



Science KS2

Biology - Animals: Scientific Enquiry

Relates to Education Destination resource number: **119081&2**

LESSON PLAN

PRE-VISIT



2+ hours

Today's (or continuing)

Learning Outcomes:

Students will be able to ask relevant and interesting questions to start a study, an investigation, or an enquiry.

Learning Objective/s:

To enable students to use appropriate question starters based on Bloom's Taxonomy in order to stimulate research/enquiry.

Engagement and Inclusion:

Accessible to all.

Strategies to tackle Potential Barriers:

Non-writers should be paired or grouped with confident writers

Preparation: Students should have been given the task of drawing a 'mysterious' animal as if they were explorers and had come across it during their explorations. Some of the drawings should be selected, copied, and stuck onto the centre of A3 sheets. See **Resources needed** below.

Resources needed:

A sheet of A3 paper between 2 or 3. Each paper should have a picture of a different mysterious creature at the centre. *The pictures could have been drawn by the students previously and selected for inclusion.*

NOTE:

The following timings are a guide only and will depend on how much time children require for the task.

TASKS	TIMING	KEY QUESTIONS
<p>STARTER</p> <p>Play a game of What Am I? (Guess the animal in 10 Questions) Teacher thinks of an animal. Class ask questions but teacher can only answer Yes or No. Discuss questions opposite.</p> <p>Now play, find out as much about my pet as you can in 10 questions. This time the answers are not limited and a pupil can answer.</p> <p>MAIN</p> <p>Working in pairs, pupils are given an A3 sheet with a central picture as described in the resources.</p> <p>Explain that their task will be to give questions to a research group who will go and find out as much as they can about the creature on their sheet. The research group will only answer the questions they write down.</p> <p>After looking at the picture pupils are asked to come up with 2 questions starting with WHAT, and to write them on the left of the paper.</p> <p>They are then asked to think of at least one question starting with WHERE and a question starting with WHEN. and to write them under the others.</p> <p>These question words should be written up on the board as the task progresses.</p> <p>(continued overleaf)...</p>	<p>3 mins</p> <p>5 mins</p> <p>5 mins</p> <p>3 mins</p> <p>5 mins</p>	<p>Why does it take a long time to get the right information? What is wrong with these sorts of questions? What is wrong with the answers? What would be better questions to ask ? What were the best sorts of questions to ask? Why? Hopefully answers will include questions starting with What, where, when etc</p> <p>What sort of things would you like to know about this creature?</p> <p>Can you think of a 'What' question that would help you to get the answer.</p> <p>Ask the same for When and Where</p>

LESSON PLAN (continued)

PRE-VISIT



2+ hours

TASKS	TIMING	KEY QUESTIONS
<p>Students are invited to share their questions with the class. Students can be 'maggies' and write other ideas down if they think they are good.</p> <p>Discuss ways of finding out the answers.</p> <p>Explain that their question sheets will now be passed to the research team. Sheets are swapped over. Each pair will now act as the research team, read the questions and provide answers from their imagination, which they will write on the swapped sheet in a different colour. Sheets are handed back to the questioners and the answers are read.</p> <p>Students are now asked to consider explanations and reasons for some of the answers. With guided questioning some should work out that HOW and WHY questions would be appropriate.</p> <p>Pairs are asked to write at least one HOW question based on the answers they've been given and consider how the answer could be discovered. This can be answered by the 'research team' as if through observation perhaps.</p> <p>Back on their question sheets, they then think of a WHY question based on the answers they have been given. After writing it on their sheet it can be shared with the class.</p> <p>High achievers could ask a WHAT IF question. Can they come up with possible answers for their WHY question?</p> <p>PLENARY / FINAL TASK <i>linked back to the learning objective</i></p> <p>If time allows, students should collate the information they have into a paragraph.</p> <p>As a follow up, pairs could present their animals to the class or make a display for the wall.</p> <p>Students should be told that they will be using these questioning techniques for a Scientific Enquiry when they go on their visit to Amazon World Zoo Park.</p>	<p>8 mins</p> <p>3 mins</p> <p>3 mins</p> <p>3 mins</p> <p>3-5 mins</p> <p>8-10 mins</p> <p>5-10 mins</p> <p>15 mins</p>	<p>How could you find out the answers? Is there more than one way?</p> <p>Can anyone think of a question starter that will help give explanations or reasons? What question would I ask if I wanted an explanation of how it hunted for food?</p> <p>How could you find answers to these HOW questions? Is there just one way?</p> <p>How could you find answers to these WHY questions? Is there just one way?</p> <p>Will all questions be able to be answered? Which questions require you to use your own reasoning skills?</p> <p>Could someone else come up with a different answer that could also be right?</p> <p>Explain that this has been an imaginary exercise, but on the trip, they will be carrying out a real scientific enquiry.</p> <p>How will they find the real answers to questions? E.g. Observation, Information boards, Internet back at school, reasoning</p>

Homework:

Notes for next lesson:



Science KS2

Biology - Animals: Scientific Enquiry

Relates to Education Destination resource number: **119081&2**

LESSON PLAN

ON-SITE



1-2 hours

Today's (or continuing)

Learning Outcomes:

Students learn to observe and ask questions in order to start a scientific enquiry.

Learning Objective/s:

To practise the skills needed in order to initiate an enquiry.

Engagement and Inclusion:

Low ability resource worksheets available (119081)

Strategies to tackle Potential Barriers:

Use differentiated resource

Resources needed:

Each student will need a resource worksheet, pencil and clipboard.

NOTE:

The following timings are a guide only and will depend on how much time children require for the task.

TASKS	TIMING	KEY QUESTIONS
<p>STARTER</p> <p>Before starting the main task students should have walked through part of the zoo and have been encouraged to ask questions and look for or think of answers.</p> <p>MAIN</p> <p>This task is probably best completed in the outside zone if done as part of a carousel, but any area where there is a selection of animals would suffice.</p> <p>Students are asked to choose an animal to study. The worksheet should be self explanatory for readers but non /poor readers will need assistance.</p> <p>After drawing and describing their animal they are asked to write questions to be answered using the given question starters.</p> <p>They should be encouraged to find answers from the information boards or observation. The 'Why' question can be answered as 'I think ...'</p> <p>If time is short part of the research could be done back at school.</p> <p>PLENARY / FINAL TASK</p> <p><i>linked back to the learning objective</i></p> <p>Pupils should have the chance to share their discoveries. This could be done informally eg in pairs, or as a presentation to the class back at school.</p> <p>Work could be written up and sent to Amazon World Zoo Park .</p>	30mins	<p>Questions starting with</p> <p>What ?</p> <p>Where?</p> <p>When? (not so easy) Works well for nocturnal animals.</p> <p>How?</p> <p>Why?</p> <p>What was the most interesting thing you found out about your animal ?</p> <p>Was there anything you forgot to ask?</p>

Homework:

Notes for next lesson: