

Cell cycle

The cell cycle is composed of 3 stages: interphase, mitosis and cytokinesis.

Interphase – is the longest phase. At this stage in its life cycle, the cell grows bigger, does its ‘job’ and at the end, doubles its DNA. The ‘job’ of a red blood cell is to carry oxygen. The ‘job’ of a muscle cell is to contract etc..

Mitosis – is the stage in which the DNA of the cell is divided.

Cytokinesis – is the stage in which the cytoplasm is divided between the 2 new daughter cells. An animal cell will simply pinch into 2 daughter cells. A plant cell needs to build a new cell wall.

Closer look at Mitosis

Although the process of dividing the DNA is a smooth, continuous process, there are 4 stages that are clearly visible with a microscope: prophase, metaphase, anaphase and telophase.

Prophase: The doubled DNA thickens. Now it is called **chromosomes**. (the DNA during interphase is long and thin and is called ‘**chromatin**’)

Metaphase: the DNA chromosomes are lined up in the middle of the cell. Spindle fibres are attached to the chromosomes and eventually will shorten and pull apart.

Anaphase: The doubled DNA is getting pulled apart to the 2 ends of the cell.

Telophase: The DNA has been fully separated and a new nuclear membrane is forming around the 2 sets of DNA.

*****There are lots of good visuals in the textbook – take a look*** Section 2.5***