knowing   *creating*

| Design & Designers | Vision & Inspiration |

D&T

product, market, safety, develop, research, cost

| Tools, Utensils & Processes | Research & Development | Suitability & Productivity |

using   *analysing*   *evaluating*

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R•E•A•L Opportunities (How we will learn)

The History of Design & Technology	Manufacturing Products	Cooking and Healthy Eating
As a light-touch element of planning, children will place design, discoveries, inventions and technological progress in context. For example, if using electricity in a product, a "who gets closest" race to guess to the nearest year when the light bulb was invented will place this in context historically. "How long has electricity been in use"? is briefly but crucially important to deep learning in D&T.	Approximately two thirds of the year will be spent researching, developing and refining products which are fit to purpose. It is acceptable to spend two terms on a single idea, to make room for the iterative process of trial, error, evaluation and refinement. Equally acceptable is the blocking of several sessions over a day, a week of afternoons or a fortnight.	Overlapping with science and human biology, D&T needs to consider cooking. This should include nutrition, health, choices and ingredients and as part of the REAL curriculum, have a heavy bias towards life skills, including safe use of tools such as tin openers, knives, etc. **Key stage 1** ➢ use the basic principles of a healthy and varied diet to prepare dishes ➢ understand where food comes from. **Key stage 2** ➢ understand and apply the principles of a healthy and varied diet ➢ prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques ➢ understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.

All DT learning should be formally risk assessed where it involved tools, hazardous utensils, heat or mains electricity.

Personal & Social Curriculum:

Use and Abuses: Correct and safe use of equipment (eg solvents)

*Community Life:*Care of equipment and recycling/reusing and disposal of resources e.g. cardboard, cogs and batteries respectively. Challenge sexist stereotypes in cooking and construction

Social behaviour:

Myself and Others: Collaborating on projects; Appropriate behaviour in respect of safety. Money and Finance:responsible spending, costing and pricing

Healthy Body, Healthy Mind: Challenge and pressure: meeting project deadlines, responding positively and resiliently to challenge

Who helps us?: professional eg STEM support in DT

Staying Safe: Safe use of cooking, craft & construction equipment. Wearing correct clothing and appropriate safety wear.

Entitlements

Children will be entitled to use real tools and processes, taking assessed risks in a controlled environment.

ART & DESIGN: There should be strong cross-curricular working between ART & DT in the manipulation of tools, media and finishing processes. The aesthetics of art should inform D&T but not dominate it, as D&T is concerned with a useful and efficient product, not an artwork, which has no use other than to communicate meaning.	**COMPUTING:** DT's technical processes should rely heavily on computing, in digitally aided design, apps for exploded diagrams and planning processes, spreadsheets of materials, time & cost, online product research and high quality presentation using video, audio and powerpoint or keynot (for example).	**DANCE:** Dance's commitment to discipline and high quality performance must contribute to this growing professionalism in presentation of products. Children designing and filming advertisements may incorporate clips of dance or their own choreographies/ repeated motifs, or designing costumes & props for dance events	**GEOGRAPHY:** Where food comes from, how it is packaged and its impact on land use and the environment is an aspect of DT which will be supported by the wider perspectives of geography. The accuracy needed in field work (gathering data, recording, observation) should be a rehearsal for product testing and design.
HISTORY: Contextualise materials, components, processes and products in their historical setting. Children should know when we first used plastic, who invented the light bulb, a timeline of hats / wallets etc to gain inspiration but also deepen understanding. The lives of great designers & inventors will lend a backdrop to design.	**LANGUAGES:** Our chosen language is German and as children explore the idea of *German-ness* they should have an eye for nationally specific architecture, successful German designers, brands and companies, products originating in Germany and German typographies and graphics.	**MATHEMATICS:** There must be age-appropriate challenge and rigour in measurements, scaling, cutting to size etc. so that children have a place to contextualise maths and see *why* it is important to measure accurately and *how small* a mm is in the real world. This should feed into high level thinking at the evaluation level.	**MUSIC:** Music may be selected, recorded, edited and processed for use in presentations and advertisements, in addition musical instruments may be designed to a specific remit, whether this means "longer than 10cm", or "to produce the notes A, D and G".
PHILOSOPHY: Ideas of worth & value in products (axiology: Why is a Rolex worth £20 000 and a Timex worth £20) and the ethics of advertising; questions about products doing good versus products making money, and enquiry into whether products have a duty to be beautiful (aesthetics). Can a product be a work of art? ("Beautility"?)	**PHYSICAL EDUCATION:** There are possibilities in PE to rehearses and recontextualise the accuracy of measurement, timing and recording needed in rigorous DT. It also provides superb opportunities for designing equipment. Can you design and manufacture a boomerang which returns? A discus which flies? A sports kit which inspires a win?	**SCIENCE:** The accuracy of measurement and the safety awareness required in processes should be shared and enhanced in DT. Investigation into the suitability and properties of materials will shed light on science and should be strongly cross-curricular. A deconstruction of the design of scientific instruments will be a rich source of learning	**SMSC:** What is the impact of design on society for better or for worse? What does design suggest about Culture? Are there cultural or gender differences in taste? What is the impact of consumerism? Do advertisers have responsibilities? How do I stay safe when working with tools? What are my responsibilities to my client? My collaborator?

Cross-Curricular Learning

R•E•A•L Objectives (What we will learn to do)

Children should learn:

to communicate	To construct/cook	To deconstruct	to troubleshoot	to design
using	using	analysing	evaluating	creating
Children present their vision using a growing range of technical vocabulary, practical recording techniques and increasingly fluent verbal skills.	Children make and assemble products/dish, selecting the appropriate tools/utensils, equipment, components and materials to suit the design or brief, working safely and responsibly.	Children analyse and deconstruct the patterns, trends and structure of successful products and designers to gather data for their own design.	Children constantly assess and modify the vision, the design, the process and the product; repairing weak elements and using a trial and error approach to success and completion.	Children envision practical and aesthetic solutions to the needs and wants of consumers, developing a range of useful, desirable and innovative products.

The Depth & Breadth Assessment Model: Points System

Phase 1			Phase 2			Phase 3		
Year 1		Year 1	Year 3		Year 4	Year 5		Year 6
Surface Learning	Enhanced Learning	Deep Learning	Surface Learning	Enhanced Learning	Deep Learning	Surface Learning	Enhanced Learning	Deep Learning
1　2　3	4　5　6		7　8　9	10　11　12		13　14　15	16　17　18	
3+	6+		9+	12+		15+	18+	

We are assessing not just the amount that children learn, but the **depth** and **breadth** of their learning. We monitor how well a child understands a concept and how useful that learning becomes. Progress in the D&B model widen from shallow, surface-level learning, to an enhanced understanding then beyond, into deep, thoughtful ownership. Extremely deep and rich learning within a year group is recorded as *n+* signifying mastery of the subject.

We chart children's understanding on this continuum, giving them a numerical score, based on averages. This is their attainment. The difference in *attainment* from one assessment to the next is their *progress.* The combination of both in a broad picture is their *achievement.*

with support and modelling	with modelling	independently	mastery (*n+*)
Children attempt and complete learning after concepts and skills are clearly demonstrated. They make mistakes, are assisted and use consistent and continuing feedback to improve during the process.	Children attempt and complete learning after concepts and skills are clearly demonstrated. They work collaboratively or unaided, needing formative feedback, demonstrating maturing skills and concepts.	Children attempt and complete work confidently and independently, in collaboration or alone. They are largely unaided with minimum scaffolding and are demonstrating embedded skills and concepts.	Children's knowledge and understanding of the subject is so deep and thorough that they have required personalised extension and enrichment from the class teacher. Their work shows unusual insight, broad applications and great creativity.

PHASE 1

Breadth of Learning

Depth of Learning	Stage of Teaching		Year	to communicate — using	To construct/cook — using	To deconstruct — analysing	to troubleshoot — evaluating	to design — creating
1	Surface Learning	Aut	Year 1	**To communicate:** With support and modelling I can draw my ideas as a labelled plan	**To construct/cook:** With support and modelling I cut and join materials,/ prepare ingredients, using basic tools/utensils safely. **To construct:** With support and modelling I begin to explore basic mechanisms in construction toys, pop-up books, etc. (cogs, gears, levers, slides etc.)	**To deconstruct:** With support, modelling and questioning I can examine simple products and answer questions simply on how they are joined / prepared / supported / constructed. ["Do you think this is raw or cooked? How is the leg joined to the body?"]	**To troubleshoot:** With support and modelling, I can say if there is a difference between my plan and my product. ["Look at your plan and see if the product came out the same?" "*Nothing*" "Are you sure? What about the handle? "*Oh yeah. It's not square!*"]	**To design:** With support and modelling I can devise my own basic version of a simple generic product, following simple instructions but adding my own personal touch.
2	Surface Learning	Spr	Year 1	**To communicate:** With modelling I can draw my ideas as a captioned plan. I answer simple questions about my intentions. ["I am going to make a pop-up chick for Easter. It needs folded paper to make it pop"]	**To construct/cook:** With support I cut, join, and shape materials/ prepare ingredients, using basic tools/utensils safely. **To construct:** With modelling I begin to explore basic mechanisms in toys and discuss how they work.	**To deconstruct:** With modelling and questioning I can examine simple products asking and answering simple questions about how they are joined / prepared / supported / constructed. ["How do they get the bumps in it? Is this glued so it stays in? What is that taste?"]	**To troubleshoot:** With modelling, I can say if there is a difference between my plan and my product. ["Look at your plan and see if the product came out the same?" "*Oh no, I used the long pipe cleaners in the end...*"]	**To design:** With modelling I can devise my own version of a simple generic product, following basic instructions but adding my own personal touch. My decoration is personal and deliberate.
3	Enhanced Learning	Sum	Year 1	**To communicate:** I can draw my ideas as a captioned plan and present my intentions simply and briefly.	**To construct/cook:** I can independently select from a range of basic tools/utensils to cut, join and shape simple materials/prepare ingredients, making simple products/dishes. **To construct:** With support and modelling I have attempted to use simple mechanisms [hinge, slide, flap, etc.] in my product.	**To deconstruct:** I can examine simple products and ask simple questions about how they are joined / prepared / supported / constructed. ["How do they get the bumps in it? Is this glued so it stays in? What is that taste?"]	**To troubleshoot:** I can say confidently if there is a difference between my plan and my product and begin to articulate what is different. ["It is different from my plant. The eyes are different."]	**To design:** I can devise my own version of a simple generic product. When completed it is personal, shaped and decorated to be unique to me, but in very simple terms.
4	Enhanced Learning	Aut	Year 2	**To communicate:** With modelling and support I can write my ideas in simple terms, illustrating then with a simple labelled diagram. I answer questions about my intentions.	**To construct/cook:** With support and modelling I can select tools/utensils to finish / shape my simple product/prepare my dish, to a presentation standard. **To construct:** With support and modelling I can use simple mechanisms in my products or prototypes [slide, lever, switch, strong hinge etc.]	**To deconstruct:** With support, modelling and questioning I can begin to sort products by their strength, construction, joins, materials and uses. ["Can you sort all of the metal utensils which don't have a join?" *Yes.*" "Go on then."] **To deconstruct:** With support I explore simple materials, selecting the most appropriate.	**To troubleshoot:** With support, modelling and questioning, I can say if an approach is likely to be useful or problematic. ["If I use pinking shears it will be pretty but not a straight line"] **To troubleshoot:** With support, modelling and questioning I can say *why* there is a difference between my plan and my product.	**To design:** With support and modelling I can base my design on simple criteria (colour, size etc) **To design:** With support and modelling I can use simple materials to mock up my design using words like *prototype* or *makette*.
5	Deep Learning	Spr	Year 2	**To communicate:** With modelling I can write my ideas in simple linked sentences, illustrating then with a labelled diagram. I can present these ideas a verbally using my recording as a prompt.	**To construc/cookt:** With support I can select tools/utensils to finish / shape my simple product /prepare my dish to a presentation standard. ["I'm going to go round the words in marker pen to make them stand out"]	**To deconstruct:** With support, I can begin to sort products by their similarities and differences answering questions about patterns and trends. ["These are all made of metal and none of them are glued. The wood ones have glue – all of them!"] **To deconstruct:** I explore simple materials, selecting the most appropriate.	**To troubleshoot:** With modelling, I can use technical vocab to describe difference between plan and product. ["I said I'd use a square box but I could only find cuboids – that's why it won't stand up!"] **To Troubleshoot:** With questioning I can account for why there is a difference between my product and my plan or criteria.	**To design:** With and modelling I can base my design on simple criteria (colour, size, etc) **To design:** With modelling I can use simple materials to mock up my design using words like *prototype* or *makette*.
6	Deep Learning	Sum	Year 2	**To communicate:** I consistently and independently plan my ideas on paper and convey them verbally, using simple labels, captions, diagrams.	**To construct/cook:** I can select tools/utensils to finish / shape my simple product /prepare my dish to a presentation standard, improving, polishing and repairing as I go.	**To deconstruct: I can** sort a range of simple products by their construction, materials and purpose. **To deconstruct:** I can comment on simple trends I have noticed in design and packaging ["Almost all chocolate wrappers have a bit of red somewhere, have you noticed?"]	**To troubleshoot:** I can confidently describe difference between plan, design criteria and product, giving basic reasons why. **To troubleshoot:** I can confidently indicate when a plan, process or approach is not working and seek collaboration to improve. ["This won't stick. What are you using Tom? How did you do that?"]	**To design:** I confidently use simple criteria to inform my design. **To design:** In the simplest terms I mock-up and prototype my designs using paper, card, pipe-cleaners etc to get proportion, ratio and structure right before I begin my final product.

Depth of Learning		Stage of Teaching		Breadth of Learning				
				to communicate	**To construct/cook**	**To deconstruct**	**to troubleshoot**	**to design**
				using	using	analysing	evaluating	creating
7	Surface Learning	Aut	Year 3	**To communicate:** With support and modelling I outline product and process intentions in sequentially illustrated writing. I answer questions about my ideas and possible risks.	**To construct/cook:** With support and modelling I can select from a wider range of tools [blades, pliers, small hammers etc, & cooking utensils] talking about the risk and using appropriately.	**To deconstruct:** With support an modelling I can analyse a wider range of products, recording similarities, differences, strengths and weaknesses in detailed illustrated writing.	**To troubleshoot:** With support and modelling I can make improvements to my product, exploring strength, stiffness and reinforcement (including texture and taste in cooking).	**To design:** With support and modelling I can base my design on a more complex product remit, my analysis of products, and my evaluation of prior learning.
8		Spr		**To communicate**: With modelling I outline product and process intentions in sequentially illustrated writing. I volunteer information about my ideas and possible risks.	**To construct/cook:** With support and modelling I can carefully use more sophisticated joining techniques (knots, bands, tapes, adhesives, nails, tacks etc.) **To construct:** With support and modelling I can begin to incorporate electricity into my product (bulb, buzzer, switch)	**To deconstruct:** With support and modelling I can begin to construct very simple speculative exploded diagrams of products. [e.g. an exploded view of a table lamp during a "lighthouse" project.]	**To troubleshoot:** With support and modelling I can use iterative methods to refine my work, in continual supportive discussion with peers. **To troubleshoot:** With support and modelling I can describe the narrative of the manufacture.	**To design:** With modelling I can base my design on a more complex product remit, my analysis of products, and my evaluation of prior learning.
9	Enhanced Learning	Sum		**To communicate**: I can confidently combine text and images to begin to show a simple, logical sequential construction process, presenting this with the correct technical vocabulary.	**To construct/ccok** With modelling I can select from a wider range of tools [blades, pliers, small hammers etc, & cooking utensils] talking about the risk and using appropriately.	**To deconstruct:** With modelling I can analyse a wider range of products, recording similarities, differences, strengths and weaknesses in detailed illustrated writing.	**To troubleshoot:** With modelling I can make improvements to my product, exploring strength, stiffness and reinforcement (including thickness and taste in cooking).	**To design:** My own creative vision is independently enhanced by what I have learned from the analysis and evaluation of my own, others and commercial products.
10		Aut	Year 4	**To communicate:** With support and modelling I can produce a purposeful plan, showing materials, tools, process and product. I can discuss the risks.	**To construct:** With modelling I can carefully use more sophisticated joining techniques (knots, bands, tapes, adhesives, nails, tacks etc.) **To construct:** With modelling I can begin to incorporate electricity into my product (bulb, buzzer, switch).	**To deconstruct:** With modelling I can begin to construct very simple speculative exploded diagrams and cross-sections of products. [e.g. a cross section of an electrical wire during a project on making a lamp]	**To troubleshoot:** With modelling I can use iterative methods to refine my work, in continual supportive discussion with peers. **To troubleshoot:** With modelling I can describe the narrative of the manufacture.	**To design:** With support and modelling, I can incorporate the style, aesthetic, approach or philosophy of great and leading designers and inventors.
11	Deep Learning	Spr		**To communicate:** With modelling I can produce a detailed plan, showing materials, tools, process, product and risk assessment.	**To construct** I confidently but carefully select from a wider range of tools [blades, pliers, small hammers etc, & cooking utensils] talking clearly and confidently about the risk and using appropriately.	**To deconstruct:** I can gather data, collect opinions and record similarities, differences, strengths and weaknesses in detailed illustrated writing, to inform my design.	**To troubleshoot:** I can independently strengthen, stiffen or reinforce structures to make them taller, more robust or more complex. **To troubleshoot:** I can deepen and intensify the flavour of food and find ways to thicken or develop its texture.	**To design:** With modelling, I can incorporate the style, aesthetic, approach or philosophy of great and leading designers and inventors.
12		Sum		**To communicate:** I can confidently produce and present a detailed plan, showing materials, tools, process, product and risk assessment, outlining safety measures, using the correct technical vocabulary	**To construct:** I independently and carefully use can use more sophisticated joining techniques (knots, bands, tapes, adhesives, nails, tacks etc.) **To construct:** I can independently incorporate working electricical circuits into my product (bulb, buzzer, switch)	**To deconstruct:** I can deconstruct and dissect simple safe products, drawing and labelling the components and their purpose in a limited range of ways [exploded diagrams, flow diagrams, cross-sections]	**To troubleshoot:** I seek and accept advice when constructing products, refining continually; I can discuss the narrative of my manufacture saying who gave what advice when, what went wrong, what I learned from this and comparing the product realistically to the remit/design.	**To design:** I confidently base my design on a broad research base, namely a product remit, my analysis of a range of products, my evaluation of prior learning, and the work of inspirational designers and inventors.

PHASE 3

Depth of Learning		Stage of Teaching		**Breadth of Learning**				
				To communicate	**To construct/cook**	**To deconstruct**	**to troubleshoot**	**to design**
				using	using	analysing	evaluating	creating
Surface Learning	13	Aut	Year 5	**To communicate:** With support and modelling I can write and discuss a basic, illustrated, reasoned proposal, outlining my intentions and discussing risks and foreseeable problems.	**To construct/cook:** With support and modelling I can measure and mark out materials to an accurate cm scale/measure ingredients accurately **To construct:** With support and modelling I accurately apply a range of finishing techniques, (sanding, polishing, snagging etc.)	**To deconstruct:** With support an modelling I can analyse wider range of products, recording similarities, differences, strengths & weaknesses in detailed illustrated writing. **To deconstruct:** With support and modelling I begin to draw more complex, labelled exploded diagrams to explore the construction and design of products.	**To troubleshoot:** With support and modelling I can offer constructive criticism about my own product in prototype. ["I didn't like how it looked on 3 legs- so I made it square and started again with four. The final result is much more steady."] **To troubleshoot:** With support and modelling I can assess strengths and weaknesses in my product, commenting on 2 or more aspects	**To design:** With support and modelling I can commission a product from another child, specifying size, colour, decoration and purpose. **To design:** With support and modelling I can gather a wide range of images of products which attract me using the design process for inspiration ["I've gathered all these pictures of wallets- I want one with a clasp like this but the same blue as that."]
	14	Spr		**To communicate:** With modelling I can write and discuss a basic, illustrated, reasoned proposal, outlining my intentions and discussing risks and foreseeable problems.	**To construct/cook:** With modelling I can measure and mark out materials and components to an accurate cm scale/measure ingredients accurately **To construct:** With support and modelling I accurately apply a range of finishing techniques, (see above) including those from art and design.	**To deconstruct:** With modelling I can analyse a wider range of products, recording similarities, differences, strengths & weaknesses in detailed illustrated writing. **To deconstruct:** With modelling I begin to draw more complex, labelled exploded diagrams to explore the construction and design of products.	**To troubleshoot:** With modelling I can offer constructive criticism about my own product and those of others in the design stage and in prototype, and act on this, improving the finished product *measurably*. **To troubleshoot:** With modelling I can assess strengths and weaknesses in my finished product and those of others, commenting on 2 or more aspects.	**To design:** With modelling I can commission a product from another child, specifying size, colour, decoration and purpose. **To design:** With modelling I can gather a wide range of images of products which attract me using the design process for inspiration.
Enhanced Learning	15	Sum		**To communicate:** Using best practice I can independently write and present an illustrated, reasoned proposal, outlining my intentions and discussing risks and foreseeable problems.	**To construct/cook:** I independently measure and mark out materials and components to an accurate cm scale/measure ingredients accurately. **To construct:** I independently and skilfully apply a range of accurate and professional finishing techniques, (see above) including those from art and design.	**To deconstruct:** I can independently analyse a very wide range of products, recording similarities, differences, strengths & weaknesses in detailed illustrated writing, predicting which may be the best-seller based on evidence. **To deconstruct:** I begin to draw more complex, labelled exploded diagrams to explore the construction and design of products.	**To troubleshoot:** I can independently and sensitively offer constructive criticism about my own product and those of others in the design stage and in prototype, and act on this, improving the finished product *measurably*. **To troubleshoot:** I can independently and sensitively assess strengths and weaknesses in my finished product and those of others, commenting on 3 or more aspects. (see above)	**To design:** I can independently commission a product from another child, specifying size, colour, decoration and purpose. **To design:** With modelling I can gather images of products which attract me using the design process for inspiration.
	16	Aut	Year 6	**To communicate:** With support, modelling and questioning I can make a presentation describing inception-vision- process-product & evaluation.	**To construct/cook:** With support and modelling I can measure, mark out and safely cut materials to an accurate mm scale/measure ingredients using scale and ratio **To construct:** With support and modelling I accurately select from a wide range of cutting, joining and finishing techniques.	**To deconstruct:** With support and modelling I can give analytical responses to products, suggesting 1) target demographic 2) possible production costs 3) possible styles of advertising 4) possible innovations. **To deconstruct:** With support and modelling I can draw sequential, operational diagrams to show clearly how products work.	**To troubleshoot:** With support and modelling I compare the prototype and the product to the initial commission / design / proposal, narrating changes, improvements and mistakes during the process. **To troubleshoot:** With support and modelling I can make changes to materials, tools and processes to work more safely or efficiently.	**To design:** With support and modelling I can commission a product from another child, expressing a range of specifications, including dimensions clearly.["The cookies must all be no bigger than 10cm across and be nice and thin."] **To design:** With support and modelling I can gather a wide range of images of products which attract me being open to and acknowledging serendipity
Deep Learning	17	Spr		**To communicate:** With modelling, using a range of models I can develop a convincing presentation for summative purposes or pitching to an investor.	**To construct/cook:** With modelling I can measure, mark out and safely cut materials to an accurate mm scale/ measure ingredients using scale and ration **To construct:** With modelling I accurately select from a wide range of cutting, joining and finishing techniques, choosing the most appropriate tool for the job.	**To deconstruct:** With modelling I can give analytical responses to products, suggesting 1) target demographic 2) possible production costs 3) possible styles of advertising 4) possible innovations. **To deconstruct:** With support and modelling I can draw sequential, operational diagrams to show clearly how products work.	**To troubleshoot:** With modelling I compare the prototype and the product to the initial commission / design / proposal, narrating the changes, improvements and mistakes during the process. **To troubleshoot:** With modelling I can make changes to materials, tools & processes to work more safely & efficiently.	**To design:** With modelling I can commission a product from another child, expressing a range of spec's, including dimensions, clearly. **To design:** With modelling I can gather inspiration from a wide range of images and products which attract me being open to and acknowledging serendipity ["I've gone wrong drawing that clasp but it looks like a heart, so I think I'll do a heart now."]
	18	Sum		**To communicate:** Independently and in collaboration I can narrate a design process from inception to evaluation, using data and evidence. **To communicate:** I can present a subtle, sophisticated and convincing pitch, drawing on evidence and data.	**To construct/cook:** I independently and safely measure, mark out and cut materials to an accurate mm scale/measure ingredients using scale and ratio **To construct:** I select the appropriate tool from a wide range of cutting, joining and finishing techniques, giving reasons why I chose it and discussing its risks and benefits. [saw, pliers, glue-gun, hole punch. etc.]	**To deconstruct:** I give analytical responses to products, suggesting 1) target demographic 2) possible production costs 3) possible styles of advertising 4) possible innovations. **To deconstruct:** With support and modelling I can draw sequential, operational diagrams to show clearly how products work.	**To troubleshoot:** I independently compare the prototype the product to the initial commission / design / proposal, narrating the changes, improvements and mistakes of the entire process. **To troubleshoot:** I can make and suggest changes to materials, tools and processes to work more safely or efficiently.	**To design:** I can independently commission a product from another child, clearly expressing a range of specifications including dimensions. **To design:** I independently gather a wide range of images and products which attract me and when designing, staying open to and acknowledge the effect of serendipity.

Glossary

Commission *to ask for a product to be designed and mae..*

Design *the verbal, drawn or written creative idea which will result in a product*

Maquette *a small mock-up of a product to indicate proportions or shape.*

Pitch *a verbal or written proposal for a product designed to make you commission or buy.*

Plan *the verbal, drawn or written process which will result in a product.*

Product *the finished useable, sellable item*

Prototype *the first working incarnation of a product made for the purpose of evaluation and refinement.*

Serendipity *accidental good luck*

Remit *a set of specifications which guide the manufacture of a product*

Seasonality *The local availability of food and ingredients*