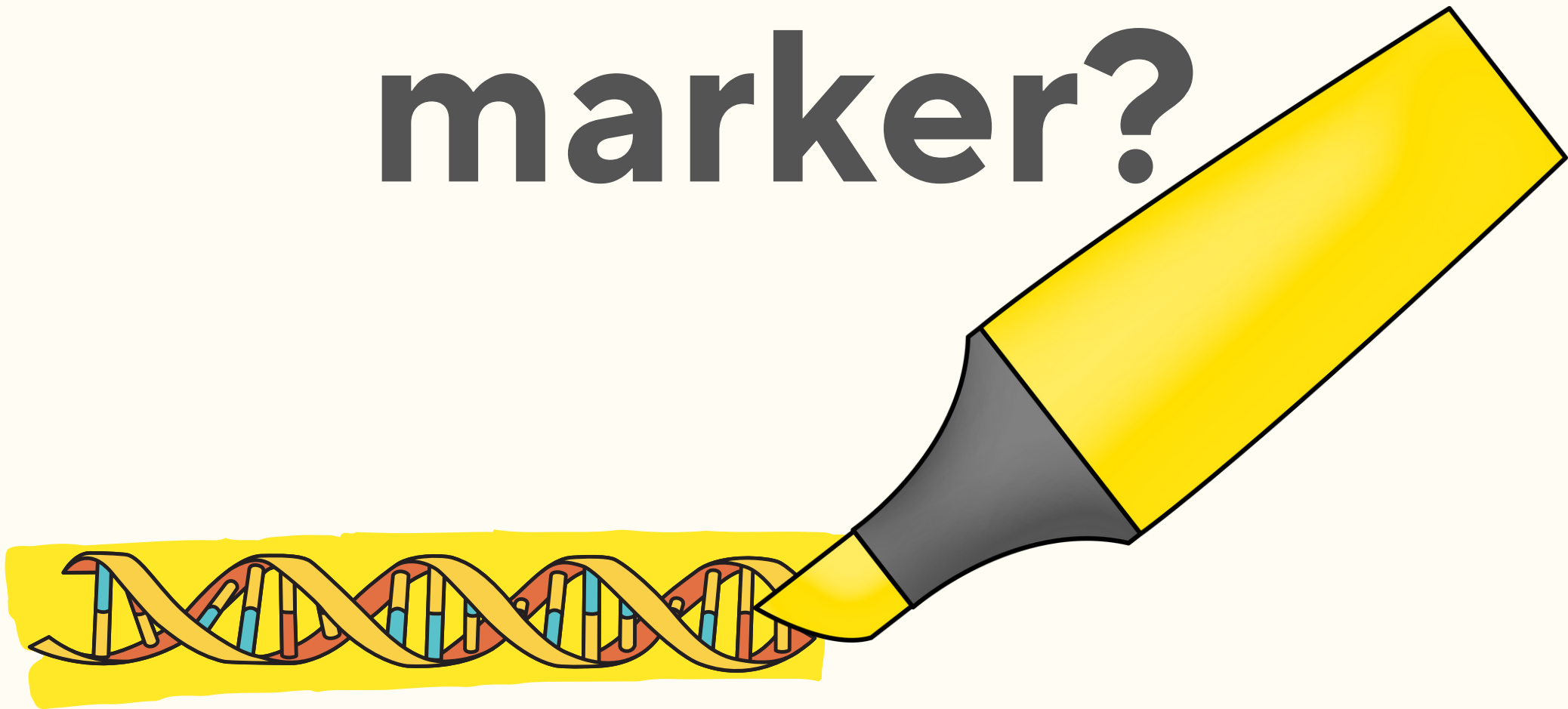
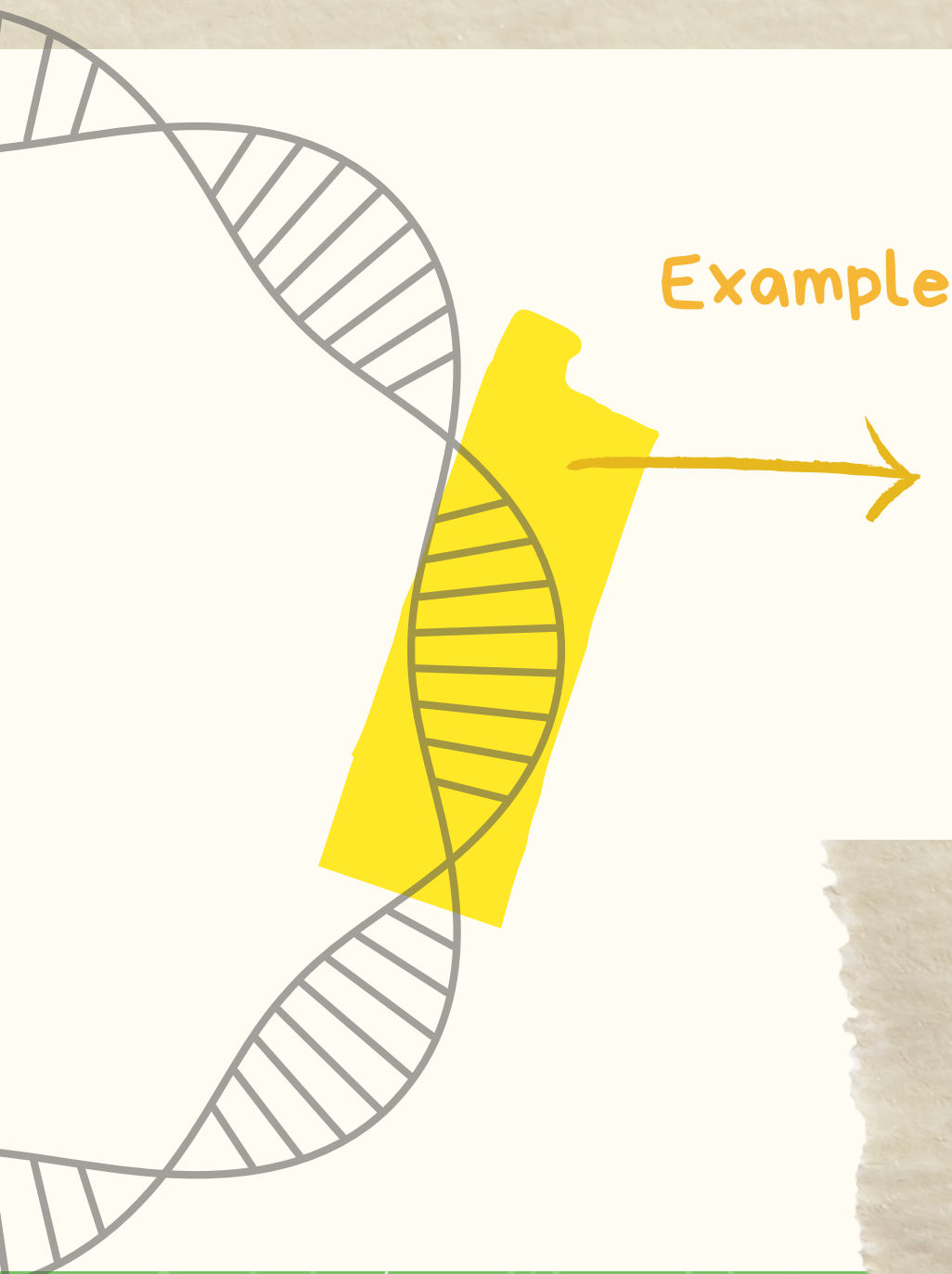


What is a

**genetic
marker?**

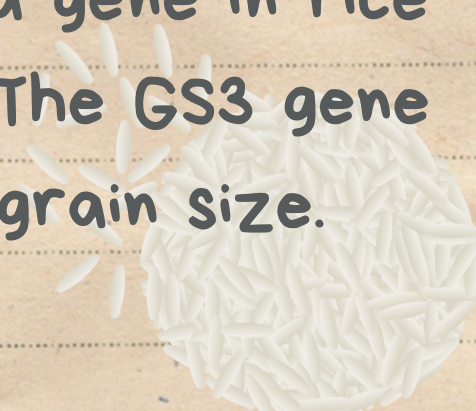


A genetic marker is a specific DNA sequence with a known location on a chromosome. It can be associated with a particular trait or condition.



Example

This part of the DNA represents a gene in rice called GS3. The GS3 gene controls grain size.



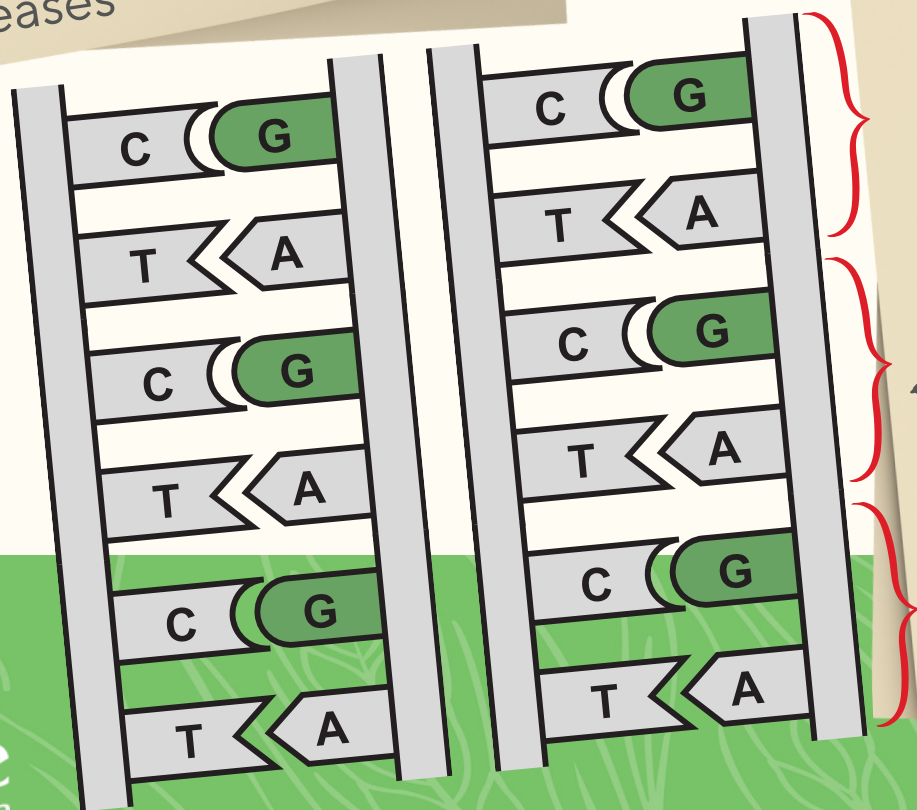
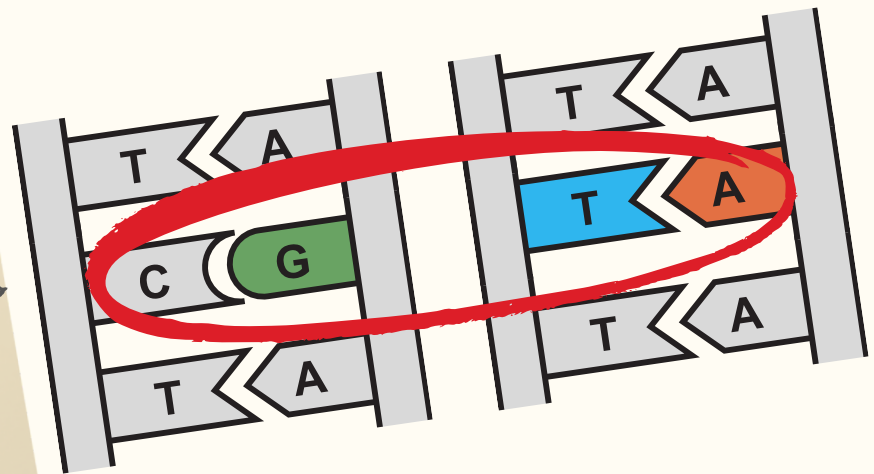
Genetic markers are used in various fields of genetics. They can help **map the location of genes, identify individuals, study genetic diversity, and assist in the diagnosis of genetic disorders.**

What are some types of genetic markers?

Single Nucleotide Polymorphisms (SNPs)

- most common type
- a single nucleotide change in the DNA sequence

USE: in genome-wide association studies (GWAS) to identify genetic variations associated with specific traits or diseases



Microsatellites

- short, repetitive DNA sequences (tandem repeats)

USE: for genetic fingerprinting, paternity testing, population genetics studies

Genetic markers play a crucial role in

genetic research

Genetic markers aid the research of populations, genetic relationships, and evolutionary trends

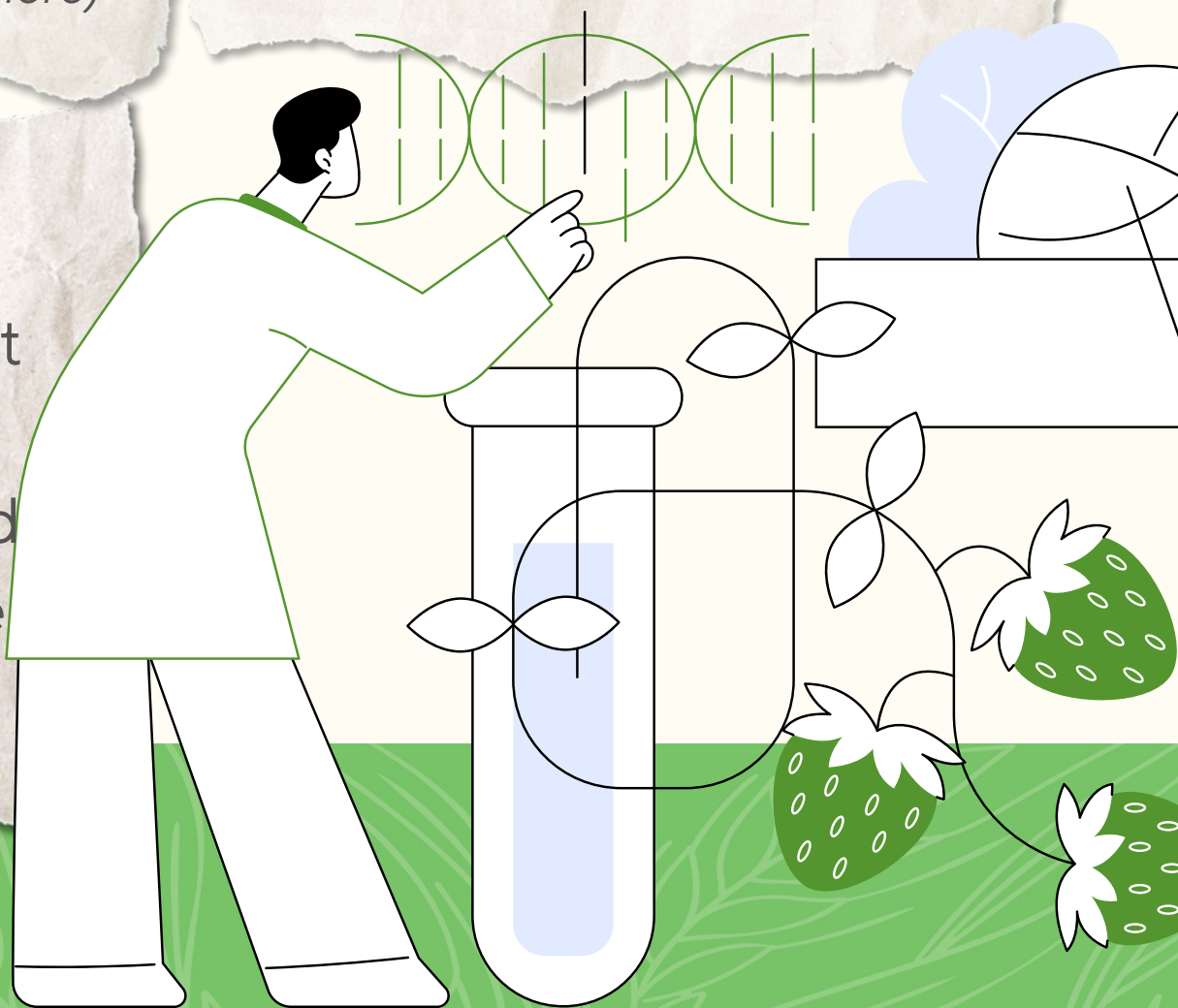
(and much more)

forensic science

Genetic markers enable DNA profiling and analysis

medical genetics

Genetic markers help predict the likelihood of developing certain genetic disorders and can link an inherited disease with the responsible gene

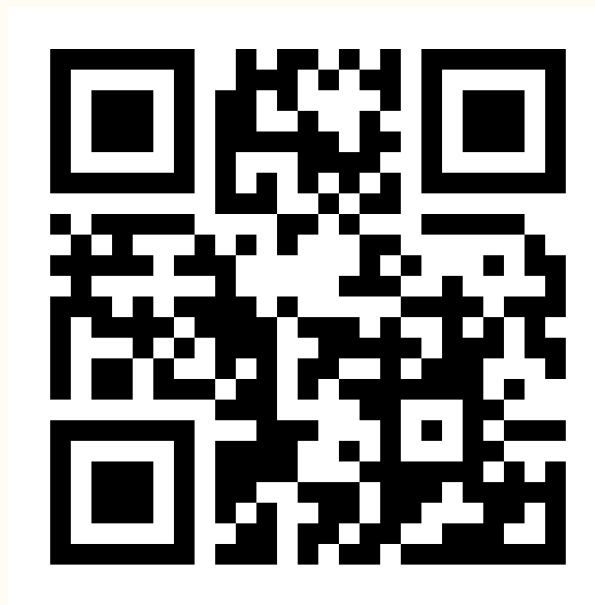


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