SPRING TERM 20	21 - 22 YEAR 5		
Breadth	Threshold Concept	Milestone 3 Yr 5 and Yr6	Activities (that relate to Threshold Concepts and the Milestone indicators)
History			
Tudors	Investigate and interpret evidence Build an	 Use sources of evidence to deduce information about the past. Select suitable sources of evidence, giving reasons for choices. Use sources of information to form testable hypotheses about the past. Seek out and analyse a wide range of evidence in order to justify claims about the past. Show an awareness of the concept of propaganda and how historians must understand the social context of evidence studied. Understand that no single source of evidence gives the full answer to questions about the past. Refine lines of enquiry as appropriate. Identify continuity and change in the history of the locality of the school. 	 Explorers throughout History (Page 26 – 27) Name as many explorers as you can. Label a timeline to show when these events happened. Why are explorers significant in the history of Britain? What is the difference between exploration and migration? Explain the advantages of exploration. Learn about key explorers, such as Christopher Columbus, Sir Francis Drake, Roald Amundsen, Emilia Earhart, Neil Armstrong. List resources that explorers brought back from their journeys. Suggest reasons why the kings and queens of Europe encouraged explorers to sail to new worlds. Suggest some reasons why most explorers in history have been men. What was the impact on British society of exploration in the 16th and 17th centuries? Key Vocabulary – exploration, significant, centuries, resources, civilisations, expanded
	overview of world history	 Give a broad overview of life in Britain from medieval until the Tudor and Stuarts times. Compare some of the times studied with those of the other areas of interest around the world. 	

		Describe the social, ethnic, cultural or
		religious diversity of past society.
		 Describe the characteristic features of the
		past, including ideas, beliefs, attitudes and
		experiences of men, women and children.
	iderstand ronology	 Describe the main changes in a period of history (using terms such as: social, religious, political, technological and cultural).
		• Identify periods of rapid change in history and contrast them with times of relatively little change.
		• Understand the concepts of continuity and change over time, representing them, along with evidence, on a time line.
		 Use dates and terms accurately in describing events.
	mmunicate	Use appropriate historical vocabulary
hist	storically	to communicate, including:
		• dates
		• time period
		• era
		• chronology
		• continuity
		• change
		• century
		• decade

		• legacy.	
		• Use literacy, numeracy and computing skills to an exceptional standard in order to communicate information about the past.	
		Use original ways to present information and ideas.	
Geograp	hv		
Maps	Investigate places	 Collect and analyse statistics and other information in order to draw clear conclusions about locations. Identify and describe how the physical features affect the human activity within a location. Use a range of geographical resources to give detailed descriptions and opinions of the characteristic features of a location. Use different types of fieldwork sampling (random and systematic) to observe, measure and record the human and physical features in the local area. Record the results in a range of ways. Analyse and give views on the effectiveness of different geographical representations of a location (such as aerial images compared with maps and topological maps - as in London's Tube map). Name and locate some of the countries and cities of the world and their identifying human and physical characteristics, including hills, mountains, rivers, key topographical features and land-use patterns; and understand how some of these aspects have changed over time. Name and locate the countries of North and South 	Ocean currents (pg 146-147) What is an ocean current? What creates an ocean current? What are gyres? Look at the rotation of gyres in the N and S hemispheres. Identify and map the main ocean currents of the world. Find out about the effect the ocean currents have on world weather patterns. What is the Gulf Stream and how does it affect UK weather? Investigate the Great Pacific Garbage Patch. What is it? Why is it there/ What causes it? Plastic pollution: what can we do about it?
		Name and locate the countries of North and South America and identify their main physical and human characteristics.	

Investigate patterns	of latitude, longitude, Equator, Northern Hemisphere, Southern Hemisphere, the Tropics of Cancer and Capricorn, Arctic and Antarctic Circle,	
	 and time zones (including day and night). Understand some of the reasons for geographical similarities and differences between countries. 	
	 Describe how locations around the world are changing and explain some of the reasons for change. 	
	 Describe geographical diversity across the world. Describe how countries and geographical 	
	regions are interconnected and interdependent.	
Communica geographica	ally	
	• physical geography , including: climate zones, biomes and vegetation belts, rivers, mountains, volcanoes and earthquakes and the water cycle.	
	• human geography, including: settlements, land use, economic activity including trade links, and the distribution of natural resources including energy, food, minerals, and water supplies.	
	 Use the eight points of a compass, four-figure grid references, symbols and a key (that uses standard Ordnance Survey symbols) to communicate knowledge of the United Kingdom and the world. 	
	 Create maps of locations identifying patterns (such as: land use, climate zones, population densities, height of land). 	

Art & Design

	Develop ideas	Develop and imaginatively extend ideas from starting points throughout the curriculum.	Textiles
		Collect information, sketches and resources	Lesson 1. Paysaguy Tanochy, halls and discuss
		and present ideas imaginatively in a sketch	Lesson 1 – Bayeaux Tapestry talk and discuss
Surrealism		book.	Show the children a selection of pictures and see if
		Use the qualities of materials to enhance	they can create a story related to the images. Why
		ideas.	do they think this was made? Tell them the actual
		Spot the potential in unexpected results as	story.
		work progresses.	Lesson 2 – Read a story and discuss (story broken
		Comment on artworks with a fluent grasp of	into x amount of parts) Read through a story with the
		visual language.	children (story to be decided at Feb half term, but
	Master	Painting	perhaps The Three Little Pigs/Red Riding Hood)
	Techniques	Sketch (lightly) before painting to combine	Lesson 3 – Practise skills of sewing/ What worked
	recimiques	line and colour.	well? Complete sewing materials on to fabric, so
		Create a colour palette based upon colours	that the children can practise their skills. Children to
		observed in the natural or built world.	have created their plans working with their group to
		Use the qualities of watercolour and acrylic	make decisions on colours etc for specific
		paints to create visually interesting pieces.	characters.
		Combine colours, tones and tints to enhance	
		the mood of a piece.	Lesson 4 - Practical session Children to complete
		Use brush techniques and the qualities of	their segment of the story.
		paint to create texture.	Lesson 5 – Practical session Children to continue with
		 Develop a personal style of painting, drawing 	and complete their piece of work. Put the work
		upon ideas from other artists.	together to see the whole story.
		Collage	
		 Mix textures (rough and smooth, plain and 	
		patterned).	
		 Combine visual and tactile qualities. 	
		Use ceramic mosaic materials and techniques.	
		Sculpture	
		Show life-like qualities and real-life	
		proportions or, if more abstract, provoke	
		different interpretations.	
		 Use tools to carve and add shapes, texture 	
		and pattern.	
		 Combine visual and tactile qualities. 	
		 Use frameworks (such as wire or moulds) to 	
		provide stability and form.	
		Drawing	

 Use a variety of techniques to add interesting effects (e.g. reflections, shadows, direction of sunlight). Use a choice of techniques to depict movement, perspective, shadows and reflection. Choose a style of drawing suitable for the work (e.g. realistic or impressionistic). Use lines to represent movement. Print Build up layers of colours.
 perspective, shadows and reflection. Choose a style of drawing suitable for the work (e.g. realistic or impressionistic). Use lines to represent movement. Print
Use lines to represent movement.Print
Print
Build up layers of colours.
Create an accurate pattern, showing fine detail.
Use a range of visual elements to reflect the purpose of the work.
Textiles
• Show precision in techniques.
Choose from a range of stitching techniques.
• Combine previously learned techniques to create pieces.
Digital Media • Enhance digital media by editing (including sound, video, animation, still images and installations).
• Give details (including own sketches) about the style of some notable artists, artisans and designers. • Show how the work of those studied was influential in both society and to other artists.

· Create original pieces that show a rar	nge of
influences and styles.	

Design & Technology

Master practical skills

Food

- Understand the importance of correct storage and handling of ingredients (using knowledge of microorganisms).
- Measure accurately and calculate ratios of ingredients to scale up or down from a recipe.
- Demonstrate a range of baking and cooking techniques.
- Create and refine recipes, including ingredients, methods, cooking times and temperatures.

Materials

- Cut materials with precision and refine the finish with appropriate tools (such as sanding wood after cutting or a more precise scissor cut after roughly cutting out a shape).
- Show an understanding of the qualities of materials to choose appropriate tools to cut and shape (such as the nature of fabric may require sharper scissors than would be used to cut paper).

Textiles

• Create objects (such as a cushion) that employ a seam allowance.

Making a pencil case

Week 1 - Design criteria.

To 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 in the context of creating a design criteria for a

pencil case.

Week 2 - Designing

To generate, develop, **model and communicate** their ideas through discussion, **annotated sketches**, cross-sectional and exploded diagrams in the context of making a paper **template** for a pencil case.

Week 3 – Making a template and investigate stitches.

To generate, develop and communicate their ideas through discussion, **prototypes** and **pattern** pieces in the context of making a paper **template** for a pencil case. Start **stitches** if there is time - To generate, develop, model and communicate their ideas through prototypes in the context of **practising** different stitches to inform the final design.

Week 4 - Practise stitches

Continue with practising stitches – the children need to be confident with a **blanket stitch** and **running stitch** to ensure that they can complete the pencil case.

Week 5 – Start the decorating process, begin sewing if time.

	 Join textiles with a combination of stitching techniques (such as back stitch for seams and running stitch to attach decoration). Use the qualities of materials to create suitable visual and tactile effects in the decoration of textiles 	To select from and use a wider range of materials and components, including textiles, according to their functional properties and aesthetic qualities in the context of selecting decorative techniques and fastenings for felt pencil cases.
	 (such as a soft decoration for comfort on a cushion). Electricals and electronics Create circuits using electronics kits that employ a number of components (such as LEDs, resistors, transistors and chips). 	Week 6 – Complete making the pencil case and review the work. To complete the pencil case and then evaluate their work based on the criteria decided upon at the start.
	Computing • Write code to control and monitor models or products.	
	Construction • Develop a range of practical skills to create products (such as cutting, drilling and screwing, nailing, gluing, filing and sanding).	
	Mechanics	
	Convert rotary motion to linear using cams.	
	Use innovative combinations of electronics (or computing) and mechanics in product designs.	
Design, make, evaluate and improve	 Design with the user in mind, motivated by the service a product will offer (rather than simply for profit). 	
	Make products through stages of prototypes, making continual refinements.	
	 Ensure products have a high quality finish, using art skills where appropriate. 	
	• Use prototypes, cross-sectional diagrams and computer aided designs to represent designs.	

Take i from o throug histor	of instreason y • Cre upon • Eva	mbine elements of design from a range spirational designers throughout history, giving ons for choices. eate innovative designs that improve existing products. aluate the design of products so as to suggest overments to the user experience.	
Science			
Work	• Use and r • Tak scien and r • Recusing keys, • Repwritte involv • Preprese • Use up fu • Use ideas	n enquiries, including recognising controlling variables where necessary. e appropriate techniques, apparatus, materials during fieldwork and laboratory work. The measurements, using a range of tific equipment, with increasing accuracy precision. The cord data and results of increasing complexity is scientific diagrams and labels, classification is tables, bar and line graphs, and models. The proof of the comparations of increasing complexity is scientific diagrams and labels, classification is tables, bar and line graphs, and models. The proof of the comparations of increasing complexity is scientific and the explanations of results, explanations wing causal relationships, and conclusions. The test results to make predictions to set in the comparation of t	Famous Scientists Lesson 1 / 2 – David Attenborough Lesson 3 / 4 – Eva Crane Lesson 5 / 6 – Leonardo da Vinci

Understan plants	• Relate knowledge of plants to studies of evolution and inheritance.	
	• Relate knowledge of plants to studies of all living things.	
Understan	Describe the changes as humans develop to old	
animals ar	nd age.	
humans	• Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood.	
	• Recognise the importance of diet, exercise, drugs and lifestyle on the way the human body functions.	
	Describe the ways in which nutrients and water	
	are transported within animals, including humans.	
Investigate things		
	• Describe the life process of reproduction in some plants and animals.	
	 Describe how living things are classified into broad groups according to common observable characteristics. 	
	Give reasons for classifying plants and animals based on specific characteristics.	
Understan evolution inheritanc	and time and that fossils provide information about living	
	 Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. 	

		T
	 Identify how animals and plants are adapted to 	
	suit their environment in different ways and that	
	adaptation may lead to evolution.	
Investigate	Compare and group together everyday materials	
Investigate		
materials	based on evidence from comparative and fair tests,	
	including their hardness, solubility, conductivity	
	(electrical and thermal), and response to magnets.	
	Understand how some materials will dissolve	
	in liquid to form a solution and describe how	
	to recover a substance from a solution.	
	Use knowledge of solids, liquids and gases	
	to decide how mixtures might be	
	separated, including through filtering, sieving	
	and evaporating.	
	Give reasons, based on evidence from comparative	
	and fair tests, for the particular uses of everyday	
	materials, including metals, wood and plastic.	
	Demonstrate that dissolving, mixing and changes	
	of state are reversible changes.	
	or state are reversible changes.	
	- Evaluin that same shanges result in the formation	
	• Explain that some changes result in the formation	
	of new materials, and that this kind of change is not	
	usually reversible, including changes associated with	
	burning, oxidisation and the action of acid on	
	bicarbonate of soda.	
Understand the	Describe the movement of the Earth, and other	
Earth's	planets, relative to the Sun in the solar system.	
movement in	Describe the movement of the Moon relative to the	
space	Earth.	
	Laiui.	
	Describe the Con- Fronts LM	
	Describe the Sun, Earth and Moon as	
	approximately spherical bodies.	
	Use the idea of the Earth's rotation to explain day	
	and night and the apparent movement of the sun	
	across the sky.	

Understand electrical circuits	 Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit. Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches. Use recognised symbols when representing a simple circuit in a diagram. 	
Understand movement, forces and magnets.	 Magnets Describe magnets as having two poles. Predict whether two magnets will attract or repel each other, depending on which poles are facing. Forces 	Lesson 1 – Identifying push and pulls Lesson 2 – Isaac Newton. Gravity. Mass and Weight Lesson 3 – Investigation. Craters created by drop Lesson 4 – Parachute investigation Lesson 5 – Boat race investigation Lesson 6 – Mechanisms – gears/pulleys/springs
	 Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. Identify the effect of drag forces, such as air resistance, water resistance and friction that act between moving surfaces. 	
	 Describe, in terms of drag forces, why moving objects that are not driven tend to slow down. Understand that force and motion can be transferred through mechanical devices such as gears, pulleys, levers and springs. Understand that some mechanisms including levers, pulleys and gears, allow a smaller force to have a greater effect. 	

Investigate sound and hearing	 Understand that light appears to travel in straight lines. Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eyes. Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them, and to predict the size of shadows when the position of the light source changes. Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes. Find patterns between the pitch of a sound and features of the object that produced it. Find patterns between the volume of a sound and the strength of the vibrations that produced it. Recognise that sounds get fainter as the distance 	
	from the sound source increases	
Computing		
Code	 Set IF conditions for movements. Specify types of rotation giving the number of degrees. Change the position of objects between screen layers (send to back, bring to front). Upload sounds from a file and edit them. Add effects such as fade in and out and control their implementation. Combine the use of pens with movement to create interesting effects. Set events to control other events by 'broadcasting' information as a trigger. Use IF THEN ELSE conditions to control events or objects. 	Spring 1 – Video editing Lesson 1 – Learn about the history of moving images and video. What are the benefits of adding audio? Lesson 2 – Identify devices and apps that record audio and video. What are the pros and cons of these devices? Lesson 1 – What makes a good website? Review existing website and its structure. Lesson 2 – How would you lay out a web page? Plan the features of a web page

 Use a range of sensing tools (including proximity, user inputs, loudness and mouse position) to control events or actions. Use lists to create a set of variables. Use the Boolean operators () < () () = () () > () ()and() ()or() Not() to define conditions. Use the Reporter operators () + () () - () () * () () / () to perform calculations. Pick Random () to () Letter () of () 	Lesson 3 – Copyright or copyWRONG – consider the ownership and use of images. Lesson 4 – How does my webpage look? Recognise the need to preview a webpage. Lesson 5 – Follow the breadcrumbs – what is a navigation path? Outline the need for a navigation path. Lesson 6 – Think before you link. Recognise the implications of linking to content owned by other people.
Letter () of ()	

	Length of ()	
	() Mod () This reports the remainder	
	after a division calculation	
	Round ()	
	() of ().	
Connect	 Collaborate with others online on sites approved and moderated by teachers. 	
	• Give examples of the risks of online communities and demonstrate knowledge of how to minimise risk and report problems.	
	• Understand and demonstrate knowledge that it is illegal to download copyrighted material, including music or games, without express written permission, from the copyright holder.	
	• Understand the effect of online comments and show responsibility and sensitivity when online.	
	 Understand how simple networks are set up and used. 	
Communi	 Choose the most suitable applications and devices for the purposes of communication. 	
	 Use many of the advanced features in order to create high quality, professional or efficient communications. 	
Collect	 Select appropriate applications to devise, construct and manipulate data and present it in an effective 	Spring Term 2 – Flat-file databases
	and professional manner.	Creating a paper-based database – paper version of a database.
		2. Computer databases – examine how data can be stored and
		viewed. 3. Using a database – grouping records
		4. Using search tools - use search techniques within a database

			5. Comparing data visually - what makes a chart useful and how it can be used to compare data.6. Databases in real life - real life data base to ask and answer questions.
Music			
Vocab Unit 1 Minims, crotchets, dotted crochets, quavers, Legato, staccato, solo, tempo, allegro, adagio Dynamics - loud (forte) and quiet (piano), getting louder (crescendo)and	Perform	 Sing or play from memory with confidence. Perform solos or as part of an ensemble. Sing or play expressively and in tune. Hold a part within a round. Sing a harmony part confidently and accurately. Sustain a drone or a melodic ostinato to accompany singing. Perform with controlled breathing (voice) and skillful playing (instrument). 	Charanga unit – How does music bring us together. Lesson 1 – Ghost Parade Lesson 2 – Ghost Parade Lesson 3 – Words can hurt Lesson 4 – Words can hurt Lesson 5 – Joyful, Joyful Lesson 6 – Joyful, Joyful Performing Ghost Parade; Words can hurt; Joyful, Joyful Composing C, G, Ab, Bb Improvising Using the glockenspiel and recorder Ukulele lessons – Taught by Mrs Harwood - LMS
getting quieter (decrescendo)	Compose	 Create songs with verses and a chorus. Create rhythmic patterns with an awareness of timbre and duration. Combine a variety of musical devices, including melody, rhythm and chords. Thoughtfully select elements for a piece in order to gain a defined effect. Use drones and melodic ostinati (based on the pentatonic scale). 	

	Convey the relationship between the lyrics and the melody.	
	 Use digital technologies to compose, edit and refine pieces of music. 	
Transcribe	 Use the standard musical notation of crotchet, minim and semibreve to indicate how many beats to play. 	
	Read and create notes on the musical stave.	
	Understand the purpose of the treble and bass clefs and use them in transcribing compositions.	
	• Understand and use the # (sharp) and ♭ (flat) symbols.	
	Use and understand simple time signatures.	
Describe music	 Choose from a wide range of musical vocabulary to accurately describe and appraise music including: pitch dynamics tempo timbre texture lyrics and melody sense of occasion expressive solo rounds harmonies accompaniments drones cyclic patterns combination of musical elements cultural context. 	Ukulele lessons – Taught by Mrs Harwood - LMS
	Describe how lyrics often reflect the cultural context of music and have social meaning	

Develop practical skills in order to participate, compete and lead a healthy lifestyle

Gymnastics

Create complex and well-executed **sequences** that include a full range of movements including:

- travelling balances swinging springing
- flight vaults inversions rotations
- bending, stretching and twisting gestures
- linking skills.
- Hold shapes that are strong, fluent and expressive.
- Include in a sequence set pieces, choosing the most appropriate linking elements.
- Vary speed, direction, level and body rotation during floor performances.
- Practise and refine the gymnastic techniques used in performances (listed above).
- Demonstrate good kinesthetic awareness (placement and alignment of body parts is usually good in well-rehearsed actions).
- Use equipment to vault and to swing (remaining upright).

Games

Choose and combine techniques in game situations (running, throwing, catching, passing, jumping and kicking, etc.).

Gymnastics – GetSet4PE

Lesson 1 – To be able to perform symmetrical and asymmetrical balances.

Lesson 2 – To develop the straight, forward, straddle and backward roll.

Lesson 3 – To develop the straight, barrel, forward, straddle and backward roll.

Lesson 4 – To be able to explore different methods of travelling, linking actions in both canon and synchronisation.

Lesson 5 – To be able to perform progressions of inverted movements.

Lesson 6 – To be able to perform progressions of a handstand.

Lesson 7 – To explore matching and mirroring using actions both on the floor and on apparatus.

Lesson 8 - To be able to create a partner sequence using apparatus.

Dodgeball – GetSet4PE

Lesson 1 To recap on the rules of dodgeball and apply them to a game.

Lesson 2 – To develop throwing at a moving target.

Lesson 3 – To use jumps, dodges and ducks to avoid being hit.

Lesson 4 – To develop catching to get an opponent out.

Lesson 5 – To learn to block using a dodgeball.

Lesson 6 – To select and apply tactics in the game.

Lesson 7 – To develop officiating skills and referee a dodgeball game.

Lesson 8 - To apply skills, rules and tactics to a dodgeball tournament.

Swimming – taught by the staff at the Meres Leisure centre

		 Work alone, or with team mates in order to gain points or possession. Strike a bowled or volleyed ball with accuracy. Use forehand and backhand when playing racket games. Field, defend and attack tactically by anticipating the direction of play. Choose the most appropriate tactics for a game. Uphold the spirit of fair play and respect in all competitive situations. Lead others when called upon and act as a good role model within a team. 	
R.E			
	Understand beliefs and teachings	Explain how some teachings and beliefs are shared between religions. Explain how religious beliefs shape the lives of individuals and communities.	Being Human: How does faith and belief affect the way people live their lives? (See separate detailed plan for RE)
	Understand practices and lifestyles	Explain the practices and lifestyles involved in belonging to a faith community. Compare and contrast the lifestyles of different faith groups and give reasons why some within the same faith may adopt different lifestyles.	

RSE & PSED	Understand how beliefs are conveyed	Show an understanding of the role of a spiritual leader. Explain some of the different ways that individuals show their beliefs.	
Families and friendships	Attraction to others; romantic relationships; civil partnership and marriage	what makes a healthy friendship and how they make people feel included strategies to help someone feel included about peer influence and how it can make people feel or behave the impact of the need for peer approval in different situations, including online strategies to manage peer influence and the need for peer approval e.g. exit strategies, assertive communication that it is common for friendships to experience challenges strategies to positively resolve disputes and reconcile differences in friendships that friendships can change over time and the benefits of having new and different types of friends how to recognise if a friendship is making them feel unsafe, worried, or uncomfortable when and how to seek support in relation to friendships	
Safe relationships	Recognising and managing pressure; consent in different situations	to identify what physical touch is acceptable, unacceptable, wanted or unwanted in different situations • how to ask for, give and not give permission for physical contact • how it feels in a person's mind and body when they are uncomfortable • that it is never someone's fault if they have experienced unacceptable contact • how to respond to unwanted or unacceptable physical contact	

		that no one should ask them to keep a secret that makes them feel uncomfortable or try to persuade them to keep a secret they are worried about whom to tell if they are concerned about unwanted physical contact	
Respecting ourselves and others	Expressing opinions and respecting other points of view, including discussing topical issues	To think about the link between values and behaviour and how to be a positive role model • how to discuss issues respectfully • how to listen to and respect other points of view • how to constructively challenge points of view they disagree with • ways to participate effectively in discussions online and manage conflict or Disagreements- through computing	Lesson 1 – How has human activity changed the world? Lesson 2 – Revive our oceans Lesson 3 – Use less space – deforestation Lesson 4 – Eliminate waste Lesson 5 – Renewable energy Lesson 6 – Media & Stereotypes Lesson 7 – Jobs for the future (ambition / how or why you may choose a certain job) Lesson 8 – Influences from family/peers on job choices Lesson 9 – Diversity / inclusion / stereotyping in the workplace Lesson 10 - routes into work