Subject: **Science -Biology**			
Year group: 1			Unit of Learning: Animals including humans (Human body and senses)
Prior Learning Children know about similarities and differences in relation to 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.			**Future Learning:** In Year 2 pupils will learn that animals, including humans, have offspring which grow into adults; to describe the basic needs of animals, including humans, for survival (water, food and air) and the importance of exercise, eating the right amounts of different types of food, and hygiene. In Key stage 2 they will learn about the skeletomuscular system, digestive system and the circulatory system as well as life processes such as reproduction, nutrition and growth
Autumn 1			
Theme	Learning Objective	Substantive Knowledge	Suggested Activity
Session 1 2 hour	**What are the different parts of our body called?** To identify, name, draw and label the basic parts of the human body	To know that the human body has **hair** **head / face** **neck** **shoulders** **arm** **elbow** **hand** **finger** **body / torso** **stomach** **hips/pelvis** **legs** **knee** **foot feet** **toe toes**	Using peer coaching allow children to have a go a labelling an outline of the human body. Circulate and discuss explanations and misconceptions. * take photos to stick in books Watch https://www.bbc.co.uk/bitesize/topics/z9yycdm/articles/zqhbr82 Play 'Simon says' Pupils label a diagram of the human body

Session 2 1 hour	**What are our five senses and which body parts does each sense use?** • To say which part of the body is associated with each sense	To know that we have **5 senses; hearing, sight/seeing, taste, smell and touch.** To know that our **sense of sight** is associated with our **eyes**; our **sense of hearing** is associated with our **ears**, our **sense of taste** is associated with our **tongue**, or sense of **smell** is associated with our **nose** and **our sense of touch** is associated with our **skin**	Introduce to concept of senses using this clip from BBC Bitesize https://www.bbc.co.uk/bitesize/topics/z9yycdm/articles/zxy987h Either in small groups or whole class explore with the children how their senses help them. Challenge pupils to identify items using their senses Such as giving each child a chocolate button when their eyes are closed Letting them handle an ice cube with their eyes closed Smelling an orange with their eyes closed Identifying an instrument with their eyes closed. Identifying a mystery object inside a feely bag. Discus how easy / difficult that was. What body part did they use?
Session 3 1 hour	**What are our five senses and which body parts does each sense use?** To say which part of the body is associated with each sense		Using photographs from the practical senses session Pupils write a simple sentence We can taste with our mouths/tongue We can smell with our nose Our eyes help us to see Or label photographs with the sense and the body part **EXT/GD-** *How do your senses help you get ready for school/ cross the road /learn?* *What can be done if you sense of sight is impaired?* *What can be done if you sense of hearing is impaired?*
Session 4 1 hour	**How are bodies different?** **What are disabilities?**	To know that sometimes peoples **senses** don't work as well as they should and this is known as a **disability.** To know being **deaf** or **blind** are **disabilities** associated with the **senses of hearing** and **sight.**	Explain that although most bodies have the same parts they can often look different or work differently. Sometimes people's body parts don't work as well as they should and this is called a disability. When you have a disability you might need special equipment or medicine to help you. Watch https://www.youtube.com/watch?v=q4sGcaA6bFk – ONLY UP TO 3.25 VI workshop

		To know that there are things we can do to help people with disabilities live life in the same way people without disabilities live.	
Session 4 1 hour		ASSESSMENT <u>Key Assessment Criteria</u> To know the name and position of the different parts of the human body. To know the 5 senses and the body parts associated with each one.	**Teacher focus group.** Play Simon says touch your… to assess whether pupils can identify the different parts of our body called **What are our five senses and which body parts does each sense use?** Observe children matching senses cards to sensory oragan card Discuss How does this sense help you? How does you sense of sight help you stay safe? What sound can you hear? Etc. **<u>Assessment Carousel</u>** Prepare range of activities that pupils can attempt independently to recap and consolidate learning. This could include 1- Tasting and classifying fruits/ berries 2- Labelling big bodies 3- Draw a picture with a blindfold on. (provide pupils with a simple picture they have to look at, memorise and copy blindfolded) 4- Feely bags – identify the missing object 5- provision

'Forest Friday' Ongoing learning through out the year	**What is happening in our school environment in Autumn?** **WS -** To observe closely, using simple equipment **WS -** To ask simple questions and recognising that they can be answered in different ways **WS -** To observe closely, using simple equipment **WS -** To use observations and ideas to suggest answers to questions **WS -** To gather and recording data to help in answering questions To observe changes across the four seasons To observe and describe weather associated with the seasons and how day length varies. To identify and name a variety of common wild and garden plants, including deciduous and evergreen trees	To know that in the **UK** we have **four seasons spring, summer autumn and winter.** To know that in **autumn** the **days** become **shorter**; the **temperature** becomes **cooler; leaves** begin to **change colour** and **fall from the trees, plants** are **dying** and some **plants** will be **spreading** their **seeds** ready from next **spring**. In **autumn**, some **animals** will be collecting **food** to last them through the **winter**, others will be preparing to **hibernate** and some will **migrate** to warmer places <u>Key Assessment Criteria</u> To know the seasonal changes that take place in autumn including identifying deciduous and evergreen trees.	Regular walks into the school environment at different points throughout the year. **Describe the weather today** **What do you notice?** **What has changed since our last walk?** **What do you think we will see on our next walk?** Measure temperature /rainfall on frequent walks / record /create a line graph (whole class or individual) and compare to prediction. Look at changes to flora and fauna. Identify common wild and garden plants and trees Keep a simple observational diary. The weather was… The temperature I saw… I noticed Things that had changed • • • Next time I think I would like to find out

A bespoke scheme of learning for Science

A Scheme of Work designed to make our school a vibrant learning community where all pupils are successful learners. Leaners who are valued and able to thrive. It is designed to engage pupils and motivate them to learn. It is challenging and inspirational, with meaningful outcomes and clearly defined end points, but allows flexibility, to ensure all pupils receive a broad, balanced curriculum and prepares pupils for the next stage of their education and for life in modern Britain and beyond.

<table>
<tr><td colspan="4">Subject: Science -Chemistry</td></tr>
<tr><td colspan="2">Year group: 1</td><td colspan="2">Unit of Learning: Everyday Materials (Toys -History)</td></tr>
<tr><td colspan="2">Prior Learning
Children know about similarities and differences in relation to 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.</td><td colspan="2">Future Learning:
In Year 2 pupils will learn to identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses and find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.
In key stage 2 they will learn about rocks, states of matter and how materials can be changed.</td></tr>
<tr><td colspan="4">Autumn 2</td></tr>
<tr><td>Theme</td><td>Learning Objective</td><td>Substantive Knowledge</td><td>Suggested Activity</td></tr>
<tr><td>Session 1
2 hour</td><td>What are things made of?
• To distinguish between an object and the material from which it is made.</td><td>To know that objects are made from materials.
To know that the most common materials are: wood
plastic
glass
metal
water
rock
brick
paper
fabric</td><td>Explain that we use materials to make objects.
Designers choose the best material for job that they want the object to do.

You wouldn't want a teapot made of chocolate or a duvet made of metal or a bed made out of bricks

Pupils go on a discovery walk around school – listing / drawing objects made from wood, plastic, glass, metal, brick, fabric
  </td></tr>
<tr><td>Session 2
1 hour</td><td>What are things made of?
To identify and name a variety of everyday materials,</td><td>To know the characteristic of common materials: wood
plastic
glass
metal
water</td><td>• Provide pupils with a range of toys made from different materials.
• Pupils sort the toys based on what they are made from.
• Take photos for books
Finish by asking children why did the designer choose fabric to make a teddy bear or plastic for Duplo bricks</td></tr>
</table>

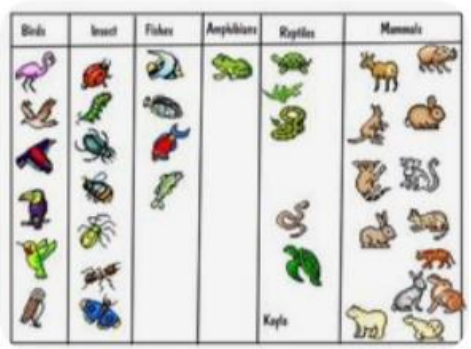
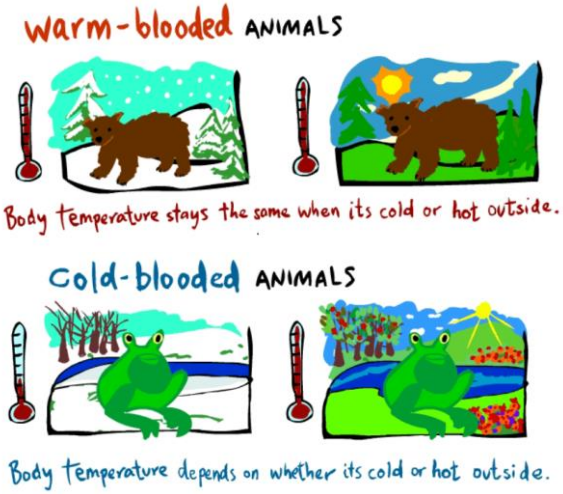
	including wood, plastic, glass, metal, water, and rock	**rock** **brick** **paper** **fabric** in order to identify them.	
Session 3 1 hour	**What are materials like?** To describe the simple physical properties of a variety of everyday materials	To know that **materials** have **different properties**. To know **properties of material** help us to **describe** them. To know the meaning of the words: **strong** **weak** **flexible** **rigid** **transparent** **translucent** **opaque** **soft** **hard** **waterproof** **absorbent** **shiny** **dull** **stretchy** **smooth**	Look at the new vocabulary on flash cards and explain that these words can be used to describe the materials. Most words can be organised into pairs of opposites The opposite of strong is weak etc. Choose an object such as a ruler Is this strong or weak? Flexible or rigid? Transparent, translucent or opaque? Using photographs of the toys from the previous session pupils identify what a toy is made from and what the properties of that material is. They may also include other relevant adjectives – bright – colourful etc. E.g  Teddy bear Fabric Flexible Opaque Soft
Session 4 1 hour	**What would be the best material to keep teddy dry?**	To know that some **materials** do certain **jobs** better than others. To know that **designers** choose **materials** based on whether they will be good at the **job** they have to do.	Pupils plan and carryout an investigation to test with materials would be best to make a coat for teddy Teddy needs a raincoat. Rabbit gives him some paper, fabric and some plastic but he doesn't know which will be best to make a coat –He takes the paper then places it

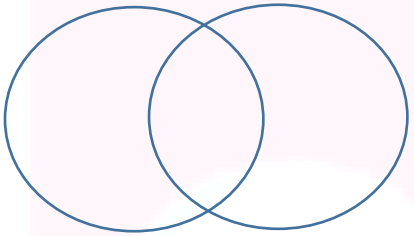
	Why do you think that? **How can we find out for certain?** To perform simple test to identify best material for a specific purpose **WS -** To ask simple questions and recognising that they can be answered in different ways **WS -** To observe closely, using simple equipment **WS -** To perform simple tests **WS -** To use observations and ideas to suggest answers to questions **WS -** To gather and recording data to help in answering questions.		over a bowl in a tray. He uses a pipet to squirt water on it, leaves it for 30 seconds then checks to see if any water dripped into the bowl. Through discussion identify - equipment to use, then all variables, then the **change** variable, then **measure** variable, **control** variables. Using 'Working Scientifically' slides pupils generate question and predication 

		ASSESSMENT <u>Key Assessment Criteria</u> To know the names of different everyday materials. To know some properties of different everyday materials.	**Teacher focus group.** **What are things made of?** **What are materials like?** Working with a small group. Place a tuff tray with a range of items made from different materials in front of the children. Ask them to select something made of …… wood…… Ask them to select something that is soft… waterproof… rigid **<u>Assessment Carousel</u>** Prepare range of activities that pupils can attempt independently to recap and consolidate learning. This could include 1- Sorting objects by material 2- Sorting objects by property 3- Feely bags – what is it made from? 4- Matching what materials would you use to make a raincoat / chair / blanket 5- provision	

'Forest Friday' Ongoing learning throughout the year	**What is happening in our school environment in Autumn?** **WS -** To observe closely, using simple equipment **WS -** To ask simple questions and recognising that they can be answered in different ways **WS -** To observe closely, using simple equipment **WS -** To use observations and ideas to suggest answers to questions **WS -** To gather and recording data to help in answering questions To observe changes across the four seasons To observe and describe weather associated with the seasons and how day length varies. To identify and name a variety of common wild and garden plants, including deciduous and evergreen trees	To know that in the **UK** we have **four seasons spring, summer autumn and winter.** To know that in **autumn** the **days** become **shorter**; the **temperature** becomes **cooler; leaves** begin to **change colour** and **fall from the trees, plants** are **dying** and some **plants** will be **spreading** their **seeds** ready from next **spring**. In **autumn**, some **animals** will be collecting **food** to last them through the **winter**, others will be preparing to **hibernate** and some will **migrate** to warmer places <u>Key Assessment Criteria</u> To know the seasonal changes that take place during winter, including how day length is much shorter compared to summertime.	Regular walks into the school environment at different points throughout the year. **Describe the weather today** **What do you notice?** **What has changed since our last walk?** **What do you think we will see on our next walk?** Measure temperature /rainfall on frequent walks / record /create a line graph (whole class or individual) and compare to prediction. Look at changes to flora and fauna. Identify common wild and garden plants and trees Keep a simple observational diary. The weather was… The temperature I saw… I noticed Things that had changed • • • Next time I think I would like to find out

Subject: **Science –Biology**			
Year group: 1			Unit of Learning: Animals including Humans
Prior Learning Children know about similarities and differences in relation to 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.			**Future Learning:** In Year 2 pupils will learn to identify the differences between things that are living, dead, and things that have never been alive. They will learn 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, including how animals, obtain their food from plants and other animals, using the idea of a simple food chain.
Spring 1			
Theme	Learning Objective	Substantive Knowledge	Suggested Activity Vocabulary and Discovery
Session 1 2 hour	**What makes some animals different to other animals?** **WS -** To identify and classify animals	To know that **animals** can be **grouped** in different ways. To know animals can be grouped by what they eat **carnivore, herbivore, omnivore**. To know that **carnivores eat meat** (other animals), **herbivores eat plants** and **omnivores eat both meat (animals) and plants** To know that animals with a **backbone (vertebrates)** can be grouped into **mammals, birds, reptiles, amphibians, and fish**.	Uses small world animals and direct them to sort them into their own groups and discuss how they have sorted them. Begin to introduce the new vocabulary by asking them to sort them into certain groups - birds/not bird - animals that live in the UK / animals that don't - animals that live in the arctic / animals that don't - carnivores /herbivores / omnivores
Session 2 1 hour	**What are the different types of animal?** **What type of animal is this?**	To know that **mammals, birds, reptiles, amphibians, and fish** have certain **characteristics** that help us to group them. To know that **birds** have	Sort characteristics of each animal group – Kagen https://www.bbc.co.uk/bitesize/topics/z6882hv **Birds** Not all birds can fly, but they do all have wings. Birds have beaks that help them catch and swallow food.

	How can we identify which group an animal belongs to? **What are the characteristics of birds?** **What ae the characteristics of reptiles?** To identify and name a variety of common animals specifically reptiles, birds and mammals	• **wings** • **a beak** • **two legs** • **lungs to breath** To know **birds** are **warm blooded** and their **babies** hatch out of the **eggs** they lay. To know that **reptiles** have • **4 legs or no legs** • **scales** • **lungs to breath** To know **reptiles** are **cold blooded** and their **babies** hatch out of the **eggs** they lay. To know that **warm-blooded animals** can keep their **body temperature** the same no matter if it's hot or cold. To know that **cold-blooded animals' body temperature** depends on the **temperature around them.**	Baby birds are born in eggs. Warm blooded. They have two legs. They breathe through lungs **Reptile** They are cold-blooded. Baby reptiles are born in eggs. They have four legs except for snakes. They breathe through lungs Their bodies are covered in scales  
Session 3 1 hour	**What is a carnivore, herbivore and omnivore?** **Which animals are carnivores?**	To know animals can be grouped by what they eat **carnivore, herbivore, omnivore.** To know that **carnivores eat meat** (other animals), **herbivores eat**	Clarify the terms Carnivore, Herbivore, Omnivore Give children pictures or small world figures and ask them to sort them into Carnivore, herbivore omnivore Pupils use a Venn diagram to sort animals

<table>
<tr>
<td></td>
<td>Which animals are herbivores?
Which animals are omnivore?
To identify and name a variety of common animals that are carnivores, herbivores and omnivores</td>
<td>plants and omnivores eat both meat (animals) and plants</td>
<td>Herbivore (plants) Carnivore (meat)
 
Omnivore - both</td>
</tr>
<tr>
<td>Session 4
1 hour</td>
<td>What characteristic do birds and reptiles have?
What are their similarities?
What are their differences?
Do they share characteristics?
To describe and compare the structure of a variety of common animal's reptiles, birds and mammals, including pets)</td>
<td>To know that birds have
• wings
• a beak
• two legs
• lungs to breath
To know birds are warm blooded and their babies hatch out of the eggs they lay.
To know that reptiles have
• 4 legs or no legs
• scales
• lungs to breath
To know reptiles are cold blooded and their babies hatch out of the eggs they lay.
To know that warm-blooded animals can keep their body temperature the same no matter if it's hot or cold.
To know that cold-blooded animals' body temperature depends on the temperature around them.</td>
<td>Pupils create a fact file using video clips, photographs and information texts on a birds and a reptile you have chosen based on pupil interest, animals you have seen while, in the woodland, pets, characters in your class text or other books you have looked at
<table>
<tr><th></th><th>Fish</th><th>Amphibians</th><th>Reptiles</th><th>Birds</th><th>Mammals</th></tr>
<tr><td>Warm blood or cold blood?</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Type of body covering?</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Live birth or hatch from egg?</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Feeds young with milk</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Has a skeleton</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Breathes with lungs or gills?</td><td></td><td></td><td></td><td></td><td></td></tr>
</table>
</td>
</tr>
</table>

		ASSESSMENT WEEK <u>Key Assessment Criteria</u> To know the key physical features and characteristics of reptiles and birds. To know the meaning of the terms carnivore, herbivore and omnivore.	Assessment Carousel Prepare range of activities that pupils can attempt independently to recap and consolidate learning. This could include 1. Labelling animals (cut and stick) 2. Identifying animals using classification keys 3. Sorting animals 4. Small world animals and habitats **Focus group** Give each pupil a selection of small world animals and ask them to sort them however they wish and explain what they have done. Now ask them to sort them according to your criteria. Choose two animals for each child and ask children to identify them and classify them as a mammal, bird or reptile. How did they know? What else can they tell you? Put the small world animals in the middle of the table and ask each child to select a herbivore, omnivore or carnivore.	

<table>
<tr>
<td>'Forest Friday'

Ongoing learning throughout the year</td>
<td>What is happening in our school environment in spring?
WS - To observe closely, using simple equipment
WS - To ask simple questions and recognising that they can be answered in different ways
WS - To observe closely, using simple equipment
WS - To use observations and ideas to suggest answers to questions
WS - To gather and recording data to help in answering questions
To observe changes across the four seasons
To observe and describe weather associated with the seasons and how day length varies.
To identify and name a variety of common wild and garden plants, including deciduous and evergreen trees</td>
<td>To know that in the UK we have four seasons spring, summer autumn and winter.

To know that in Winter the days become even shorter; the temperature becomes very cold; deciduous trees will have no leaves, many plants will be dead

In winter, you won't see many animals, some animals will hibernate and some will have migrate to warmer places

<u>Key assessment Criteria</u>
To know seasonal changes that take place in early spring including identifying plants and flowers.</td>
<td>Regular walks into the school environment at different points throughout the year.
Describe the weather today
What do you notice?
What has changed since our last walk?
What do you think we will see on our next walk?
Measure temperature /rainfall on frequent walks / record /create a line graph (whole class or individual) and compare to prediction. Look at changes to flora and fauna. Identify common wild and garden plants and trees

Keep a simple observational diary.
The weather was…

The temperature

I saw…

I noticed

Things that had changed
•
•
•
Next time I think
I would like to find out</td>
</tr>
</table>

A bespoke scheme of learning for Science

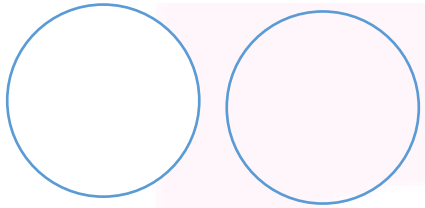
A Scheme of Work designed to make our school a vibrant learning community where all pupils are successful learners. Leaners who are valued and able to thrive. It is designed to engage pupils and motivate them to learn. It is challenging and inspirational, with meaningful outcomes and clearly defined end points, but allows flexibility, to ensure all pupils receive a broad, balanced curriculum and prepares pupils for the next stage of their education and for life in modern Britain and beyond.

Subject: **Science –Chemistry**			
Year group: 1			Unit of Learning: Material (household items past and present History)
Prior Learning Children know about similarities and differences in relation to 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.			Future Learning: In Year 2 pupils will learn to identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses and find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. In key stage 2 they will learn about rocks, states of matter and how materials can be changed.
Spring 2			
Theme	Learning Objective	Substantive Knowledge	Suggested Activity
Session 1 2 hour	**What are things made of?** • To distinguish between an object and the material from which it is made.	To know that **objects** are made from **materials.** To know that the most common **materials** are: **wood** **plastic** **glass** **metal** **water** **rock** **brick** **paper** **fabric**	• Provide pupils with a range of household objects made from different materials. • Pupils sort them based on what they are made from. • Take photos for books • What did they notice? • What were most things made from? Compare items from the past and the present
Session 2 1 hour	**Are all materials the same?** **How are they similar?** **How are they different?**	To know that **materials** have different **properties**. To know **properties** of **material** help us to describe them. To know the meaning of the words:	Ask **Are all materials the same?** **How are they similar?** **How are they different?**

<table>
<tr>
<td></td>
<td>What are the properties of different materials?
• To describe the simple physical properties of a variety of everyday materials</td>
<td>strong
weak
flexible
rigid
transparent
translucent
opaque
soft
hard
waterproof
absorbent
shiny
dull
stretchy
smooth
To know that some materials do certain jobs better than others.
To know that designers choose materials based on whether they will be good at the job they have to do.</td>
<td>Recap vocabulary on flash cards and explain that these words can be used to describe the materials.
Most words can be organised into pairs of opposites
The opposite of strong is weak etc.
Pupils assign properties to the materials used to make different household items.
Pupils complete statements about the household items.
‘The sweeping brush in made from wood because it is rigid.’
‘The sweeping brush in made from wood. Wood is strong and rigid.’

GD-
Wood is good for making sweeping brushes because it is strong, rigid and smooth.</td>
</tr>
<tr>
<td>Session 3
1 hour</td>
<td>How can we sort these items based on their properties? What do you notice about your sorting diagram?</td>
<td>To know the meaning of the words:
strong
weak
flexible
rigid
transparent
translucent
opaque</td>
<td>Using photographs of the household items from the past and present pupils complete sorting diagrams based on the properties of materials used.

<table><tr><td>Flexible</td><td>Rigid</td></tr><tr><td>Cloth
Mop head</td><td>Sweeping brush
bucket</td></tr></table></td>
</tr>
</table>

	Can you seen any patterns, similarities or differences? To compare and group together a variety of everyday materials on the basis of their simple physical properties.	**soft** **hard** **waterproof** **absorbent** **shiny** **dull** **stretchy** **smooth**	 Waterproof Absorbent
Session 4 1 hour		ASSESSMENT To know some properties of different everyday materials. To know why objects have been made from certain materials.	**<u>Assessment Carousel</u>** Prepare range of activities that pupils can attempt independently to recap and consolidate learning. This could include 1- Sorting objects by material 2- Sorting objects by property (Two properties – Venn diagram) 3- Feely bags – what is it made from? How did you know? 4- Explaining why objects have been made from certain items… wellies / blanket 5- provision

<table>
<tr>
<td>'Forest Friday'

Ongoing learning throughout the year</td>
<td>What is happening in our school environment in spring?
WS - To observe closely, using simple equipment
WS - To ask simple questions and recognising that they can be answered in different ways
WS - To observe closely, using simple equipment
WS - To use observations and ideas to suggest answers to questions
WS - To gather and recording data to help in answering questions
To observe changes across the four seasons
To observe and describe weather associated with the seasons and how day length varies.
To identify and name a variety of common wild and garden plants, including deciduous and evergreen trees</td>
<td>To know that in the UK we have four seasons spring, summer autumn and Spring.

To know that in spring the days become longer; the temperature becomes warmer; deciduous trees will start to blossom or bud, plants will be start to grow

In spring, animals will become more active, hibernating animals will wake up and some animals that migrated will start to return

<u>Key Assessment Criteria</u>
To know some season changes that take place during spring, including how the weather is changing and how daytime is increasing.</td>
<td>Regular walks into the school environment at different points throughout the year.
Describe the weather today
What do you notice?
What has changed since our last walk?
What do you think we will see on our next walk?
Measure temperature /rainfall on frequent walks / record /create a line graph (whole class or individual) and compare to prediction. Look at changes to flora and fauna. Identify common wild and garden plants and trees

Keep a simple observational diary.
The weather was…

The temperature

I saw…

I noticed

Things that had changed
•
•
•
Next time I think
I would like to find out</td>
</tr>
</table>

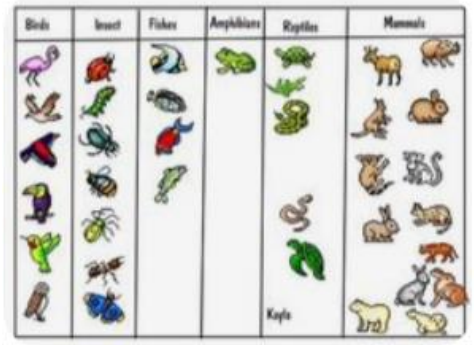
A bespoke scheme of learning for Science

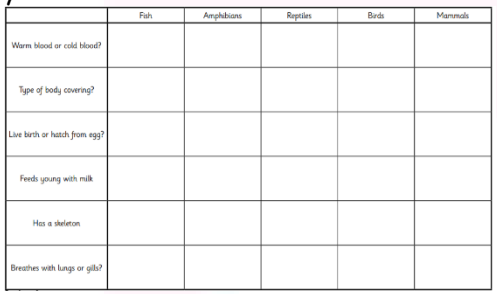
A Scheme of Work designed to make our school a vibrant learning community where all pupils are successful learners. Leaners who are valued and able to thrive. It is designed to engage pupils and motivate them to learn. It is challenging and inspirational, with meaningful outcomes and clearly defined end points, but allows flexibility, to ensure all pupils receive a broad, balanced curriculum and prepares pupils for the next stage of their education and for life in modern Britain and beyond.

<table>
<tr><td colspan="4">Subject: Science –Physics</td></tr>
<tr><td colspan="2">Year group: 1</td><td colspan="2">Unit of Learning:</td></tr>
<tr><td colspan="2">Prior Learning
Children know about similarities and differences in relation to 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.</td><td colspan="2">Future Learning:
In Year 2 pupils will learn to identify the differences between things that are living, dead, and things that have never been alive. They will learn 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, including how animals, obtain their food from plants and other animals, using the idea of a simple food chain.</td></tr>
<tr><td colspan="4">Summer 1</td></tr>
<tr><td>Theme</td><td>Learning Objective</td><td>Substantive Knowledge</td><td>Suggested Activity
Vocabulary and Discovery</td></tr>
<tr><td>Session 1
2 hour</td><td>What makes some animals different to other animals?

WS - To identify and classify animals</td><td>To know that animals can be grouped in different ways.
To know animals can be grouped by what they eat
carnivore, herbivore, omnivore.
To know that carnivores eat meat (other animals), herbivores eat plants and omnivores eat both meat (animals) and plants
To know that animals with a backbone (vertebrates) can be grouped into mammals, birds, reptiles, amphibians, and fish.</td><td>Uses small world animals and direct them to sort them into their own groups and discuss how they have sorted them.

Begin to introduce the new vocabulary by asking them to sort them inti certain groups
- fish / not fish amphibian/not amphibians
- animals that live in the UK / animals that don't
- animals that live in water all the time/ animals that don't
- carnivores /herbivores / omnivores</td></tr>
</table>

Session 2 1 hour	**What are the different types of animal?** **What type of animal is this?** **How can we identify which group an animal belongs to?** **What are the characteristics of fish?** **What ae the characteristics of mammals?** **What ae the characteristics of amphibians?** To identify and name a variety of common animals specifically fish, amphibians and mammals	To know that **mammals, birds, reptiles, amphibians, and fish** have certain **characteristics** that help us to group them. To know that **fish** have • **scales** • **no legs** • **gills to breath** To know **fish** are **cold blooded** and their **babies** hatch out of the **eggs** they lay. To know that **amphibians** have • **skin** • **for some of their life they have gills but they develop lungs as the get older.** To know **amphibians** are **cold-blooded** and their **babies** hatch out of the **eggs** they lay. To know that **mammals** have • **skin with some hair or fur** • **a beak** • **4 limbs (arms and legs)** • **lungs to breath** To know **mammals** are **warm-blooded** and they give **birth** to live **babies.**	Sort characteristics of each animal group – Kagen https://www.bbc.co.uk/bitesize/topics/z6882hv **Fish** Has fins to help it swim. Is covered in scales Baby fish are born in eggs. Cold blooded. They have no legs. They breathe through gills underwater **mammals** Young mammals drink milk from their mothers. Most mammals have skin with some hair or fur. Almost all mammals give birth to live babies (not in eggs). They are warm-blooded. They breathe through lungs **Amphibian** They are cold-blooded. Baby amphibians are born in eggs. Some of their life they have gills then they develop lungs to breath on land Their bodies are covered in skin 

Session 3 1 hour	**What characteristic do birds and reptiles have? What are their similarities? What are their differences? Do they share characteristics?** To describe and compare the structure of a variety of common animal's fish, amphibians and mammals, including pets)	To know that **mammals, birds, reptiles, amphibians, and fish** have certain **characteristics** that help us to group them. To know that **fish** have • **scales** • **no legs** • **gills to breath** To know **fish** are **cold blooded** and their **babies** hatch out of the **eggs** they lay. To know that **amphibians** have • **skin** • **for some of their life they have gills but they develop lungs as the get older.** To know **amphibians** are **cold-blooded** and their **babies** hatch out of the **eggs** they lay. To know that **mammals** have • **skin with some hair or fur** • **a beak** • **4 limbs (arms and legs)** • **lungs to breath** To know **mammals** are **warm-blooded** and they give **birth** to live **babies.**	Pupils create a fact file using video clips, photographs and information texts on amphibians, mammal and fish you have chosen based on pupil interest, animals you have seen while, in the woodland, pets characters in your class text or other books you have looked at  Fish / Amphibians / Reptiles / Birds / Mammals Warm blood or cold blood? Type of body covering? Live birth or hatch from egg? Feeds young with milk Has a skeleton Breathes with lungs or gills?
		ASSESSMENT WEEK <u>Key Assessment Criteria</u>	Assessment Carousel Prepare range of activities that pupils can attempt independently to recap and consolidate learning. This could include

		To know the key physical features and characteristics of mammals, fish and amphibians. To know the meaning of the terms carnivore, herbivore and omnivore and name animals withing each category.	5. Labelling animals (cut and stick) 6. Identifying animals using classification keys 7. Sorting animals 8. Small world animals and habitats **Focus group** Give each pupil a selection of small world animals and ask them to sort them however they wish and explain what they have done. Now ask them to sort them according to your criteria. Choose two animals for each child and ask children to identify them and classify them as a mammal, bird or reptile. How did they know? What else can they tell you? Put the small world animals in the middle of the table and ask each child to select a herbivore, omnivore or carnivore.
		PREP for Summer 2	Look at a variety of seeds, beans bulbs plant in various containers including plant pots with soil and clear containers with blotting paper or kitchen roll Take a photograph. Pupils will keep a plant diary next half term and measure the growth of two plants in order to complete a weekly class chart and compare the growth at the end of term

<table>
<tr>
<td>'Forest Friday'

Ongoing learning throughout the year</td>
<td>What is happening in our school environment in spring?
WS - To observe closely, using simple equipment
WS - To ask simple questions and recognising that they can be answered in different ways
WS - To observe closely, using simple equipment
WS - To use observations and ideas to suggest answers to questions
WS - To gather and recording data to help in answering questions
To observe changes across the four seasons
To observe and describe weather associated with the seasons and how day length varies.
To identify and name a variety of common wild and garden plants, including deciduous and evergreen trees</td>
<td>To know that in the UK we have four seasons spring, summer autumn and Spring.

To know that in late spring the days become longer; the temperature becomes warmer; deciduous trees that blossomed will show signs of fruit trees will be in full leaf, plants will growing

In spring, animals will become more active and have babies of their own

<u>Key Assessment Criteria</u>
To know some season changes that take place during spring/ summer, including the abundance of new plant and animal life that is starting grow / be born.</td>
<td>Regular walks into the school environment at different points throughout the year.
Describe the weather today
What do you notice?
What has changed since our last walk?
What do you think we will see on our next walk?
Measure temperature /rainfall on frequent walks / record /create a line graph (whole class or individual) and compare to prediction. Look at changes to flora and fauna. Identify common wild and garden plants and trees

Keep a simple observational diary.
The weather was…

The temperature

I saw…

I noticed

Things that had changed
•
•
•
Next time I think
I would like to find out</td>
</tr>
</table>

A bespoke scheme of learning for Science

A Scheme of Work designed to make our school a vibrant learning community where all pupils are successful learners. Leaners who are valued and able to thrive. It is designed to engage pupils and motivate them to learn. It is challenging and inspirational, with meaningful outcomes and clearly defined end points, but allows flexibility, to ensure all pupils receive a broad, balanced curriculum and prepares pupils for the next stage of their education and for life in modern Britain and beyond.

Subject: **Science -Biology**			
Year group: 1			Unit of Learning: Plants
Prior Learning Children should know about similarities and differences in relation to 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.			**Future Learning:** In Year 2 pupils will learn how seeds and bulbs grow into mature plants And that plants need water, light and a suitable temperature to grow and stay healthy. In Year 3 pupils will learn to identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers. They will investigate the way in which water is transported within plants and explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.
Summer 2			
Theme	Learning Objective	Substantive Knowledge	Suggested Activity
Session 1 2 hour	**What are the different parts of a plant called?** To identify and describe the basic structure of a variety of common flowering plants, including trees.	To know that **plants** and **trees** are **living things**. To know that some **plants** have **flowers** and others don't. To know that all plants are made up of **roots** **stem** **leaves** To know that flowering plants are made up of **roots** **stem** **leaves** **flowers** **petals**	Provide children with a variety of plants on their table such as a leek, a lily (TAKE CARE the pollen stains), cress, 'living salad' leaves, potted plant, flowering plant. https://www.bbc.co.uk/bitesize/topics/zpxnyrd/articles/z3wpsbk Explain that, most plants are made up of roots stem leaves flowers petals Pupils use sticky notes to label the plants on the table in front of them. EXT: can pupils explain the function of each part of the plants.

Session 2 1 hour	**How do plants grow?**	To know that **plants grow** from **seeds** and **bulbs**. To know that the **roots grow first underground** and then a **shoot** will **appear above ground**.	Start by looking at the photos of the different seeds planted before half term. 'Before the holidays we planted different seeds in a variety of container' Today we are going to see how they have changed' 'What do you think might have happened?' (give thinking time and use Kagen strategies where appropriate) Use Kagen strategies to generate vocabulary they might need to describe the plants.  https://www.youtube.com/watch?v=JSe_VUMymjo Clarify new vocabulary germination, seed coat, roots and shoot introduced in the clip Show children the plants use Kagen strategies to describe the changes. Record the changes as you see fit in a plant diary (photographs and captions, labelled diagrams…) (Maybe choose the beans or sunflowers to focus on for plant diary) Measure the growth of two different plant and complete a weekly growth chart as a class
Session 3 1 hour	**What different plants are found in our school environment?** To identify and name a variety of common wild and garden plants, including deciduous and evergreen trees	To know that **plants** and **trees** are **living things**. To know that some **plants** have **flowers** and others don't. To know **deciduous** trees lose their **leaves** in **autumn**. To know **evergreen** trees have **leaves** all year round. To know the names of some **common plants** found in our school environment.	Pre teach / introduce some simple classification keys or books. Similar to Lesson 1 but this time look at the plants in our school environment. Pupils identify common wild plants and trees and recognise parts of different plants they find. Could this be a scavenger hunt done in smaller groups set out at different points around school- have classification keys available - Polly tunnel - Quad - Forest / woodland - Sun flowers - School field

		To know how to use simple **classification keys.**	Record learning using photographs and post-it not observations or pupils cold use photographs in follow up work to classify and label.
Session 4 1 hour	**What are the different parts of a plant called?** To identify and describe the basic structure of a variety of common flowering plants, including trees.	To know that all plants are made up of **roots** **stem** **leaves** To know that flowering plants are made up of **roots** **stem** **leaves** **flowers** **petals** To know where the **roots, stem, leaves, flowers, petals** are on different **plants.**	Start by looking at the photos of the different seeds planted before half term. 'Think back to last time we looked at the seeds – what had happened what did they look like?' How do you think they will look today? Make a prediction about how the plants will look today. (give thinking time and use Kagen strategies where appropriate) Use Kagen strategies to generate vocabulary they might need to describe the plants. Record the changes as you see fit in a plant diary (photographs and captions, labelled diagrams…) Complete Plant diary for the final time Start by looking at the photos of the different seeds planted before half term. 'Think back to last time we looked at the seeds – what had happened what did they look like?' How do you think they will look today? Make a prediction about how the plants will look today. (give thinking time and use Kagen strategies where appropriate) Record the changes as you see fit in a plant diary (photographs and captions, labelled diagrams…) Look at the class growth chart and discuss what it shows using Kagen strategies. Is this what they expected why /why not? Pupils stick a copy/ photograph of the chart in their book and explain chart the chart shows
		ASSESSMENT <u>Key Assessment Criteria</u> To know that all plants are made up of **roots, a stem** and **leaves** and that flowering plants also have **flowers** and **petals.**	

<table>
<tr>
<td>'Forest Friday'

Ongoing learning throughout the year</td>
<td>What is happening in our school environment in summer?
WS - To observe closely, using simple equipment
WS - To ask simple questions and recognising that they can be answered in different ways
WS - To observe closely, using simple equipment
WS - To use observations and ideas to suggest answers to questions
WS - To gather and recording data to help in answering questions
To observe changes across the four seasons
To observe and describe weather associated with the seasons and how day length varies.
To identify and name a variety of common wild and garden plants, including deciduous and evergreen trees</td>
<td>To know that in the UK we have four seasons spring, summer autumn and Spring.

To know that in summer the days become longer; the temperature becomes warmer; deciduous trees that blossomed will show signs of fruit, trees will be in full leaf, plants will growing

In spring, animals will become more active and have babies of their own

ASSESSMENT
<u>Key Assessment Criteria</u>
To know some of the seasonal changes that occur during summer and name a variety of common wild and garden plants,</td>
<td>Regular walks into the school environment at different points throughout the year.
Describe the weather today
What do you notice?
What has changed since our last walk?
What do you think we will see on our next walk?
Measure temperature /rainfall on frequent walks / record /create a line graph (whole class or individual) and compare to prediction. Look at changes to flora and fauna. Identify common wild and garden plants and trees

Keep a simple observational diary.
The weather was…

The temperature

I saw…

I noticed

Things that had changed
•
•
•
Next time I think
I would like to find out</td>
</tr>
</table>