

Assignment: 7

Name: _____

Hour: 2

Why is DNA so important?

Mutation – a change in the sequence of DNA due to environmental damage or an error in replication, transcription or translation

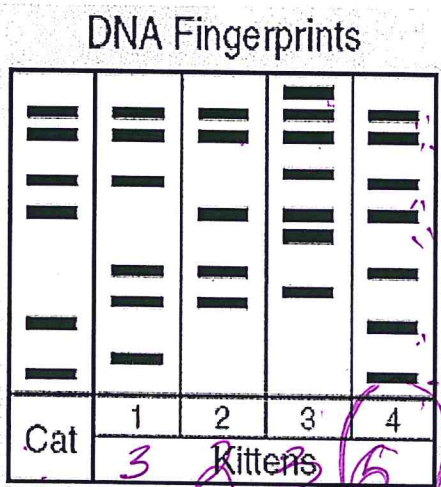
Common Mutations

- Sickle Cell Anemia – caused by A being switched to T in the 17th nucleotide in the gene that codes for hemoglobin (so instead of coding for valine (val) it codes for glutamic acid (glu))
- Cystic Fibrosis – a single nucleotide is switched and it causes a STOP codon to occur too early in a gene that creates a protein that lets chloride ions through the cell membrane
- Fragile X Syndrome (causes mental retardation in males, CGG) and Muscular Dystrophy (causes muscle weakness and deterioration, CTG) are both caused by repeating codon sequences
- ALS/Lou Gerhrig's disease – caused by repeats of "GGGCCC" on chromosome #9

DNA Fingerprint - a unique pattern of bands that often looks like a bar code that is sometimes used to identify a parent or a criminal

The picture shows a segment of DNA from a cat. Which of these is most likely the kitten of this cat? CIRCLE YOUR ANSWER.

- a. 1
- b. 2
- c. 3
- d. 4



Lt. Russ is investigating a murder scene. The felon was scratched by his victim & some of his skin cells were found under the victim's fingernails. A DNA test was performed. Which of the suspects is the murderer? 2

