Comparing Reproduction		
Questions	**Asexual**	**Sexual**
How many gametes?		
Mitosis or Meiosis?		
Is there variation?		
Why / How?		

Describe what fertilisation is and how it causes variation within a species:

Topic 6 Inheritance, Variation and Evolution

Complete the punnet square showing the chances of each gender being created.

Gametes		

Chances - ……..%

Define these:

DNA –

Gene –

Chromosome –

Amino acid –

Protein –

Genome –

Characteristic –

Genome project –

Nucleotide –

Bases –

Homozygote –

Heterozygote –

Genotype –

Phenotype –

Alleles –

Punnet square –

Complete the flow chart for Meiosis.

Meiosis Sequence	
Step	**Description**
Start off with 46 chromosomes.	
Duplication	
Line up and random mixing of chromatids.	
Cell divides twice.	
4 cells created each containing 23 chromosomes.	

(BIOLOGY ONLY) Protein Synthesis:

1. Template -

2. Carrier molecules -

3. Amino acids -

4. Protein chain -

5. Complete -

(BIOLOGY ONLY) Compare reproduction in the different organisms.

Comparing Reproduction	
Organism	**Description**
Plants	
Fungi	
Malaria	

Describe the following diseases and state whether they are dominant or recessive

1. Polydactyl:

2. Recessive:

(BIOLOGY ONLY) Describe the following and how they occur:

1. Gene Expression

2. Mutation

Screening Embryos			
Method	**Description**	**Advantages**	**Concerns**
Amniocentesis			
Chorionic Villus Sampling			

Comparing Genetic Technologies			
Method	**Description / How it happens**	**Advantages**	**Ethics and Limitations**
Selective Breeding			
Cloning plants (BIOLOGY ONLY)			
Cloning animals (BIOLOGY ONLY)			
Adult cell cloning (BIOLOGY ONLY)			

Describe natural selection in terms of;

Mutation –

Genetic Variation –

Survival of the fittest and evolution –

Genetic Engineering:

What is it?

What are the 4 stages?

1.

2.

3.

4.

List the benefits:

List the concerns:

Fossils:

List the different ways fossils can be made?

1.

2.

3.

Why is the fossil record useful?

Why is the fossil record incomplete?

Describe Genetic variation –

Describe Environmental variation –

Characteristic	Genetic	Environment
Skin colour		
Weight		
Eye colour		
Hair colour		
Scars		

Describe 3 reasons why organisms become extinct.

Describe the theories of dinosaur extinction:

1.

2.

Why did scientists think low light and temperature followed after an asteroid?

3 things to do when using antibiotics to prevent resistant bacteria

1.

2.

3.

Describe how MRSA spread and the effects of this.

Classification models:

1. Two kingdoms:
2. Five kingdoms:
3. Three domain, six kingdoms:

What is the binomial naming system?

What is the evidence for using the 3 domain system?

Archaea –

Bacteria –

Eukaryota –

(BIOLOGY ONLY) Mendel:

1. Describe monohybrid inheritance

2. How did Mendel discover inheritance?

3. Why did people not believe Mendel?

4. Why was the discovery of DNA so important to our understanding of genetics?

(BIOLOGY ONLY) Alfred Russel Wallace

1. Describe the work of Wallace

2. Why did Darwin worry about Wallace publishing his work?

(BIOLOGY ONLY) Speciation

1. Why will any population contain natural genetic variation?

2. Describe speciation.

3. What is a species?

(BIOLOGY ONLY) Speciation and Isolation

What is meant by 'isolation'?

Give some examples of isolation:

Explain how isolation can lead to speciation:
1.

2.

3.

4.

5.

(BIOLOGY ONLY) Theories of Evolution

Scientists	Theory descriptions	Problems with their ideas
Lamarck		
Darwin		

(BIOLOGY ONLY) Accepting Darwin's ideas

Describe how the finches on the Galapagos islands gave evidence of natural selection:
1.

2.

3.

Why did people object to Darwin's idea?
1.

2.

3.

4.