



# BTEC Applied Science Extended Certificate

Year 12 Curriculum Framework



Collaborating with:



BTEC Certificate & Extended Certificate

601/7436/5

## Curriculum Overview

At ICC we follow the Pearson BTEC Certificate and Extended Certificate Specification. The curriculum is sequenced to be delivered by two members of teaching staff and each unit is mapped to the big ideas from our KS3 and KS4 curriculum. Unit 1 is externally assessed with the opportunity to take the exam in January and to retake in May if desired. Each topic of this unit is assessed with end of topic summative assessments. Unit 2 is an internally assessed practical unit. Opportunities to consider rich questions and reference to futures are made where relevant throughout the course in order to help our students understand the present and plan for their own future. We start Unit 3 in the summer term. This is another externally assessed unit. Students will take the exam for this unit in Year 13 Spring Term.

[Link to the specification](#)

[Link to the scheme of work](#)

		Teacher 1			Teacher 2		
		Topics	Practical's	Big idea	Topics	Practical's	Big idea
Autumn Term	First half	Unit 1: A: Periodicity and properties of elements A1: Structure and bonding in applications in science, A2: Production and uses of substances in relation to properties		 MATTER  REACTIONS	Unit 1: B: Structure and functions of cells and tissues B1: Cell structure and function B2: Cell specialisation		 ORGANISMS
	Second half	Unit 1: C: Waves in communication C1: Working with waves, C2: Waves in communication, C3: Use of electromagnetic waves in communication		 WAVES	B3: Tissue structure and function Unit 2: Learning aim A: Undertake titration and colorimetry to determine the concentration of solutions, A1: Laboratory equipment and its calibration	Calibration of volumetric equipment, Calibration of pipettes, Calibration of balances, Calibration of pH meter	 ORGANISMS  REACTIONS
Spring Term	First half	Revision, Exam in January Unit 2: Learning aim C: Undertake chromatographic techniques to identify components in mixtures C1: Chromatographic techniques C2: Application of chromatography	Paper chromatography Extraction of plant pigment TLC of herb pigments	 MATTER  REACTIONS	A2: Preparation and standardisation of solutions using titration, A3: Colorimetry Unit 2: Learning aim B: Undertake calorimetry to study cooling curves, B1: Thermometers	Preparing a standard solution, Titration, Colorimetry, Comparing thermometers	 MATTER  REACTIONS
	Second half	C3: Interpretation of a chromatogram Unit 2: Learning aim D: Review personal development of scientific skills for laboratory work D1: Personal responsibility D2: Interpersonal skills		 MATTER  REACTIONS	B2: Cooling curves Learning aim D: Review personal development of scientific skills for laboratory work D3: Professional practice	Collect temperature/time data from a molten substance cooling	 MATTER  REACTIONS



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Summer Term	First half	Unit 3: A: Planning a scientific Investigation A1: Developing a hypothesis, A2: Selection of appropriate equipment, techniques, and standard procedures, A3: Health and safety associated with the investigation, A4: Variables		Revision if needed for retake Retake exam  B: Data collection, processing, and analysis/interpretation B1: Collection of quantitative/qualitative data,	
	Second half	A5: Method for data collection and analysis C: Drawing conclusions and evaluation C1: Interpretation/analysis of data		B2: Processing data  C: Drawing conclusions and evaluation C2: Evaluation	