

Evolution and Inheritance: Lesson 4

Variation and Inheritance

Science KS2 Year 6



Evolution and Inheritance: Lesson 4

Science

Key Stage 2

Year 6

Learning Aims:

- to identify that we all look different. We are unique
- to identify that we look similar to our parents, but we are not exactly the same
- to learn what 'inheritance' means and that we inherit our DNA from our biological parents
- to identify which characteristics are inherited and which are non-inherited

Curriculum Objective

In this lesson we are getting children to observe variation in themselves, in their physical features. Where does this come from? Why do animals look similar to their biological parents? Knowledge about DNA learned in previous lessons will help them to understand that their DNA is inherited from their biological parents. We think about which features are inherited and which are non-inherited.

Pupils should be taught to:

- recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents

Working Scientifically

- Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.
- Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.
- Identifying scientific evidence that has been used to support or refute ideas or arguments.

Key Vocabulary

Deoxyribonucleic Acid (DNA). This was also in lessons 2 and 3.

Variation. Inherited. Non-inherited. Inheritance.

These can also be found at the end of this PDF and can be placed on a learning wall as they are discussed during the presentation.



Equipment

You will need (these will help complement the PowerPoint and bring the lesson to life):

- Lego kit (optional)
- paper
- coloured pens, pencils or crayons
- ruler

PowerPoint Presentation

The accompanying PowerPoint presentation has 21 slides with the following learning points. At intervals throughout the lesson, we suggest asking the children what questions they might have. These can be collected throughout the unit of learning and added to the slide at the end of the lesson.

- Slides 1 and 2 introduce the lesson
- Slide 3 explains that not all families are biologically related, that many of our values come from our family and upbringing, but that physical characteristics are inherited from our biological parents.
- Slide 4 introduces the idea that we look similar to our biological parents, but are not identical. This slide can be used to introduce a class discussion. Why do the children think they look similar to their biological parents? (If you have looked-after or adopted children in your class, you may prefer to focus on slides 6 to 9, which look at inheritance in dogs, to reinforce these same points.)
- Slide 5 asks the children to remember what DNA is. You can show them a Lego kit to remind them - it is the instructions to build them. Introduce children to the idea that they inherit their DNA from their biological parents; 50% of their DNA is from their biological mother and 50% from their biological father (again, if you have looked-after or adopted children, you may like to focus on slides 6 to 9, looking at inheritance in dogs, to reinforce these points.)
- Slides 6 to 9 look at inheritance in dogs, using the example of a labradoodle cross.
- Slides 10 and 11 define the word 'inherited'. Children learn about which features are inherited from biological parents and which are non-inherited. Get the children to come up with some examples for each.



Activity

- Slides 12 to 16: the children decide which of these features are inherited and which are non-inherited.

Activity

- Slide 17: data gathering. In this activity children will be observing the variation in physical characteristics for everyone in the class. Encourage the children to fill in the worksheet on page 5 of this PDF and complete the tally chart.
- Slide 18: results. Children should display their data in a bar graph. Can they use the data to work out which is the most and which is the least common hair colour?
- Slide 19: analysis/conclusions – How many different types of hair colour were there? How many children had dimples or could roll their tongue? Do the children think there is a lot of variation in their class? What do they think would happen if we added another variable? We finish by asking where this variation comes from, and let the children know that they will find out in the next lesson.
- Slide 20 is kept blank so that you can add the children's questions, and carry them through this unit of learning.
- Slide 21: closing slide.



How much variation is there in our class?

Hair colour	Features	No. of children
Black	Dimples and can roll tongue	
Black	Dimples and can't roll tongue	
Black	No dimples and can roll tongue	
Black	No dimples and can't roll tongue	
Dark brown	Dimples and can roll tongue	
Dark brown	Dimples and can't roll tongue	
Dark brown	No dimples and can roll tongue	
Dark brown	No dimples and can't roll tongue	
Light brown	Dimples and can roll tongue	
Light brown	Dimples and can't roll tongue	
Light brown	No dimples and can roll tongue	
Light brown	No dimples and can't roll tongue	
Ginger	Dimples and can roll tongue	
Ginger	Dimples and can't roll tongue	
Ginger	No dimples and can roll tongue	
Ginger	No dimples and can't roll tongue	
Blonde	Dimples and can roll tongue	
Blonde	Dimples and can't roll tongue	
Blonde	No dimples and can roll tongue	
Blonde	No dimples and can't roll tongue	



Evolution and Inheritance: Keywords Flashcards



Variation

Inherited

Non-inherited

Inheritance



Variation



Inherited



Non-inherited



Inheritance

