Give the letter or name of the nitrogenous base that pairs with Adenine (A)	In the name DNA, what does the A stand for? Deoxyribonucleic A____	What alternates with the sugar to make the uprights of DNA?	What alternates with the phosphate to make the uprights of DNA?
T (thymine)	Acid	Phosphate (group/molecule)	Sugar / deoxy-ribose (molecule)
What name means to copy when talking about DNA?	What two words describe the "twisted ladder" shape of DNA?	What is the name of the weak bond that attracts base to base in DNA?	What word describes the unit made of a sugar, a base and a phosphate group?
Replicate / replication	Double helix	Hydrogen (bond)	nucleotide
If the bases are CTA, what would the sequence of bases be on opposite strand?	What does "semi conservative" mean in terms of DNA replication?	DNA is a triplet code. What thing does a sequence of 3 bases "code for"?	What molecule is made by joining many, many amino acids together?
GAT	One strand is old, other is new	A (particular) amino acid	Protein (molecule)
Does the base adenine (A) bond to thymine (T) with 2 or 3 hydrogen bonds?	Does the base cytosine (C) bond to guanine (G) with 2 or 3 hydrogen bonds?	What "T__L___" describes the shape of the DNA double helix?	Which is bigger, a chromosome or a gene?
Two	Three	Twisted ladder	Chromosome

What word starting with A describes the arrangement of sugar & phosphate?	Chromosomes are divided into smaller segments called…?	What "G" are codes for the production of a protein are called?	The "variable" part of a nucleotide is its……?
alternating	genes	genes	base
Where in a cell is the DNA concentrated?	In a sample of DNA, 20% of the bases are T. What % are C? (Think!!)	In a sample of DNA, 15 % of the bases are G. What % are C?	In DNA is the sugar molecule ribose, deoxyribose or glucose?
In the nucleus	30% (think about it!!)	15%	***d***eoxyribose
Give two functions of the cell division called mitosis.	In mitosis cell division, how many daughter cells are produced?	In mitosis, the chromosomes replicate. Then do they line up singly or in pairs?	Where is the equator in a cell?
Growth & repair	Two	Singly	Middle of cell
Name the apparatus along which the chromosomes are pulled in mitosis?	Are the chromosomes visible in the nucleus before cell division starts?	What two "C"s are made when the DNA copies/replicates?	What structure on the chromosome is attached to the spindle?
Spindle (apparatus/fibres)	No	chromatids	the centromere

In mitosis what structure breaks down before the chromosomes line up on the equator?	Where are the poles of the spindle?	Is the cell division mitosis involved in the production of sperm and/or eggs?	Name a part of a body where the cell division called mitosis occurs.
Nuclear membrane	At opposite ends of cell/spindle	No	Any part except sex cells (or rbc)
Mitosis produces cells that are genetically identical or different?	What structure holds identical chromatids together in a replicated chromosome?	How many pairs of chromosomes are in a human skin cell?	How many chromosomes are in a human heart cell?
identical	centromere	23 pairs	46 chromosomes / 23 pairs
How many different types of bases are there in DNA? Give the letters.	The entire genetic information of an organism is called its….	What types of cells are produced by meiosis?	Gametes have only one set of chromosomes and are haploid or diploid?
Four - A, T, C and G (any order)	genome	sex cells / sperm / eggs	haploid
Name the cell division that gives rise to 4 different daughter cells?	The name for a fertilised egg is a ……?	Homologous chromosomes are p____of chromosomes, one from mother & one from father	Cells with two sets of chromosomes are haploid or diploid?
meiosis	zygote	pairs	diploid

What name is given to alternative forms of a gene?	What does the word "siblings" mean?	What is a phenotype?	What is a genotype?
alleles	brothers and/or sisters	physical expression of gene eg blue eye colour	the alleles an organism possesses e.g. BB
What three structures are found in a nucleotide?	Describe the base pairing rule?	What does heterozygous refer to?	Name the scientist that was the founder of genetics?
Phosphate, sugar and a base	(A) with (T) and (G) with (C)	Alleles that are different i.e. Tt	Gregor Mendel
Where does meiosis occur?	Where does mitosis occur?	How many cell divisions occur during meiosis?	How many cell divisions occur during mitosis?
In the ovaries and testes	In the body cells	two	one
Does crossing over occur during meiosis or mitosis?	What is crossing over?	What is variation?	What is a gene?
Meiosis	Information is swapped from one chromosome to another	Genetic differences between one organism and another	A single instruction which codes for a characteristic

What is a chromosome	Why are siblings different from one another	What types of cells are produced during meiosis?	What types of cells are produced during mitosis?
Threadlike structure found in the nucleus	Crossing over in meiosis causes variation & random fertilisation of sex cells	Sex cells	Body cells
Describe the cells produced by meiosis?	Describe the cells produced by mitosis?	Describe the percentage genotypes produced by R R r r	Describe the percentage genotypes produced by T t T t
Four genetically unique sex cells with 23 chromosomes (human)	Two genetically identical cells with 46 chromosomes (human)	100% Rr	25% TT, 50% Tt, 25% tt
Describe the percentage genotypes produced by C c c c	Complete the following DNA sequence A T C G A G C T _ _ _ _ _ _ _ _	What does semi-conservative replication mean?	What is a recessive gene?
50% Cc, 50% cc	T A G C T C G A	Chromosomes replicate - one strand of DNA is original, other strand of DNA is new	A gene that is not expressed often
What is a dominant gene?	What does homozygous refer to?	What letters are used to denote the sex chromosomes?	Describe the percentage genotypes produced by S s s s
A gene that is expressed often	Alleles the same i.e. TT or tt	X or Y	25% SS, 50% Ss, 25% ss

What is a test cross?	What is selective breeding?	What is cloning?	Complete the following DNA sequence C T A G T G C T _ _ _ _ _ _ _ _
Cross organism of unknown genotype (TT or Tt) with a recessive organism to work out its genotype	Choosing animals with desirable characteristics and breeding them together	Producing offspring genetically identical to one parent	G A T C A C G A
Name the four important bases that genes are made from?	If a fruit fly has 8 chromosomes in its body cells how many will its sex cells contain?	A horse has 33 chromosomes in its sex cells. How many will it have in its body cells?	What is replication?
Adenine, Cytosine, Guanine, Thymine	4	66	Chromosomes make copies of themselves
What are gametes?	Describe the percentage genotypes produced by D d d d	Which of the following genotypes is male? XX or XY	Which of the following genotypes is female?
The male and female sex cells	50% DD and 50% dd	XY	XX
What is main the function of chromosomes?	What is the main function of a gene?	What is genetic engineering?	List the advantages for selective breeding in cattle?
To carry inherited material	To code for a characteristic i.e. eye colour	Genes are artificially removed or added to organisms genome	Increased milk production, meat quality and quantity etc