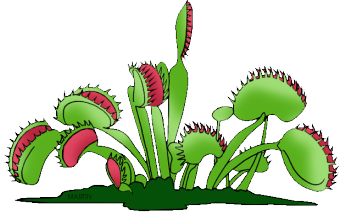


Science 1.9 AS 90948 Demonstrate understanding of biological ideas relating to genetic variation

Writing Excellence answers to **inheritable or non-inheritable variation** questions

inheritable or non-inheritable variation QUESTION	
<p>Question: The Venus flytrap plants come in a number of different types, such as the “B-52” with a red leaf. A teacher brought two identical plants to class and put them in different parts of the classroom. The Venus flytrap put near a window grew short leaves and the Venus flytrap in the shade grew long leaves. Colour variation in the leaves of the Venus flytraps can be passed on to a plant’s offspring, but the different leaf length cannot.</p> <p>Explain why. In your answer you should:</p> <ul style="list-style-type: none"> •define inheritable and non-inheritable variation •explain what causes inheritable and non-inheritable variations. 	
ANSWER	
1. define the term inheritable variation	Inheritable variation can be passed on to offspring and involves a change or mutation of information in the DNA (due to the base sequence)
2. Explain what effect inheritable variation has	The variation will be contained in the DNA of every cell in the body because it was present in the gametes (egg and sperm)
3. define the term non-inheritable variation	Whereas non-inheritable variation may be due to the environment (or only occurs in body cells) and is gained after fertilisation.
4. Explain what effect non-inheritable variation has	Non-inheritable variation affects only that organism during its lifetime, not its offspring.
5. link the phenotype related to inherited variation (give example from question)	The red colouration of the venus flytrap is due to DNA differences, and so can be passed on to its offspring– as long as the DNA in the gametes is also affected.
6. link the phenotype related to non-inherited variation (give example from question)	Lack of light has caused the fly trap in the shade to grow longer leaves. This is not due to a change in the DNA, and so cannot be passed on
7. complete the final statement	Genetics determines the characteristics you will be born with and this is called _____, but environment then affects these characteristics once you are born and this is called _____.

NOTE: The white column is how your answer would appear on your test paper so make sure you **write out complete sentences**. The grey area is just to help you structure your answer and would not appear in the question.