**SCIENCE WEEKLY PLANNING SHEET - EVOLUTION AND INHERITANCE**

**Term: Autumn 1 Year: 6**

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| **Week 1**   1. **Focus:** Fossils   *SE 5 research using secondary sources*  **Activity:** Talk to the children about science and scientists, what happens in science lessons, why do we learn science, is it important? Can they remember what they learnt in science in the past? Do they like science? Do they know the names of any scientists? Can they recognise any? Introduce the 5 areas of scientific enquiry which they will be learning to recognise in their science lessons.  Show the children a homemade fossil. Open it up and ask them what they think it is. Explain that it is a fossil which provides information about living things that inhabited the Earth millions of years ago. Watch a video explaining how they are formed. <https://www.youtube.com/watch?v=87E8bQrX4Wg>  Ask the children to now attempt to explain to each other how fossils are formed. Give the children strips showing the process in pictures to support them as appropriate. Give them vocabulary to use in their verbal explanations. Ask for volunteers to explain to the class.  Children will then make their own fossils using air dried clay, shells and plaster of Paris. When they have finished they can write an explanation of how fossils are formed in their books.  Next show a picture of Mary Anning and the fossil she discovered and explain they need to find the connection between them using the resource ‘National Geographic kids’ and finding out about the her life and why her work is important to scientists today. They should use this information to produce a Factfile (differentiated by headings) about her life.  *Ask the children to bring into school photographs of their close family members for next week*    **Outcome: The children will recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.**  **Resources:**  Air dry clay, Paster of Paris, shells, laptops/IPads, goggles, plastic gloves | **Week 2**   1. **Focus:** Inheritance   *SE2 looking for patterns*  *SE3 identifying, classifying and grouping*  **Activity:** Recap the challenge from last week focusing on the last statement ‘Excavate a fossil carefully and in one piece using carefully selected tools’. Excavate the fossils made last week (take photos) and identify the enquiry skill we were using. Talk about how the plaster of Paris has changed shape from a liquid to a solid. Ask what has happened to the clay. Glue the photographs from last week into books and add a comment about why fossils are important discoveries in science (leave space for this week’s photos)  Use the powerpoint to introduce traits watching the following video  <https://www.youtube.com/watch?v=uojI22lgWto>  Discuss the features that the children have inherited from their parents referring to any photos they have brought in. Extend to their siblings. Ask the children to write a paragraph about this.  Show the children a picture of a white cat with her 5 white and 1 black kittens, what can they infer about the father?  Watch the following video clip to explain inheritance and traits in animals  <https://www.youtube.com/watch?v=GqEConjFPvgnd>  Ask the children to list traits that elephants inherit from their parents. Continue with other animals ie tigon, donkey, labradoodle.  Extension – children to sort inherited behaviour traits (instincts) from learned behaviour  **Outcome: The children will recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents**  **Resources:** ‘Fossils’ made last week, paintbrushes, spoons ,toothbrushes, goggles, gloves shells from last week, photos of family members |
| **Week 3**   1. **Focus:** Adapting to the environment advantages and disadvantages of adaptation - animals   *SE3 identifying, classifying and grouping*  **Activity:**  Give the children pictures of a range of animals which are and are not native to the UK. Ask the children to sort them using their own criteria then give them the criteria native/not native. Can they list any general similarities and differences between the 2 groups that they can see? What reasons can they think of for these differences?  Watch the video  <https://www.youtube.com/watch?v=VuRPpw48R5U>  Display a labelled picture of a polar bear to show its adaptations and reasons. Children work together in pairs to match labels of adaptations to appropriate animals LA – stick pictures of the animals into their books and write the matching labels. Other children write tables in their books to record the adaptation of 3 animals then write an advantage they think it gives the animal. HA children include their own table for the polar bear.  Plenary – Use the ’Odd One Out’ activity called ‘ Amazing Adaptations’ on Explorify to discuss advantages and disadvantages of adaptations  **Outcome:**   |  | | --- | | **The children will be able to identify animals that are adapted to suit their environment in different ways** |   Resources:Pictures of various native and non-native animals | **Week 4**   1. **Focus:** Adapting to the environment advantages and disadvantages of adaptation - plants   *SE3 identifying, classifying and grouping*  **Activity: Starter –** Use the ’Odd One Out’ activity called ‘ Amazing Adaptations’ on Explorify to discuss advantages and disadvantages of animal adaptations. Discuss other examples such as the tortoise developing a shell for protection but then only being able to move slowly, penguins which are adapted to live in the sea (they have torpedo-shaped bodies combined with powerful flippers which enable them to swim to considerable depths and over great distances) but their legs and feet which help their bodies to be streamlined in the water are located far back on the body which means they waddle on land. Ask the children to discuss with their partners any other animals they can think of which are also at a disadvantage because of their adaptations.  Talk to the children about plants growing in different environments and how they have adapted to the conditions there.  Give the children a description of an adaptation and ask them to match it to the environment to which it is best adapted. They then repeat this with other plants. (LA – match 3 labelled pictures HA – say why this adaptation matches the environment).  Design a perfect plant to be adapted to any environment  **Outcome: The children will be able to identify plants that are adapted to suit their environment in different ways**  Resources: pictures of plants and adaptations |
| **Week 5**   1. **Focus:** Charles Darwin.   *SE 4 fair testing and comparing*  *SE2 looking for patterns*  **Activity: Starter:**  Explain that we today we are going to be using the third scientific enquiry skill, what is it? Write it as a title ie Fair testing and Comparing *(give the la children a sheet to stick in).* Explain that we are going to give have a competition to see who can collect the most pasta without touching it. Give out the different equipment to collect the pasta (pegs, tweezers made from paperclips and chopsticks made from lolly sticks fastened together with rubber bands) and different sized pasta. Ask the children to pick up as much pasta as they can in 20 seconds. Note responses from the children as they are given different beaks and different sized pasta Let some children have more time. Is it fair? Make a list on the board of ways we could have made it more fair (give everyone the same tools, the same sized pasta, the same time). Explain that next we are going to find out Which is the best tool for picking up pasta?, write this as a subheading. Instead of the children competing with each other they are going to test the different tools to see which is the most efficient. Explain that our variable is the tool but we must keep everything else the same. List the factors we are keeping the same ie the person with the tool, the pasta, the time limit. Record the Variable and Factors to Keep the Same in their books then write the title Results. Ask the second person in each pair to be the time keeper. Carry out the test, the children can choose their own way of recording the results. Discuss the results, which tool was the most efficient, how do you know? Record results and come to a Conclusion under another subheading.  **Outcome: Children will be able to carry out a fair test recording their results and comparing them and begin to learn about the work of Charles Darwin and his theory of evolution**  **Resources:** pegs, tweezers made from paperclips, chopsticks made from lollysticks linked with rubber bands, bags of 2 different sized pasta shapes |  |

**EVOLUTION AND INHERITANCE - Year 6**

**Evolution** -the theory that all the kinds of living things that exist today developed from earlier types. The differences between them resulted from changes that happened over many years.

**Inheritance** -the process by which genetic information is passed on from parent to child. This is why members of the same family tend to have similar characteristics.

**Adaptation** -a special skill which helps an animal to survive and do everything it needs to do.

**Fossils** are the remains or traces of plants and animals that lived long ago. **Fossils** give scientists clues about the past.

**Trait** - a quality that makes one person, animal, or thing different from another.

**Environment** - All the physical surroundings on Earth. The **environment** includes everything living and everything non-living.