DCC Progression Frameworks - Third/Fourth Level

Rationale

Dundee City Council's Progression framework documents, at third and fourth levels, provide a council-wide aid to practitioners in curriculum planning and assessment design.

They offer guidance on Broad General Education learning pathways within the S1 to S3 curriculum, creating natural progression from primary to secondary to support teachers in preparing learners for the rigours of National 4 and National 5.

These documents aim to encourage pace and challenge across third and fourth levels, while accounting for breadth and depth within each curricular area, with a central focus on application of skills and knowledge in order to achieve the benchmarks.

Purpose

These frameworks are a tool to provide guidance for learning progression within S1 to S3, across BGE third and fourth levels. They should be used in conjunction with schools' planning, tracking and assessment approaches.

These documents have been designed with two purposes in mind:

- to inform teacher judgements about an individual learner's progression through each curricular area.
- to assist in the moderation of each department's own framework for effective planning of learning, teaching and assessment.

User Guidance

General Layout: (see Appendix 1)

The frameworks assist practitioners in creating a learner journey starting at the experience and outcome and ending at the achievement of the accompanying benchmark for that outcome.

- The experiences and outcomes have been categorised into primary and secondary organisers according to practitioner input.
- In order to reflect an individual learner's journey within S1 to S3, third and fourth levels have been bundled, where appropriate, to provide a blended pathway.

Reading the Document: (see Appendix 2)

The documents include two colour gradients to represent the deepening knowledge, skills and learning of the individual as they progress from third level to fourth level. This colour gradient also serves to aid the practitioner in making clear and efficient learner judgements.

The document is designed to be read:

1. Horizontally: to chart a learner's individual journey through depth, challenge and application.
2. Vertically: To plan moderation of learning, teaching and assessment, taking account of the breadth of the curricular area.

Meta Skills:

Meta-skills are innate, timeless, higher-order skills that create adaptive learners and promote success in whatever context the future brings. Each benchmark has a suggested linked meta-skill **(marked in blue text)** **however** these are only suggestions and others may be more appropriate for your planning. A link to the Meta Skills frameworks can be found **here.**

Appendix 1: General Layout

Primary Organiser:

This signposts the over-arching curricular organiser.

Secondary Organiser:

This signposts the curricular sub-organiser which links to the experiences and outcomes in the next column.

Benchmarks:

The benchmarks are used to inform assessment of progress and support teacher professional judgement. Third and Fourth Level benchmarks have been 'bundled' to outline a learner's progression across topic or skill set.

Organiser -Planet Earth / Biodiversity and Interdependence	EXPERIENCES AND OUTCOMES	PROGRESSION 3.1	PROGRESSION 3.2/4.1	PROGRESSION 4.2	BENCHMARKS
	I can sample and identify living things from different habitats to compare their biodiversity and can suggest reasons for their distribution. SCN 3-01a I understand how animal and plant species depend on each other and how living things are adapted for survival. I can predict the impact of population growth and natural hazards on biodiversity. SCN 4-01a	I can/am able to: • I can use the term **biodiversity** and describe why its maintenance is important. • I can identify **abiotic** factors such as, temperature, pH, oxygen levels, light levels, wind speed, humidity, and describe how to measure them. • I can identify **biotic** factors such as, predators, disease, build-up of waste and describe how they can affect the distribution of organisms. • I can describe the use of a variety of **sampling** methods, including pitfall traps/tullgren funnels, quadrats, beating stick and tray, water net, to collect organisms.	• I can explain why some **habitats** are inhabited by some **organisms** and not others (e.g. protection from predators, resistance to drought, photosensitivity etc.) • I can compare and explain the differences between two **habitats** in terms of the **biotic** and abiotic factors, knowing the adaptations of the **organisms** (e.g. desert versus pond) • I can use the term **biodiversity** and describe why its maintenance is important. • I can identify **abiotic** factors such as, temperature, pH, oxygen levels, light levels, wind speed and humidity, • I can identify **biotic** factors such as, predators, disease, build-up of waste and describe how they can affect the distribution of **organisms**.	I can/am able to: • I can describe the relationship between the terms **habitat**, population, community and **ecosystem**. • I can use food chains and food webs to describe how populations of organisms in an ecosystem impact on each other. • I can explain why increased **biodiversity** contributes to the stability of an ecosystem. • I can explain how changes such as population growth or natural disasters will affect **biodiversity** and increase competition and can predict how this might affect a particular **ecosystem**.	Identifies living things using biological keys. Collects and analyses increasingly complex data and information, for example, temperature and light intensity, to suggest reasons for the distribution of organisms within different habitats. Describes how plants and animals depend on each other for food, shelter and pollination, using scientific vocabulary such as 'population', 'community' and 'species'. Explains the possible effects of removal or addition of species on food webs and biodiversity. Summarises research findings to provide examples of structural, physiological and behavioural adaptations which lead to species survival.

Experiences and Outcomes:

The experiences and outcomes are used to plan learning and the assessment of progress in the B.G.E. They provide coherence and signpost progression in learning within each level, as well as supporting progression to learning at the next level, setting challenging standards. Third level experiences and outcomes have been paired with their fourth level counterpart to aid in this.

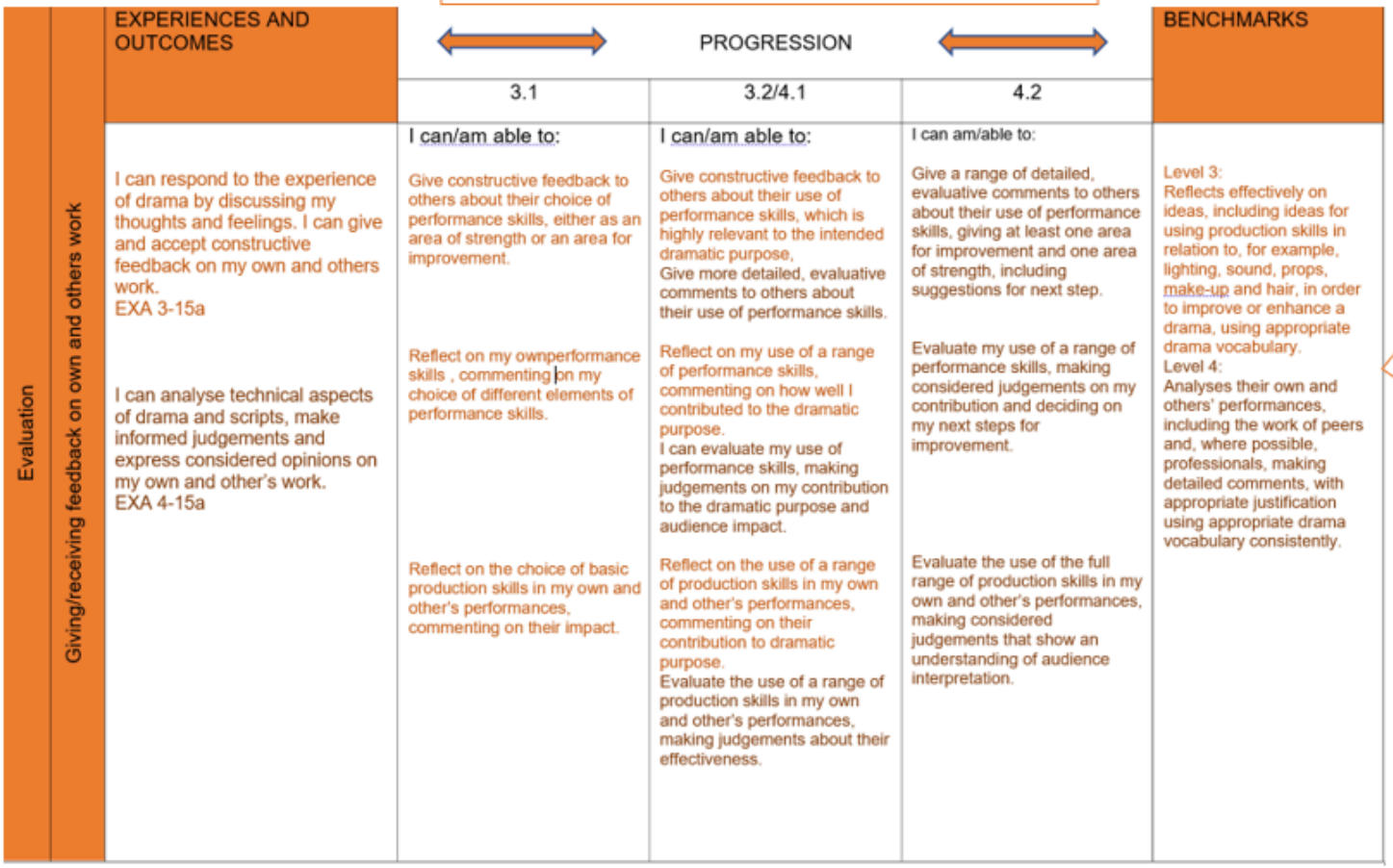
Progression Columns:

The central three columns detail 'I can' statements that exemplify a learner's progress towards the level three, and then the accompanying level four benchmark within that organiser. Within these columns key words have been highlighted in **bold**.

Appendix 2: Reading the Framework

For each learner, the journey through third and fourth level will vary, depending on the individual. It will take account of the need for breadth, challenge and application.

Planning of learning, teaching and assessment, should ensure a breadth of learning across organisers and statements. This should be supported through the moderation process.



Colour Coding:

The two tones have been used throughout to identify third and fourth level experiences and outcomes, pathway statements and benchmarks to show progression.

Level 3.1
Exemplifies a typical learner, working within level 3.

Level 3.2/4.1
Exemplifies a learner who is applying skills at third level and is beginning to work within fourth level.

Level 4.2
Exemplifies a typical learner, working within level 4.

DUNDEE CDT PROGRESSION FRAMEWORK – THIRD & FOURTH LEVEL

Craft, Design, Engineering & Graphics	Design & Constructing Models/Products	EXPERIENCES AND OUTCOMES	PROGRESSION			BENCHMARKS
			3.1	3.2/4.1	4.2	
		I can create solutions in 3D and 2D and can justify the construction/graphic methods and the design features. **TCH 3-09a** I can apply design thinking skills when	I can/am able to: • I can **produce** a simple Design Folio with support, using aspects such as Analysis, Research, Idea Generation and Evaluation. • I can demonstrate creativity with support in 2D and some 3D sketching to ensure my ideas are understood. • I can **identify** 3-4 relevant design issues (from Function/ Aesthetics/Ergonomics/User/Materials/Construction/Safety) and apply these to my design with support. • I can **create** a simple working drawing with support to add sizes, which I can then use to measure materials. • I can **complete** a simple Cutting List with support and follow a Sequence of Operations. • I can **saw** straight lines accurately some of the time. I can saw (wood/plastic)/file (metal) to a curve accurately some of the time. • I can cut 90degree angles mostly accurately and create well-fitting joints with support (rebate joints) at least one of the times.	I can/am able to: • I can **produce** a simple Design Folio independently, using aspects such as Analysis, Research, Idea Generation and Evaluation. • I can **demonstrate** creativity and accuracy in 2D and some 3D sketching to ensure my ideas are understood. • I can **identify** and apply my **understanding** of 3-4 relevant design issues (from Function/ Aesthetics/Ergonomics/User/ Materials/Construction/Safety) • I can **create** a simple working drawing independently with sizes, which I can then use to measure materials. • I can independently **complete** a simple Cutting List and Sequence of Operations. • I can **saw** straight lines accurately most of the time. I can saw (wood/plastic)/file (metal) to a curve accurately most times. I can cut 90degree angles accurately and create well-fitting joints	I can/am able to: • I can **produce** a more complex Design Folio independently, using Analysis, Research, Idea Generation, Development, Modelling and ongoing Evaluation and Justification of design decisions. • I can **identify** and apply my **understanding** of 6-7 relevant design issues (from Function/Performance/ Aesthetics/Ergonomics/User/ Materials/Construction/Safety) • I can **demonstrate** creativity and accuracy in 2D and 3D sketching to ensure my ideas are conveyed clearly and in detail. • I can **apply** a range of modelling/prototyping skills (e.g., using paper/card/plasticine/CAD/CAM) to evaluate the effectiveness of my design concepts/proposals. • I can **create** a complex working drawing independently with sizes,	Uses aspects of the design process to reach a solution for a given brief. *Innovation - creativity* Identifies relevant design factors in a design brief. *Innovation - creativity* Applies knowledge of design factors and construction methods to justify a design solution. *Innovation – critical thinking* Uses tools and equipment to manufacture models/products. *Innovation – creativity* Applies safe working practices when creating a model/product. *Self-management – integrity* Extracts dimensions from a drawing and transfer these onto materials to create a model/product. *Innovation – sense making.*

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		designing and manufacturing models/products which satisfy the user or client. **TCH 4-09a**		with support (rebate joints/possibly finger joints) most times. • I can **produce** a more complex Design Folio with support, using Analysis, Research, Idea Generation, Development, Modelling and ongoing Evaluation and Justification of design decisions. • I can **identify** and apply my **understanding** of 5-6 relevant design issues with support (from Function/Performance/ Aesthetics/Ergonomics/User/ Materials/Construction/Safety) • I can **use** one modelling/prototyping skill (e.g., using paper/card/plasticine/CAD/CAM) to begin evaluating my design concepts/proposals. • I can **create** a more complex working drawing with support including sizes, which I can then use to independently measure materials and create my product. • I can confidently **saw** straight lines accurately most of the time. I can saw (wood/plastic)/file (metal) to a curve accurately most times. I	which I can then use to measure materials. • I can complete a detailed Cutting List and detailed Sequence of Operations. • I can confidently **saw** straight lines accurately almost every time. • I can **saw** (wood/plastic)/file (metal) a curve accurately almost every time. I can cut 90-degree angles accurately and create well-fitting more complex joints (finger joints, mortice and tenon, dovetails) almost every time. I can use other joining methods such as riveting, brazing, or welding.	Understands approaches to designing and that a range of strategies and phases can help arrive at a potential proposal that meets specific criteria. *Innovation - creativity* Uses modelling techniques to evaluate design concepts and design proposals. *Innovation – critical thinking* Justifies design decisions. *Innovation – critical thinking* Selects tools and equipment to mark-out, cut, shape, form, and finish models/products independently. *Innovation – creativity* Identifies potential health and safety risks in the manufacture of models/products and plan the safe working practices required. *Self-management - integrity* Produces accurate prototypes, in scale, by reading drawings and sketches to retrieve

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				can cut 90degree angles accurately and create well-fitting joints independently (rebate joints/possibly finger joints) most times.		dimensional and material information. *Innovation – sense making*

DUNDEE CDT PROGRESSION FRAMEWORK – THIRD & FOURTH LEVEL

Craft, Design, Engineering & Graphics	Exploring Uses of Materials	EXPERIENCES AND OUTCOMES	PROGRESSION			BENCHMARKS
			3.1	3.2/4.1	4.2	
		I can explore the properties and performance of materials before justifying the most appropriate material for a task **TCH 3-10a**	I can/am able to: • I can **identify** the different categories of materials including Wood, Metal, Plastic and Manufactured Boards • I can **identify** examples of different Woods, Metals and Plastics that have different uses. • I can **identify** generic examples of materials suitable for 2-3 manufacturing processes with support e.g., Wood for Turning, Plastic for Injection Moulding and Metal for Sand Casting. • I can **recognise**, with support, that examples of different forms are still the same material e.g. group together a plastic rod, granules and sheet. • I can justify, with prompts, my selection of materials when developing a solution to a problem or brief • I can discuss, with prompts, the sustainability and environmental impact of sourcing and using different materials.	I can/am able to: • I can **give specific examples** of materials suitable for 3-4 different manufacturing processes e.g., Polypropylene for Injection Moulding, Mild Steel Sheet for Piercing and Blanking, Birch Faced Plywood for Laser Cutting. • I can independently **recognise** that materials come in different forms, e.g., when shown plastic rods, granules, and sheets I can identify these are all examples of plastics. • I can independently **justify** my selection of materials when developing a solution to a problem or brief e.g. I have used Acrylic for my key tag as it is available in different colours, is easy to cut and shape and is easy to keep clean. • I can **discuss** the sustainability and environmental impact of sourcing and using different materials, giving at least one example e.g., Plastics are	I can/am able to: • I can **describe** the different categories of materials independently e.g., Woods, Metals and Plastics, and can describe Softwoods/Hardwoods/Man Made boards, Ferrous and Non-ferrous Metals, Thermo and Thermoset Plastics. • I can **describe** several properties (such as strength to weight ratio/weather resistance/durability/ease of cutting/shaping/hygiene/recycling/aesthetic properties) of a range of materials including Softwoods/Hardwoods/Man Made boards, Ferrous and Non-ferrous Metals, Thermo and Thermoset Plastics. • I can **recognise** sustainability issues when selecting materials, and can use this to give a full justification e.g. I have	Identifies the different categories of materials. *Self-management - focusing* Recognises that materials have different properties and uses. *Innovation – sense making.* Recognises that material properties have an impact upon manufacturing processing choices. *Innovation – sense making.* Recognises that materials come in different forms. *Self-management - focusing* Justifies selection of materials when developing a solution to a problem or brief *Innovation – critical thinking* Discusses sustainability and environmental impact of sourcing and using different materials. *Social Intelligence - communicating* Describes the different categories of materials. *Self-management - focusing*

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		I consider the material performance as well as sustainability of materials and apply these to real world tasks. **TCH 4-10a**		made using oil which is a finite resource • I can **describe** the different categories of materials independently e.g., Woods, Metals and Plastics, and with support can describe Softwoods/Hardwoods/Man Made boards, Ferrous and Non-ferrous Metals, Thermo and Thermoset Plastics • I can **describe** basic properties of some materials e.g., describe properties such as strength to weight ratio, weather resistance etc for a sample of Woods, Metals and Plastics. • I can **recognise** sustainability issues when selecting materials, e.g. I have used Pine rather than Oak as it is a softwood which grows quickly.	chosen Pine which is a softwood because it is fast growing, locally sourced and comes from a sustainable forest where several new trees are planted for each one cut down.	Describes the properties of materials. *Innovation – sense making.* Recognises sustainability issues when selecting materials. *Self-management - integrity*

DUNDEE CDT PROGRESSION FRAMEWORK – THIRD & FOURTH LEVEL

raft, Design, Engineering&Graphics	Representing Ideas, Concepts&Products	EXPERIENCES AND OUTCOMES	PROGRESSION			BENCHMARKS
			3.1	3.2/4.1	4.2	
		I can apply a range of graphic techniques and standards when producing images using sketching, drawing and software. **TCH 3-11a**	I can/am able to: • I can **produce** simple 2d orthographic sketches which show an understanding of proportion. • I can **produce** a range of sketches of a simple item or idea, (cubes, geometric shapes) showing basic skills in 1 point perspective. • I can **apply** render to pictorial drawings and can complete them with support. Outlines are occasionally traced in the appropriate colour, light source/tonal change represented and techniques to represent materials are attempted. • I can **use** given products in a visual display with effective titles and background image. • I can **attempt** both orthographic and pictorial drawings, extracting sizes/ details from given worksheets and can complete them, using appropriate drawing standards (e.g., 3rd angle projection) with support. • I can **produce** a 3D CAD model	I can/am able to: • I can **produce** more complex orthographic sketches which show good **understanding** of proportion and begin to show appropriate scale. • I can **produce** a range of sketches of a more complex item or idea, (cubes with cut-outs, combination of geometric shapes) showing basic skills in 1 point perspective, 2-point perspective and isometric/oblique sketching. • I can **apply** render to pictorial drawings and complete them independently. Outlines are occasionally traced in the appropriate colour, light source/tonal change represented, and techniques are used to represent materials so that they can be recognised. • I can **create** a display which demonstrates visual impact, using colour theory such as Harmonising/Contrasting colours, Warm/Cool colours and Advancing and Receding	• I can/am able to: • I can **sketch** complex items in both 2D and 3D (Orthographic/1PP/2PP/Oblique/Isometric) to a high standard. Sketches communicate my ideas showing good proportion and give a good indication of scale. • I can **apply** render to pictorial drawings I have produced independently. Outlines are in the appropriate colour, light source/tonal change represented with highlights and shadows, and techniques are chosen independently to represent materials which look realistic. • I can independently **create** a visual display with high visual impact, using techniques such as balance/depth/line, and clearly justify the use of these techniques. • I can independently **use** colour theory such as	Produces sketches which show an understanding of proportion. *Innovation - creativity* Produces 2D and 3D sketches using a range of techniques. *Innovation - creativity* Produces rendered drawings which may include colour, surface texture, tonal change. *Innovation - creativity* Justifies the choice of colours, layout in a promotional graphics. *Innovation – critical thinking* Recognises design principles and DTP terms. *Innovation – sense making.* Produces orthographic and pictorial drawings/sketches of everyday objects, products or buildings by extracting information from given pictorial drawings accurately. *Innovation - creativity* Use appropriate drawing standards, symbols, and conventions where these apply. *Innovation – sense making.*
		I can extend my use of manual and digital graphic techniques to				

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		realise ideas, concepts and products and recognise the importance of real-world standards. **TCH 4-11a**	of a simple given product (e.g., holey cube, dice, basic room layout), using features of the software (e.g., inventor, ProEngineer, Sketch Up, TinkerCad, Homestyler etc) with support to achieve an accurate representation. • I can, with support, **add** simple render effect to this model. • I can, with support, **use** this model to produce a range of 2D and 3D drawings. • I can **use** 2D drawing software (Autosketch/Techsoft/Designworks etc) to produce a 2D version of a given product/room layout with support.	colours, alongside simple layout techniques such as balance/depth/line. • I can **justify** the above choices, commenting on the use of each colour/technique. • I can **complete** simple orthographic and pictorial drawings, extracting sizes/ details from given worksheets and can complete them. • I can **produce** a 3D CAD model of a simple given product (e.g., holey cube, dice, basic room layout), using features of the software (e.g., inventor, ProEngineer, Sketch Up, TinkerCad, Homestyler etc) independently to achieve an accurate representation. • I can **independently** add a simple render effect to this model. • I can **use** this model to produce a range of 2D and 3D drawings. • I can **use** 2D drawing software (Autosketch/Techsoft/Designworks etc) to produce a 2D version of a given product/room layout independently.	Harmonising/Contrasting colours, Warm/Cool colours and Advancing and Receding colours, and the emotions of colours to clearly justify my choice of colours in my presentations. • I can **complete** more complex orthographic and pictorial drawings including hidden detail and centre axis, extracting sizes/ details from given worksheets and can complete them using appropriate drawing standards, symbols and conventions, including third angle projection, dimensioning, line types and use of scale. • I can **produce** a 3D CAD model of a given or designed product made of several parts independently (e.g., Lego Character, Storage Unit), using features of the software (e.g., Inventor, ProEngineer, Sketch Up, TinkerCad, Homestyler etc) to achieve an accurate representation. • I can confidently **identify** all of the commands and techniques used to	Uses computer aided design (CAD) commands, techniques and practices required to create a model. *Innovation – critical thinking* Produces 3D rendered CAD models. *Innovation – critical thinking* Produces a range of 2D and 3D CAD drawings. *Innovation – critical thinking* Produces sketches which show proportion and scale. *Innovation – creativity* Produces 2D and 3D sketches using perspective techniques, surface texture, tonal change and colour. Uses colouring media when drawing/sketching. *Innovation - creativity* Plans and justifies the choice of colours, layout and presentation techniques in graphic displays. *Innovation – critical thinking* Recognises and can apply the design

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				• I can **complete** more complex orthographic and pictorial drawings, extracting sizes/ details from given worksheets and can complete them using appropriate drawing standards, symbols and conventions, including third angle projection, dimensioning, line types and use of scale with support. • I can **produce** a 3D CAD model of a given or designed product made of several parts (e.g., Lego Character, Storage Unit), using features of the software (e.g., Inventor, ProEngineer, Sketch Up, TinkerCad, Homestyler etc) with support to achieve an accurate representation. • I can **identify** some of the commands and techniques used to produce my 3D CAD model. • I can, with support, **add** render effect to show the light source, surface texture, materials applied to the model and a background application. • I can, with support, **use** this model to produce a range of 2D and 3D drawings including assembled and exploded pictorial drawings from a 3D CAD assembly model.	produce my 3D CAD model. • I can independently **add** render effect to show the light source, surface texture, materials applied to the model and a background application. • I can independently **use** this model to produce a range of 2D and 3D drawings including assembled and exploded pictorial drawings from a 3D CAD assembly model.	principles and DTP terms. *Innovation – Sense making.* Plans, produces, and justifies the choice of informational graphics to suit a given scenario or brief. *Innovation – critical thinking* Produces orthographic and pictorial drawings by extracting information from given drawings, including detail such as hidden detail, centre axis. *Innovation - creativity* Identifies and uses appropriate drawing standards, symbols, and conventions, including third angle projection, dimensioning, line types and use of scale. *Innovation – sense making.* Creates assembled and exploded pictorial drawings from a 3D CAD assembly model. *Innovation – critical thinking* Identifies CAD commands, techniques

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						and practice employed in the production of 3D graphics and models. *Innovation – critical thinking* Produces rendered 3D CAD models to show the light source, surface texture, materials applied to the model and a background application. *Innovation – critical thinking*

		EXPERIENCES AND OUTCOMES	PROGRESSION			BENCHMARKS
			3.1	3.2/4.1	4.2	
C r a f t , D e s i g n , E n g i n e e r i	A p p l i c a t i o n o f E n g i n e e r i	I can apply my knowledge and understanding of engineering disciplines and can develop/build solutions to given tasks. **TCH 3-12a**	I can/am able to: • I can **identify** simple systems in the home. • I can **identify** basic input, process and output components. • I can **build/simulate** an electronic system to solve a simple problem with one input and one output. • I can **solve** control problems by generating basic flowcharts with a continuous loop. • I can **name** and **recognise** at least 2 of the 4 types of motion. • I can **recognise** a class 1	I can/am able to: • I can **identify** more complex systems in society and state their inputs, processes and outputs. • I can **identify** a number of input, process and output components and explain how they work. • I can b**uild/simulate a solution** to a problem-solving task requiring two inputs and one output. • I can **solve** control problems by generating basic flowcharts with a continuous	• I can/am able to: • I can **identify** complex systems in the world of work and state their inputs, processes and outputs. • I can **produce** a systems diagram solution to a problem-solving task requiring two or more inputs, two processes and one or more outputs • I can **build/simulate** a solution to a problem-solving task	Explain why something is an Input, process, output. *Innovation – sense making.* Builds/simulates solutions to engineering problems. *Innovation – creativity* Explains energy transfers within a system *Innovation – sense making* Uses given formulae to calculate outcomes to engineering problems. *Innovation – sense making*

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n g & G r a p h i c s	n g	I can solve problems through the application of engineering principles and can discuss the impact engineering has on the world around me. **TCH 4-12a**	Lever. • I can **name** some gearing systems with support.	loop. • I can **draw** Truth Tables for NOT, AND & OR. • I can **solve** control problems by generating flowcharts with "Yes/No" decision boxes. • I can **explain** how AND, OR & NOT gates work. • I can **identify** and describe two different branches of engineering (eg Mechanical, Civil, Electrical, Aeronautical, Biomechanical). • I can **explain** how technology can solve engineering problems. • I can **describe** the economic and environmental impact of engineering. • I can **name** and **recognise** at least 3 of the 4 types of motion. (Rotary, Reciprocating, Oscillating, Linear) • I can **recognise** a simple Lever, and I know what the fulcrum is. • I can **recognise** a range of gearing systems with some assistance. (Spur, Helical, Bevel, Worm, Rack and Pinion) • I can **carry out** simple Voltage, Current and Resistance calculations.	requiring two or more inputs, two processes and one output. • I can **solve** control problems by generating flowcharts with "For...Next" loops and subroutines. • I can **describe** how digital and analogue systems work. • I can **explain** the difference between Open and Closed loop systems. • I can **identify** and describe 3 or more different branches of engineering (e.g., Mechanical, Civil, Electrical, Aeronautical, Biomechanical). • I can **explain** how emerging technologies can provide improved solutions to engineering challenges. • I can **describe** social, environmental, and economic impacts of engineering. • I can **name** and **recognise** the 4 types of motion and give examples of them. (Rotary, Reciprocating, Oscillating, Linear)	Produces systems diagrams, including open and closed loop and the identification of sub-systems *Innovation – sense making.* Designs and builds/simulates solutions to problems. *Innovation - creativity* Selects and uses formulae to calculate outcomes to engineering problems. *Self-management – initiative* Identifies and describes the function of specific components to justify their use within the solution to a problem. *Innovation – critical thinking* Evaluates and explains design decisions around an engineering solution, including the advantages, disadvantages, consequence, and the social, economic and environmental impact. *Innovation – critical thinking*

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					• I can **recognise** a simple Lever and point out the fulcrum. I can also make statements about the Forces required, depending on the length of the Lever and position of the fulcrum. • I can **name** a range of gearing systems, give examples, and explain the effects of increasing or decreasing the number of teeth on each gear. (Spur, Helical, Bevel, Worm, Rack and Pinion) • I can **carry out** Voltage, Current, Resistance, Power, and Efficiency calculations for domestic systems independently.	