



Medium Term Planning Science: Pumas and Shooting Stars- SEND planning

Animals Including Humans

Working Scientifically: Across all year groups scientific knowledge and skills are learnt by working scientifically.

There are five key strands linked to **Working Scientifically** that are apparent throughout all of the topics and across all year groups:

Asking Questions and Carrying Out Fair and Comparative Tests:

- KS1: Asking simple questions and recognising that they can be answered in different ways.
Performing simple tests.
- Y3/4: Asking relevant questions and using different types of scientific enquiries to answer them.
Setting up simple practical enquiries, comparative and fair tests.
- Y5/6: Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.
Using test results to make predictions to set up further comparative and fair tests.

Observing and Measuring Changes:

- KS1: Observing closely, using simple equipment.
- Y3/4: Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.
- Y5/6: Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.

Identifying, Classifying, Recording and Presenting Data:

- KS1: Identifying and classifying.
Gathering and recording data to help in answering questions.
- Y3/4: Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions.
Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.
- Y5/6: Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.

Drawing Conclusions, Noticing Patterns and Presenting Findings:

- KS1: Using their observations and ideas to suggest answers to questions.
- Y3/4: Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.
Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.
- Y5/6: Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations.

Using Scientific Evidence and Secondary Sources of Information:

- Y3/4: Identifying differences, similarities or changes related to simple scientific ideas and processes.
Using straightforward scientific evidence to answer questions or to support their findings.
- Y5/6: Identifying scientific evidence that has been used to support or refute ideas or arguments.



Tier 1	Tier 2	Tier 3
<p>grow live healthy fruit and vegetables animals humans skeleton bones muscles</p>	<p>carbohydrates protein fats support protection movement oxygen</p>	<p>herbivore carnivore omnivore vertebrates invertebrates</p>

Lesson	Learning Objective	Brief outline and suggested outcome	Milestone Objectives	Points To Note	Resources
1	<p>I know what we need to eat and why.</p> <p>I am beginning to gain an understanding of the 5 main food groups.</p> <p>I understand that humans need a variety of nutrients to survive, and we get these from the different foods we eat.</p>	<p>Explore why living things need food to grow, to be strong, to live and be healthy.</p> <p>Pose the question, - 'What did you have for tea last night?' Children share details of their evening meal.</p> <p>Introduce the children to the five main food groups to the children and talk about what types of foods are found in each food group and why it is important to eat/not eat too much of that food group. Look at what 'I' had to eat. Using a food plate, identify which food group each component of my meal falls into.</p> <p>In small groups or mixed ability pairs children sort food into healthy/unhealthy and then sort pictures of foods into the correct food group e.g., fats, proteins, carbohydrates. Talk through - Hmm, these are potatoes they are carbohydrates, and they give humans energy.</p> <p>Shooting Stars/Pumas -Practically sort food into the correct food group.</p>	<p>Working Scientifically:</p> <p>Asking Questions and Carrying Out Fair and Comparative Tests:</p> <p>Asking relevant questions and using different types of scientific enquiries to answer them.</p> <p>Identifying, Classifying, Recording and Presenting Data:</p> <p>Gathering, recording and classifying and presenting data in a variety of ways to help in answering questions.</p>	<p>ICT: Use of visual images off IWB.</p> <p>Chn can use ICT in class to place food in the correct place.</p> <p>Use of iPad to record and take images of the children being Scientists. Use the images to aid discussion and develop communication and language skills with modelling the use of</p>	<p>Selection foods real and pictures e.g., potatoes, meat, vegetables, and a chocolate bar.</p>

		Date, target, photograph to be stuck in book with chn writing a short explanation of what they did in today's lesson.		scientific language,	
2	<p>I can name 5 of the main food groups and understand each food groups impact on the body. (Pumas)</p> <p>I can name at least of the main food groups and understand each food groups impact on the body. (Shooting Stars)</p> <p>I understand that humans need a variety of nutrients to survive, and we get these from the different foods we eat.</p>	<p>Recap why living things need food to grow, to be strong, to live and be healthy.</p> <p>Pose the question, - 'What did you have for tea last night? Children share details of their evening meal.</p> <p>Recap the five main food groups to the children and talk about what types of foods are found in each food group and why it is important to eat/not eat too much of that food group. Recap - look at what 'I' had to eat. Using a food plate, identify which food group each component of my meal falls into.</p> <p>In mixed ability pairs chn make a healthy balanced meal based upon prior learning.</p> <p>Shooting Stars - Make a balanced meal using Play Doh focusing on 3 food groups.</p> <p>Date, target, photograph to be stuck in book with chn writing a short explanation of what they did in today's lesson. E.g This is my healthy plate I made _____ and.</p> <p>Pumas - Make a balanced meal by drawing the pictures and labelling each food and food group.</p>	<p>Working Scientifically:</p> <p>Asking Questions and Carrying Out Fair and Comparative Tests:</p> <p>Asking relevant questions and using different types of scientific enquiries to answer them.</p> <p>Identifying, Classifying, Recording and Presenting Data:</p> <p>Gathering, recording and classifying and presenting data in a variety of ways to help in answering questions.</p>	<p>ICT: Use of visual images on IWB.</p> <p>Chn can use ICT in class to place food in the correct place.</p> <p>Use of iPad to record and take images of the children being Scientists. Use the images to aid discussion and develop communication and language skills with modelling the use of scientific language.</p>	<p>Selection foods real and pictures e.g., potatoes, meat, vegetables, and a chocolate bar.</p> <p>Play Doh Eat Well Plate templates for each pair.</p>




3	<p>I am beginning to understand what a herbivore, carnivore and omnivore is.</p> <p>To understand that animals and humans: Identify those animals, including humans, need the right types and amount of nutrition; that they cannot make their own food and they get nutrition from what they eat.</p>	<p>Recap the learning from previous lesson and explain to the children that it is equally important for animals to get the right nutrition and to eat the right types of foods. Use visual images to show an example of an herbivore, carnivore and omnivore. Can the chn name the animal? Then discuss the different animal classifications. Using images to help their understanding e.g., herbivore - herb that makes me think of herbs and plants. To aid the children's understanding we will focus on animals the chn already know and where possible link to Shooting Stars Autumn topic and Talk For Writing book.</p> <p>Use role play and internet videos to show animals eating that food e.g. carnivores eat lots of meat, so they get their energy from protein; herbivores get their energy from eating plants, but different animals will eat different types of plants (Koala Bear eats Eucalyptus Leaves, while an elephant eats a wide variety of plant foods such as branches, fruit, grasses and leaves) and that omnivores can be more flexible in what they eat usually because it is what is available to them (a Brown Bear will eat fish that it can catch in a river but it will also eat berries from a tree).</p> <p>Ask the children whether they can think of any animals that fit any of these groups? (Be prepared to have your own examples ready for Shooting Stars) Encourage them to think about more familiar animals such as pets or animals they have seen on visits such as farms or zoos.</p> <p>Work in mixed ability pairs (Shooting Stars) or individually (Pumas) to name a range of photographs/pictures of the animals on their tables. Chn then sort the visual images into the correct group of carnivores, herbivores, omnivores. Challenge - Why would they eat this food? E.g. A Lion would eat meat, which is protein to make it big and strong. Can you draw on your own examples of any other animals.</p> <p>Date, target, photograph to be stuck in book with chn writing a short explanation of what they did in today's lesson.</p>	<p>Working Scientifically:</p> <p>Asking Questions and Carrying Out Fair and Comparative Tests:</p> <p>Asking relevant questions and using different types of scientific enquiries to answer them.</p> <p>Identifying, Classifying, Recording and Presenting Data:</p> <p>Gathering, recording and classifying and presenting data in a variety of ways to help in answering questions.</p> <p>Using Scientific Evidence and Secondary Sources of Information:</p> <p>Use straightforward scientific evidence to answer questions or to support their findings.</p>	<p>ICT: Use of visual images and videos on IWB to aid understanding.</p> <p>Use of iPad to record and take images of the children being Scientists. Use the images to aid discussion and develop communication and language skills with modelling the use of scientific language.</p>	<p>Visual images of animals</p>
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4	<p>I can investigate animal skeletons.</p> <p>To understand animals and humans:</p> <p>Identify those humans and animals have skeletons and muscles for support, protection and movement.</p>	<p>Show the children pictures of different skeletons, including a human skeleton. What can the children tell you about them? Do all creatures have the same kind of skeleton?</p> <p>Discuss the meaning of the word vertebrates and invertebrates, such as an elephant and worm. Discuss the differences between them. Class quiz with white boards to identify vertebrates and invertebrates, then group sorting activity.</p> <p>Children to recognise the animals from their skeleton e.g. dogs, cats, rabbits. Pumas to have more challenging animals. Class quiz.</p> <p>Date, target, photograph to be stuck in book with chn writing a short explanation of what they did in today's lesson.</p>	<p>Working Scientifically:</p> <p>Asking Questions and Carrying Out Fair and Comparative Tests:</p> <p>Asking relevant questions and using different types of scientific enquiries to answer them.</p> <p>Identifying, Classifying, Recording and Presenting Data:</p> <p>Gathering, recording and classifying and presenting data in a variety of ways to help in answering questions.</p> <p>Using Scientific Evidence and Secondary Sources of Information:</p> <p>Use straightforward scientific evidence to answer questions or to support their findings.</p> <p>Observing and Measuring Changes:</p> <p>Making systematic and careful observations.</p>	<p>ICT: Use of visual images and videos on IWB to aid understanding.</p> <p>Use of iPad to record and take images of the children being Scientists. Use the images to aid discussion and develop communication and language skills with modelling the use of scientific language.</p>	<p>Visual images.</p>
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5	<p>I can create a human skeleton.</p> <p>I am beginning to understand that bones have different functions and sizes.</p>	<p>Start the lesson by encouraging the children to stand up and move their bodies. Posing the question...Hmm I wonder how our muscles are attached to our body? Explain that some animals and humans have bones which attach to a skeleton. Prior to the lesson Shooting Stars will have read the story Funny Bones during class story time. Play the chn the Funny Bones song and use role play and the song to act out the song. Look closely at the diagram of a human skeleton. Which bones do the children think are the most important? Why?</p> <p>Share the names of some of the most familiar bones such as the skull, spine, rib cage, thigh bone with the children identifying these bones on the human skeleton.</p> <p><i>Make a split pin diagram of a skeleton to introduce key parts of the human skeleton.</i></p> <p><i>Shooting Stars - Label simpler bones from Funny Bones song - foot, leg, knee, thigh, hip, back bone (spine)</i></p> <p><i>Pumas - To work on all the above plus spine, skull, rib cage.</i></p>	<p>Working Scientifically:</p> <p>Asking Questions and Carrying Out Fair and Comparative Tests:</p> <p>Asking relevant questions and using different types of scientific enquiries to answer them.</p> <p>To understand animals and humans:</p> <p>Identify that humans and some animals have skeletons and muscles for support, protection and movement.</p>	<p>ICT: Use of visual images, videos and songs on IWB to aid understanding.</p> <p>Use of iPad to record and take images of the children being Scientists. Use the images to aid discussion and develop communication and language skills with modelling the use of scientific language.</p>	<p>Funny Bones stort - song</p> <p>Human skeleton cut up, split pins</p> <p>Visual images</p>
6	<p>I can investigate and explain the purpose of a human skeleton.</p>	<p>Flashback Four.</p> <p>Skeleton labelling activity. As a whole class then individually. Shooting Stars to label more simple bones. Pumas to use more scientific vocabulary e.g. femur, spine, etc.</p> <p>http://www.youtube.com/watch?v=i42FSNA9bAY</p> <p>Watch the above clip and ask Pumas - to note down in pairs on white boards any facts they think are important.</p> <p>Classroom discussion about what makes our bodies move. What do we have inside our bodies? E.g., internal organs - heart, lungs. What stops them from getting damaged when a ball hits you or you bump yourself. Introduce the vocabulary,</p>	<p>Working Scientifically:</p> <p>Asking Questions and Carrying Out Fair and Comparative Tests:</p> <p>Asking relevant questions and using different types of scientific enquiries to answer them.</p> <p>Observing and Measuring Changes:</p> <p>Making systematic and careful observations.</p>	<p>ICT: Use of visual images, videos and songs on IWB to aid understanding.</p> <p>Use of iPad to record and take images of the children being Scientists. Use the images to aid discussion and develop</p>	<p>Skeleton labelling</p> <p>White boards and pens</p> <p>Rubber glove</p> <p>Visual images</p>

		<p>support and protection. What joins our bones together? Introduce joints.</p> <p><i>Children to go outside/ in the hall. Children to work with a partner to explore how their bodies. Can they identify joints? What would our bodies look like without bones/skeleton? Use water filled rubber glove to demonstrate.</i></p> <p><i>Take photos/videos of the chn moving and pointing to joints. Continue recapping their observations by playing the video back in class and reinforcing vocabulary.</i></p> <p>Date, target, photograph to be stuck in book with chn writing a short explanation of what they did in today's lesson. Pumas- Fill in the gaps information sheet.</p>	<p>Identifying, Classifying, Recording and Presenting Data: Gathering, recording and classifying and presenting data in a variety of ways to help in answering questions.</p> <p>Drawing conclusions, Noticing Patterns and Presenting Findings: Report on findings from enquiries, including oral, and written explanations of results and conclusions.</p>	<p>communication and language skills with modelling the use of scientific language.</p>	
7	<p>I am beginning to understand how voluntary muscles work.</p>	<p><i>Flashback four</i></p> <p><i>Ask children to remind each other of what they learnt last week - what does our skeleton do?</i></p> <p>httphttps://www.bbc.co.uk/bitesize/clips/zpp6n39</p> <p><i>Children to move their bodies and demonstrate muscle movement. Introduce scientific terms to Pumas- skeletal muscles, voluntary muscles, contract and relax. Demonstrate with elastic bands.</i></p> <p><i>Class quiz - BBC Bitesize- key terms.</i></p> <p><i>All pupils to participate in making a muscle model of the hand to demonstrate how muscles pull our bones.</i></p> <p><i>Children's photos in books of them building muscle model. Pumas to complete a fill in the blanks sheet.</i></p>	<p>Working Scientifically:</p> <p>Asking Questions and Carrying Out Fair and Comparative Tests: Asking relevant questions and using different types of scientific enquiries to answer them.</p> <p>Observing and Measuring Changes: Making systematic and careful observations.</p> <p>Identifying, Classifying, Recording and Presenting Data: Gathering, recording and classifying and presenting data in a variety of ways to help in answering questions.</p>	<p>ICT: Use of visual images, videos and songs on IWB to aid understanding.</p> <p>Use of iPad to record and take images of the children being Scientists. Use the images to aid discussion and develop communication and language skills with modelling the use of</p>	<p>Craft supplies for muscle model- card, straws, string, double sided sticky tape.</p>

			<p>Drawing conclusions, Noticing Patterns and Presenting Findings:</p> <p>Report on findings from enquiries, including oral, and written explanations of results and conclusions.</p>	scientific language.	
8	<p>I am beginning to understand how involuntary muscles work.</p> <p>I can explore the effect of exercise on my muscles.</p>	<p><i>Flashback Four Questions.</i></p> <p><i>Chn to discuss last week's lesson with their partner. How might what they learnt last week help them to predict the outcome of today's lesson?</i></p> <p><i>Encourage the chn to point/touch their muscles. Then explain that there is an important muscle in our body which helps not only to keep us alive working every moment of every day but is also able to help our muscles work effectively. Explain very simply about the heart pumping blood which is filled with oxygen that allows our muscles to function well and work hard when needed e.g., exercise.</i></p> <p><i>Introduce the chn to their pulse explain what this is and we and medical professionals use this determine how fit, healthy and how well your heart is working.</i></p> <p><i>Children predict what will happen to their bodies when they exercise.</i></p> <p><i>Give chn a range of exercises to do which will on a chart. Teacher modelling e.g., jumping - small jump, large jump, slow walking, fast walking, slow jogging, sprinting.</i></p> <p><i>Chn to predict what will happen to their bodies when they exercise.</i></p>	<p>Working Scientifically:</p> <p>Asking Questions and Carrying Out Fair and Comparative Tests:</p> <p>Asking relevant questions and using different types of scientific enquiries to answer them.</p> <p>Observing and Measuring Changes:</p> <p>Making systematic and careful observations.</p> <p>Identifying, Classifying, Recording and Presenting Data:</p> <p>Gathering, recording and classifying and presenting data in a variety of ways to help in answering questions.</p> <p>Drawing conclusions, Noticing Patterns and Presenting Findings:</p>	<p>ICT: Use of visual images, videos and songs on IWB to aid understanding.</p> <p>Mrs Donaghue's Heart rate monitor.</p> <p>Use of iPad to record and take images of the children being Scientists. Use the images to aid discussion and develop communication and language skills with modelling the use of scientific language.</p>	

		<p>Each pair will be given a table to record their heart rate - as a class draw simple conclusions. E.g., My heart was working harder when I was _____.</p> <p>Discuss throughout - how your muscles are feeling throughout. How would your muscles feel if I made you sprint for 3 hours?</p>	<p>Report on findings from enquiries, including oral, and written explanations of results and conclusions.</p> <p>Report on findings from enquiries, including oral, and written explanations of results and conclusions.</p>		
<p>Key to symbols:</p> <p>Knowledge schemas running throughout the whole school.</p>			Food		
			Technology		
			Fashion		