



**wellcome
connecting
science**

**Welcome to the
Wellcome Genome Campus**

A reminder – the important bits



If the alarm sounds for more than one minute, please evacuate. Your host will guide you to the nearest assembly point



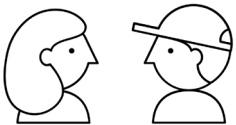
If you feel unwell or suffer an accident, let your host know and they will summon appropriate first aid



Please stay together and with your host(s) at all times during your visit



All buildings on the Campus are non-smoking



Be respectful of your hosts, speakers, tour guides and each other

Genome Academy

Timetable

- Carry out DNA barcoding
 - Practical work
 - Bioinformatics
- Hear about current research
- Experience the sequencing facilities
- Tour labs and data centre
- Consider the ethics of genomics
- Meet staff

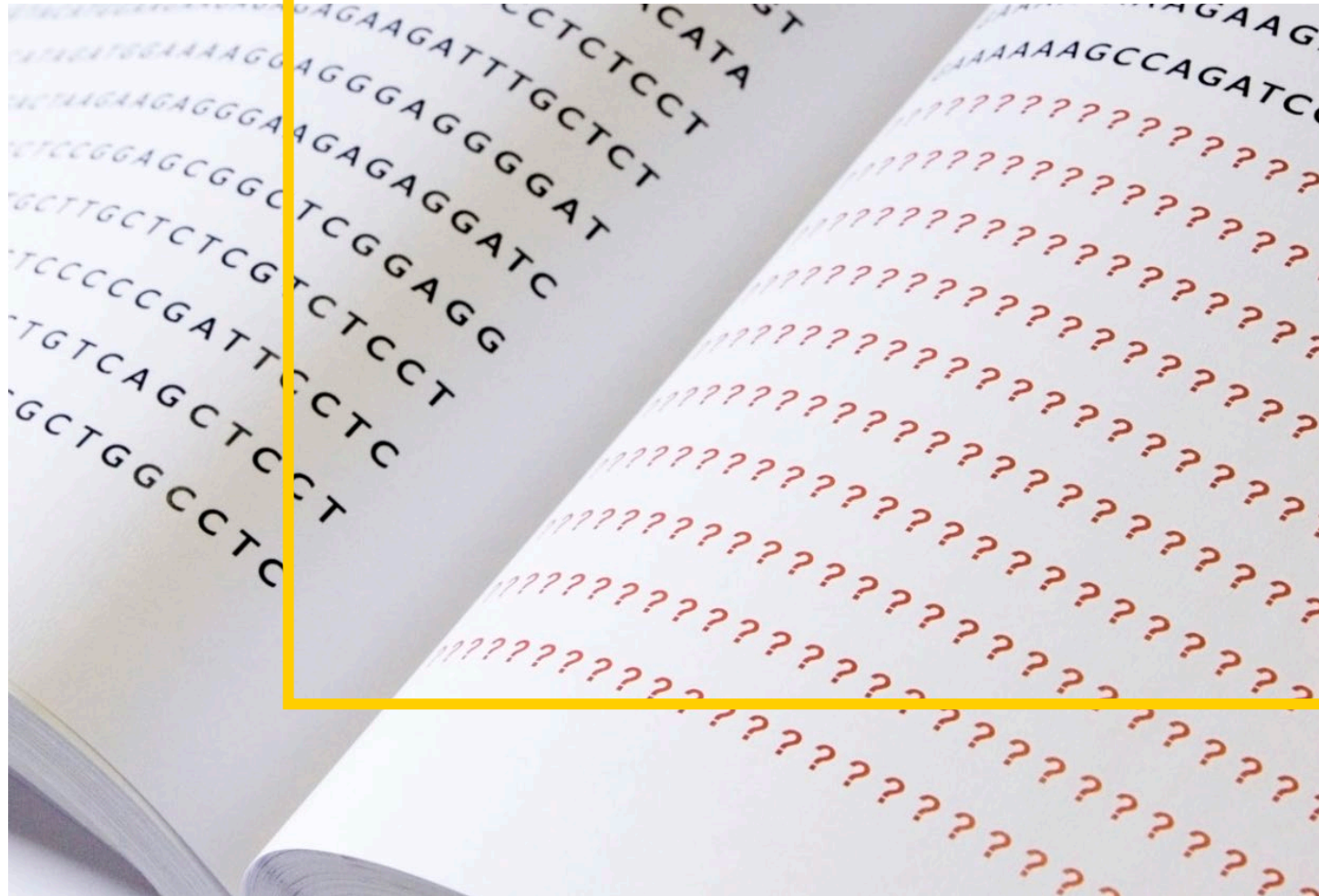


Plan for today

- Refresher
- Talk 'Lab automation'
- Lab and data centre tours
- Lunch
- Talk 'Applications of CRISPR'
- Ethics discussion
- Reflections
- Evaluation and certificates



Refresher on Day 2



Voting handsets

We will use voting handsets through the session to ask questions

Please leave these on your desk when the session ends



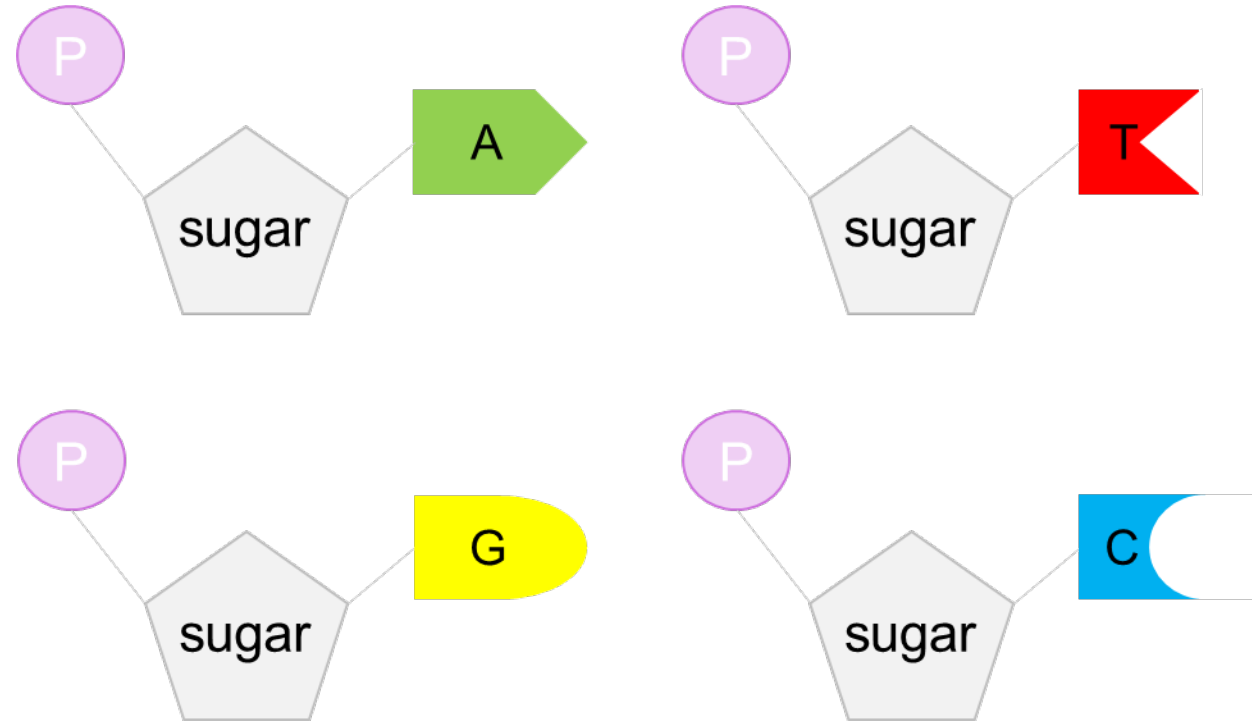
Which famous scientist invented the first method of DNA sequencing used in the Human Genome Project?

- A. Sam Sulston
- B. John Sulston
- C. Barney Sanger
- D. Fred Sanger



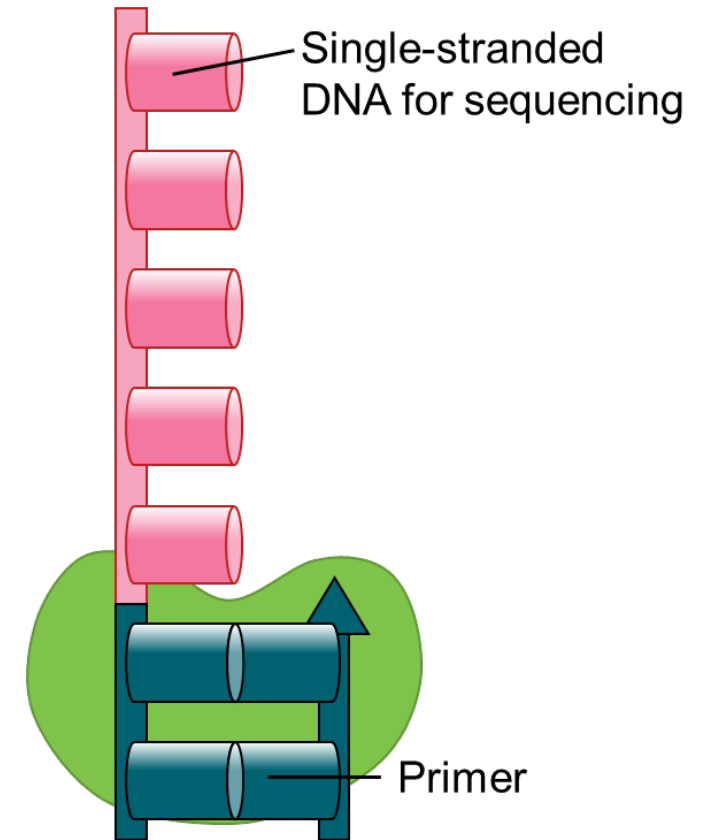
What is the name for the monomer that forms the polymer DNA?

- A. Nucleotide
- B. Nucleoside
- C. Base
- D. Base pair



Which enzyme catalyses the formation of phosphodiester bonds in the DNA backbone?

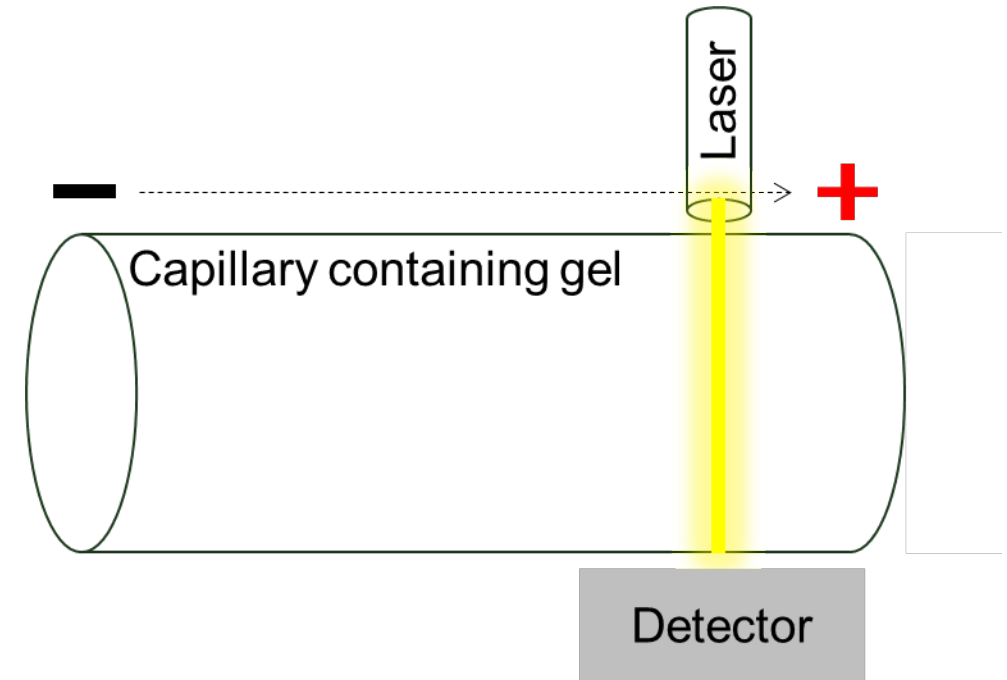
- A. DNA helicase
- B. DNA replicase
- C. DNA polymerase
- D. DNA phosphodiesterase



What is a capillary?

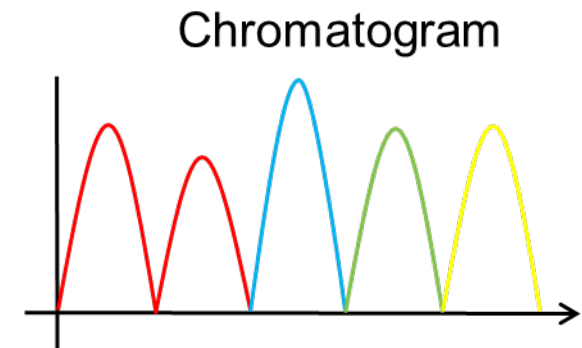
A capillary is a **very narrow, thin-walled tube**.

A capillary filled with gel is used in capillary gel electrophoresis.



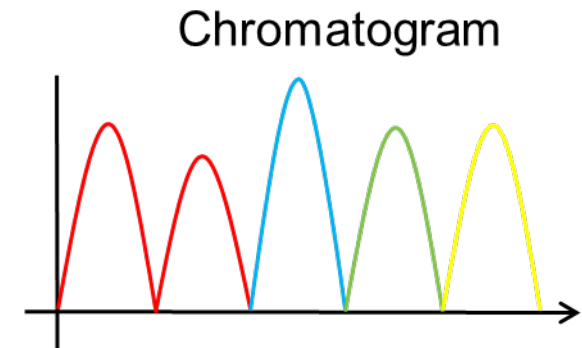
What does a chromatogram show?

- A. X axis = Fluorescence detected,
Y axis = Time (indicating base position)
- B. X axis = Fluorescence detected,
Y axis = Distance (indicating base position)
- C. X axis = Time (indicating base position),
Y axis = Fluorescence detected
- D. X axis = Distance (indicating base position),
Y axis = Fluorescence detected,



On a chromatogram, what indicates good quality DNA sequence?

On a chromatogram good quality, accurate DNA sequence is seen as sharp, evenly-spaced peaks.



What is bioinformatics?

Bioinformatics is the development of software and computing tools to organise and analyse raw biological data.



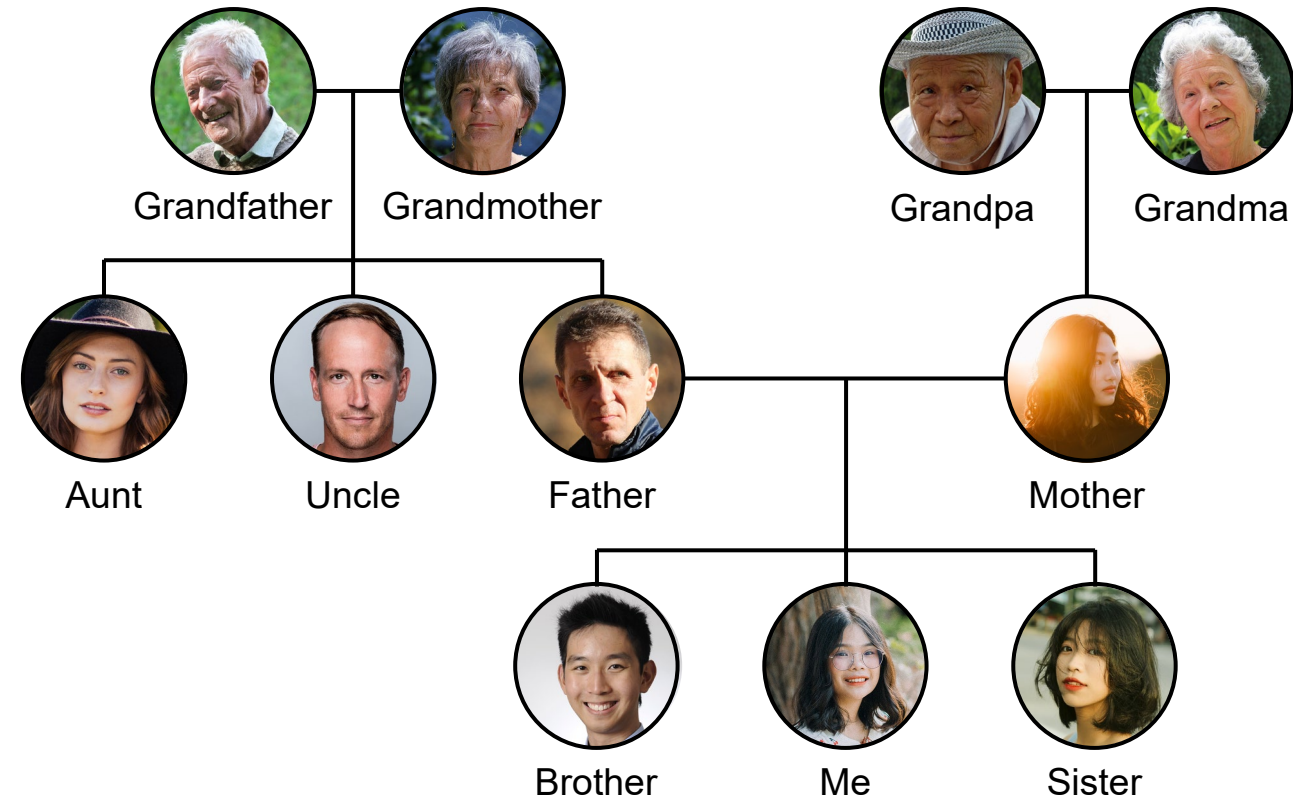
What does BLAST stand for?

- A. Basic Local Alignment Sequence Tool
- B. Base Local Alignment Sequence Tool
- C. Basic Local Alignment Search Tool
- D. Base Local Alignment Search Tool



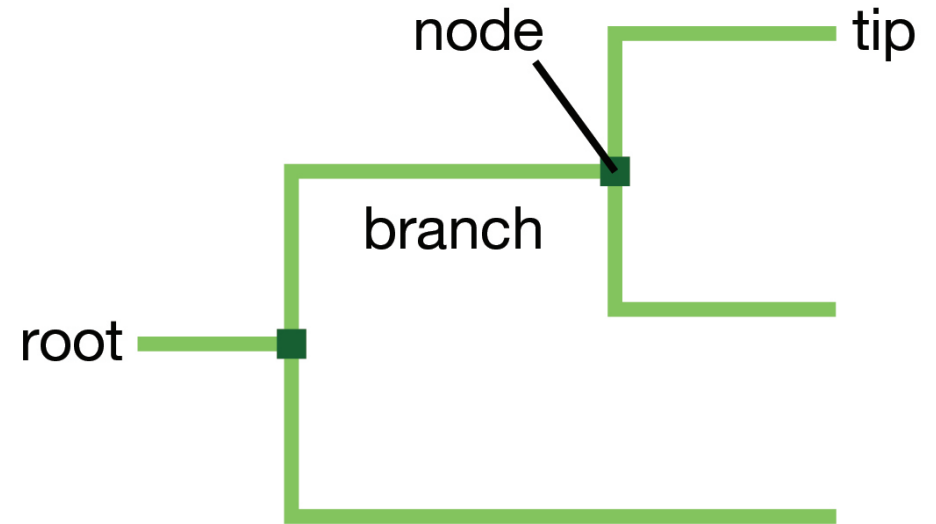
What is shown on a phylogenetic tree?

A phylogenetic tree is a diagram that represents [evolutionary relationships among organisms](#).



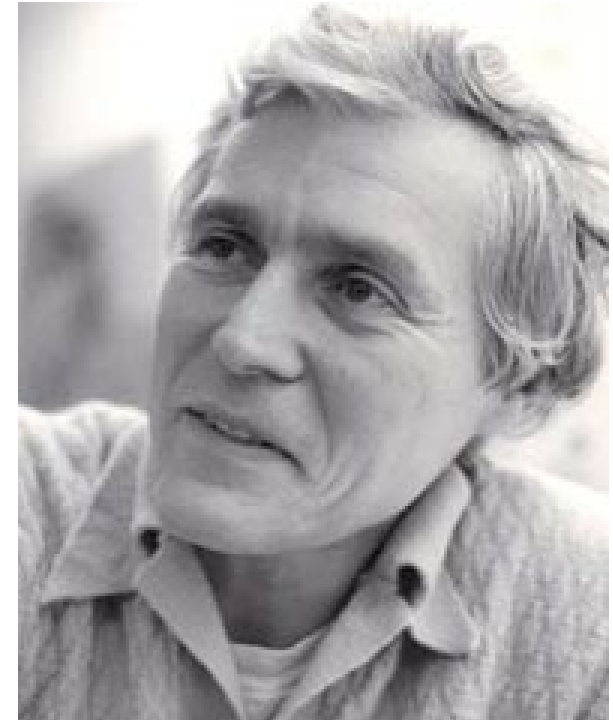
What does a node on a phylogenetic tree show?

- A. A common ancestor for the whole tree
- B. The relative time since which species diverged
- C. Where speciation occurred from a common ancestor
- D. The species represented in the phylogenetic tree



Which scientist was first to use molecular analysis of genetic material in classification?

- A. Carl Linneaus
- B. Ernst Haeckel
- C. Herbert Copeland
- D. Robert Whittaker
- E. Carl Woese



Which scientist proposed the use of a DNA barcode as a DNA-based method to assist identification of organisms?

- A. Charles Darwin
- B. Carl Woese
- C. Cletus Kurtzman
- D. Paul Hebert



ATGGTC



ATGGTC

Same DNA barcode = same species



ATGGTC



GTTGCG

Different barcode = different species

Next activities

Today we will explore other areas of research and labs, then discuss some of the possibilities opened up by our understanding of genomics and the associated ethical issues.