



“Enjoy failure and learn from it. You can never learn from success.” **James Dyson**

VISION Design and Technology is a motivational, robust and practical subject which develops a range of skills, transferable throughout the curriculum. Design and Technology encourages; creative and independent thinking, problem solving, questioning and research, purposeful designing, fine motor skills and the ability to effectively evaluate through reflective thinking and discussions. Design and Technology offers our pupils the opportunity to creatively problem solve both as individuals and as members of a team.

EYFS	EYFS R	Progress towards a more fluent style of moving, with developing control and grace. PD Develop their small motor skills so that they can use a range of tools competently, safely and confidently. PD Use their core muscle strength to achieve a good posture when sitting at a table or sitting on the floor. PD Explore, use and refine a variety of artistic effects to express their ideas and feelings. EA&D Return to and build on their previous learning, refining ideas and developing their ability to represent them. EA&D Create collaboratively, sharing ideas, resources and skills. EA&D
	EYFS ELG	Use a range of small tools, including scissors, paintbrushes and cutlery. PD Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. EA&D Share their creations, explaining the process they have used. EA&D

Y1	Autumn	Spring	Summer
YEAR A Unit Overview	Cooking and Nutrition: Smoothies Selecting fruit and vegetables and preparing food by cutting and juicing to create a smoothie to meet a design brief. https://www.kapowprimary.com/subjects/design-technology/key-stage-1/year-1/cooking-and-nutrition-smoothies/	Mechanisms: Wheels and Axles Developing an understanding of how wheels, axles and axle holders work while practising cutting straight and curved shapes with scissors. https://www.kapowprimary.com/subjects/design-technology/key-stage-1/year-1/option-1-wheels-and-axles/	Textiles: Simple Stitches Examining fabrics, practising basic sewing techniques and identifying how different materials are made from threads. https://www.kapowprimary.com/subjects/design-technology/key-stage-1/year-1/textiles/textiles-simple-stitches/
Key Outcomes	Describe fruits and vegetables and explain how to identify fruits. Name a range of places that fruits and vegetables grow. Describe basic characteristics of fruit and vegetables. Prepare fruits and vegetables to make a smoothie.	Choose and use the most suitable tool for cutting out different shapes accurately. Test and compare wheels of different shapes, thicknesses and smoothness. Estimate the middle of a circle. Design, draw and label a product that uses a simple mechanism. Identify the needs of the user. Make and finish a simple pull-along toy. Evaluate a product against simple design criteria and provide feedback.	Name some objects made of fabric. Describe the look and feel of different fabrics. Thread a needle. Make a series of stitches that match each other in embroidery fabric. Choose colours and shapes for a design. Explain their ideas to others verbally and with a sketch. Choose materials based on their texture. Follow the general position of the lines of a design with stitches. Say what they like about someone else's stitching and what could be made better.
Small Steps	Fruits: To identify fruits. Growing: to describe where fruits and vegetables grow. Cutting and juicing: To practise food preparation skills. Testing ingredients: To select ingredients for a recipe. Making smoothies: To apply food preparation skills to a recipe. Evaluating: To evaluate against the design brief.	Wheels: To develop cutting skills by shaping wheels. Improving Wheels Part 1: to refine cutting skills by shaping round wheels. Improving Wheels Part 2: To evaluate by comparing and discussing different wheel designs. Designing a pull-along toy: to create a design by drawing plans for a pull-along toy. Make a pull-along toy: To apply finishing techniques by decorating a pull-along toy.	What is fabric? To explore how fabrics are made and used. Making stitches: To thread a needle and make stitches. Designing bunting: To sketch a design for a piece of bunting. Stitching a design: To stitch a design for a piece of celebratory bunting. Finishing and evaluating: To finish a design of stitches and evaluate.
Key Vocabulary	blend, blender, chopping board, compare, cut, design, evaluate, flavour, fork, fruit, healthy, ingredients, juice, juicer, leaf, plant, recipe, root, seed, select, smoothie, stem, table knife, taste, tree, vegetable, vine	axle, axle holder, better, careful, choose, compare, design, dislike, like, mechanism, movement, product, straight line, tool, turn, user, wheel, worse	design, even, fabric, like, needle, sketch, stitch, thread

Y2/3/4	Autumn A	Spring A	Summer A
YEAR A Unit Overview	Mechanical Systems: Pneumatic Toys Investigating how compressed air can create movement within a mechanism and be used in a working pneumatic toy. https://www.kapowprimary.com/subjects/design-technology/key-stage-2/year-3/new-mechanical-systems-pneumatic-toys/	Cooking and Nutrition: Adapting a Recipe Learning a basic biscuit recipe and adapting it for a new audience while considering the cost of ingredients and other expenses against a set budget. https://www.kapowprimary.com/subjects/preview-units/design-and-technology/key-stage-2/year-4/cooking-and-nutrition-adapting-a-recipe-y4/	Structures: Helmets Designing and making a helmet, using strengthening techniques to reinforce the shell structure. https://www.kapowprimary.com/subjects/design-technology/key-stage-2/year-4/structures/structures-helmets/
Key Outcomes	Define a mechanism as a system of parts working together to create movement and a pneumatic system can be used as part of this. Describe how a pneumatic system forces air over a distance to create movement and identify pneumatic systems in a range of everyday objects. Describe different types of drawings used in design to explain ideas clearly and explain why one may be more useful for a particular situation. Develop design criteria from a design brief. Begin to draw different types of diagrams to generate suitable ideas. Recall different types of pneumatic systems used to design a toy and create one for a specific movement. Build secure housing for a pneumatic system, consider sustainable resources and work with materials to create different effects by cutting, creasing, folding, etc. Evaluate how well the design, materials and equipment help to achieve the design brief.	Describe features of biscuits using taste, texture and appearance. Explain why some biscuits might be made for children, adults or special occasions. Remember and follow simple rules for working in a safe and clean way. Follow a recipe with support. Use a budget to plan a recipe. Adapt a recipe using additional ingredients to fit a design or budget. Measure and mix ingredients properly. Contribute to a discussion about criteria for evaluation.	Describe what a shell structure is and describe what makes an effective helmet. Design a helmet for a specific user by choosing appropriate features. Explain layering techniques used to strengthen a helmet. Use layering techniques to make a helmet and reflect on the process. Evaluate the strengthening required in the helmet and justify appropriate strengthening techniques. Follow a design plan and use appropriate techniques to strengthen and stiffen the helmet. Communicate with peers when making improvements. Analyse helmets' strengths and weaknesses and evaluate how they work for their purpose.
Small Steps	Exploring Pneumatics: To explore how pneumatic systems create movement within mechanisms. Drawing diagrams: To use different types of diagrams to summarise information. Designing a pneumatic toy: to design a toy that uses a pneumatic system. Making a pneumatic toy: To create a pneumatic system for a moving toy. Finishing the toy: To test and finalise ideas against design criteria.	Existing Biscuits: To evaluate existing biscuit products. Basic Biscuits: To prepare and cook a dish. Budgeting: To select ingredients and follow a budget. Packaging: To take inspiration from existing products. Testing a new recipe: To make and test a prototype biscuit. Evaluating biscuits: To evaluate a final product.	Exploring shell structures: To explore shell structures and design my own. Making papier-mâché shells: To make the shell of a helmet. Strengthening techniques: To assess how a helmet structure needs to be strengthened. Strengthening shell structures: To strengthen the helmet shell structure. Evaluating shell structures: To evaluate the effectiveness of strengthening the helmet.
Key Vocabulary	diagram, evaluate, feedback, housing, linkage, mechanical, system, mechanism, pivot, pneumatic system, thumbnail sketch	cut, design, evaluate, fold, hygiene, ingredients, layout, market research, modify, multiplication, opinion, pounds, sieve, sift, target audience, taste, texture, unique, wooden spoon	analyse, effective, iteration, reflect, strengthen

Y2/3/4	Autumn B	Spring B	Summer B
YEAR B Unit Overview	Textiles: Fastenings Designing and creating a book sleeve and exploring a range of fastening techniques. https://www.kapowprimary.com/subjects/design-technology/key-stage-2/year-4/textiles-fastenings/	Digital World: Mindful Moments Timer Researching, designing and prototyping a Micro:bit timer. https://www.kapowprimary.com/subjects/design-technology/key-stage-2/year-4/digital-world-mindful-moments-timer/	Electrical Systems: Exploring Electrical Products Investigating electrical components and circuits and how they are used in everyday products to improve safety and convenience. https://www.kapowprimary.com/subjects/design-technology/key-stage-2/year-4/electrical-systems-torches/
Key Outcomes	Identify the features, benefits and disadvantages of a range of fastening types. Write design criteria and design a sleeve that satisfies the criteria. Make a template for their book sleeve. Assemble their case using any stitch they are comfortable with.	State and/or describe the advantages and disadvantages of existing products (timers). Understand how virtual micro:bit features could be used as part of a design idea. Use research to inform design criteria. Write a program that displays a timer on the virtual micro:bit based on their chosen seconds/minutes. Suggest where the errors are, if testing is unsuccessful, by comparing the correct code to their own. State key functions in the program editor (e.g. loops). Evaluate the immediate appeal of the virtual micro:bit timer and how it might function. Express which stages of the project they enjoyed or found more challenging. Explain the need for a company to stand out against competition and/or state the importance of logos in business. Recall and describe the name and use of key tools used in Sketchpad (CAD) software. Fulfil the design requirements of the logo. Evaluate the product using feedback from the user.	Identify everyday products that use electrical components and name the components. Make and test toggle and push switches in electrical circuits. Explain why switches are useful in electrical products. Compare a toggle switch and a push switch. Research a design problem by asking questions and conducting a survey. Describe a target audience as a group of people that a product is designed for and identify the target audience for a new product. Identify what a cross-sectional diagram is and why it is useful. Draw a cross-sectional diagram with labels that shows the inside of a product.
Small Steps	Evaluating Fastenings – To explain the advantages and disadvantages of different types of fastening. Designing my Book Sleeve – To design a product to meet design criteria. Paper Mock-Up and Preparing Fabric – To make and test a paper template. Assembling my book sleeve – To assemble a book jacket.	Analysing timers – To evaluate existing products. Designing for the user – To develop design criteria. Programming the timer – To programme and control a product. Prototypes – To develop and communicate ideas. Brand Identity – To develop ideas through computer-aided design. An exhibition – To consider feedback and evaluate.	Why are electrical products useful? – To investigate the function of electrical products. Light bulbs and toggle switches – To build an electrical circuit with a bulb and toggle switch. Buzzers and push switches – To build an electrical circuit with a push switch. Researching an electrical product using a survey – To research a design problem by surveying a target audience. Cross-sectional diagrams – To communicate a design idea using a cross-sectional diagram.
Key Vocabulary	Criteria, fabric, fastening, fix, mock-up, stitch, template	advantage, aesthetic, annotate, assemble, block, brand, brand identity, bug, clipart, coding, computer-aided design (CAD), criteria, debug, design, develop, disadvantage, display, ergonomic, evaluate, exhibition, feedback, form, function, join, logo, loop, mindfulness, model, net, program, prototype, research, script, sketchpad, test, timer, user, variable	Battery, bulb, buzzer, circuit, cross-sectional diagram, electricity, research, switch, target audience, wire

Y2/3/4	Autumn C	Spring C	Summer C
YEAR C Unit Overview	Structures: Product Packaging https://www.kapowprimary.com/subjects/design-technology/key-stage-2/year-3/structures/structures-product-packaging/	Mechanisms: Mechanical Cars Exploring mechanical systems by building and testing prototype cars to identify effective design features. https://www.kapowprimary.com/subjects/design-technology/key-stage-2/year-4/mechanical-cars/	Textiles: Egyptian Collars Learning how to cross-stitch and appliqué to decorate and assemble Egyptian collars, representing the pupils' unique personalities. https://www.kapowprimary.com/subjects/design-technology/key-stage-2/year-3/textiles-cushions-or-egyptian-collars/textiles-egyptian-collars/
Key Outcomes	Investigate and analyse a range of existing packaging products, identifying shapes, form and function. Evaluate what makes good packaging and what shapes suit which products. Design, make and evaluate product packaging, following a design criteria. Use CAD software (Sketchpad) to create 2D shapes that form the net of 3D shapes, including the tabs. Give and receive feedback and identify errors in nets to help suggest improvements. Cut, fold and stick the parts of a net together to make a 3D shape. Use ribbing to strengthen packaging. Decorate packaging with an intentional design that shows its function.	Describe key design improvements in the history of the automobile. Measure and compare the distance travelled by different mechanical cars. Choose and use appropriate tools and materials to make mechanical cars. Draw exploded diagrams and annotated sketches of my different mechanical cars. Use a problem statement to identify the design criteria. Assess the product against the design criteria. Conduct market research into existing products. Provide specific feedback and adjust my design to incorporate customer feedback.	Demonstrate their ability to use cross-stitch as a decorative feature or to join two pieces of fabric together. Develop appliqué designs based on design criteria. Design, cut and shape their template for an usekh or wesekh collar with increasing accuracy. Decorate their Egyptian collar using a variety of techniques, such as appliqué, cross-stitch, beads, buttons and pinking. Measure and attach a ribbon with a running stitch. Recognise different types and qualities of fabrics. Explain the aesthetic and functional properties of some of their material choices.
Small Steps	Exploring product packaging – To evaluate how 3D shapes are used in product packaging. Using nets – To design nets for 3D product packaging. Reviewing designs – to review and improve net designs for packaging. Making 3D packaging – To make 3D structures to package a healthy snack. Decorating and evaluating – To use a design brief to finalise and evaluate packaging.	Prototype one: Inclined Plane – To build a simple prototype car chassis. Prototype two: Slingshot Car – To build a prototype of a sustainable slingshot car chassis. Prototype three: Wind-up Car – To build a prototype of a durable slingshot car chassis. Mechanical toy car kit: Designing – To design a mechanised toy car. Mechanical toy car kit: Making and Evaluating – To make a mechanical toy car from a kit.	Cross-stitch and applique – To learn how to sew cross-stitch and applique. Egyptian collars – To develop and use a template. Developing the collars – To assembly fabric parts into a fabric product. Finishing their collars – To decorate fabric using applique and cross-stitch.
Key Vocabulary	computer-aided design (CAD), feedback, form, function, net, shell, structure, tab, three-dimensional (3D)	bearing, chassis, force, machine, mechanism, prototype, target, audience	asymmetrical, appliqué, cotton, cross-stitch, embellish, fabric, patch, pinking, polyester, running stitch, silk, symmetrical, template, thread, unique

Y4/5/6	Autumn A	Spring A	Summer A
YEAR A Unit Overview	Mechanisms: Gears and Pulleys Investigating the history, mechanics and uses of gears and pulleys. https://www.kapowprimary.com/subjects/design-technology/key-stage-2/year-5/gears-and-pulleys/	Cooking and Nutrition: Come Dine with Me! Developing food preparation and evaluation skills by researching and preparing a three-course meal. https://www.kapowprimary.com/subjects/design-technology/key-stage-2/year-6/new-cooking-and-nutrition-come-dine-with-me/	Structures: Playground Pioneers Investigating how playground structures are designed and reinforced through using triangulation and computer-aided design. https://www.kapowprimary.com/subjects/design-technology/key-stage-2/year-6/structures/structures-playground-pioneers/
Key Outcomes	Give examples of machines that use gears and/or pulleys. Describe how gears and pulleys work and their purpose. Design and make a gear and pulley system. Write a problem statement. Write questions for market research, provide feedback and research market competitors. Write and use a design brief to guide design. Evaluate a product against a set of design criteria, provide useful feedback and incorporate changes. Draw and annotate an eco-gadget bike design.	Find a suitable recipe for their course. Record the relevant ingredients and equipment needed. Follow a recipe, including using the correct quantities of each ingredient. Write a recipe, explaining the process taken. Explain where certain key foods come from before they appear on the supermarket shelf.	Explain the term constraints and why some are more important than others. Use sketches with labels to communicate ideas. Use 3D CAD software to communicate ideas. Modify a design to make it stronger and more stable using knowledge of triangulation and reinforcing. Select appropriate materials and tools for cutting and joining. Make a plan and equipment list for a project. Reinforce and stabilise a prototype of a structure. Apply a quality finish in a neat way and explain why the finish is important. Critically evaluate the success of a structure within constraints and suggest alternative, more sustainable, materials. Explain design decisions.
Small Steps	Gears – To create a working gear system and explain its function. Improving your gear design – To improve a working gear system and suggest some applications. Pulleys – To create a working pulley system and explain its function. Eco-gadget bike project: Market research – To conduct market research to discover useful tasks an eco-gadget bike could perform. Eco-gadget bike project: Design – To design and evaluate an eco-gadget bike using design criteria.	Complementary flavours – To explain the use of complimentary flavours. Three Ingredients, Three Courses – To research and design a three-course meal. Ingredients and Skills – To explain recipe choices. To start... - To apply culinary skills and knowledge. The Main Course – To apply culinary skills and knowledge. Dessert – To apply culinary skills and knowledge.	Playground Design Challenge – To generate ideas for a playground structure by considering relevant constraints. Designing Structures with Tinkercad – To create a prototype using Tinkercad. Making a Prototype of a playground structure – To construct a scale prototype of a playground structure. Finishing a Prototype of a Structure – To complete a structure prototype and improve its appearance. Prototype Evaluation – To evaluate a prototype of a playground structure.
Key Vocabulary	annotate, axle, force, gear, gear system, input, machine, market research, mechanism, output, problem statement, pulley, pulley system, renewable energy, research, sustainability, teeth	balance, bitter, bridge method, complement, cookbook, cross-contamination, enhance, equipment, farm to fork, flavours, ingredients, method, pairing, preparation, recipe, research, salty, sour, storyboard, sweet, umami	aesthetic, alternative, constraint, innovate, reinforce, triangulation, prototype

Y4/5/6	Autumn B	Spring B	Summer B
YEAR B Unit Overview	Textiles: Stuffed Toys Developing textile and sewing skills by designing and making a stuffed toy using fabric and decorative techniques. https://www.kapowprimary.com/subjects/design-technology/key-stage-2/year-5/textiles-stuffed-toys/	Digital World: Navigating the World Designing a product and programming it to function as a compass and a pedometer. https://www.kapowprimary.com/subjects/preview-units/design-and-technology/year-6/digital-world-navigating-the-world-updated/	Electrical Systems: Wobble Bots Building on existing knowledge of circuits by introducing motors and exploring how they create movement in products. https://www.kapowprimary.com/subjects/design-technology/key-stage-2/year-5/electrical-systems/electrical-systems-wobble-bots/
Key Outcomes	Design a stuffed toy, considering the main component shapes of their toy. Create an appropriate template for their stuffed toy. Join two pieces of fabric using a blanket stitch. Neatly cut out their fabric. Use appliqué or decorative stitching to decorate the front of their stuffed toy. Use blanket stitch to assemble their stuffed toy, repairing when needed. Identify what worked well and areas for improvement.	Describe user needs for an outdoor adventure product and recognise some design constraints. Understand user needs by exploring and analysing existing products. Create 3D CAD designs to represent product ideas for an adventure tool that works as a pedometer and a compass. Refine designs through understanding constraints and suggesting improvements. Identify useful BBC micro:bit features for a specific product and program an input and output into the micro:bit to enable it to count steps and give directions. Test the code's accuracy to ensure it works as intended and identify any changes needed to make it function properly. Use conditions to program compass points and explain why they need to be accurate for the product to work. Evaluate a product against a design criteria and explain what works well and what improvements could be made.	Identify some simple elements of a circuit (battery, wires, bulb, motor and switch) and explain their function. Explain that for electricity to flow around a circuit, it must be closed. Describe a motor as an electrical circuit component that changes electricity into movement. Provide examples of motorised products that use movement to rotate or spin different parts. Make a product that uses a motor. Design a motorised product for a particular purpose. Determine appropriate design criteria based on the function of the proposed product. Explain design choices based on the desired functionality of a product. Create an innovative motorised product based on knowledge of existing products. Discuss the effectiveness of a product while considering the design criteria.
Small Steps	Designing a stuffed toy – To design a stuffed toy. Blanket stitch – To sew a blanket stitch. Details and appendages – To create and add decorations to the fabric. Stuffed toy assembly – To use a blanket stitch to assembly the components of a stuffed toy.	Outdoor adventure – To investigate how existing products for the outdoor adventure market meet user needs. Designing on Tinkercad – To communicate and refine designs ideas clearly using CAD software. Coding a pedometer – To develop a functional feature of a product by programming a digital pedometer. Coding a compass – To program a product to respond to directional sensors and function as a compass. Reflecting on a product – To evaluate a product to identify its pros and cons.	Circuits and motors – To investigate by creating circuits. Meet the Kapow Doodlers – To make a motorised product and test its function. Exploring wobble bots – To apply knowledge of circuits to experiment with product design. Designing a wobble bot for a purpose – To design a motorised product for a specific purpose. Making and evaluating a wobble hat – To make and evaluate the effectiveness of a motorised product.
Key Vocabulary	accurate, annotate, appendage, blanket-stitch, design criteria, detail, evaluation, fabric, sew, shape, stuffed toy, stuffing, template	aesthetic, alternative, constraints, design criteria, innovative, iteration, target audience, user	annotate, assemble, electrical component, motor, battery, circuit, electricity

Y4/5/6	Autumn C	Spring C	Summer C
YEAR C Unit Overview	Structures: Bridges Investigating different types of bridges and how structural strength is affected by shape and design. https://www.kapowprimary.com/subjects/design-technology/key-stage-2/year-5/structure-bridges/	Mechanisms: Automata Toys Applying woodworking skills by constructing an automaton with moving parts and mechanisms. https://www.kapowprimary.com/subjects/design-technology/key-stage-2/year-6/new-mechanical-systems-automata-toys/	Textiles: Bags Designing pattern pieces, making a bag for a specific user and thinking about aesthetics and functionality. https://www.kapowprimary.com/subjects/design-technology/key-stage-2/year-6/textiles-bags/
Key Outcomes	Identify stronger and weaker supporting shapes. Recognise that supporting shapes can help increase the strength of a bridge so it can hold more weight. Identify beam, arch and truss bridges and describe their differences. Use triangles to create simple truss bridges that support a load (weight). Cut beams to the correct size using a cutting mat. Smooth down rough cut edges with sandpaper. Follow each stage of the truss bridge creation as instructed by the teacher. Complete a bridge with varying ranges of accuracy and finish supported by the teacher. Identify some areas for improvement and reinforcing bridges as necessary.	Mark, saw and cut out the components and supports of their toy with varying degrees of accuracy to the intended measurements. Follow health and safety rules, taking care with the equipment. Attempt a partial assembly of their toys using an exploded diagram following a teacher's demonstration. Develop a design idea with some descriptive notes. Explore different cam profiles and choose three for their follower toppers with an explanation of their choices. Create neat, decorated follower toppers with some accuracy. Measure and cut panels that fit with some inaccuracies to conceal the inner workings of the automata. Decorate and finish the automata to meet the design criteria and brief. Evaluate their finished product, making descriptive and reflective points on function and form.	Explore and compare real textile products, thinking about how they look, how they are used and how they affect the environment. Develop and test design ideas by creating pattern pieces and making prototypes to explore how well they work. Use labelled drawings and diagrams to show clear design ideas, including how pattern pieces will fit together. Use fabrics and materials suitable for the product, thinking about how they look and how well they work. Make 3D textile shapes by carefully cutting, folding and joining materials to match the design. Join fabrics securely using stitches or knots and add decorative details to improve the appearance. Use pins, scissors and other tools carefully to keep fabric flat and measure and cut accurately. Evaluate how well the final product meets the design criteria and suggest improvements.
Small Steps	Arch and beam bridges – To explore how to reinforce a beam (structure) to improve its strength. Spaghetti truss bridges – To build a spaghetti truss bridge. Building bridges – To measure, mark out and cut materials ready to build a truss bridge. Finalising bridges – To complete, reinforce and evaluate my truss bridge.	Automata – To create design criteria to meet a user's needs. Frame assembly – To use an exploded diagram to assemble a frame. Experimenting with cams – To explore a mechanism to inform a design decision. Finishing touches – To evaluate a completed design.	Deconstructing a Bag – To explore how pattern pieces are used to design and make fabric items. Pattern pieces – To use pattern piece templates to shape, cut and stitch fabric. Designing a Bag – To design a bag and create the prototype pattern pieces. Making a Bag Prototype – To create a prototype bag from a design sketch. Adding Features – To add features to a bag.
Key Vocabulary	accuracy, arch bridge, assemble, beam bridge, bench hook/vice, corrugation, factors, hardwood, joints, lamination, mark out, material properties, quality of finish, reinforce, rigid, sandpaper, softwood, tenon saw/coping saw, truss bridge	accurate, automata, axle, bench hook, cam, cam profile, component, cross-sectional diagram, dowel, evaluate, exploded diagram, follower, form, frame, function, housing, mechanism, storefront, visual	innovative, pattern piece, seam allowance, stitch, cut, shape, prototype, features