



Kindness -Determination – Resilience – Teamwork – Communication – Respect

'Together we learn – United we achieve'

TOWNVILLE INFANTS' SCHOOL

Science Curriculum Map KS1

Science Year 1 NC				
Plants	Animals Including Humans	Everyday Materials	Seasonal Change	Working Scientifically
<ul style="list-style-type: none"> - Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees - Identify and describe the basic structure of a variety of common flowering plants, including trees. 	<ul style="list-style-type: none"> - Identify and name a variety of animals including fish, amphibians, birds and mammals - Identify and name a variety of common animals that are carnivores, herbivores and omnivores - Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets) - Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense 	<ul style="list-style-type: none"> - Distinguish between an object and the material from which it is made - 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 	<ul style="list-style-type: none"> - Observe changes across the four seasons - Observe and describe weather associated with the seasons and how day length varies 	<ul style="list-style-type: none"> - Ask simple questions and recognize that they can be answered in different ways - Observe closely, using simple equipment - Perform simple tests - Identify and classify - Use my observations and ideas to suggest answers to questions - Gather and record data to help answer questions

Science Year 2 NC				
Plants	Animals Including Humans	Uses of Everyday Materials	Living Things and Their Habitats	Working Scientifically
<ul style="list-style-type: none"> - Observe and describe how seeds and bulbs grow into mature plants - Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. 	<ul style="list-style-type: none"> - Notice that animals, including humans, have offspring which grow into adults - Find out about and describe the basic needs of animals, including humans, for survival (water, food and air) - Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. 	<ul style="list-style-type: none"> - Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses - Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. 	<ul style="list-style-type: none"> - Explore and compare the differences between things that are living, dead and things that have never been alive - Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other - Identify and name a variety of plants and animals in their habitats, including micro-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 	<ul style="list-style-type: none"> - Ask simple questions and recognize that they can be answered in different ways - Observe closely, using simple equipment - Perform simple tests - Identify and classify - Use my observations and ideas to suggest answers to questions - Gather and record data to help answer questions

Cycle A

Term	Autumn		Spring		Summer	
Driver Project	Childhood		Bright Lights, Big City		School Days	
Science Project	Amazing Me!	Brilliant Builders	Wild Weather	Wild and Wonderful Creatres	Food Chains	Growing Things
Unit	Animals Including Humans	Everyday Materials	Seasonal Change	Animals Including Humans	Living Things and Their Habitats	Plants
Overview	Children will think carefully about what they were like as a baby. Look at the differences in their body and compare foot and hand sizes. Consider how to investigate what we can hear in the playground. They will investigate fruit and vegetables and plan a balanced picnic for guests.	Children will use games such as 'I-Spy the Material' in the classroom, before discussing why different materials have been used. They will sort items according to their properties and consider what it would be like if the tables were made of jelly or the chairs were chocolate	In this block we will think about the weather, learn how to present data and make our own weather forecast to present to the class. We will play shadow tag and create bar charts to record shadow length over time.	We will sort animal into groups and learn about carnivores, herbivores and omnivores. Create show box dioramas for a toy animal and annotate it with researched information.	In this project, children will talk about food chains and role play the interdependence between creatures in a chain, considering what part each plays in its survival. Learn about water-based food chains and reconstruct them in tanks of water. Interpret the transfer of energy in a food chain.	We will explore outside and prepare tubs for planting potatoes. Record the growth of a bean and look at how it develops. Look really closely at little cress plants and draw what we see. Then pop them into egg sandwiches for an egg and cress snack!
Knowledge, skills, and concepts	<p>What children will know...</p> <ul style="list-style-type: none"> - we, as humans, change with the passing of time - animals, including humans have offspring that grow in to adults - Scientific information can be collected and presented in a variety of ways - The names of body parts 	<p>What children will know...</p> <ul style="list-style-type: none"> - that objects are made from materials and be able to name and distinguish between these - the names of a range of everyday materials, including wood, plastic, glass, metal, water and rock - Materials have different properties 	<p>What children will know...</p> <ul style="list-style-type: none"> - weather changes across the seasons - day length varies across the year - Scientific data can be collected and presented in a variety of ways - Air temperature changes with the seasons - shadows are created in the absence of light 	<p>What children will know...</p> <ul style="list-style-type: none"> - the names of different common animals including fish, amphibians, reptiles, birds and mammals - animals can be grouped according to whether they are carnivores, herbivores and omnivores. 	<p>What children will know...</p> <ul style="list-style-type: none"> - living things need other living things to survive - creatures are adapted for their own habitats - The sun's energy travels through a food chain and that this is called a 'transfer of energy' - whether things are alive, dead or have never lived and the 	<p>What children will know...</p> <ul style="list-style-type: none"> - The names of a variety of different plants (including deciduous and evergreen trees). - The structure of plants including leaves, flowers (blossom), petals, fruit, roots, bulb, seed, trunk, branches and stem. - the basic needs of plants for water, light

	<p>- The name and purpose of our senses and the body parts associated with these</p> <p>- we can use our senses to classify things in to groups</p> <p>- Animals, including humans need water, air and food to survive</p> <p>- It is important for humans of exercise, eating the right amounts of different types of food, and hygiene</p> <p>What children will do...</p> <p>- compare similarities and differences between themselves now and as a baby</p> <p>- Observe changes over time by looking at baby photos and current photos</p> <p>- identify, name, draw and label the basic parts of the human body and say which of the body is associated with each sense</p> <p>- Collect information about their bodies by observing, measuring and noticing patterns</p> <p>- plan and investigate our senses.</p> <p>- identify the differences between fruit and vegetables using our</p>	<p>which make them suitable for different reasons</p> <p>- materials can be grouped and classified based on their physical properties</p> <p>- Some materials are magnetic</p> <p>- Everyday materials can be used for more than one thing</p> <p>- squashing, bending, twisting and stretching can change the shapes of solid objects made from some everyday materials.</p> <p>What children will do...</p> <p>- discuss, identify, describe and name a variety of everyday materials</p> <p>- Compare and group a range of everyday materials based on their physical properties</p> <p>- appreciate the usefulness of some materials</p> <p>- Sort objects according to their properties, usefulness and other criteria</p>	<p>- shadows get longer as the day increases and are longest at dusk</p> <p>- rain is called precipitation</p> <p>- winter and autumn typically have higher precipitation</p> <p>- wind has a range of uses including wind turbines</p> <p>- wind strength can be measured using the Beaufort Scale</p> <p>- Hurricanes are the strongest type of wind</p> <p>- People who study the weather are called meteorologists</p> <p>- temperature can be measured using a thermometer</p> <p>What children will do...</p> <p>- Look at weather forecasts and the symbols used by forecasters</p> <p>- observe and describe weather associated with the seasons and how day length varies</p> <p>- Discuss typical weather patterns</p> <p>- measure temperature</p> <p>- Use symbols to record weather observations</p> <p>- Make predictions about rainfall</p> <p>- Begin to record the direction of the wind</p>	<p>- Animals including humans need water, air and food for survival</p> <p>- The difference between survival and comfort</p> <p>- The names of body parts</p> <p>- The name and purpose of our senses and the body parts associated with these</p> <p>- different types of animals have different characteristics and they can be categorised according to these</p> <p>- The basic needs and habitats of some wild animals</p> <p>- animals, including humans, have offspring which grow into adults</p> <p>What children will do...</p> <p>- describe and compare the observable features of animals from a range of groups</p> <p>- Describe the importance of exercise, balanced diet and hygiene for humans.</p> <p>- Describe the main changes as young animals, including humans, grow into adults.</p> <p>- describe and compare the structure of a</p>	<p>differences between these</p> <p>- Animals get their food from other animals and/or plants</p> <p>- Different habitats provide the basic needs of animals and plants</p> <p>- A food chain is made of a series of plants and animals that eat each other and shows how energy is transferred from one organism to another via food.</p> <p>- Food chains exist in water habitats</p> <p>What children will do...</p> <p>- Observe parts of food chains in the school grounds and discuss what would happen in the rest of the food chain</p> <p>- Make simple food chains</p> <p>- Identify different plants and animals and recognize that they are suited to their different habitats, including micro-habitats.</p> <p>- Categorise specimens according to their features.</p> <p>- Consider what makes each creature perfectly adapted to their habitat</p>	<p>and a suitable temperature to grow and stay healthy.</p> <p>- How to keep plants healthy</p> <p>- Cress seeds need water and the right temperature to germinate and grow</p> <p>- Scientific information can be collected and presented in a variety of ways</p> <p>- The various functions of the parts of the plant and their importance.</p> <p>What children will do...</p> <p>- Describe how plants are suited to different habitats</p> <p>- Describe the main changes as seeds and bulbs grow into mature plants.</p> <p>- Observe and describe how seeds and bulbs grow into mature plants</p> <p>- Identify and closely observe plants outside the school building</p> <p>- Predict what plants will look like when they are fully grown</p> <p>- Predict the outcomes of bean and seeds growth and set up a</p>
--	---	---	---	---	---	--

	<p>senses and classify them using a Venn diagram</p> <ul style="list-style-type: none"> - sort produce using our senses - Design a balanced lunch box - Make healthy sandwiches 	<ul style="list-style-type: none"> - Explore and observe a variety of different magnets and objects - Discuss the properties of metal objects and usefulness of magnets - identify and compare the suitability of a variety of everyday materials - Describe the physical properties of everyday materials 	<p>and consider if it will change</p> <ul style="list-style-type: none"> - Observe wind direction over time and notice any patterns between rainfall and wind - investigate how we can use a compass to track the direction of the wind - Track a shadow by observing and measuring over time and record the results - Photograph and draw around shadows - Consider what effect rain has on us and our daily lives 	<p>variety of common animals</p> <ul style="list-style-type: none"> - identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense - Collate and discuss knowledge and information about African animals - Sort creatures into carnivores, herbivores or omnivores. - Consider the differences/similarities between what humans want and what they need to survive 	<ul style="list-style-type: none"> - Create model water food chains and jellyfish out of plastic bags - Consider that creatures found in water are perfectly suited to their environment - describe how some animals obtain their food from plants and other animals 	<p>diary to observe the growth over time</p> <ul style="list-style-type: none"> - Predict, and begin to give reasons for, what will happen to the cress in the dark cupboard - Observe the cress growth, talk about what the seed has produced and how the cress plant grew - Make egg and cress sandwiches
<p>Working Scientifically</p>	<p>Working scientifically</p> <ul style="list-style-type: none"> i)asking simple questions and recognising that they can be answered in different ways ii)observing closely, using simple equipment iii)performing simple tests iv)identifying and classifying v)using their observations and ideas to suggest answers to questions vi) gathering and recording data to help in answering questions. 					
<p>Key vocabulary</p>	<p>compare, describe, similar, different, notice patterns, compare, measure, record, predict, gather, centimetre, millimetre, ears, senses, hearing, spotting patterns, touch, sight, smell, taste, hear, sense</p>	<p>rough/smooth, flat/bumpy, sharp/blunt, wood, metal, plastic, glass, rock, materials, properties, rough/smooth, flat/bumpy, sharp/blunt, wood, metal, plastic, glass, rock, materials,</p>	<p>Rain, snow, storm, thunder, lightning, cloudy, clothing, warm, cold, forecast, summer, autumn, winter, spring, seasons, Day, night, shadow length, change, light, dark, Weather, rainfall, precipitation, data, wind, direction, gauge</p>	<p>Birds, fish, reptiles, mammals, invertebrates, group, classify, carnivores, herbivores, omnivores, Basic needs, water, food, air, breathing, survival, habitats, offspring, babies, adults</p>	<p>Food chain, predator, habitats, dependence, dead, alive, savannah, rainforest, tundra, micro-habitat, features, ocean, water</p>	<p>Plant, leaf, grow, weed, change, living, water, healthy, similar to, different from, potato, chitting, Warmth, light, dry, wet, moist, growth, germination, Seed, seed coat, bean, water, warmth, nutrients, leaves, stem, roots</p>

		<i>properties, magnetic, non- magnetic, metal</i>				
SMSC	<p>Spirituality <i>Children will explore aspects of nature including seasons and other natural phenomena They will question and explore why things happen and how things work They will debate and question 'big' ideas such as evolution They will develop a sense of awe and wonder about the world around them</i></p> <p>Social <i>Explore how science- based charities promote and support health and wellbeing e.g. through Children's Mental Health Week</i></p> <p>Cultural <i>Find out about different scientists from around the world Investigate variation between all living things</i></p>					
British Values	<p>Democracy <i>Children will work collaboratively They will listen to other's opinions and ideas about science, theories and hypotheses</i></p> <p>Rule of Law <i>Follow safety rules in science- see guidance from CLEAPSS</i></p> <p>Individual Liberty <i>Express their hypotheses and ideas Make predictions Try out an idea or approach</i></p>					

Cycle B

Term	Autumn		Spring		Summer	
Driver Project	Movers and Shakers		Coastline		Magnificent Monarchs	
Science Project	People and Their Pets	Brilliant Builders	Exploring Changes	Weather Art	Art and Nature	Habitats and Homes
Unit	Animals Including Humans	Everyday Materials	Everyday Materials	Seasonal Change	Plants	Living Things and Their Habitats
Overview	<i>In this project, we will observe, photograph and sketch creatures in the school grounds. We will collect woodlice and establish colonies in the classroom based on what children know about their habitats. We will then exploring different pets and what they need to stay healthy and happy.</i>	<i>We will rise to the challenge of fixing a torn umbrella, explore different materials and answer the questions: how can we know that this material will not let the rain through? We will then investigate the absorbency and waterproofing of materials.</i>	<i>Throughout this project we will observe a block of ice and record the changes before devising our own investigations. We will explore puddles and measure how they change and then take up the challenge of investigating the absorbency of fabrics and explore changes in wax through batik art and crayon making.</i>	<i>We will talk about the four seasons and make a seasons collage together. We will explore different weather conditions and how the sun plays a vital part in our survival. We will then explore shadows using torches and make shadow theatres.</i>	<i>In this project we will, investigate and sort materials according to where they came from. We will find and sketch flowers outside in the playground and create bark and leaf rubbings.</i>	<i>This half term we will make a playground allotment complete with edible plants and bird scaring sculptures. We will weed and tend the allotment; visit a farm; and explore farming. In groups, we will design, build and evaluate a bug hotel.</i>
Knowledge, skills, and concepts	<p>What children will know...</p> <ul style="list-style-type: none"> - Minibeasts live in habitats - Scientific data can be collected and presented in a variety of ways - Key differences between birds, fish, amphibians, reptiles, mammals and invertebrates, carnivores, herbivores and omnivores - Animals including humans need water, air and food for survival - Know that there are many types of animals 	<p>What children will know...</p> <ul style="list-style-type: none"> - objects are made from materials - the names of a range of everyday materials - Materials have different properties which make them suitable for different reasons and some can be used for more than one thing - materials can be grouped and classified based on their properties - squashing, bending, twisting and stretching 	<p>What children will know...</p> <ul style="list-style-type: none"> - water is a material and ice is water in a different state - Water particles get closer together as ice melts - objects are made from materials and be able to name and distinguish between these - Materials have different properties which make them suitable for different reasons and some can be used for more than one thing 	<p>What children will know...</p> <ul style="list-style-type: none"> - weather changes across the seasons - day length varies across the year - Scientific data can be collected and presented in a variety of ways - Know that natural light comes from the sun and a light source is anything that makes light - The suns light reflects off the moon and warms our planet 	<p>What children will know...</p> <ul style="list-style-type: none"> - Plants are suited to different habitats - The names of a variety of different plants (including deciduous and evergreen trees). - The structure of plants including leaves, flowers (blossom), petals, fruit, roots, bulb, seed, trunk, branches and stem. - the basic needs of plants for water, light and a suitable temperature to grow and stay healthy. 	<p>What children will know...</p> <ul style="list-style-type: none"> - Some insects help to look after plants e.g. helping pollination or scaring away plant eating insects - things can be classed as alive, dead or never alive - different plants and animals are suited to different habitats including micro-habitats - habitats provide for the basic needs or animals and plants

that can be classed as pets and that they all have different needs to be happy and healthy
- An invertebrate is a creature with no back bone

What children will do...

- Identify and name a variety of common animals including fish, amphibians, reptiles, birds, mammals, carnivores, herbivores and omnivores
- Describe and **compare** the structure of a variety of common animals
- Carefully observe creatures in the school grounds, generate questions and notice patterns
- Make a visual record of their observations, annotate to show understanding and learning **with scientific questions and develop lines of enquiry**
- Observe woodlice over a period of time and record the results **using different materials**
- Evaluate the results of their investigations and talk about what they have discovered

can change the shapes of solid objects made from some everyday materials.

- Waterproof material does not absorb fluid
- Natural materials are those that are found naturally around us, while man-made materials have been made by humans.

What children will do...

- Distinguish between an object and the material from which it is made
- Identify and name a variety of everyday materials
- Describe the physical properties of a variety of everyday materials
- Compare and group everyday materials based on their physical properties
- **Identify and compare the suitability of everyday materials**
- **Explore how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching**
- Consider the most suitable materials for fixing a torn umbrella

- Scientific data can be collected and presented in a variety of ways

- **water is a material**
- wax is a waterproof material
- some materials change when heated up and may change shape

What children will do...

- Distinguish between an object and the material from which it is made
- 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 a variety of everyday materials on their simple physical properties
- **Identify and compare the suitability of a variety of everyday materials**
- **Explore how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching**

- Know that light from the sun moves throughout the day
- Shadows are formed in the absence of light
- Wind direction can be observed through nature **and measured using a compass**
- wind has a range of uses including wind turbines
- sundials were used to help tell the time

What children will do...

- observe changes across the four seasons
- observe and describe weather associated with the seasons and how day length varies
- Consider whether current weather is typical or the time of year
- Consider the different elements of the seasons and create a collage to represent this
- Make a wind sock to measure wind direction-
- Begin to record the direction of the wind and consider if it will change **comparing the effectiveness of weather vane and wind sock**
- Make a bottle wind spiral and spinner to

- How to keep plants healthy
- **Scientific information can be collected and presented in a variety of ways**
- **The various functions of the parts of the plant and their importance including pollen.**

- The changes that occur when seeds and bulbs grow in to mature plants
- Some materials come from plants
- Know that seed dispersal can occur through pollination
- **Different plants disperse seeds in different ways**

What children will do...

- identify common plants that are useful to us
- Classify items based on whether or not they come from plants
- Make a seed helicopter and a dandelion seed
- Examine plants for signs that they have been eaten and consider what is eating them
- Study parts of plants through magnifying glasses
- Explore trees within our environment

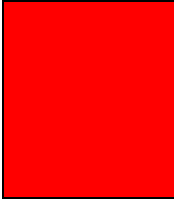
- Animals get their food from other animals or plants

- **a food chain is made of a series of plants and animals that eat each other and shows how energy is transferred from one organism to another via food**
- **some invertebrates like cool, damp conditions and some prefer the sun**

What children will do...

- **explore and compare the differences between things that are living, dead and things that have never been alive**
- **identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs animals and plants, and how they depend on each other**
- Create an allotment in the playground and plant edible plants
- Consider what conditions they will need to create to attract helpful insects
- **Make micro-habitats to encourage certain mini-beasts and create**

	<p>- Make comparisons between different pets' needs and requirements for health and happiness</p> <p>- Talk about and design a good pet, including why they have chosen to include specific features</p>	<p>- Consider and investigate the hypothesis "Hard materials cannot absorb water" and make predictions about different materials before testing them</p> <p>- Create hypotheses and make predictions about the absorbency of different materials</p> <p>- Investigate the absorbency of various materials</p> <p>- Discuss the difference between natural and man-made objects</p>	<p>- observe a block of ice and record the changes considering how they may change its state and explaining how its appearance changes as it melts</p> <p>- Devise an investigation to melt the ice quickly or slowly and make predictions</p> <p>- Explore the properties of water and the best ways of observing and measuring how puddles change over time</p>	<p>explore the strength of the wind in the playground</p> <p>- Design sun catchers for the classroom that will both absorb the sun and reflect it and consider the best places to hang these</p> <p>- make sundials and explore their effectiveness</p> <p>- Create a shadow theatre</p>	<p>- Find flowers and identify and sketch them</p> <p>- Look carefully at pollen and understand more about the role it plays in the growing of plants, vegetables and fruits</p> <p>-Take a flower to pieces and label the parts exploring the basic structure and the function of its parts</p>	<p>the right conditions to attract those specific living things</p> <p>- Explore the role that farms play in the food chain</p> <p>- Create a bug hotel and consider/ predict what each micro- habitat will attract</p> <p>- Observe over time what happens to the bug hotel and evaluate their micro- habitat</p> <p>- Observe and harvest the edible foods grown in the allotments</p>
Key vocabulary	<p>Patterns, behaviour, habitat, living things, damp, shady, dry, prediction, happy, healthy, investigate, Birds, fish, amphibians, reptiles, mammals, invertebrates, group, similarities and difference</p>	<p>Waterproof, absorbent, breaks/tears, materials, properties, strong, weak, hypothesis</p>	<p>Water, ice, melts, frozen, observe, materials, properties, absorbency, waterproof, strong, resist</p>	<p>Rain, snow, storm, thunder, lightning, warm, cold, forecast, summer, autumn, winter, spring, seasons, Wind, strength, direction, light source, Shadow, day, night, shadow length, change, light, dark</p>	<p>Plant, leaf, grow, weed, change, living, water, healthy, similar to, different from, useful, Seed, bean, water, warmth, nutrients, leaves, stem, roots, deciduous, evergreen, roots, stem, leaves, flower, trunk, bark</p>	<p>Growth, germination, planting, edible, mini-beasts, habitats, Harvest, grow, allotment, produce, soil, wash, cook</p>
SMSC	<p>Spirituality Children will explore aspects of nature including seasons and other natural phenomena They will question and explore why things happen and how things work They will debate and question 'big' ideas such as evolution They will develop a sense of awe and wonder about the world around them</p> <p>Social Explore how science- based charities promote and support health and wellbeing e.g. through Children's Mental Health Week</p> <p>Cultural Find out about different scientists from around the world Investigate variation between all living things</p>					
British Values	<p>Democracy Children will work collaboratively They will listen to other's opinions and ideas about science, theories and hypotheses</p>					



Rule of Law

Follow safety rules in science- see guidance from CLEAPSS

Individual Liberty

Express their hypotheses and ideas

Make predictions

Try out an idea or approach