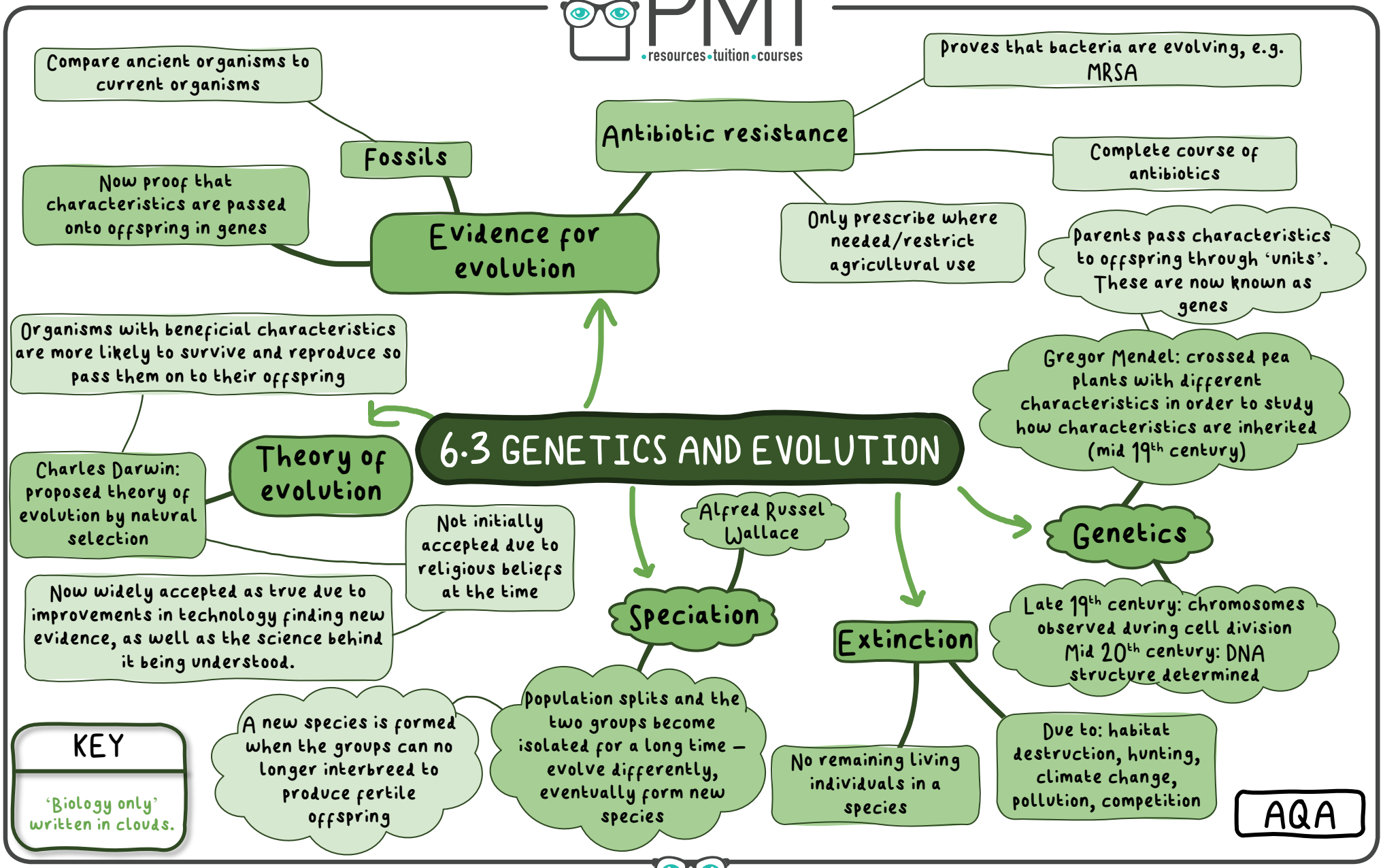
PMT
resources tuition courses
6.3 GENETICS AND EVOLUTION
Evidence for evolution
Fossils
Compare ancient organisms to current organisms
Now proof that characteristics are passed onto offspring in genes
Antibiotic resistance
Proves that bacteria are evolving, e.g. MRSA
Complete course of antibiotics
Only prescribe where needed/restrict agricultural use
Theory of evolution
Organisms with beneficial characteristics are more likely to survive and reproduce so pass them on to their offspring
Charles Darwin: proposed theory of evolution by natural selection
Not initially accepted due to religious beliefs at the time
Now widely accepted as true due to improvements in technology finding new evidence, as well as the science behind it being understood.
Speciation
Alfred Russel Wallace
Population splits and the two groups become isolated for a long time – evolve differently, eventually form new species
A new species is formed when the groups can no longer interbreed to produce fertile offspring
Extinction
No remaining living individuals in a species
Due to: habitat destruction, hunting, climate change, pollution, competition
Genetics
Gregor Mendel: crossed pea plants with different characteristics in order to study how characteristics are inherited (mid 19th century)
Parents pass characteristics to offspring through 'units'. These are now known as genes
Late 19th century: chromosomes observed during cell division
Mid 20th century: DNA structure determined
KEY
'Biology only' written in clouds.
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