

 Upton Infant School		We Are  Designers		Progression Map: Brilliant Mechanics	
Upton Infant School's Design and Technology Curriculum Rationale					
Brilliant mechanics... • develop the creative, technical and practical expertise to perform everyday tasks confidently and participate successfully in an increasingly technological world • build and apply a repertoire of knowledge, understanding and skills in order to design and make high quality prototypes and products for a wide range of users • develop evaluation skills to critique, evaluate and test their ideas and products and the work of others					
Design and Technology Curriculum – Mechanics					
Reception		Year One		Year Two	
				Next steps (Year Three)	
Intent					
Brilliant mechanics in Reception will use a plan-do-review approach to making their own creations, exploring a variety of materials, e.g. junk modelling. Children will learn to use the scissors, glue and spatulas and tape. They will learn by trial and error and making mistakes, developing evaluation skills. This will be a particular focus in the ‘Crash, Bang Boom’ topic.		Brilliant mechanics in Year One will learn how to create their own moving pictures by exploring a variety of pictures involving levers and sliders to understand the key features.. Children will design and create their own moving picture involving levers and sliders for a purpose with a given design brief which they can then evaluate the success of their own moving picture against.		Brilliant mechanics in Year Two will be taught how wheels work and explore a variety of wheeled vehicles to understand the key features. They will learn how to use saws and bench hooks to create a vehicle with functioning wheels and axels. Brilliant mechanics will design and create their own wheeled vehicle for a purpose with a given design brief which they can evaluate the success of their vehicle against.	
Planning considerations for teachers					
• Are children given ample opportunity to practice and develop skills? • Are resources readily available and accessible for children to use, including in discovery time? • Are children given the opportunity to create for a purpose and to plan and review their creations?		• Are children given the chance to explore a variety of different moving pictures for themselves to identify the key features (e.g. pop-up books etc.?) • Are the children given ample opportunity to develop the necessary skills before entering the design and creation stage? • Are the appropriate tools and resources readily available? • Are children creating for a specific purpose?		• Are children given the chance to explore a variety of different vehicles, to deconstruct and explore them to understand the key features? • Are the children given ample opportunity to develop the necessary skills before entering the design and creation stage? • Are the appropriate tools and resources readily available? • Are the children creating for a specific purpose?	
Design Skills and knowledge					
Brilliant mechanics... • have a purpose in mind for their construction		Brilliant mechanics... 1• can design a moving picture for a purpose (to share with Reception children) 2• can draw and talk about their moving picture design		Brilliant mechanics... 1• can design a purposeful, functional and appealing vehicle based on design criteria 2• can generate, develop and communicate ideas for their vehicles through producing a drawing and talking about their design	
Creating skills and knowledge					
Brilliant mechanics... • use simple tools and techniques competently and appropriately •select tools and techniques needed to shape, assemble and join materials they are using •construct with a purpose in mind, using a variety of resources		Brilliant mechanics... 3• learn to use a range of tools (scissors, glue, tape) for cutting, shaping, joining and finishing. 4• can shape, cut and join a range of materials and components, including card, paper and fabric.		Brilliant mechanics... 3• know how to use saws, bench hooks and hand drills to cut, join and finish 4• can select from and use materials (including wood and card) and components (including wheels and dowel) according to the suitability of their characteristics	
Evaluation skills and knowledge					
Brilliant mechanics... •select appropriate resources and adapts work where necessary •develop their ideas through trial and error and learning from making mistakes •talk about their finished product and compare to their purpose		Brilliant mechanics... 5• know how pop-up books and books with moving elements work, exploring and evaluating a range of books 6• evaluate the success of their moving picture against design criteria		Brilliant mechanics... 5• know how wheels work by exploring and evaluate a range of different vehicles 6• can evaluate the success of their vehicle against their design	
Technical Skills and Knowledge					
Brilliant mechanics... • safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function		Brilliant mechanics... 7• can build structures, exploring how they can be made stronger, stiffer, more stable 8• can use levers and sliders to make a moving picture		Brilliant mechanics... 7• know how to make structures which are stronger, stiffer and more stable 8• know that wheels are attached to axels which can be fixed or moving	
Our promise to make DT learning brilliant					
• Children have the opportunity to create their work for a purpose and present to others, e.g. a show for parents		• Children will experience a wide range of pop-up books. • Children to share their moving picture with Reception children.		• Children have the opportunity to use a variety of tools, including saws, hand drills and bench hooks. • Children to take part in ‘Wacky Races’ to race their vehicles, which is videoed or parents are invited to.	

