

Coads Green Primary School DT Vertical Skills Progression Map

Checked by School Leader/I Key Stage Leader		Name/ Signature/ Date:		
Checked by Schoo	l Curriculum Leader	Name/ Signature/ Date:		
		I onsible for ensuring the delivery of the National Curriculum 14 intentions within the school. The school is required to of this Vertical Skills Progression Map. The school must complete an annual review of its School Vertical Progression tion of curriculum skills.		
		ing, learning evidence and pupil knowledge will take place as part of good practice by subject and school leaders vill be used to inform in school/ MAT CPD subject training.		
Curriculum Statement	Purpose of Study Design and technology is an inspiring, rigorous and practical subject. Using creativity and imagination, pupils design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. They acquire a broad range of subject			
National Curriculum 2014	knowledge and draw on disciplines such as mathematics, science, engineering, computing and art. Pupils learn how to take			
	Aims	sign and technology aims to ensure that all pupils:		
		technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in a		
		ertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for		
	 critique, evaluate and test their ideas and products and the work of others understand and apply the principles of nutrition and learn how to cook. Assessment By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant progra of study. 			

Key Stage 1

Subject Content

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home and school, gardens and playgrounds, the local community, industry and the wider environment].

Cooking and Nutrition Subject Content

As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life.

National Curriculum 2014 Key Stage 1				
Learning Intentions	Non-Statutory			
Pupils should be taught about:	Νοπ-στατάτοι γ			
Design design purposeful, functional, appealing products for themselves and other users based on design criteria generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology				
Make select from and use a range of tools and equipment to perform practical tasks select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics Evaluate explore and evaluate a range of existing products evaluate their ideas and products against design criteria Technical knowledge	 [for example, cutting, shaping, joining and finishing] 			
 build structures, exploring how they can be made stronger, stiffer and more stable explore and use mechanisms in their products. 				
 Cooking and Nutrition use the basic principles of a healthy and varied diet to prepare dishes understand where food comes from. 	 [for example, levers, sliders, wheels and axles], 			

		Learning Progression					
	Key Stage 1						
Designing	Progression Statement	Working Towards	Working At	Working Beyond			
	Understanding contexts, users and purposes	State what products they are designing and making Say whether their products are for themselves or other users	Work confidently within a range of contexts, such as imaginary, story-based, home, school, gardens, playgrounds, local community, industry and the wider environment Describe what their products are for Say how their products will work Use simple design criteria to help develop their ideas	Say how they will make their products suitable for their intended users			
	Generating, developing, modelling and communicating ideas	Generate ideas by drawing on their own experiences	Use knowledge of existing products to help come up with ideas Develop and communicate ideas by talking and drawing	Model ideas by exploring materials, components and construction kits and by making templates and mock-ups Use information and communication technology, where appropriate, to develop and communicate their ideas			
Making	Progression Statement	Working Towards	Working At	Working Beyond			
	Planning	Plan by suggesting what to do next	Select from a range of tools and equipment, explaining their choices	Select from a range of materials and components according to their characteristics			
	Practical skills and techniques	Begin to use procedures for safety and hygiene	Follow procedures for safety and hygiene	Confidently follow procedures for safety and hygiene. Explaining procedures to others.			

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		Use a materials and	Use materials and components,	
		components to make a product	including	Use a range of materials and
			construction materials and kits,	components, including
		Begin to assemble, join and	textiles, food ingredients	construction materials and kits,
		combine materials and	and mechanical components	textiles, food ingredients
		components		and mechanical components
			Measure, mark out, cut and	
			shape materials and	With increasing accuracy
			components	measure, mark out, cut and
				shape materials and
			Assemble, join and combine	components
			materials and components	
				With confidence assemble, join
			Use finishing techniques,	and combine materials and
			including those from art and	components
			design	
				Use finishing techniques,
				including those from art and
				design, explaining their
				reasoning.
Evaluating	Progression Statement	Working Towards	Working At	Working Beyond
	Own ideas and products	Talk about their design ideas	Make simple judgements about	Suggest how their products
	own acus and products	and what they are making	their products and ideas	could be improved based on the
		and what they are making	against design criteria	success criteria
			against design criteria	success criteria
	Existing products	Explain what products are	Explain what products are	Explain how products work
	5,			
		Who products are for	Who products are for	Suggest how products are used,
				giving reasons for their views
		What products are for	What products are for	
				Suggest where products might
			How products work	be used
			Suggest how products are used	Suggest what materials products
				are made from and suggesting
			Suggest where products might	why materials have been chosen
			Suggest where products might	wity materials have been chosen

			be used Suggest what materials products are made from Explain what they like and dislike about products	Explain what they like and dislike about products, giving reasons for their views
Technical Knowledge	Progression Statement	Working Towards	Working At	Working Beyond
	Making products work	Talk about the simple working characteristics of materials and components	Talk about the movement of simple mechanisms such as levers, sliders, wheels and axles Explain how freestanding structures can be made stronger, stiffer and more stable Know that a 3-D textiles product can be assembled from two identical fabric shapes	Know that food ingredients should be combined according to their sensory characteristics Know the correct technical vocabulary for the projects they are undertaking
Cooking and Nutrition	Progression Statement	Working Towards	Working At	Working Beyond
U	Where food comes from	Begin to recognise that all food comes from plants or animals Begin to recognise that food has to be farmed, grown elsewhere (e.g. home) or caught	Know that all food comes from plants or animals Know that food has to be farmed, grown elsewhere (e.g. home) or caught	Know and explain that all food comes from plants or animals, giving some examples Know and explain that food has to be farmed, grown elsewhere (e.g. home) or caught, giving
		caught		examples
	Food, preparation and cooking	Begin to name and sort foods into the five groups in the eat-well plate	Able to name and sort foods into the five groups in the eat-well plate	Confidentially able to name and sort a number of foods into the five groups in the eat-well plate
		Know that everyone should eat	Know that everyone should eat	Confidently able to explain why

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	at least five portions of	at least five portions of	everyone should eat at least five
	fruit and vegetables every day	fruit and vegetables every day,	portions of
		suggesting different fruits and	fruit and vegetables every day,
	Begin to know how to use	vegetables	suggesting different fruits and
	techniques such as cutting,		vegetables
	peeling and grating	Know how to prepare simple	
		dishes safely and	Able to explain how to prepare
		hygienically, without using a	simple dishes safely and
		heat source	hygienically, without using a
			heat source
		Know how to use techniques	
		such as cutting, peeling	Know how to use techniques
		and grating	such as cutting, peeling
			and grating and confidently carry
			these techniques out when
			producing a product.
	Key Stage 2		

Subject Content

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home, school, leisure, culture, enterprise, industry and the wider environment].

Cooking and Nutrition

As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life.

National Curriculum 2014 Key Stage 2					
Learning Intentions	Non-Statutory				
Pupils should be taught about					
Design					
 use research and develop design criteria to inform the design of 					
innovative, functional, appealing products that are fit for purpose, aimed					
at particular individuals or groups					
 generate, develop, model and communicate their ideas through 					
discussion, annotated sketches, cross-sectional and exploded diagrams,					

Make ∎		ces and computer-aided design ider range of tools and equipment	to perform			
•	select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities			 for example, [cutting, shaping, joining and finishing] 		
Evaluat						
		a range of existing products				
		I products against their own design	criteria and			
		hers to improve their work				
•	understand how key eve	ents and individuals in design and t	echnology have			
	helped shape the world					
Technic	al knowledge					
•	apply their understanding	ng of how to strengthen, stiffen and	d reinforce			
	more complex structure					
•	understand and use meenamed systems in their products			 [for example, gears, pulleys, cams, levers and linkages] 		
•		ctrical systems in their products		 [for example, series circuits incorporating switches, bulbs, buzzers and motors] 		
•		ng of computing to program, monit	or and control			
Cooking	their products. and Nutrition					
COOKIN		ne principles of a healthy and varie	d diat			
-		ety of predominantly savoury dishe				
	of cooking techniques	ety of predominantly savoury dishe	es using a range			
-	. .	and know where and how a variety	of ingredients			
	, are grown, reared, caug		0			
	· _ · _ · _ ·	•	Learning I	Progression		
			Lower K	ey Stage 2		
Designi	ng	Progression Statement	Working Towar	ds	Working At	Working Beyond
		Understanding contexts, users	Work within a ra		Work confidently within a	Develop their own design criteria
		and purposes	contexts, such a	s the	range of contexts, such as the	and use these to inform
			home, school, le	eisure, culture,	home, school, leisure, culture,	their ideas
			enterprise, indu	-	enterprise, industry and the	
			wider environm	ent	wider environment	
			Begin to describ	e the purpose	Describe the purpose of their	

		of their products	products	
		of their products	products	
			Indicate the design features of	
			their products that will appeal	
			to intended users	
			Explain how particular parts of	
			their products work	
			Gather information about the	
			needs and wants of particular	
			individuals and groups	
	Generating, developing,	Share and clarify ideas through	Share and clarify ideas through	Make design decisions that take
	modelling and communicating	discussion	discussion	account of the availability of
	ideas			resources
		Use annotated sketches, cross-	Model their ideas using	
		sectional drawings and	prototypes and pattern pieces	
		exploded diagrams to develop and communicate their ideas	Use annotated sketches, cross-	
		and communicate their ideas	sectional drawings and	
			exploded diagrams to develop	
			and communicate their ideas	
			Use computer-aided design to	
			develop and communicate	
			their ideas	
			Generate realistic ideas,	
			focusing on the needs of the	
			user	
Making	Progression Statement	Working Towards	Working At	Working Beyond
	Planning	Select tools and equipment	Select tools and equipment	Explain their choice of tools and
		suitable for the task	suitable for the task	equipment in relation to the
				skills and techniques they will be
		Select materials and	Begin to explain their choice of	using
		components suitable for the	tools and equipment in relation	

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		task	to the skills and techniques	Explain their choice of materials
			they will be using	and components according to
				functional properties and
			Select materials and	aesthetic qualities
			components suitable for the	
			task	Confidently order the main stages of making
			Begin to explain their choice of	stages of making
			materials and components	
			according to functional	
			properties and aesthetic	
			qualities	
			Order the main stages of	
			making	
	Practical shills and to shairwas		Follow procedures for safety	Connectly follow and codyness for
	Practical skills and techniques	Follow procedures for safety		Correctly follow procedures for
		and hygiene	and hygiene	safety and hygiene
		Use materials and components	Use a wider range of materials	Confidently use a wider range of
		from KS1	and components than KS1,	materials and components than
		110111 K31	including construction	KS1, including construction
		Measure, mark out, cut and	materials and kits, textiles,	materials and kits, textiles, food
		shape materials and	food ingredients, mechanical	ingredients, mechanical
				-
		components	components and electrical	components and electrical
		Accomble join and combine	components	components
		Assemble, join and combine	Maagura mark out out and	With accuracy maccura marth
		materials and components	Measure, mark out, cut and	With accuracy measure, mark
		Apply a finishing technique	shape materials and	out, cut and shape materials and
			components with	components
			some accuracy	With accuracy accomble isis
				With accuracy assemble, join and combine materials and
			Assemble, join and combine	
			materials and components with	components
			some accuracy	
				Apply a range of finishing
			Apply a range of finishing	techniques, including those from

			techniques	art and design, with some accuracy
Evaluating	Progression Statement	Working Towards	Working At	Working Beyond
	Own ideas and products	Identify the strengths and areas for development in their products	Identify the strengths and areas for development in their ideas and products Consider the views of others to improve their work Refer to their design criteria as they design and make Use their design criteria to evaluate their completed products	Consider the views of others, including intended users, to improve their work Refer to their design criteria as they design and make to inform the marking process Use their design criteria to evaluate their completed products considering the intended user
	Existing products	 Investigate and analyse: How well products have been designed How well products have been made Why materials have been chosen How well products work How well products achieve their purposes When products were designed and made Whether products can be recycled or reused 	 Investigate and analyse: How well products have been designed How well products have been made Why materials have been chosen What methods of construction have been used How well products work How well products achieve their purposes How well products meet user needs and wants Who designed and made the products? Where products were designed and made 	 Investigate and analyse: How well products have been designed for the intended user How well products have been made, based on research. Why materials have been chosen. Explaining their reasoning. What methods of construction have been used. Considering if other methods of construction would have been better. How well products work How well products achieve their purposes for the intended user

			 When products were designed and made Whether products can be recycled or reused 	 How well products meet user needs and wants Who designed and made the products? Where products were designed and made and whether this has impacted on the product outcome When products were designed and made and whether this has impacted on the product outcome When products can be recycled or reused and its impact on the environment
	Key events and individuals	Begin to know of inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products	Know inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products	Confidently talk about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products
Technical Knowledge	Progression Statement	Working Towards	Working At	Working Beyond
	Making things work	That materials can be combined and mixed to create more useful characteristics That materials have both functional properties and aesthetic qualities	How to use learning from science to help design and make products that work How to use learning from mathematics to help design and make products that work The correct technical vocabulary for the projects they are undertaking How mechanical systems such as levers and linkages or pneumatic systems create	That mechanical and electrical systems have an input, process and output How to program a computer to control their products

			Ι	
			movement	
			How simple electrical circuits	
			and components can be used	
			to create functional products	
			How to make strong, stiff shell	
			structures	
			structures	
			That a single fabric shape can	
			be used to make a 3D textiles	
			product	
			That food ingredients can be	
			fresh, pre-cooked and	
			processed	
Cooking and Nutrition	Progression Statement	Working Towards	Working At	Working Beyond
	Where food comes from	Is aware that that a recipe can	That a recipe can be adapted a	That a recipe can be adapted a
		be adapted a by adding or	by adding or substituting one	by adding or substituting one
		substituting one or more	or more ingredients	or more ingredients to change
		ingredients		the flavour to the product
			That food is grown (such as	
		That food is grown, reared and	tomatoes, wheat and	That food is grown (such as
		caught in the UK, Europe and	potatoes), reared (such as pigs,	tomatoes, wheat and
		the wider world	chickens and cattle) and caught	potatoes), reared (such as pigs,
			(such as fish) in the UK, Europe	chickens and cattle) and caught
			and the wider world	(such as fish) in the UK, Europe
				and the wider world. Giving
				reasoning why food can be
				sourced in different countries.
	Food preparation, cooking and	Beginning to know how to	Knows how to prepare and	Can confidently prepare and
	nutrition	prepare and cook a savoury	cook a variety of predominantly	cook a variety of predominantly
		dish safely and hygienically	savoury dishes safely and	savoury dishes safely and
		including, where appropriate,	hygienically including, where	hygienically including, where
		the use of a heat source	appropriate, the use of a heat	appropriate, the use of a heat
			source	source

		Starting to know techniques		
		such as peeling, chopping,	Knows how to use a range of	Is able to use a range of
		slicing, grating, mixing,	techniques such as peeling,	techniques such as peeling,
		spreading, kneading and baking	chopping, slicing, grating,	chopping, slicing, grating, mixing,
			mixing, spreading, kneading	spreading, kneading and baking
		Is aware that a healthy diet is	and baking	
		made up from a variety and		Explains that a healthy diet is
		balance of different food and	Knows that a healthy diet is	made up from a variety and
		drink, as depicted in the eat-	made up from a variety and	balance of different food and
		well plate	balance of different food and	drink, as depicted in the eat-well
			drink, as depicted in the eat-	plate
		That to be active and healthy	well plate	plate
		food and drink are needed to	wen plate	Can explain that to be active and
		provide energy for the body	Can explain that to be active	healthy food and drink are
		provide energy for the body	and healthy food and drink are	needed to provide energy for the
			-	
			needed to provide energy for	body giving explanations about
			the body	why
		Learning Progression		
		Upper Key Stage 2	1	
Designing	Progression Statement	Working Towards	Working At	Working Beyond
	Understanding contexts, users	Describe the purpose of their	Work confidently within a	Work confidently within a range
	and purposes	products	different context, such as the	of contexts, such as the
			home, school, leisure, culture,	home, school, leisure, culture,
		Indicate the design features of	enterprise, industry and the	enterprise, industry and the
		their products that will appeal	wider environment	wider environment
		to intended users		
			Describe the purpose of their	Describe the purpose of their
		Develop a simple design	products	products to an audience using
		specification to guide their		persuasive techniques
		thinking	Consider the design features of	
			their products that will appeal	Indicate the design features of
			to intended users	their products that will appeal to
				intended users
			Think about how particular	
			parts of their products work	Explain how particular parts of
				their products work

		Carry out research, using surveys, interviews, questionnaires and web-based resources Consider the needs, wants, preferences and values of particular individuals and groups Develop a simple design specification to guide their thinking	Carry out in depth research, using surveys, interviews, questionnaires and web-based resources Identify and explain their needs, wants, preferences and values of particular individuals and groups Develop a design specification to guide their thinking
Generating, developing, modelling and communicating ideas	Share through discussion Begin to model their ideas using prototypes and pattern pieces Begin to use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas Generate ideas for products	 Share and clarify ideas through discussion Model their ideas using prototypes and pattern pieces Use annotated sketches, crosssectional drawings and exploded diagrams to develop and communicate their ideas Use computer-aided design to develop and communicate their ideas Generate innovative ideas Make design decisions, taking account of constraints such as time and resources 	Share and clarify ideas through discussion, taking on board the views of others Model their ideas using prototypes and pattern pieces, exploring many different approaches Confidently use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas Confidently use computer-aided design to develop and communicate their ideas Generate innovative ideas, drawing on research Make design decisions, taking

				account of constraints such as time, resources and cost
Making Pro	ogression Statement	Working Towards	Working At	Working Beyond
Pla	anning	Select tools and equipment suitable for the task	Select tools and equipment suitable for the task	Explain their choice of tools and equipment in relation to the skills and techniques they will be
		Select materials and components suitable for the	Explain their choice of tools and equipment in relation to	using
		task	the skills and techniques they will be using	Confidently select materials and components suitable for the
		Explain their choice of		task, naming the specific name
		materials and components	Select materials and components suitable for the	of the materials and components
		Produce appropriate lists of tools, equipment and materials	task	Explain their choice of materials and components according to
		that they need	Explain their choice of materials and components according to functional	functional properties and aesthetic qualities
			properties	Produce appropriate lists of tools, equipment and materials
			Request appropriate tools, equipment and materials that	that they need
			they need	Formulate step-by-step plans as a guide to making for others to
			Formulate step-by-step plans as a guide to making	confidently follow
Pro	actical skills and techniques	Know the procedures for safety and hygiene	Follow procedures for safety and hygiene	Follow procedures for safety and hygiene and supporting others to do so
		Use a wider range of materials	Use a wider range of materials	
		and components than KS1	and components than KS1, including construction	Accurately use a wider range of materials and components than
		Measure, mark out, cut and	materials and kits, textiles,	KS1, including construction
		shape materials and components	food ingredients, mechanical components and electrical components	materials and kits, textiles, food ingredients, mechanical components and electrical

	Assemble, join and combine		components
	materials and components	Accurately measure, mark out,	
		cut and shape materials and	Accurately measure, mark out,
	Apply a range of finishing	components	cut and shape materials and
	techniques, including those		components to fine
	from art and design	Accurately assemble, join and combine materials and	measurements
	Begin to use techniques that	components	Accurately assemble, join and
	involve a number of steps		combine materials and
		Accurately apply a range of	components to fine
		finishing techniques, including	measurements
		those from art and design	
			Accurately apply a range of
		Use techniques that involve a	finishing techniques suitable for
		number of steps	the product, including those
			from art and design
		Demonstrate resourcefulness	5
		when tackling practical	Confidently use techniques that
		problems	involve a number of steps
			Demonstrate resourcefulness
			when tackling practical problems
			and showing support to others
Own ideas and products	Identify the strengths and areas	Identify the strengths and areas	Identify the strengths and areas
	for development in their ideas	for development in their ideas	for development in their ideas
		and products	and products and use this to
	Consider the views of others,		refine their products
	including intended users, to	Consider the views of others,	
	improve their work	including intended users, to	Consider the views of others,
		improve their work	including intended users, to
	Begin to evaluate their ideas		improve their work and use this
	and products against their	Begin to critically evaluate the	to refine their products
	original design specification	quality of the design,	
		manufacture and fitness for	Critically evaluate the quality of
		purpose of their products as	the design, manufacture and
			fitness for purpose of their

Existing pro	 Investigate and analyse: How well products have been designed How well products have been made Why materials have been chosen What methods of construction have been 	 Evaluate their ideas and products against their original design specification Investigate and analyse: How well products have been designed How well products have been made Why materials have been chosen What methods of construction have been 	 products as they design and make Evaluate their ideas and products against their original design specification, identifying successes and next steps Investigate and analyse: How sustainable the materials in products are What impact products have beyond their intended purpose
	 used How well products work How well products achieve their purposes How well products meet user needs and wants 	 used How well products work How well products achieve their purposes How well products meet user needs and wants How much products cost to make How innovative products are How sustainable the materials in products are What impact products have beyond their intended purpose 	
Key events of	Talk about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking	Investigate different inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking	Independently explore inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking

		products	products	products
Technical Knowledge	Progression Statement	Working Towards	Working At	Working Beyond
	Making products work	How to use learning from science to help design and make products that work How to use learning from mathematics to help design and make products that work That materials have both functional properties and aesthetic qualities	That mechanical and electrical systems have an input, process and output The correct technical vocabulary for the projects they are undertaking How more complex electrical circuits and components can be used to create functional	How to program a computer to monitor changes in the environment and control their products How to reinforce and strengthen a 3D framework
		That materials can be combined and mixed to create more useful characteristics How mechanical systems such as cams or pulleys or gears create movement	products That a 3D textiles product can be made from a combination of fabric shapes That a recipe can be adapted by adding or substituting one or more ingredients	
Cooking and Nutrition	Progression Statement	Working Towards	Working At	Working Beyond
	Where food comes from	That a recipe can be adapted a by adding or substituting one or more ingredients That food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world	That seasons may affect the food available How food is processed into ingredients that can be eaten	Explain that seasons may affect the food available, recognise what foods are available in different seasons How food is processed into ingredients that can be eaten or used in cooking
	Food preparation, cooking and nutrition	How to prepare and cook a variety of predominantly	That recipes can be adapted to change the appearance,	Knowing that recipes can be adapted to change the

savoury dishes safely and	taste, texture and aroma	appearance, taste, texture and
hygienically including, where	That different food and drink	aroma, put this into practice in
appropriate, the use of a heat	contain different substances	their own cooking
source		
		That different food and drink
How to use a range of		contain different substances –
techniques such as peeling,		nutrients, water and fibre – that
chopping, slicing, grating,		are needed for health
mixing, spreading, kneading		
and baking		