



Biology B
Unit 9 Glossary

Term	Definition
blunt ends	when restriction enzymes cut straight across the DNA molecule and leave these type of ends. (Unit 9, Lesson 1)
chromosome painting	when chromosomes are then exposed to fluorescent stains to differentiate between the 23 pairs of chromosomes (Unit 9, Lesson 3)
clinical trial	this is a type of experiment where products, particularly medicines are tested on animals or people. (Unit 9, Lesson 4)
deletion	a chromosomal abnormality that occurs when parts of a chromosome are lost or absent. (Unit 9, Lesson 3)
DNA fingerprinting	a technique that compares specific sections of two or more DNA samples. (Unit 9, Lesson 1)
DNA ligase	the enzyme used during ligation. (Unit 9, Lesson 2)
DNA sequencing	the process of finding the order of nucleotides in genomes. These sequences provide important clues about how DNA functions. (Unit 9, Lesson 1)
duplication	occurs when a segment of a chromosome is copied more than once and then inserted on the same chromosome. (Unit 9, Lesson 3)
<i>E. coli</i>	also known as Escherichia coli. These bacteria are used in recombinant DNA technology. (Unit 9, Lesson 2)
gel electrophoresis	a process in which DNA fragments can be separated by electrical field in an electrophoresis chamber and then analyzed.(Unit 9, Lesson 1)
gene cloning	the process of changing an organism's traits using recombinant DNA (Unit 9, Lesson 2)
gene therapy	in this process the good gene is inserted into the genome of the organism to aid or cure the disease. (Unit 9, Lesson 2)
genetic engineering	changing an organism by inserting foreign DNA. in this way is also called (Unit 9, Lesson 2)
genetic testing	the process of testing for suspected genetic defects. (Unit 9, Lesson 2)
Genetically Modified Organism (GMO)	an organism whose genetic material has been modified or altered using genetic engineering. (Unit 9, Lesson 2)
genome	the complete set of genes or genetic material that is found in an organism. (Unit 9, Lesson 1)
genomics	the study of the genomes. (Unit 9, Lesson 1)
homologous chromosomes	chromosomes that contain genes for the same trait form pairs. One of the chromosomes of the pair is from mom, the other from dad. (Unit 9, Lesson 3)
inversions	occurs when the order of genes in a section of a chromosome is reversed. (Unit 9, Lesson 3)
isolation	an enzyme is used to break DNA at a specific base sequences. This is done to isolate a gene of interest. (Unit 9, Lesson 2)
karyotype	a process by which chromosomes are separated and arranged in

	pairs by length. Used in genetic testing to identify chromosomal abnormalities. (Unit 9, Lesson 3)
ligation	during this process, the isolated gene is glued to the plasmid.(Unit 9, Lesson 2)
peer review	a process in which research is provided to other scientists and qualified experts in that area of science so that they can verify that the research is both clear and correct. (Unit 9, Lesson 4)
plasmid	a bacterial cells circular DNA that is not part of a chromosome and can replicate independently. (Unit 9, Lesson 2)
Polymerase Chain Reaction (PCR)	a process used to amplify (make copies) DNA. (Unit 9, Lesson 1)
primer	a short piece of DNA which provides a starting place for a new strand. (Unit 9, Lesson 1)
recombinant DNA	this type DNA is produced when scientists cut DNA from two sources with the same restriction enzyme and combine them. (Unit 9, Lesson 2)
reproductive cloning	when a whole organism is cloned or an identical copy is made. (Unit 9, Lesson 2)
restriction enzymes	enzymes that cut DNA at specific sequences; Useful to divide DNA into manageable fragments. (Unit 9, Lesson 1)
selection	the process of growing transformed bacteria to make sure that the recombinant DNA is copied. (Unit 9, Lesson 2)
stem cells	cells found in the human body, that have yet to become specialized; that is, they can become any type of cell since they have not undergone differentiation. (Unit 9, Lesson 2)
sticky ends	when restriction enzymes cut within the DNA molecule and leave behind tails. (Unit 9, Lesson 1)
therapeutic cloning	this type of cloning produces stem cells to help combat diseases; however, many people oppose this type of cloning because of ethical issues. (Unit 9, Lesson 2)
transformation	the recombinant DNA is inserted into a living cell, usually a bacterial cell. (Unit 9, Lesson 2)
transgenic animals	to produce desirable animals, the genes are cloned and then are inserted into specific animals. (Unit 9, Lesson 2)
transgenic plants	to produce desirable plants, the genes are cloned and then are inserted into specific plants. (Unit 9, Lesson 2)
translocations	occurs when a segment of one chromosome breaks off of one chromosome and attaches to another chromosome. (Unit 9, Lesson 3)
vector	an agent, usually a virus, which carries DNA into a cell. (Unit 9, Lesson 2)