

Genetics

Name:

African Violets

Period:

Fill in the blanks in the sentences below using terms from the word bank. Then answer the questions on the back of the page. You can also refer to Chapter 13, Section 2 if you need help.

asexually DNA female identical male mix sexually two

A popular houseplant is the African Violet. It has soft, furry leaves and beautiful flowers. What you may not know is that this plant can reproduce either asexually or sexually.



You should notice from the drawing that the African Violet has flowers. Plants that have flowers are able to reproduce _____. Pollen containing sperm (_____ sex cells) from one plant's flower are carried by wind or animals to the center of another African Violet's flower. The pollen then travels down the pollen tube in the stigma and meets up with the ovule. The ovule has an egg (_____ sex cell) in it, which is fertilized by the sperm. The seed that is created when the sperm and egg combine will eventually grow into a new plant, under the right conditions. The offspring that grows will contain a _____ of genetic material, because it had _____ parents. Half of the _____ will have come from the plant that made the sperm, and the other half will have come from the plant that made the egg. The African Violet can also reproduce _____, without using flowers. If a broken or cut leaf is placed in soil, the leaf will begin to grow roots, stems, and additional leaves. In this case, the cutting will have the same genetic material as the plant it came from. It will have _____ DNA to its parent.

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What will the offspring look like if the plant reproduces *sexually*?

What will the offspring look like if the plant reproduces *asexually*?

How are *asexual* and *sexual* reproduction alike? [*hint: what do they both produce?*]

They both produce...

How are *asexual* and *sexual* reproduction different? [*hint: how many parents are needed?*]

Asexual production only needs...

In contrast, *sexual* reproduction needs...

If a plant is all alone, how would *asexual* reproduction help it to survive?