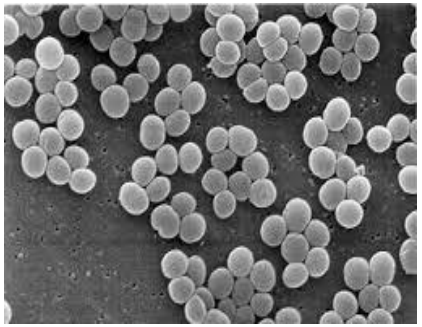
Biology 15: Genetics and Evolution

1. Evolution	
Evolution	The change in the inherited characteristics of a population due to natural selection. May result in a new species
Natural selection	The process where the organism best adapted to the environment survives and passes on their characteristics
Species	A group of organisms with similar features which can breed to make fertile offspring

Stages of evolution
1. Population shows variation due to their genes
2. Environment changes
3. Some individuals are best adapted and live longer
4. These can breed and produce more offspring
5. Over a long period of time the offspring dominate the population

2. Fossils	
Fossil	Remains of a plant or animal that were alive millions of years ago. Found in rocks. Normally only the hard parts
Fossil formation	• Parts of organisms that have not decayed because one or more of the conditions needed for decay are absent • Parts of the organism are replaced by minerals as they decay • Preserved traces of organisms, such as footprints
What they tell us	• Early life was simple • As the fossils get newer the life becomes more complex
Why do we not have a fossil for every living thing	• Early life forms were soft bodied so not fossils formed • Geological activity destroyed fossils

3. Resistant bacteria	
MRSA	A type of bacteria that has evolved to be resistant to antibiotics
How to prevent antibiotic resistance	1. Not prescribing antibiotic for viral and non-threatening infections 2. Completing the course of antibiotic given 3. Restricting the use of agricultural antibiotics



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4. Classification of organisms	
Carl Linnaeus	Invented the groups we classify organisms into 1. Kingdom 2. Phylum 3. Class 4. Order 5. Family 6. Genus 7. Species
Binomial name	The official name of all organism consisting of genus and species
3 domain system:	
Archaea	Primitive bacteria normally found in extreme environments
Bacteria	True bacteria
Eukaryotes	Plants, animals, fungi and protists

5. Extinction	
Extinction	When an entire species has died
Causes of extinction	1. Disease 2. New predators 3. Famine 4. Natural disaster (meteor, volcano)

6. Human classification