

# High Tunstall College of Science Curriculum Intent

## Unit 9: Exploring Electrical Principles and Techniques



### Learning Aim A— Understand tools, materials and equipment used for electrical operations

	BTEC Construction and the Built Environment	Progress		
Topic	Key ideas (All within Electrical Operations)	R	A	G
Exploring Electrical Principles and Techniques	Identify the purpose of tools and equipment, and the use of materials			
	Outline the safe use and storage of tools, materials and equipment			
	Explain the purpose and use of tools, materials and equipment			
	Explain the safe use and storage of tools, materials and equipment			
	Justify the selection and use of tools, materials and equipment for a specified electrical operation			
	Evaluate the selection and use of tools, materials and equipment for a specified electrical operation task			

Lesson	Learning Focus	Assessment	Key Words
1	Introduction to Unit 9: Learning Aim A. Understand the purpose/use of the following electrical tools & equipment: Measuring tape; Cable Cutters; Cable Strippers; Junior Hacksaw	Live marking/Unit assessment task	Hand tools, Equipment, Electrical Operations
2	Understand the purpose/use of the following electrical tools & equipment: Pliers; Stripping Knife; Screwdrivers; Spirit Level; Electrical testing equipment	Live marking/Unit assessment task	Hand tools, Equipment, Electrical Operations
3-4	Understand types of cables; electrical fittings and other fittings used within electrical operations	Live marking/Unit assessment task	Materials, Cables, Fittings
5	Safe use and storage of tools, materials and equipment for electrical operations: General use of Personal Protective Equipment (P.P.E.); Correct Health & Safety; and clean working environment	Live marking/Unit assessment task	Electrical Operations, Personal Protective Equipment (P.P.E.), Health & Safety
6	Safe use and storage of tools, materials and equipment for electrical operations: Safe handling when lifting and moving; Correct safe use; Cleaning and Storage upon completion of work	Live marking/Formative Assessment & Deep Marking Grid/Unit assessment task	Electrical Operations, Personal Protective Equipment (P.P.E.), Health & Safety
7-10 Assessment task (15 minute presentations)	<b>Assessment task 1: (L1P/L2P)</b> Five minute oral presentation to explain the following for a minimum of 5 tools or items of equipment, 2 types of cable, 3 types of electrical fittings and 3 types of other fittings (Minimum of 13 in total): <ul style="list-style-type: none"> <li>Purpose</li> <li>General &amp; Safe Use</li> <li>Safe Storage</li> </ul>	<b>Final Unit Assessment task 1 (L1P/L2P)</b> Expectations: <ul style="list-style-type: none"> <li>* Individual presentation to the rest of the class</li> <li>* 5 tools/2 cables/3 electrical fittings/2 other fittings from the list provided and taught in lessons</li> <li>* Clear presentation using preparation sheet</li> <li>* PowerPoint slides can be used if needed</li> </ul>	
11-13 Assessment task (3 hours)	<b>Assessment task 2: (L2M/L2D)</b> Written statements for the tools and equipment selected for the oral presentation to cover the following: <ul style="list-style-type: none"> <li>Justification of use for a specific electrical task</li> <li>Evaluate the selection and discuss a suitable alternative</li> </ul>	<b>Final Unit Assessment task 2 (L2M/L2D)</b> Expectations: <ul style="list-style-type: none"> <li>* One extended statement for each of the 13 tools &amp; equipment</li> <li>* Written explanation in detail using technical terminology</li> <li>* Discuss specific electrical tasks within the construction industry</li> <li>* Alternative tools must be plausible and suitable for the task in question</li> </ul>	