# Wangari Maathai: Planting, Peace and Park Life (Living things and their habitats)

# BIOLOGY

## KEY VOCABULARY

*classification, classification keys, environment, habitat, human impact, environmentalist, conservation, Wangari Maathai, positive, negative, migrate, hibernate, herbivore, carnivore, omnivore, producer, predator, prey, food chain*

## NATIONAL CURRICULUM OBJECTIVES

1. recognise that living things can be grouped in a variety of ways
2. construct and interpret a variety of food chains, identifying producers, predators and prey
3. explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment
4. recognise that environments can change and that this can sometimes pose dangers to living things

## Overview and rationale:

In this topic, children learn about their local parkland and its inhabitants. They discover and compare a number of different habitats and find out why the animals that live there thrive in such environments. They also learn about adaptations, initially across a broad range of animals that span the globe, then focussing in on local parkland animals, culminating in a design of their own, made-up animal in which children must justify the features they have given it. The children will have an opportunity to learn about micro habitats also and go on a mini beast hunt, using their mathematical skills to carry out surveys and tally charts, resulting in bar charts and graphs. After studying a range of living creatures, from the tiny to the large, children are then given the opportunity to sort them, using sorting keys and place them in food chains and webs thinking about which are the producers, the top consumers and everything in between! Finally, the children research the variety of plant life they may encounter in a local park, using this knowledge to write a letter to a warden suggesting possible improvements for this area. Children also use this topic to experience art in nature. Using Andy Goldsworthy as inspiration, they design and make their own sculpture in their environment using only natural objects they have found. Respect for our environment and responsibility for looking after it is the key message in a topic inspired by the efforts of African environmentalist, Wangari Maathai.

## SCIENCE LEARNING STATEMENTS

| Area of Learning | Knowledge and Skills |
|---|---|
| Scientific Enquiry and applying knowledge in context | I can raise my own relevant questions about the world around me and begin to look for answers. |
| | I am given a range of scientific experiences including different types of scientific enquiry to answer questions. |
| | I can start to make my own decisions about the most appropriate type of scientific enquiry I might use to answer questions and give justifications. |
| | I can set up simple practical enquiries, comparative and fair tests. I can recognise when a simple fair test is necessary and help decide how to set it up. |
| | I can talk about criteria for grouping, sorting and classifying; use simple keys and explain how they should be used. |
| | I can recognise when and how secondary sources might help me to answer questions that cannot be answered through practical investigations. I can use a selection of resources. |
| | I can make systematic and careful observations. I can make decisions about what observations to make, how long to make them for and the type of simple equipment that might be used. |
| | I can look for naturally occurring patterns and relationships; decide what data to collect to identify them. |
| | I can take accurate measurements using standard units, learn how to use a range of equipment, such as data loggers and thermometers, appropriately. |
| | I can collect and record data from their own observations and measurements in a variety of ways: notes, bar charts, tables. I can select and use the most appropriate standard units, drawings, labelled diagrams, keys and help to make decisions about how to analyse the data. |
| | I can look for changes, patterns, similarities and differences in their data in order to draw accurate conclusions and answer further questions |
| | I can confidently use relevant scientific language to discuss their ideas and communicate their findings, in ways that are appropriate for different audiences, including oral and written explanations, displays or presentations of results and conclusions. |
| | I can identify new questions arising from my data, making predictions for new values within or beyond the data I have already collected and finding ways of improving what I have already done. |

| 'CORE' KNOWLEDGE | 'ADDITIONAL' KNOWLEDGE |
|---|---|
| **1) I know that a habitat is the natural home or environment of an animal and that different habitats attract different animals and creatures. DO: Record: LIVING THINGS – LOCAL SURVEY** | a) I can list a range of habitats in the UK (grassland, heathland, woodland, open water, wetland, inland rock, coastal and marine). |
| | b) I know a number of animals and creatures that live in these different habitats. |
| | c) I know geographical terms to describe these habitats and can locate them on an atlas or map. |
| **2) I know that the term 'adaptation' means to change in order to improve the chance of survival.** | a) I know that animals have adapted to suit their environment over time. |
| | b) I know examples of how at least three animals have adapted to suit their environment. |
| | c) I know that predators usually have forward or narrow facing eyes and prey have side or wide facing eyes. |
| **3) I know that living things can be grouped in a variety of ways using keys and classification charts.** | a) I know that classification keys help group, identify and name a variety of living things in their local and wider environment. |
| | b) I know that a 'minibeast' is an animal without a backbone (and invertebrate) – like including spiders, ants, termites, butterflies, bees, wasps, flies - and can identify them based on their features. |
| | c) I know that an exoskeleton is a bone structure on the outside of a creature's body. |
| **4) I know that a food chain shows how plants and animals get their energy by showing 'what eats what'.** | a) I know how to construct and interpret a variety of food chains. |
| | b) I know that a predator is an animal that naturally 'preys' and hunts other animals. I also know that a herbivore only eats plants and carnivore eats other animals. |
| | c) I know that a food chain always starts with a producer, then primary consumer and ends with a top consumer. I know the arrows in a food chain mean 'is eaten by'. |
| **5) I know that the environment is the surroundings or conditions a person, animal or plant lives in.** | a) I know that environments can change and that this can sometimes pose dangers to living things. |
| | b) I know who Wangari Maathai is and why she believed in the power of one. |
| | c) I know that humans are capable of impacting our environment positively and negatively and I can say how. |
| **6) I know that Andy Goldsworthy creates sculptures using elements in nature.** | a) I know that 3D stands for three dimensional and know how this differs from 2D. |
| | b) I know Andy Goldsworthy is British and comes from Cheshire, England. |
| | c) I know that Goldsworthy doesn't usually use man made tools, preferring to use completely natural methods of construction for his artworks. |

## GEOGRAPHY LEARNING STATEMENTS

| Area of Learning | Knowledge and Skills |
|---|---|
| **Fieldwork** | I use fieldwork to observe, measure and record some of the human and physical features in the local area using sketch maps and graphs. |
| | I can also investigate the types of shops, services and housing in the local area. |
| | I can carry out a simple questionnaire. |
| | I can apply mathematical skills in data handling to Geography fieldwork. |
| **Use of basic geographical vocabulary** | I am beginning to apply the vocabulary of other subjects such as maths and science when describing geographical features and processes. |

## KEY GEOGRAPHY VOCABULARY

| | |
|---|---|
| **Human Geography** | settlement, urban, rural, region, Europe, Country, county |
| **Physical Geography** | Landscape, hills and mountains – N.B. including UK names, e.g. Pennines, Grampians, Cambrians, Southern Uplands, Cotswolds (North and South Downs etc.), coast, Rural, Climate, Biomes/ Vegetation belts e.g. Tundra, Coniferous & Deciduous Forest, Mediterranean, mountainous, desert |
| **Other useful vocab** | mountains, equator, hemisphere, food chain, differences/similarities, compare/ contrast, city/country/continent, atlas/map/globe, United Kingdom, Great Britain, Change/ effect, interaction between physical and human processes |

| Possible Enrichment activities (including trips/visitors, etc) | Creating environmental art! |
|---|---|
| | A visit to the school garden. |
| | Now press play audio lesson (Climate Change). |

| ART AND DESIGN | | | |
|---|---|---|---|
| **Exploring and Developing** | | | |
| **Exploring and developing ideas** | Select and record from first hand observation, experience and imagination and explore ideas for different purposes. | | |
| | Question and make thoughtful observations about starting points and select ideas to use in their work. | | |
| | Explore the roles and purposes of artists, craftspeople and designers working in different times and cultures. | | |
| **Evaluating and developing work** | Compare ideas, methods and approaches in their own and others' work and say what they think and feel about them. | | |
| | Adapt their work according to their views and describe how they might develop it further. | | |
| **3d Form** | | | |
| **National Curriculum** | **Additional Skills** | **Knowledge** | **Key Vocabulary** |
| ***Plan, design, make and adapt models. (clay/papier Mache/woodwork/choice for purpose)*** | -Cut complex shapes from different mediums.<br>-Decorate, coil and produce marquettes (rough draft or scale model)<br>-Make informed choices about the 3D technique chosen.<br>-Show an understanding of shape, space and form.<br>-Plan, design, make and adapt models.<br>-Talk about their work, understanding that it has been sculpted, modelled or constructed | -Know how to use nets to make 3D shapes to use in models.<br>-Know that colour can be added once papier mache is dry<br>-Know that an armature can be used to build upon papier mache | Clay, natural materials, rolling, stretching, pressing, pulling, clay, sculpture, manipulate, form, air dried clay. Join, hatching, tools, texture, slip water, finish, patterns, texture, form, nets, 3D shapes, models, marquettes, draft, scale model, sculpt, construct |
| **Artist/Style/Activities** | | | |
| ***Andy Goldworthy:*** create a 3D sculpture using elements of nature sourced from a local area. | | | |

| School Value | Topic relevance: How/when/where/why is it needed? |
|---|---|
| **Resilience** | How do predators have to show tremendous resilience when hunting in difficult and treacherous habitats? Do plants show resilience too? Wangari Maathai fought for what is right and showed great resilience until she won the Nobel peace prize. |
| **Respect** | Environments and habitats can change greatly, some naturally and some due to human impact…how can we respect our world and raise awareness of the need to look after it? We'll see that when studying the Amazon next year! |
| **Responsibility** | It is our responsibility to look after the world and UPS! We do so by supporting the WWF through sponsoring an Amur Leopard. |
| **Happiness** | Nature can have a direct influence on our happiness – How could we create a beautiful local park which could make a huge difference to local people's wellbeing? |
| **Kindness** | Being kind to ourselves is important…how can we be kind to nature too and how does that affect our own happiness? |
| **Pride** | Having pride in our local environment can have a huge impact on the local community – litter picking is just one of the activities at UPS that help with this…are there any others? |

| Possible 'higher order' questioning | |
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| **Remember** | Can you name some animals that call our local park land their home? |
| **Understand** | Can you explain how an animal may have adapted to its environment? |
| **Apply** | What changes can we make to help improve our own environment? |
| **Analyse** | What plants and flowers would make our local parkland more attractive to visitors? Why do you think this? |
| **Evaluate** | Take a look at the natural sculpture you created – how could you improve this to help it last longer? |
| **Create** | Can you create your own made up animal and explain how it has adapted to its habitat? |