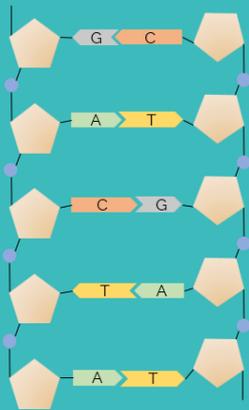


DNA and Evolution

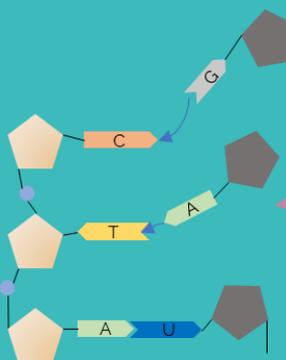
DNA Replication

Transcription



The hydrogen bonds between nucleotides are broken by **DNA Helicase** and the double strand 'un-zips'

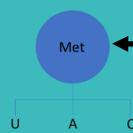
Complimentary free Nucleotides are aligned along the exposed strands of DNA by **DNA Polymerase**



The pentose phosphate backbone is reformed by **DNA Ligase** to make **mRNA** for Transcription. **Uracil** replaces **Thymine** in **mRNA**

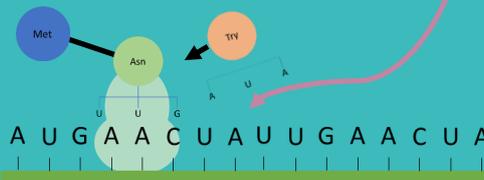
Translation

A U G A A C U A U U G A A C U A

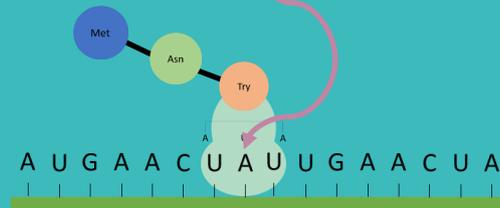


The amino acid is bound to a **tRNA** using energy from **ATP**

The tRNA **anticodon** is attracted to the **complimentary** mRNA codon and the **ribosome** holds the two together



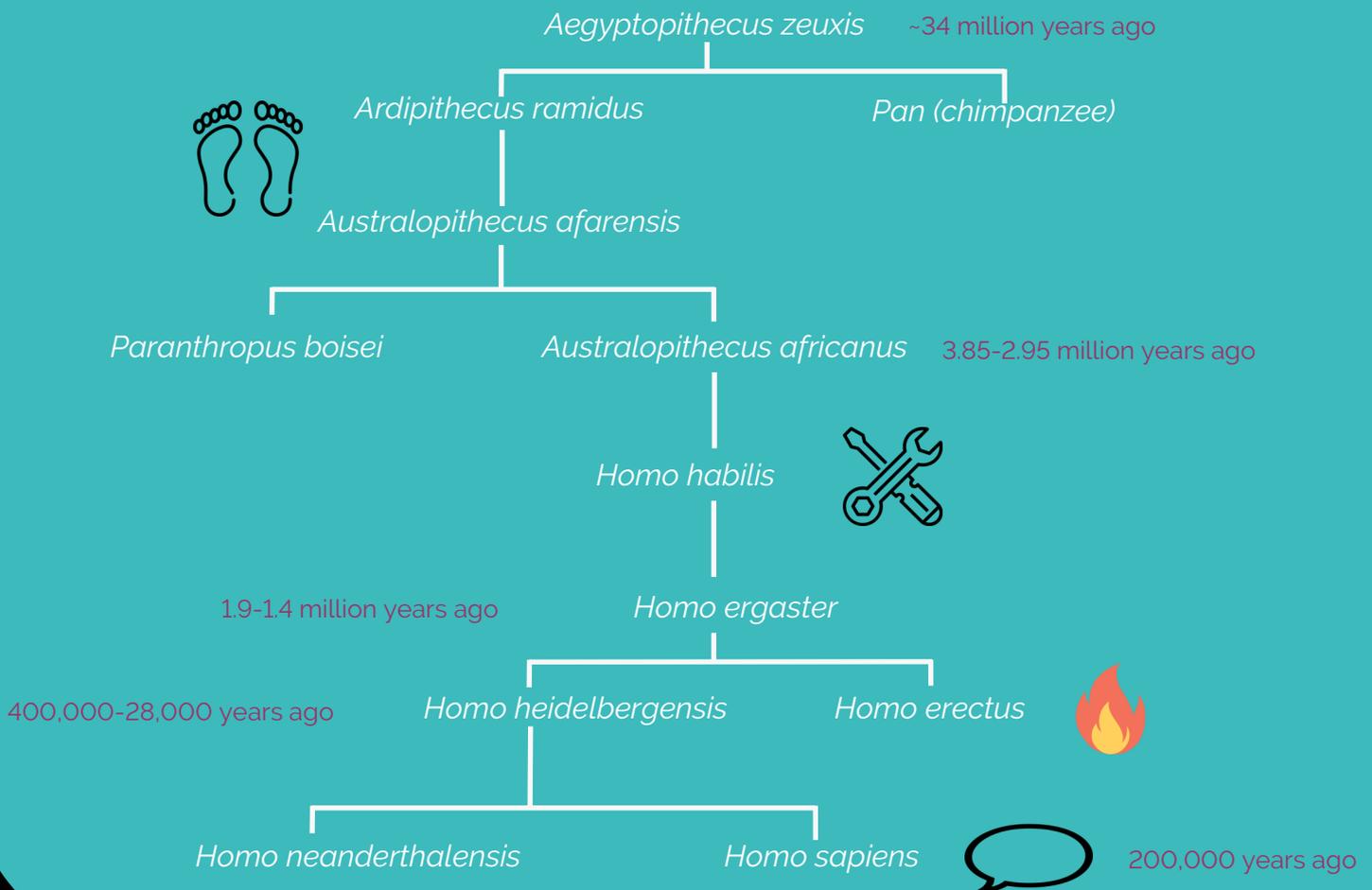
The **ribosome** shifts along and the next **tRNA** will bind to its complimentary codon whilst the amino acid from the previous tRNA will dissociate and form a **peptide bond** in the growing **polypeptide chain**



DNA Mutations

- **Point Mutation**—a change in one or a small number of nucleotides affecting a single gene
- **Substitution**—a type of point mutation where one base is substituted for another. Doesn't always lead to change in amino acid sequence due to degenerate nature of triplet codons
- **Deletion**—point mutation where a base is completely lost
- **Insertion**—point mutation where an extra base is added into the gene, may be a repeat or different base

Human Evolution



Modern humans' and chimpanzees' last common ancestor, ***Aegyptopithecus zeuxis***, occurred around 34 million years ago. Through a series of mutations over millions of years, early hominids have evolved to become ***Homo sapiens*** or modern humans.

Australopithecus afarensis showed the first signs of bi-pedal walking. The first signs of tool use was seen in ***Homo habilis***. ***Homo erectus*** are the earliest known species to control fire for the likes of cooking and heat. ***Homo sapiens*** are the first species to have complex language and vocal ability.



We have been able to tell a lot about human evolution through study of our ancestors bones. The skulls especially are very distinct between species. Follow this link to try a quiz on hominid skulls prezi.com/view/uGZIN0HhF9vZgYTGdf1U/

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