Science Catch Up Curriculum

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Reception Objectives

ELG statement	Reception topics/ learning opportunities missed	End of KS1 TAF statement	Catch up	Initial assessment suggestions*	Notes - and highlighted risk (Red will need to be planned explicitly in addition to usual topics, Green will fit readily into current units)
THE WORLD					
Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur, and talk about changes.	Minibeasts Animals	Describe the basic needs of animals for survival and the main changes as young animals, including humans, grow into adults. Describe and compare the observable features of animals from a range of groups. Group animals according to what they eat, describe how animals get their food from other animals and/or from plants, and use simple food chains to describe these relationships. Name different animals and describe	Y1 – animals including humans Y2 – animals including humans, & living things & their habitats		Minibeasts are not covered as specific objectives in KS1 but would come under animal habitats. **Teaching missed in Reception:** Names of minibeasts, farm and jungle animals and their young. What minibeasts, farm & jungle habitats are like and how the animals that live there are suited to it; camouflage (animal patterns), diet, features of their body etc. How to look after an animal e.g. a pet (food, water, shelter, keeping them clean, being kind/gentle etc)

		how they are suited to different habitats			
PD: HEALTH & SELF-CARE					
Children know the importance for good health of physical exercise, and a healthy diet, and talk about ways to keep healthy and safe (H&SC-35) They manage their own basic hygiene and personal needs successfully, including dressing and going to the toilet independently (H&SC-36)	Healthy eating was taught in the week before schools closed. Attendance was poor so a significant number of children missed this learning.	Name and locate parts of the human body, including those related to the senses [year 1], and describe the importance of exercise, a balanced diet and hygiene for humans [year 2]. Describe the basic needs of animals for survival.	Y1 – animals including humans Y2 – animals including humans, & living things & their habitats		**Teaching missed in Reception:** Naming foods which are healthy and unhealthy. Beginning to talk about what healthy foods do for our bodies e.g. milk for strong bones. Exploring how to look after our body and why we do this: washing, brushing teeth, exercising, healthy eating etc.
PD: MOVING & HANDLING					
Children show good control and co-ordination in large and small movements (M&H-56) They move confidently in a range of ways, safely negotiating space (M&H-57) They handle equipment and tools effectively, including pencils for writing (M&H-58)	Opportunities within provision activities and outdoor learning to improve children's -Fine motor skills -Gross motor skills -pencil control	**End of KS1 expected standard:** Form capital letters and digits of the correct size, orientation and relationship to one another and to lower-case letters. Use spacing between words that reflects the size of the letters. **End of KS1 greater depth:**	Have funky fingers/ FMS weekly provision activities in Y1 classrooms.		Daily phonics lessons will include opportunities to work on/improve/ correct letter formation. Handwriting will be included in English lessons as starters. Ensure weekly provision opportunities in the writing area and those linked to topic have a focus on using equipment children may not

		Use the diagonal and horizontal strokes needed to join some letters.			have accessed at home: scissors etc.

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Year 1 Objectives

NC statement missed	End of KS2 TAF statement	Catch up	Initial assessment suggestions*	Notes - and highlighted risk (Red will need to be planned explicitly in addition to usual topics, Green will fit readily into current units)
Year 1				
Plants				
identify and name a variety of common wild and garden plants including deciduous and evergreen trees	name different plants and animals and describe how they are suited to different habitats [Y2]	Y2 Habitats unit	Observation and matching: Can you find the plant this leaf came from? Using a spotter sheet to identify plants	Will be taught naturally through habitats unit – naming plants that are included in work on food chains and adaptation.
Identify and describe the basic structure of a variety of common flowering plants, including trees	Not specified in TAF	Y3 Plants unit	Explorify – Types of leaves (Odd one out) Explorify – Rich pickings (Video)	Basic plant parts, likely to be known from EYFS. Likely to be covered incidentally when observing germination and growth in Y2 but will be revisited in Y3.

NC statement missed	End of KS2 TAF statement	Catch up	Initial assessment suggestions*	Notes - and highlighted risk (Red will need to be planned explicitly in addition to usual topics, Green will fit readily into current units)
Year 1				
Animals, including humans				

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identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals	name different plants and animals and describe how they are suited to different habitats [Y2]	Y2 Habitats unit	Odd one out activities with animals from the vertebrate groups including: Explorify – Spooky animals (Odd one out), Tip the scales (Odd one out) Who am I? games Explorify – Creature comforts (Zoom in, zoom out) Explorify – In the swim (Video)	Some familiarity likely from EYFS. Taught through habitats unit – adaptation of range of vertebrates to habitat. Classifying into vertebrate groups not needed - will be taught in Y4.
identify and name a variety of common animals that are carnivores, herbivores and omnivores	**group animals according to what they eat [Y1],** describe how animals get their food from other animals and/or from plants, and use simple food chains to describe these relationships [Y2]	Y2 Habitats unit		Will be covered naturally through teaching of feeding relationships in habitats unit
describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)	**describe and compare the observable features of animals from a range of groups [Y1]**	Y2 Habitats unit or Y4 Habitats unit		Some description and comparison of features specific to different animal groups is likely to occur naturally when identifying animals in Y2 habitats unit and more specific teaching could be included if time. If not, this can be included in Y4
identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.	**name and locate parts of the human body, including those related to the senses [Y1],** and describe the importance of exercise, a balanced diet and hygiene for humans [Y2]	Y2 Animals unit or Y3 Animals unit	Simon Says body parts game including show me which body part you use for seeing etc (Y2) Draw a body outline and label the external parts you know the names of. Now draw what you think is inside the arms and legs. Is there anything similar you can draw inside other parts of the body? (Y3)	Most children should have knowledge from EYFS. Gaps can be addressed by extra teaching in either Y2 or Y3 depending on time.

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NC statement missed	End of KS2 TAF statement	Catch up	Initial assessment suggestions*	Notes - and highlighted risk (Red will need to be planned explicitly in addition to usual topics, Green will fit readily into current units)
Year 1				
Everyday materials				
distinguish between an object and the material from which it is made	**Distinguish objects from materials, describe their properties, identify and group everyday materials [Y1],** and compare their suitability for different uses [Y2].	Y2 Materials unit	Sorting activities Find me games e.g. something which is … (property) something made from … Explorify – Synthetic selection (Mystery bag)	Year 2 unit will need to be expanded to allow additional time for exploring and testing properties, building on what they will have done in EYFS, addressing gaps in knowledge of material and properties so they can make links to uses.
identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock				
describe the simple physical properties of a variety of everyday materials				
compare and group together a variety of everyday materials on the basis of their simple physical properties				

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NC statement missed	End of KS2 TAF statement	Catch up	Initial assessment suggestions*	Notes - and highlighted risk (Red will need to be planned explicitly in addition to usual topics, Green will fit readily into current units)
Year 1				
Seasonal changes				
observe and describe weather associated with the seasons and how day length varies.	**describe seasonal changes [Y1]**	Y2 or Y4 Ongoing unit -1 week of weather and habitat observations per season or per half term	Making predictions – what will the weather be like / what changes might we see when we make our next set of observations Explorify – Seasons (Video)	Basic knowledge of seasons likely from EYFS. Could be built into Y2 or Y4 habitats. Links well to Y2 geography. Ideally, structure the unit to include short, observations of plants, animals and weather in local habitats each season or half term prior to main teaching of the unit in summer term.
observe changes across the four seasons				

** Main sources of initial assessment activities included in this document (further assessment resources ideas are included in the 'How to Guide'):*

- *Explorify https://explorify.wellcome.ac.uk/*

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Year 2 Objectives

NC statement missed	End of KS2 TAF statement	Catch up	Initial assessment suggestions*	Notes - and highlighted risk (Red will need to be planned explicitly in addition to usual topics, Green will fit readily into current units)
Year 2				
Plants				
find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.	**describe basic needs of plants for survival and the impact of changing these and the main changes as seeds and bulbs grow into mature plants [Y2]**	Y3 Plants unit	Poorly plant – what might my plant need to make it healthy again?	Some knowledge of basic needs of plants likely from EYFS. Will be covered under requirements for life and growth - adjust starting point for this.
observe and describe how seeds and bulbs grow into mature plants		Y3 Plants unit and Y5 Habitats unit	Concept Cartoon – Seeds in the dark (1.1) Explorify – Seeds of Life (Odd one out), Shooting sprouts (Video) Active Assessment – Generating instructions – Growing seeds	Observe growth from seeds as part of Y3 life cycle work. As Y3 focus is on flowers and seed production include bulbs in Y5 habitats where emphasis is on comparing different life cycles.

NC statement missed	End of KS2 TAF statement	Catch up	Initial assessment suggestions*	Notes - and highlighted risk (Red will need to be planned explicitly in addition to usual topics, Green will fit readily into current units)
Year 2				
Living things and their habitats				
describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food	group animals according to what they eat [Y1], **describe how animals get their food from other animals and/or from plants, and use simple food chains to describe these relationships [Y2]**	Y4 Animals unit	Explorify – Muddy meal (video)	Adjust starting point for Y4 work on food chains

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NC statement missed	End of KS2 TAF statement	Catch up	Initial assessment suggestions*	**Notes - and highlighted risk** (Red will need to be planned explicitly in addition to usual topics, Green will fit readily into current units)
Year 2				
Animals, including humans				
notice that animals, including humans, have offspring which grow into adults	**describe the basic needs of animals for survival and the main changes as young animals, including humans, grow into adults [Y2]**	Y5 Habitats unit And Y5 Animals unit	Explorify – Looking after baby (Odd one out), Baby animals (Odd one out), Unexpected eggs (Video) Odd one out – young mammal, bird and larva or vertebrate or invertebrate that undergoes metamorphosis.	Some knowledge of baby animals likely from EYFS. Growth and ability to have offspring will be mentioned as characteristics of living things in Y4 habitats. Adjust starting points. Some earlier teaching of human life cycle may be needed as prior learning for PSHE
find out about and describe the basic needs of animals, including humans, for survival (water, food and air)		Y3 Animals unit	Explorify – How would you survive in a rainforest? (Big Question) What would you need on a desert island/ voyage to Mars?	Need for food and water will be covered in Y3 nutrition – adjust starting point. Include a mention of the need for air but this will be picked up in Y6 Animals unit.
describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.	name and locate parts of the human body, including those related to the senses [Y1], **and describe the importance of exercise, a balanced diet and hygiene for humans [Y2]**	Y3 Animals unit and Cross-curricular	Explorify – Fuel up (Odd one out) Explorify – What if … We couldn't exercise?	Adjust stating point of nutrition element of Y3 Animals. Although exercise and hygiene will be picked up in Y6 Animals unit this should also be addressed though ongoing cross-curricular work (PE, PSHE) on health and wellbeing.

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- *Explorify https://explorify.wellcome.ac.uk/*
- *Concept Cartoons – Stuart Naylor and Brenda Keogh https://www.millgatehouse.co.uk/*

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Year 3 Objectives

NC statement missed	End of KS2 TAF statement	Opportunity to Catch up	Initial assessment suggestions*	Notes - and highlighted risk (Red will need to be planned explicitly in addition to usual topics, Green will fit readily into current units)
Year 3				
Animals, including humans				
identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat	Describe the effects of diet, exercise, drugs and lifestyle on how the body functions [Y6].	Cross-curricular or Y4 Animals unit	Explorify – What if ... You only ate chips?	Builds on Y2 so children should have basic knowledge. Could be addressed in D&T and through work on healthy lifestyles in PSHE. If not, will need to be picked up in Y4 Animals with food chains and digestion and revisited in Y6.
identify that humans and some other animals have skeletons and muscles for support, protection and movement	**name, locate and describe the functions of the main parts of the** digestive [Y4], **musculoskeletal [Y3],** and circulatory systems [Y6], and describe and compare different reproductive processes and life cycles, in animals [Y5].	Y4 or Y5 Additional lessons	Explorify – What if… My bones were bendy?	Some understanding of internal skeleton needed to classify as vertebrates in Y4 and Y6. Ideally teach discretely before Y4 habitats, if not then teach in Y5.

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NC statement missed	End of KS2 TAF statement	Opportunity to Catch up	Initial assessment suggestions*	Notes - and highlighted risk (Red will need to be planned explicitly in addition to usual topics, Green will fit readily into current units)
Year 3				
Light				
recognise that they need light in order to see things and that dark is the absence of light	**use the idea that light from light sources, or reflected light**, travels in straight lines and **enters our eyes** to **explain** how we see objects [Y6], and **the formation [Y3]**, shape [Y6] **and size of shadows [Y3].**	Y4 or Y5 Additional teaching	Concept Cartoon – Seeing in the dark (7.1), White cat (7.4)	Basic knowledge from EYFS likely. Understanding of light sources needed for Earth and space
notice that light is reflected from surfaces			Concept Cartoon – Sunglasses (7.7) Explorify – Shiny things (Odd one out)	Needed for Y6 light Needed to understand that the Moon is not a light source
recognise that shadows are formed when the light from a light source is blocked by an opaque object		Y5 Earth and space unit Y5 Materials unit Y6 Light unit	Explorify – Shadow shapes (video) BBC Bitesize light and shadow www.bbc.co.uk/bitesize/clips/zshxpv4	Include teaching about shadow formation in Earth and space – observe shadows changing during the day (observation over time).
find patterns in the way that the size of shadows change				Transparency as a property in Y5 materials Controlled investigation of changing shadows in Y6 Light unit
recognise that light from the sun can be dangerous and that there are ways to protect their eyes	Not specified in TAF	Y5 Earth and space unit	Concept Cartoon – Sunglasses (7.7)	Safety mention before making observations of apparent movement of the Sun

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NC statement missed	End of KS2 TAF statement	Opportunity to Catch up	Initial assessment suggestions*	Notes - and highlighted risk (Red will need to be planned explicitly in addition to usual topics, Green will fit readily into current units)
Year 3				
Forces and magnets				
compare how things move on different surfaces	**describe the effects of simple forces that involve contact** (air and water resistance, **friction**) [Y5], **that act at a distance (magnetic forces, including those between like and unlike magnetic pole) [Y3]**, and gravity [Y5].	Y5 forces unit	Explorify – Black bobbles (Zoom in, zoom out)	Friction is included in Y5 forces – adjust starting point for the unit
notice that some forces need contact between two objects, but magnetic forces can act at a distance			Explorify – Magnets (video), Pull together (Odd one out)	Include identifying forces as contact and non-contact in Y5 unit
observe how magnets attract or repel each other and attract some materials and not others		Y4 or Y5 Additional magnets lessons or Y5 materials		Need to have taught short unit introducing the behaviour of magnets and response to magnets as a property before Y5 forces units. If materials unit is taught before forces in Y5 these lessons could be included. If there needs to be more focus in Y5 materials on catch up investigations of properties (possibly rocks, transparency and magnetism) consider splitting into separate shorter units on properties and changes.
compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials	**group and identify materials** [Y5], including rocks [Y3], **in different ways according to their properties, based on first-hand observation;** and justify the use of different everyday materials for different uses, based on their properties [Y5].			
describe magnets as having two poles	**describe the effects of simple forces that involve contact** (air and water resistance, **friction**) [Y5], **that act at a distance (magnetic forces, including those between like and unlike magnetic pole) [Y3]**, and gravity [Y5].		Observe and predict with a range of different magnets	
predict whether two magnets will attract or repel each other, depending on which poles are facing				

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- *Explorify https://explorify.wellcome.ac.uk/*

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Year 4 Objectives

NC statement missed	End of KS2 TAF statement	Opportunity to Catch up	Initial assessment suggestions*	Notes - and highlighted risk (Red will need to be planned explicitly in addition to usual topics, Green will fit readily into current units)
Year 4				
Living things and their habitats				
recognise that living things can be grouped in a variety of ways	Use the observable features of plants, animals and micro-organisms to group, classify and identify them into broad groups, using keys or other methods [Y6].	Y5 Habitats unit	Sorting activities – own and then given criteria	Familiarity with the main vertebrate groups and knowledge of invertebrates as a grouping and that there are flowering and non-flowering plants needed when studying animal and plant life cycles in Y5. Will be taught in greater detail in Y6. Teach relevant observable features for classification alongside life cycles (a distinguishing difference between the groups)
explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment		Y5 Habitats unit or Y6 Habitats unit	Observation and identification first-hand (local / visit) or from images (distant habitats)	Expand Y5 habitats to include use of keys and consideration of changing habitats. or Include more practical opportunities to observe and classify plants and animals in their habitats in the Y6 unit (classification) and consider environmental change with adaptation in Y6 evolution.
recognise that environments can change and that this can sometimes pose dangers to living things	Describe the requirements of plants for life and growth [Y3] and **explain how environmental changes may have an impact on living things [Y4].**	Y5 Habitats unit or Y6 Evolution unit	Concept Cartoon – Plants and animals (2.3)	

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Year 4				
Animals, including humans				
Construct and interpret a variety of food chains, identifying producers, predators and prey.	**Construct and interpret food chains [Y4].**	Y5 or Y6 Additional lessons	Explorify – Family meal (Video)	Children should have basic knowledge from Y2. Small amount of stand-alone teaching before the end of the key stage. Food webs not needed until KS3.

NC statement missed	End of KS2 TAF statement	Opportunity to Catch up	Initial assessment suggestions*	Notes - and highlighted risk (Red will need to be planned explicitly in addition to usual topics, Green will fit readily into current units)
Year 4				
States of matter				
compare and group materials together, according to whether they are solids, liquids or gases	**describe the characteristics of different states of matter and group materials on this basis; and describe how materials change state at different temperatures, using this to explain everyday phenomena, including the water cycle [Y4].**	Y5 Materials unit or Y5 Additional unit	Concept Cartoons – Liquids (3.4), Balloon (3.1), Fizzy drink (3.5)	Needed for Y5 materials (changes) so must be taught in Y5. To avoid overloading Y5 with more materials content and to allow for revisiting and consolidation consider splitting the teaching across Y5 and Y6 e.g. by teaching states of matter and properties and uses (short unit) in Y5, probably as 2 separate units
observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C)			Concept Cartoon – When water is boiling (3.9), Condensation (4.3)	

identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.			Discussion question – Where does rain come from?	and teaching mixing, separation and changes as an additional unit in Y6.

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Year 5 Objectives

NC statement missed	End of KS2 TAF statement	Opportunity to Catch up	Initial assessment suggestions*	Notes - and highlighted risk (Red will need to be planned explicitly in addition to usual topics, Green will fit readily into current units)
Year 5				
Living things and their habitats				
describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird	name, locate and describe the functions of the main parts of the digestive [Y4], musculoskeletal [Y3], and circulatory systems [Y6], and **describe and compare different reproductive processes and life cycles, in animals [Y5].** **name, locate and describe the functions of the main parts of plants, including those involved in reproduction [Y5]** and transporting water and nutrients [Y3].	Y6 Habitats unit	Concept Cartoon – Babies (1.7) Explorify – Coming out to play (video)	Basic understanding of animal life cycles from Y2 Life cycles are one distinguishing characteristic of different formal classification groups.
describe the life process of reproduction in some plants and animals		Y6 Habitats unit or Y6 Evolution unit	Concept cartoon – New plants (1.5) Explorify – Super seeds (Video), Growing seed (Video), Desert rose (Video)	For animals, as above Sexual reproduction in plants taught in Y3 – revisiting this is therefore low priority. Asexual reproduction in plants low priority but could be included briefly in habitats or as an exception to variation of offspring in evolution

NC statement missed	End of KS2 TAF statement	Catch up	Initial assessment suggestions*	Notes - and highlighted risk (Red will need to be planned explicitly in addition to usual topics, Green will fit readily into current units)
Year 5				
Animals, including humans				

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describe the changes as humans develop to old age.	name, locate and describe the functions of the main parts of the digestive [Y4], musculoskeletal [Y3], and circulatory systems [Y6], and **describe and compare different reproductive processes and life cycles, in animals [Y5].**	PSHE or Y6 Habitats unit	What if people laid eggs?	Puberty is essential PSHE, so should gestation be taught as part of catch up in that subject. If not, then teach aspects not familiar from Y2 (puberty, gestation) as standalone lessons or with animal life cycles in Y6. Recap of other stages low priority.
NC statement missed	**End of KS2 TAF statement**	**Catch up**	**Initial assessment suggestions***	**Notes - and highlighted risk** (Red will need to be planned explicitly in addition to usual topics, Green will fit readily into current units)
Year 5				
Properties and changes of materials				
compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets	**group and identify materials [Y5],** including rocks [Y3], **in different ways according to their properties, based on first-hand observation; and justify the use of different everyday materials for different uses, based on their properties [Y5].**	Y6 Electricity unit Y6 Light unit	Concept Cartoon – Snowman (3.2) Explorify – Cosy Comfort (Zoom in, zoom out) Explorify mystery bag activities – Interesting insulators or Electrifying metals	No specific link to future learning in Y6. Apart from solubility (covered as part of new learning about dissolving) and thermal conductivity this is revisiting of learning from LKS2 and Y2. Focus catch-up learning on unfamiliar properties. Electrical conductivity can be briefly revisited in Y6 electricity if not secure from Y4. Transparency can be revisited in Y6 light if not secure from Y3.
give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic			Poem – Woolly saucepan by Michael Rosen – RSC That's Chemistry https://edu.rsc.org/resources/primary	
know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution	**identify, and describe what happens when dissolving occurs in everyday situations; and describe how to separate mixtures and**	Y6 WOW day	Explorify – Delicious Drinks (Odd one out) Active Assessment - Concept sentences – melting and dissolving	No specific link to future learning in Y6. Needed for learning in KS3 (although some repetition e.g. dissolving,

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use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating	**solutions into their components [Y5].**		Explorify – Delicious Drinks (Odd one out)	separation techniques, changes of state likely). Teach standalone in Y6 as a short unit on mixing, separation and changes.
demonstrate that dissolving, mixing and changes of state are reversible changes	**identify, with reasons, whether changes in materials are reversible or not [Y5].**		Explorify – Delicious Drinks (Odd one out)	
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 and the action of acid on bicarbonate of soda.			Concept Cartoons – Burning candle (4.7), Alka Seltzer (4.9) Explorify – Fire fighting (Video), Baking cookies (Video)	

NC statement missed	End of KS2 TAF statement	Catch up	Initial assessment suggestions*	Notes - and highlighted risk (Red will need to be planned explicitly in addition to usual topics, Green will fit readily into current units)
Year 5				
Forces				
explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object	**describe the effects of simple forces that involve contact (air and water resistance, friction) [Y5], that act at a distance** (magnetic forces, including those between like and unlike magnetic pole) [Y3], **and gravity [Y5].**	Y6 WOW day	Explorify – What if … There was no gravity? Active Assessment – Thought experiments – Falling stone	No specific link to future learning in Y6. Needed for learning in KS3 although some repetition likely. Friction introduced in Y3 – check starting point
identify the effects of air resistance, water resistance and friction, that act between moving surfaces			Concept Cartoon – Falling (6.2), Skateboard (6.6), Football (6.7), Space walk (6.11) Explorify – Floating bottle (video), Shoot the breeze (Odd one out)	

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recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect	**identify simple mechanisms, including levers, gears and pulleys that increase the effect of a force [Y5].**	Y6 WOW day	Explorify – Take a whisk (video)	No specific link to future learning in Y6. Simple machines taught in KS3 – repetition likely. Should be covered / have been covered at least in part through D&T.

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- *Explorify https://explorify.wellcome.ac.uk/*
- *Concept Cartoons – Stuart Naylor and Brenda Keogh https://www.millgatehouse.co.uk/*
- *Active Assessment – Stuart Naylor, Brenda Keogh, Anne Goldsworthy https://www.millgatehouse.co.uk/*

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Year 6 Objectives

NC statement missed	End of KS2 TAF statement	Link to KS3 curriculum	BEST diagnostic assessments* https://www.stem.org.uk/best-evidence-science-teaching	Notes and status: taught in school / not taught / home learning
Year 6				
Living things in their habitats				
describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals	**use the observable features of plants, animals and micro-organisms to group, classify and identify them into broad groups, using keys or other methods [Y6].**	**Inheritance, chromosomes, DNA and genes** differences between species	BVE2.1 Seaside sorting BVE2.1 Is it a bird?	
give reasons for classifying plants and animals based on specific characteristics				

NC statement missed	End of KS2 TAF statement	Link to KS3 curriculum	BEST diagnostic assessments https://www.stem.org.uk/best-evidence-science-teaching	Notes and status: taught in school / not taught / home learning
Year 6				
Animals including humans				
identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood	**name, locate and describe the functions of the main parts of the** digestive [Y4], musculoskeletal [Y3], and **circulatory systems [Y6],** and describe and compare different reproductive processes and life cycles, in animals [Y5].	No specific links in KS3. Picked up in KS4.	BCL2.1 Body parts BCL2.2 The human circulatory system [BCL2.2 Arteries and veins] BCL2.2 Circulation	
describe the ways in which nutrients and water are transported within animals, including humans				

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recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function	**describe the effects of diet, exercise, drugs and lifestyle on how the body functions [Y6].**	**Nutrition and Digestion** the consequences of imbalances in the diet, including obesity, starvation and deficiency diseases. **Health** the effects of recreational drugs (including substance misuse) on behaviour, health and life processes.	BHD1.1 Health check BHD1.1 Healthy body BDH2.1 To eat or not to eat BDH2.1 Vitamins BHD2.1 Exercise effects	

NC statement missed	**End of KS2 TAF statement**	**Link to KS3 curriculum**	**BEST diagnostic assessments** https://www.stem.org.uk/best-evidence-science-teaching	**Notes and status:** taught in school / not taught / home learning
Year 6				
Evolution and inheritance				
recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago	**use the basic ideas of inheritance, variation and adaptation to describe how living things have changed over time and evolved [Y6];** and describe how fossils are formed [Y3] **and provide evidence for evolution [Y6].**	**Inheritance, chromosomes, DNA and genes** heredity as the process by which genetic information is transmitted from one generation to the next differences between species the variation between individuals within a species being continuous or discontinuous, to include measurement and graphical representation of variation	BVE1.2 How do we know? BVE1.2 What can we learn from fossils? BVE1.2 Could it become a fossil?	
recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents			BHL1.1 Dogs and their puppies BHL 1.1 Her mother's eyes	

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identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.		the variation between species and between individuals of the same species means some organisms compete more successfully, which can drive natural selection changes in the environment may leave individuals within a species, and some entire species, less well adapted to compete successfully and reproduce, which in turn may lead to extinction	*Potentially BVE3 Adaptation and evolution – resources not yet available*	

NC statement missed	**End of KS2 TAF statement**	**Link to KS3 curriculum**	**BEST diagnostic assessments** https://www.stem.org.uk/best-evidence-science-teaching	**Notes and status:** taught in school / not taught / home learning
Year 6				
Light				
recognise that light appears to travel in straight lines	**use the idea that light from light sources, or reflected light, travels in straight lines and enters our eyes to explain how we see objects [Y6],** and the formation [Y3], **shape [Y6]** and size of shadows [Y3].	**Light waves** light waves travelling through a vacuum; speed of light the transmission of light through materials: absorption, diffuse scattering and specular reflection at a surface use of ray model to explain imaging in mirrors, the pinhole camera, the refraction of light and action of convex lens in focusing (qualitative); the human eye	PLS1.2 Spotting light PSL1.2 A tree's shadow	
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			PSL2.1 My eye PSL2.1 Seeing the light PSL2.1 In the dark PSL2.1 Seeing an explanation	
use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye				

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use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them			PSL1.2 A penguin's shadow PSL1.2 Making a shadow	

NC statement missed	End of KS2 TAF statement	Link to KS3 curriculum	BEST diagnostic assessments https://www.stem.org.uk/best-evidence-science-teaching	Notes and status: taught in school / not taught / home learning
Year 6				
Electricity				
associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit	**use simple apparatus to construct and control a series circuit, and describe how the circuit may be affected when changes are made to it; and use recognised symbols to represent simple series circuit diagrams [Y6].**	**Current electricity** electric current, measured in amperes, in circuits, series and parallel circuits, currents add where branches meet and current as flow of charge potential difference, measured in volts, battery and bulb ratings; resistance, measured in ohms, as the ratio of potential difference (p.d.) to current differences in resistance between conducting and insulating components (quantitative).	PEM1.3 Which is brightest? PEM 1.3 Combining 1.5V batteries	
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			PEM1.3 Current or voltage PEM1.3 Bulb markings	
use recognised symbols when representing a simple circuit in a diagram			PEM 1.1 Circuit from a picture PEM1.1 Circuit symbols PEM1.1 Circuit diagrams (1) PEM1.1 Circuit from a diagram PEM1.1 Circuit diagrams (2)	

** For elicitation and identification of misconceptions also see Concept Cartoons – Stuart Naylor and Brenda Keogh https://www.millgatehouse.co.uk/*