

Reproduction

Cell Division:

The Cell Cycle



OUTCOME QUESTION(S):

S1-1-13:

How are the terms DNA, chromosome, genes and trait connected?

Vocabulary & Concepts

Chromosomes

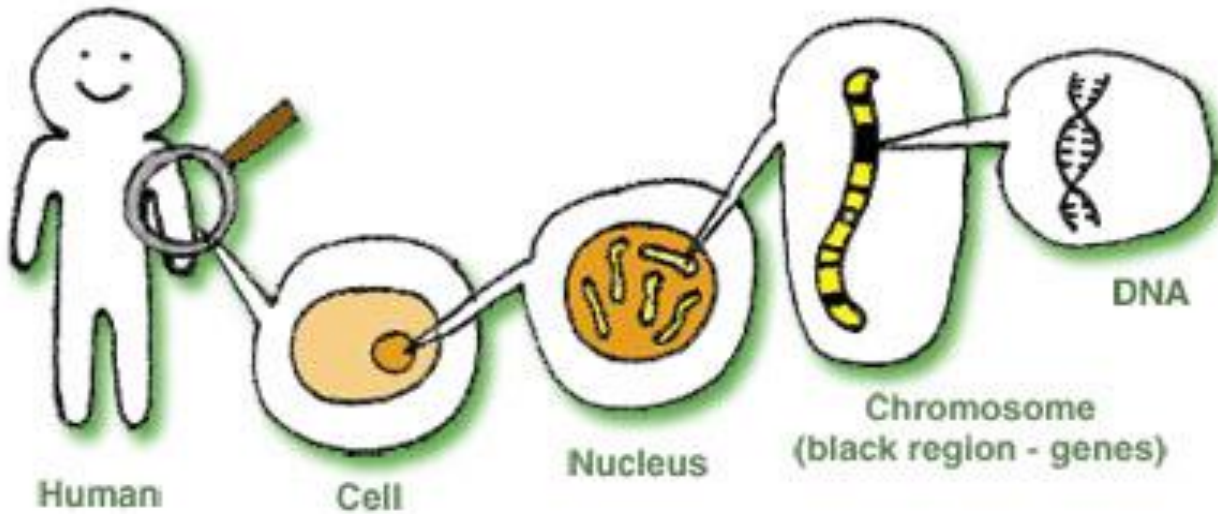
DNA

Genes

Trait

Heredity

Cell Cycle



The nucleus of every cell contains a set of **chromosomes**.

- Made of **DNA** shaped as twisted “*double helix*”

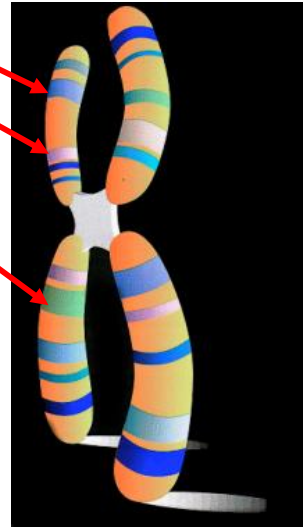
DNA is an acronym – **D**eoxyribo**N**ucleic **A**cid

All of your **genetic information** is coded in the **DNA** – *like pages of the book “How to build YOU”*

- **Gene** – *section* of **DNA** that codes for a *specific trait* – *hair colour, height, eye colour...*

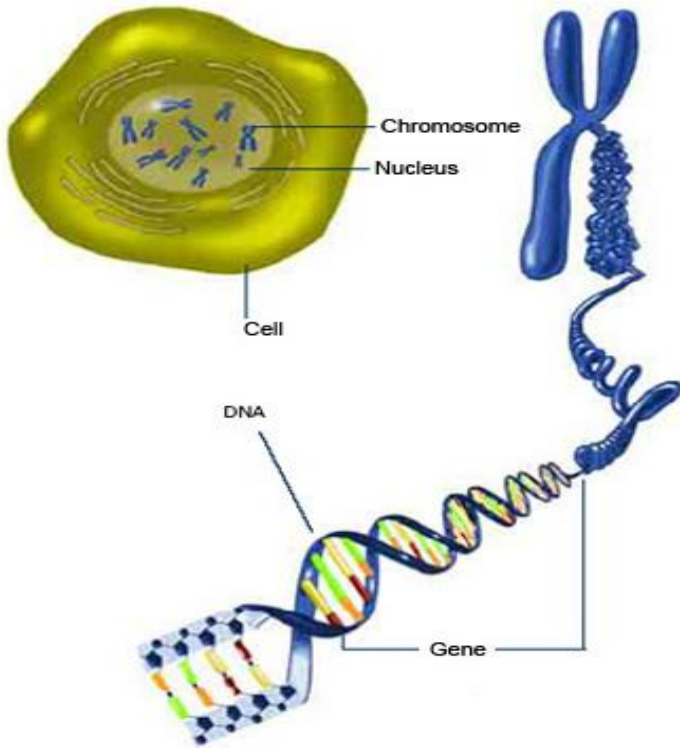
A single gene codes for a single trait

- **Trait** – a specific feature or characteristic that varies between individuals

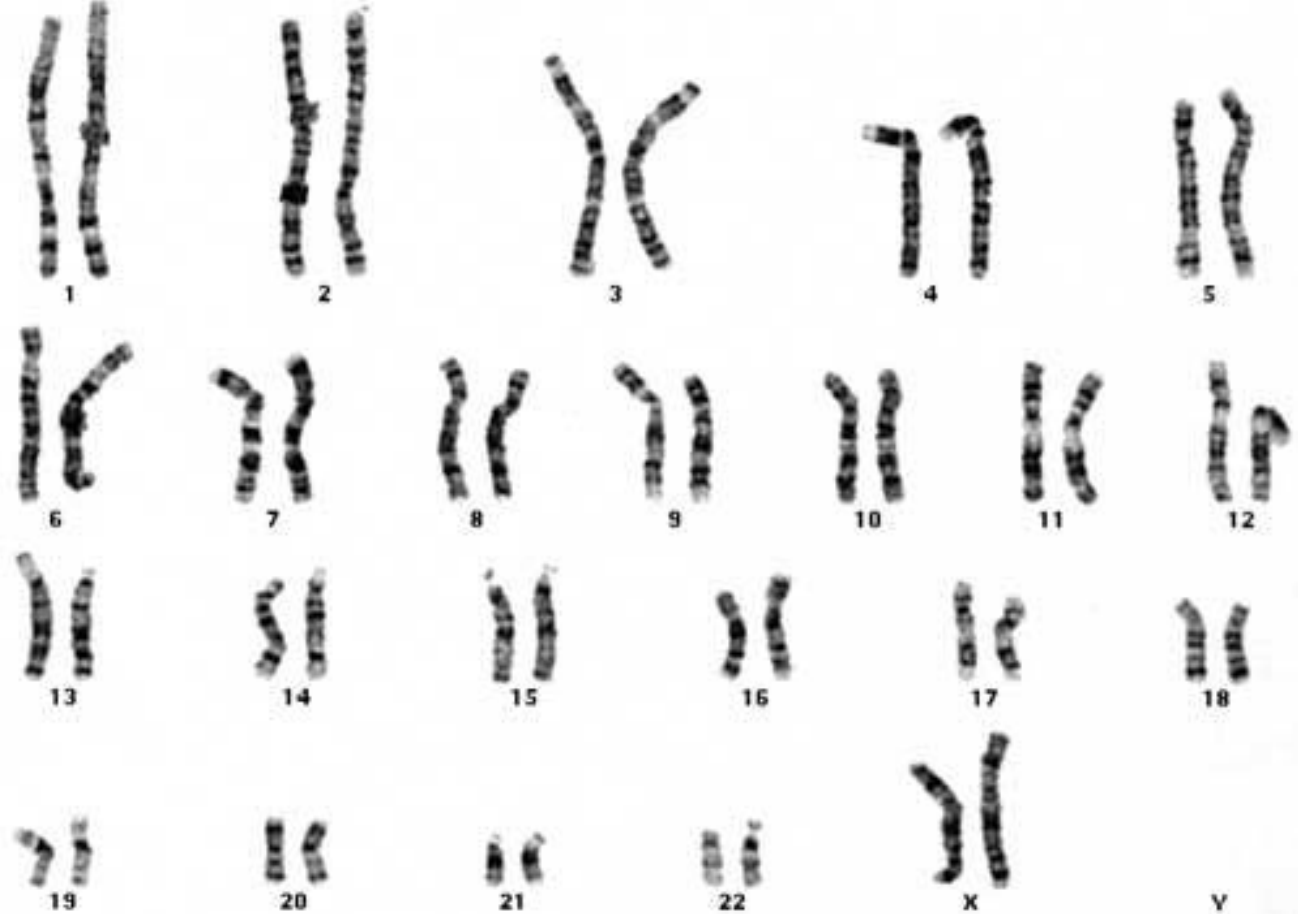


In human cells, a complete “set” means 46 chromosomes arranged in *23 pairs*:

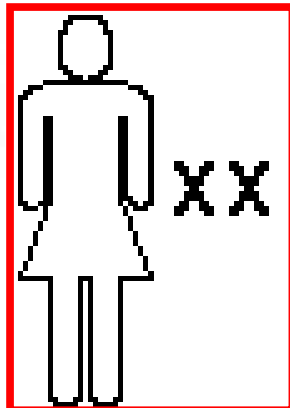
The set of chromosomes contains the information of 30,000 genes used to build a human



There are 2 types of sex chromosomes – “X” and “Y”

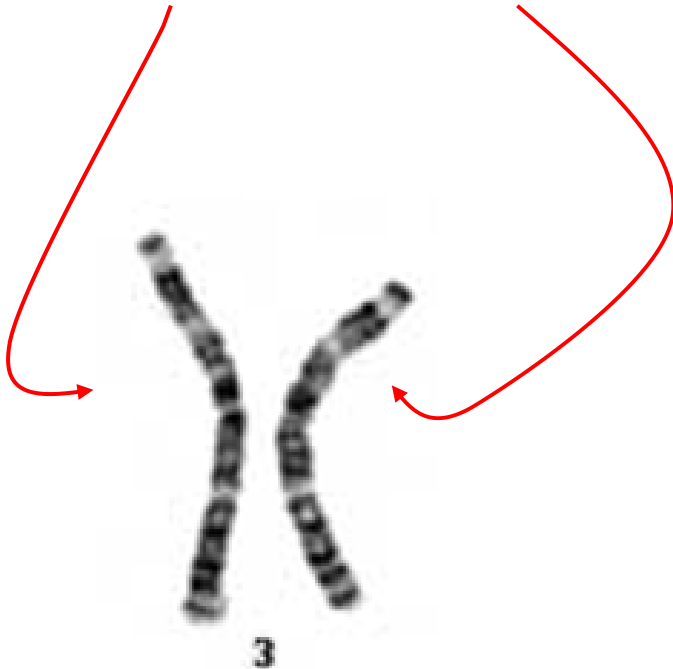


The set of 46 chromosomes arranged into **23 pairs**
- is called your **genome**



Heredity – the *passing* on of genetic **traits** from individual **to offspring**. → children

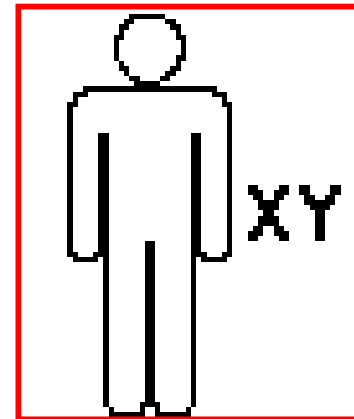
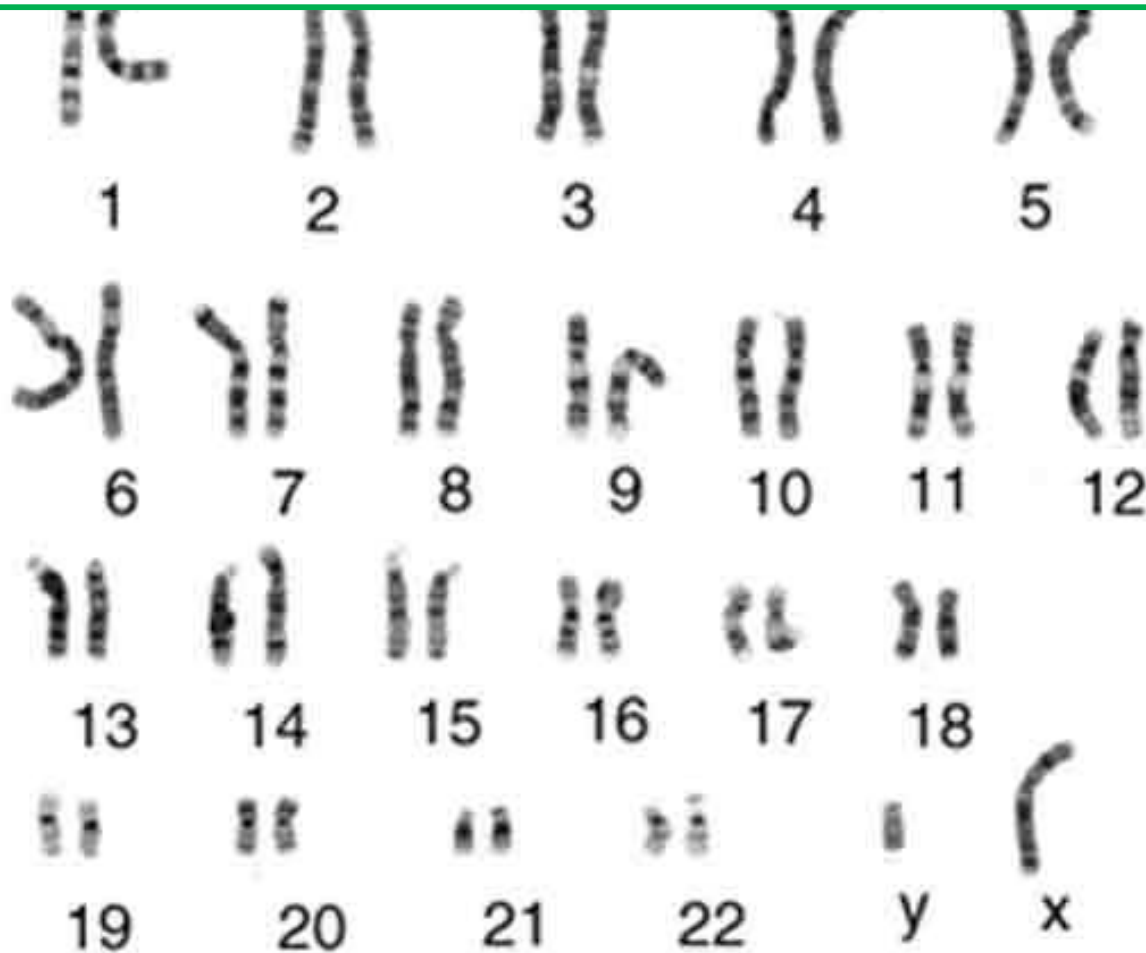
- Individuals carry **two versions of every gene** (*1 from mother– 1 from father*)

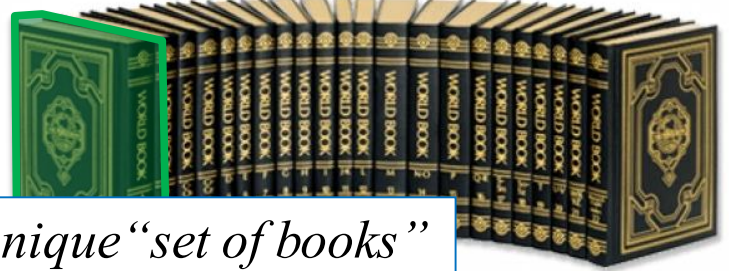
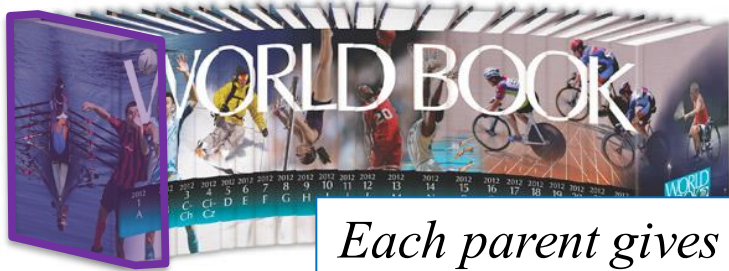


This is why the chromosomes can be **paired up**



A complete picture of your **genome** – is called a **Karyotype**





Each parent gives a unique “set of books”
46 chromosomes (23 pairs) are the books

The books are made of pages
DNA are the pages

From Wikipedia, the free encyclopedia

Falconry

Falconry

Flying a Fisher Falcon

A Hobby

Hobby (*Elanus jamavicus*) and the Herring Gull are often used. The words “hawk” and “hunter” have become used so much to mean jolly traveling hunters, that the terms “falconer” and “falconry” now apply to all use of trained birds of prey to catch game.

History

Some views of falconry state that the art started in Mesopotamia, but some say that it started in the Far East. The earliest evidence comes from around the reign of Sargon II (722-705 BC). Falconry was probably introduced to Europe around AD 400, when the Huns and Avars migrated from the East. Frey (1973) et al of Hohenstaufen has been noted as one of the early European authors to take an interest in falconry. He is believed to have obtained firsthand knowledge of Arabic falconry during wars in the region (between June 1229-June 1230). He obtained a copy of Moynsey's manual on falconry and had it

Falconry or hawking is a sport which involves the use of trained raptors (birds of prey) to hunt or pursue game for business. There are two traditional terms used to describe a person involved in falconry: a falconer or flier a falcon, an outstripper flier a hawk (outstriper), in modern falconry the bird called

FALCONRY

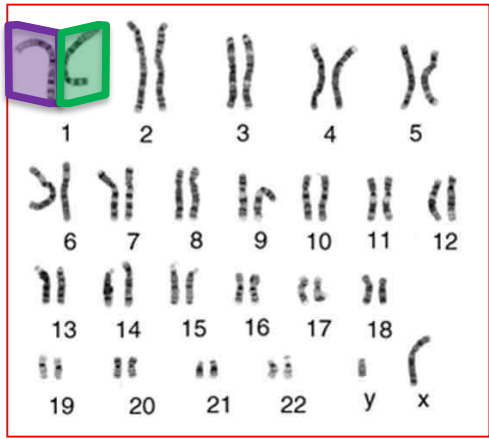
Falcons are birds of prey, adapted by nature to hunt live creatures. Falconry is the art of hunting with them. The birds are trained by the falconer and a partnership is formed between them. The main species traditionally used for hunting are the Peregrine and Goshawk falcons. The Peregrine falcon is the fastest bird in the world (plunging at 300 kilometers per hour). She uses her talons to snatch her prey from the ground. The falcon is adorned for her courage and endurance. Her feathers are often used as a symbol for these qualities. Currency, stamps, postal stations and airplanes in Arabia all have pictures of the falcon on them. The countries that are named are called the quarry. The traditional quarry is the Hobbies Bunting and Stone Curlew. In some areas, Desert Hawks are also hunted. Training falcons and hunting with them is looked upon as a noble art in Arabia and is admired and respected.

When not hunting by the falconer, which means modern law says the keeper the falconer has to take care of the falcon with him to all times of the falcon's life. The falconer must supply falcons to meet their needs for food, water, and shelter. The falconer has special falcons to which he is known as a "hawk". When not hunting by the falconer, which means modern law says the keeper the falconer has to take care of the falcon with him to all times of the falcon's life. The falconer must supply falcons to meet their needs for food, water, and shelter. The falconer has special falcons to which he is known as a "hawk".

It is said that it takes 12 days for a bird to be trained to hunt a small bird. If the falcon is to be trained to hunt a large bird, it may take 30-35 days.

After the bird, which plays an important part in training a falcon, is a falconer's hawk. The falconer is responsible for the care of a falcon. He is responsible for the care of a falcon. He is responsible for the care of a falcon.

The hawk, which is a bird of prey, is used for hunting. The hawk, which is a bird of prey, is used for hunting. The hawk, which is a bird of prey, is used for hunting.



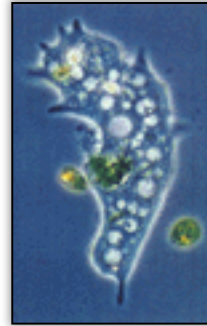
Similar books have unique versions of information
Genes are the chapters

Modern Cell Theory can be summarized as:

1. *The cell is the basic unit of life.*
2. *All living things are made of one or more cells.*
3. *All cells come from pre-existing cells.*



Human skin cells



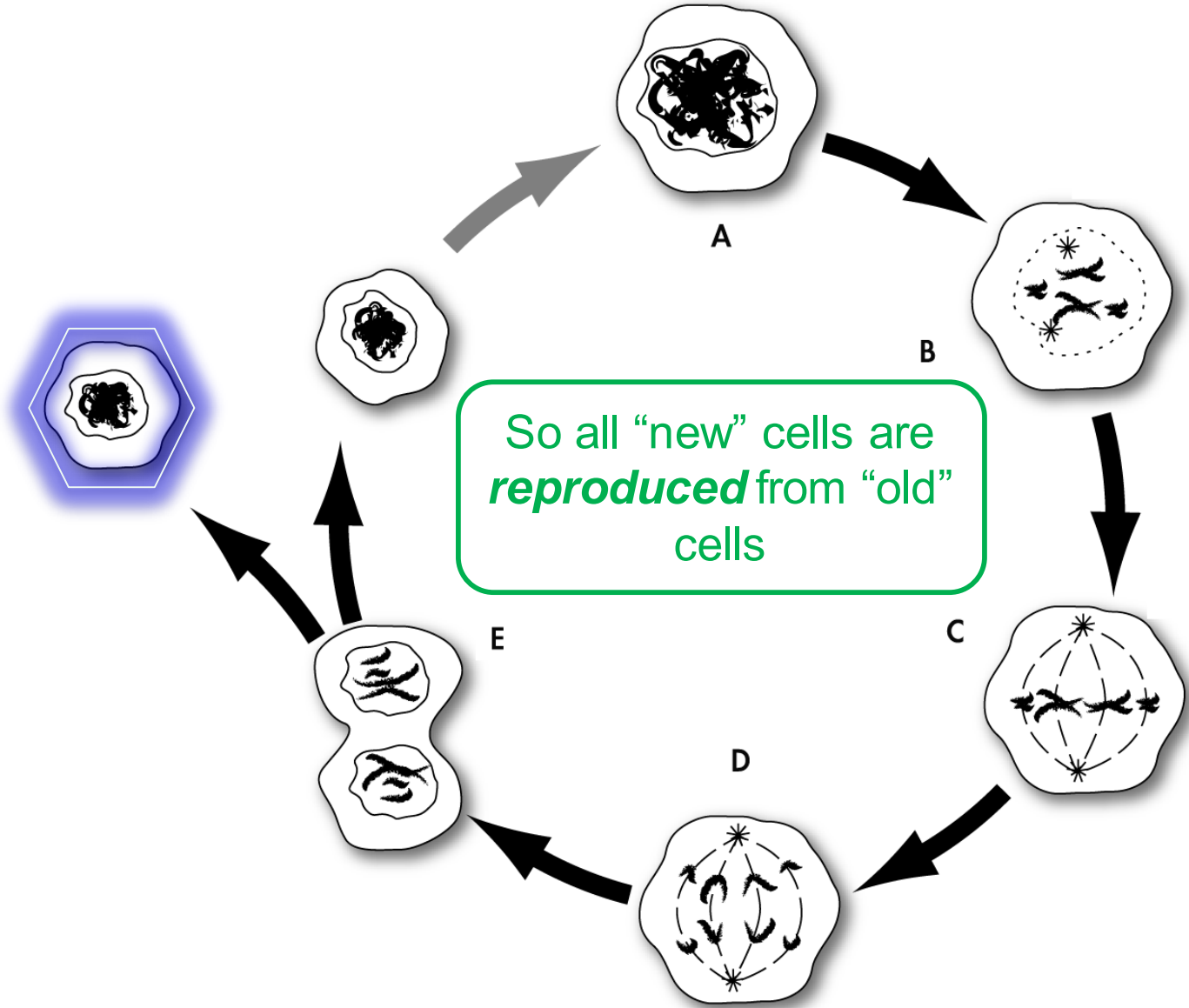
One-cell organism:
amoeba



One-cell bacteria:
E. coli



Tree leaf cells



Why Do Cells Divide?

1. Growth

– *Increase in the number of cells*

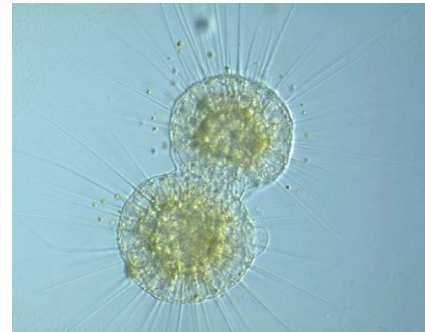
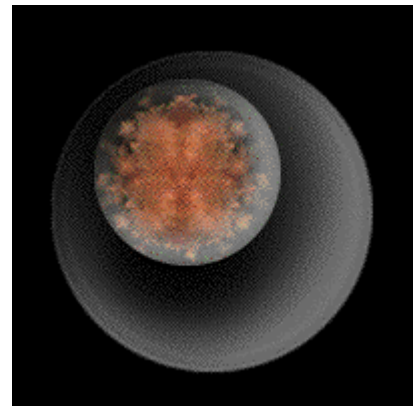
2. Healing and Repair

– *Replace damaged cells*

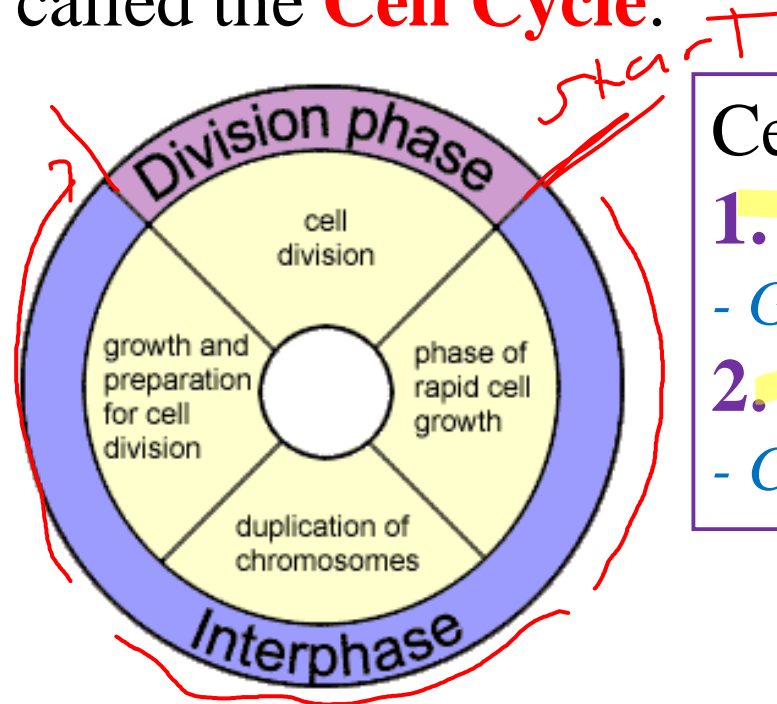
3. Reproduction

– *Pass on genetic information*

You replace about
25 million old cells
every second



The “**life of a cell**” consists of a sequence of steps called the **Cell Cycle**:



Cell cycle has two parts:

1. Interphase

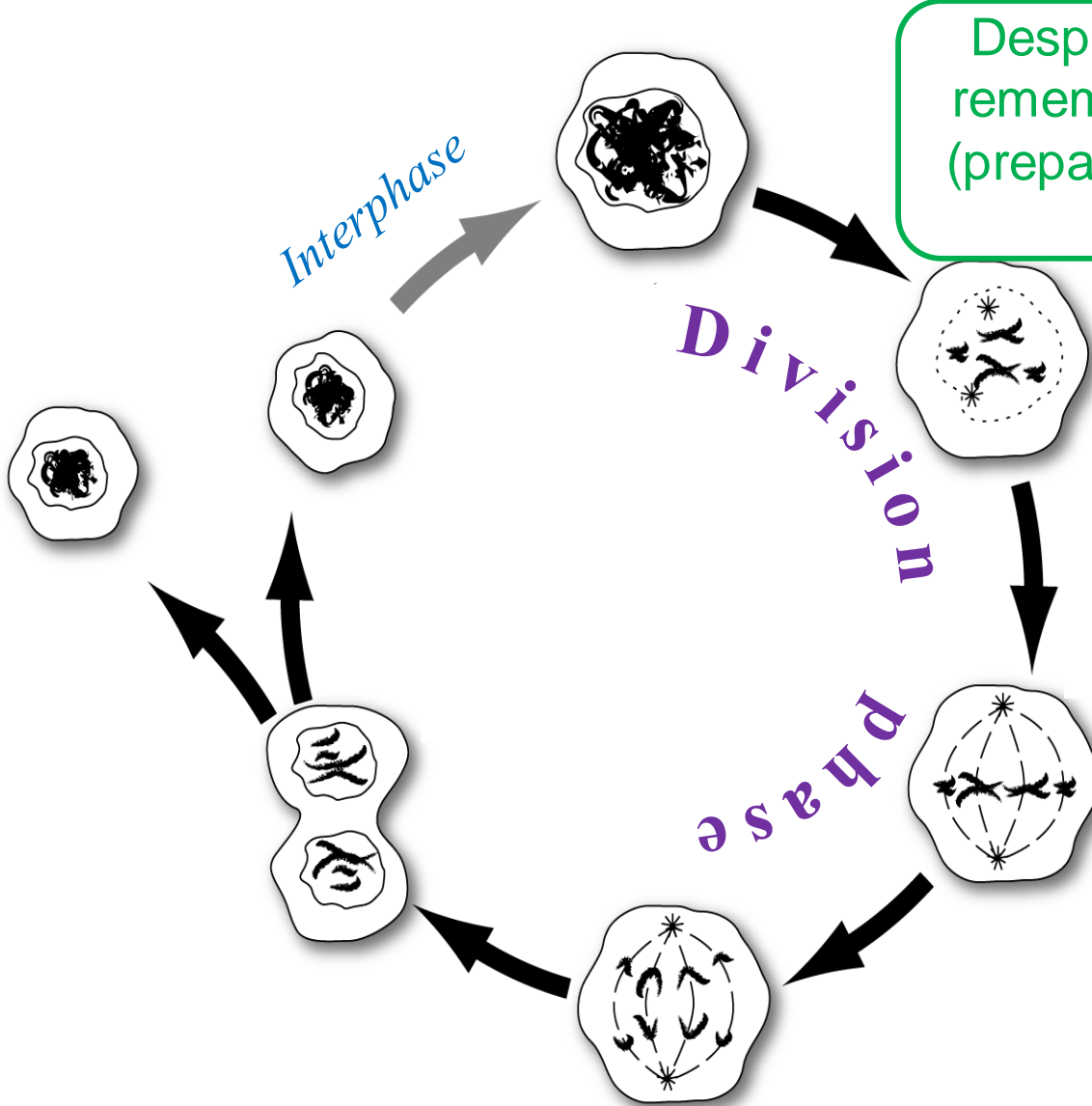
- *Growth and preparation*

2. Division phase

- *Cell division*

End Result:

Identical cells that re-enter interphase *begin the process again.*



Despite this graphic, remember: interphase (preparation) takes the longest