
32% of A Level

## PAPER 1 CHEMISTRY

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### WHAT'S ASSESSED

- 1.0 ATOMIC STRUCTURE
- 1.1 AMOUNT OF SUBSTANCE
- 1.2 BONDING
- 1.3 ENERGETICS
- 1.4 KINETICS
- 1.5 EQUILIBRIA
- 1.6 REDOX
- 2.1 PERIOD 2
- 2.2 GROUP 2 & 7
- 3.1 INTRO TO ORGANIC
- 3.2 ALKANES
- 3.3 HALOALKANES
- 3.4 ALKENES
- 3.5 ALCOHOLS
- 3.6 ORGANIC ANALYSIS

## PAPER 2 CHEMISTRY

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### WHAT'S ASSESSED

- 1.08 THERMODYNAMICS
- 1.09 RATE EQUATIONS
- 1.10 EQUILIBRIUM CONSTANT
- 1.11 ELECTROCHEMISTRY
- 1.12 ACIDS AND BASES
- 2.04 PERIOD 3 AND THEIR OXIDES
- 2.05 TRANSITION ELEMENTS
- 2.06 REACTIONS OF IONS IN SOLUTION
- 3.7 OPTICAL ISOMERISM
- 3.8 ALDEHYDES & KETONES
- 3.9 CARBOXYLIC ACIDS
- 3.10 AROMATIC CHEMISTRY
- 3.11 AMINES
- 3.12 CONDENSATION POLYMERS
- 3.13 AMINO ACIDS, PROTEINS & DNA
- 3.14 ORGANIC SYNTHESIS
- 3.15 NMR SPECTROSCOPY
- 3.16 CHROMATOGRAPHY



# **PAPER 3 CHEMISTRY**

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## **WHAT'S ASSESSED**

SYNOPTIC PAPER  
PRACTICAL SKILLS AND DATA ANALYSIS

PHYSICAL CHEMISTRY  
ORGANIC CHEMISTRY  
INORGANIC CHEMISTRY