Vocabulary – DNA/Biotechnology

1. Nucleotide – subunit of DNA consists of a phosphate, a sugar and a nitrogen base.
2. Hydrogen bond – a weak bond that holds 2 complimentary base pairs together.
3. Helicase – enzyme that unwinds and unzips DNA
4. Double helix – shape of DNA (a twisted ladder)
5. DNA polymerase – enzyme that adds new nucleotides during replication
6. Transcription – creating RNA from DNA
7. Translation – creating a protein from RNA
8. Base sequence – the order of the bases in a molecule of DNA
9. Chromatin – un coiled DNA
10. Chromosome – coiled up DNA
11. Gene – part of a chromosome or DNA that codes to make a protein
12. DNA technology – using the knowledge of DNA to apply it to the world
13. RNA Polymerase – the enzyme that adds new RNA nucleotides during transcription
14. Selective breeding – making sure organisms with desired traits (DNA) make babies with the same DNA as the parents.
15. Mutation – a change in the sequence of a DNA molecule
16. Point mutation – a change in one base of DNA
17. Frameshift mutation – a change that results in many different codons than the original.
18. Deletion – a mutation from a base being deleted (type of frameshift)
19. Insertion – a mutation that is caused by an extra base being added (type of frameshift)
20. Substitution mutation – a change in DNA caused by one single base being switched for another (type of point mutation)
21. Gene therapy – curing genetic disorders by changing the DNA in the cells
22. Genetic engineering – changing the DNA of organisms in order for them to have the traits we want
23. Restriction enzyme – cuts DNA
24. Gel electrophoresis – separating cut DNA by size
25. Recombinant DNA – a cut piece of DNA having the gene you want is inserted into a plasmid
26. Polymerase Chain Reaction (PCR) – replicating DNA in a test tube very quickly
27. Plasmid – a small circular piece of DNA
28. Transgenic organism – an organisn with foreign DNA in it.
29. Clone – an exact copy of an organism
30. Autosome – any chromosome that does NOT determine sex
31. Sex Chromosome – a chromosome that determines sex (X and Y)
32. DNA fingerprinting – using gel electrophoresis to separate cut DNA by size and developing a visual of someones DNA for comparison.
33. Human Genome Project – to map and sequence human DNA
34. Stem cells – a cell that has the ability to differentiate (become a different types of cell) skin, liver, brain, blood etc
35. Ligase – enzyme that “glues” DNA back together
36. Biotechnology – The use of DNA knowledge to create uses for society.