

# 1 | Mutation and Inheritance

## 1.1 | Cell Division, Cell Cycle & It's Regulation

**Each cell lives and reproduced on a cycle; unsurprisingly, this is called the KBhBIO101CellLifecycle!**

- These cell cycles create KBhBIO101GeneticVariation, even in KBhBIO101Mitosis, because yes!, in mitosis, there could be KBhBIO101Mutations which introduce variation
- However KBhBIO101Mutations could cause cancer if left unchecked, so we have KBhBIO101CellCycleRegulation to keep this cycle check.

\*At the end of the cell cycle, a little bit of a thing happens where the cell replicates (or makes offsprings, so not necessarily exact copies of) itself. This bit of a thing's called KBhBIO101CellReproduction.\*

- This reproduction process uses one of either KBhBIO101Mitosis (exact copy, for somatic cells (not sperm/egg) only) or
- KBhBIO101Meiosis (half, randomly-mixed genetic info, for gametes (sperm/egg) only).

## 1.2 | Genetics and Inheritance

KBhBIO101GeneticVariation is like, really good. However, its woefully complicated and there are at least 3 ways I think of that it happens.

DNA's sequence could vary by itself, and that will cause a KBhBIO101Mutations, which is actually very rarely bad news bears and instead simply introduces genetic variation if not doing nothing at all.

Organisms have different traits, and through KBhBIO101Meiosis these traits are mixed. But! which one of these traits are expressed (dad passed blue-eye, mom passed red-eye, which one expressed?)? Well, find out at KBhBIO101Inheritance.

Specifically, the mixture of a "heterozygous" alleals (different genes from mother and father) will be determined by KBhBIO101GeneticInheritance.