

YEAR 6 LIVING THINGS AND THEIR HABITATS PLANNING

Class:  **Term:**  **Subject: Science** **Unit: Living Things and Their Habitats**

Differentiation and support (Detailed differentiation in weekly plans.)

SEN: Support from more able partners in mixed ability work. Provide with writing frames / worksheets. Additional adult support.

GT: Work independently. Support less able peers. Provide extension activities to apply their own knowledge and to research information independently

English: listening for information in video clips, extracting information from texts, using dictionaries and glossaries, making notes, writing a biography, justifying choices,

Maths: Venn diagrams, Carroll diagrams, interpreting tables, classification keys

ICT: videos on IWB, online activities, online research,

Geography: habitats

Art & D+T: taking photos of organisms / making drawings of them

PSHCE: learning how to avoid getting sick from stale or contaminated food, understanding vaccinations and the importance of getting them

Note: Lesson 9 is a trip, so make sure to prepare for this well in advance e.g. do risk assessment, add to school diary, send out permission slips etc

To access the complete version of this [Year 6 Living Things and Their Habitats planning](http://www.saveteacherssundays.com/science/year-6/654/), with every resource needed for each lesson, visit:

<http://www.saveteacherssundays.com/science/year-6/654/>

W	Learning objective	Teaching activities	Resources	Assessment: Success Criteria
1	<p>To describe how all organisms are classified into broad groups according to common observable characteristics and based on similarities and differences</p> <p>To give reasons for classifying all organisms based on specific characteristics</p> <p>To understand how and why scientists classify all living things</p> <p>(50 mins)</p>	<p>Intro: Revise how classification is the process of grouping things based on their shared characteristics Revise how an organism is a living thing Revise how vertebrates are animals that have a backbone, while invertebrates are animals that do not have a backbone Ask the children to think, pair, share some examples of vertebrates and invertebrates Ask the children to think, pair, share the names of the five animal kingdoms that they learnt in Year 4 Ask the children to think, pair, share some of the similarities and differences between each of the five animal kingdoms Show the children the table of characteristics for each animal kingdom that they would have learnt about in Year 4 Ask the children to think, pair, share the characteristics for each of them and to fill in a blank table / draw the table on their pupil whiteboards Go through what should be in each part of the table Explain that we are going to be learning about the system that scientists use for classifying organisms Explain that all living things are made up of microscopic cells and that a nucleus is like the brain for each cell (this is not explained in the videos) Watch the following videos on classification and taxonomy: https://www.youtube.com/watch?v=vqxomJIBGcY (if the link does not work, Google 'Classification of Living Things Mark Drollinger') https://www.youtube.com/watch?v=u90WvBZe-tY (if the link does not work, Google 'Six Kingdoms of Classification Mark Drollinger') https://www.youtube.com/watch?v=NRVJyUzoQow (if the link does not work, Google 'An introduction to: Taxonomy Eco Sapien') – watch up to 3 mins (overcomplicates things after this) https://www.youtube.com/watch?v=aiC_Z8Za7wc – (if the link does not work, Google 'What Is Taxonomy? MonkeySee) Note: There is contradictory information in some of the videos. Ask the children to see if they can remember what it was. Use this as an opportunity to discuss how science develops (see worksheet file for detailed notes) Explain that the genus in an organism's scientific name is always capitalised, whereas the species is not e.g. Homo sapiens Explain that a mnemonic is a phrase that people sometimes use to help them to remember things, such as the order for the levels of classification Show the children the example of a mnemonic for this purpose Have the children learn this mnemonic (or come up with their own mnemonic) to help them to remember the order of the levels of taxonomic classification</p> <p>Main: Children to complete a 'fill in the blanks' activity based on the information in the video Lower ability / slower working children to complete the activity on the worksheets; higher ability children to work in their books Extension: Children to read independently about taxonomy in non-fiction books / online Have dictionaries for children to look up any words that they are unsure of the meaning of / to help them know which blank each word should go in</p> <p>Plenary: Go through correct answers, pausing to explain the more complicated aspects Recap the key information from the lesson Ask children who got on to the extension to give some additional information that they found out</p>	<p>Blank tables of animal kingdoms and pencils / pupil whiteboards and pens</p> <p>Videos open and ready to play with ads skipped and / or closed</p> <p>Worksheets</p> <p>Dictionaries</p> <p>Books on taxonomy and / or PCs, laptops or tablets (for extension)</p>	<p>MUST: understand <i>some</i> of the aspects of taxonomy covered</p> <p>SHOULD: understand <i>all</i> of the aspects of taxonomy covered</p> <p>COULD: find out some additional information about taxonomy independently</p>

2a	<p>To understand what microorganisms are</p> <p>To understand that microorganisms can be helpful or harmful to people</p> <p>To identify examples of helpful and harmful microorganisms</p> <p>(30 mins)</p>	<p>Intro:</p> <p>Ask the children to think, pair, share what they can remember about the taxonomy system from the previous lesson</p> <p>Ask the children to give any types of microorganism that they have heard of e.g. bacteria, viruses, mould etc)</p> <p>Ask the children where they have heard words like bacteria, viruses etc e.g. an adult saying that the bread has gone mouldy, anti-viral tissues, bacteria in Yakult etc</p> <p>Ask the children if they think that microorganisms are good or bad for us, and to explain their answers to this question</p> <p>Watch the video about microorganisms at https://www.youtube.com/watch?v=8KLufAFC9w (if the link does not work, Google 'Micro Organisms tsale0512') – stop at 2 mins 48 secs, but keep open for the end of the lesson</p> <p>Show the children the instructions and how to complete the activity at https://www.amnh.org/explore/ology/microbiology/bacteria-in-the-cafeteria-game (if the link does not work, Google 'American Museum of Natural History microbiology cafeteria game')</p> <p>Model for the children how to complete the table for one item</p> <p>Emphasise that they need to record each microorganism as they play the game, not just play the game</p> <p>Main:</p> <p>Children to complete the following table:</p> <table border="1"> <thead> <tr> <th>Item</th> <th>Helpful or Harmful</th> <th>Why helpful or harmful (and other information)</th> </tr> </thead> </table> <p>Extension: children to read some additional information about microorganisms at https://kids.britannica.com/students/article/microorganism/329995 (if the link does not work, Google 'Kids Britannica microorganisms') and / or watch an additional video about microorganisms at https://www.youtube.com/watch?v=JZjzQhFG6Ec (if the link does not work, Google 'Microorganisms The Dr. Binocs Show Educational Videos For Kids')</p> <p>Plenary:</p> <p>Revise how there are helpful and harmful microorganisms</p> <p>Ask the children to think, pair, share the examples of each</p> <p>Revise why it is important to:</p> <ul style="list-style-type: none"> • not eat stale food • keep cooked and uncooked meat away from each other • cover your nose when you sneeze and your mouth when you cough <p>Ask the children who got on to the extension to share some of the information that they found out</p> <p>Watch the rest of the video from the start of the lesson to listen to a song about microorganisms</p>	Item	Helpful or Harmful	Why helpful or harmful (and other information)	<p>Video open and ready to play with ads skipped and / or closed</p> <p>Instructions displayed on IWB</p> <p>Worksheets saved so that children can access them (save them as 'Word Template' to avoid problems when children try to open the document at the same time)</p>	<p>MUST: identify <i>some</i> harmful and helpful examples of microorganisms</p> <p>SHOULD: identify <i>more</i> harmful and helpful examples of microorganisms and why they are helpful / harmful</p> <p>COULD: identify <i>additional</i> harmful and helpful examples of microorganisms and why they are helpful / harmful</p>
Item	Helpful or Harmful	Why helpful or harmful (and other information)					

2b	<p>To understand what a vaccination is and how they prevent disease</p> <p>(30 mins)</p>	<p>Intro: Ask the children to think, pair, share some examples of helpful and harmful microorganisms, and what we can do to reduce the chance of getting ill from them Ask the children what they think a vaccination is and how they think vaccinations work Watch the videos on how vaccinations work at: https://www.bbc.co.uk/bitesize/clips/zychdxs (if the link does not work, Google 'BBC bitesize clips GCSE vaccinations video') https://www.youtube.com/watch?v=3aNhzLUL2ys (if the link does not work, Google 'Why Vaccines Work It's Okay To Be Smart') watch from 1 mins 20 secs to 3 mins 5 secs https://www.youtube.com/watch?v=Zcftgu1Dwk4 (if the link does not work, Google 'How Vaccines Work Medoka doo') https://www.youtube.com/watch?v=Y6E5Euli2Fc (if the link does not work, Google 'How Vaccines Work: The Complete History of Vaccines Carrington College') – watch from 1 min 8 secs</p> <p>Main: Children given list of steps for how a vaccination works in a jumbled up order They need to cut them out and sequence them into the correct order Extension: independently research online and / or in books about vaccinations e.g. specific examples, when they were first used, social issues around them etc</p> <p>Plenary: Go through the order that they the steps should have been in, without the children changing their work Children who got on to the extension to share some things that they found out Explain how if everyone in the world becomes vaccinated against a disease, the disease can be wiped out, as has happened with smallpox; however, if people stop having the vaccine for a disease before it is wiped out, the disease can return and become a problem again, as has happened with measles</p>	<p>Videos open and ready to play with ads skipped and / or closed</p> <p>Scissors</p> <p>Glue</p> <p>Steps to cut out and sequence</p> <p>Books with information about vaccinations and / or PCs / tablets / laptops (for extension)</p>	<p>MUST: correctly sequence some of the steps for how a vaccination works</p> <p>SHOULD: as above, but correctly sequence all of the steps</p> <p>COULD: independently research some additional information about vaccinations</p>
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<p>3</p>	<p>To describe how microorganisms (bacteria and viruses) are classified into broad groups according to common observable characteristics and based on similarities and differences</p> <p>To give reasons for classifying microorganisms (bacteria and viruses) based on specific characteristics</p> <p>(1 hour)</p>	<p>Intro:</p> <p>Ask the children to think, pair, share what a microorganism is, some types of microorganism and how vaccinations work</p> <p>Ask the children what a computer virus is and how a computer virus works (draw analogies with this throughout when reading the text about viruses)</p> <p>Recap MRS GREN i.e. the characteristics of all living things: Movement, Reproduction, Sensitivity, Growth, Respiration, Excretion and Nutrition (children should have covered this in previous years)</p> <p>Watch the videos:</p> <ul style="list-style-type: none"> • What is a cell? https://www.youtube.com/watch?v=3BZEA4areBM (if the link does not work, Google 'What Is A Cell? MonkeySee') • What are bacteria? https://www.youtube.com/watch?v=pcXdfofLoj0 (if the link does not work, Google 'What Is Bacteria? MonkeySee') • What are viruses? https://www.youtube.com/watch?v=slUNawr-hro (if the link does not work, Google 'What are Viruses ? dan izzo') <p>Read through the first 4 pages of the information text about microorganisms (the pages on viruses and bacteria)</p> <p>Discuss how scientists changed their minds in 1977 about bacteria being one kingdom, and how this is another example of how scientists constantly question and re-evaluate their ideas</p> <p>Revise how to classify items in a Venn diagram, including how items that do not fit in either section should go outside the diagram</p> <p>Emphasise that the children should keep their writing small and the characteristics that they add to the Venn diagram in note format, so that they can fit them in</p> <p>Main:</p> <p>Children to use the information from the videos and the information sheet to classify some of the characteristics of viruses and bacteria in a Venn diagram</p> <p>Lower ability to be given the characteristics to classify in the Venn diagram</p> <p>Higher ability children to draw the characteristics out of the information for themselves</p> <p>Extension: Add some of their own characteristics to the Venn diagram by using their own knowledge or by looking in non-fiction books / online</p> <p>Plenary:</p> <p>Go through where the characteristics should have been classified in the Venn diagram</p> <p>Discuss any characteristics that the children found challenging to classify correctly</p> <p>Ask children to share any additional characteristics that they came up with and where these would go in the Venn diagram</p> <p>If time, have a quiz on the meaning of the following vocabulary: unicellular, multicellular, prokaryotic, eukaryotic, parasitic, symbiotic, autotroph, heterotroph and nucleus</p>	<p>Information text on microorganisms (first 4 pages, numbered and photocopied back-to-back and laminated, so can be used again next year)</p> <p>Venn diagram worksheets</p> <p>Characteristics to classify displayed on IWB</p> <p>Non-fiction books on microorganisms and / or viruses and bacteria and / or PCs / tablets / laptops (for extension)</p>	<p>MUST: classify the characteristics of viruses and bacteria (list of features given to them)</p> <p>SHOULD: as above, but not given list of characteristics, need to extract these from the text themselves</p> <p>COULD: add some additional characteristics from their own knowledge or by finding more in books / online</p>
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