1. What does the structure of DNA look like? Draw it please with parts of phosphate, deoxyribose, and bases. (hint) The sugar is a pentagon The phosphate is a circle and the bases are labeled bars C, G, A, or T.

1. A sister and brother look differently. The sister looks like their father while the son looks like their mother. Explain what has happened.
2. In cats, the gene for white hair (W) is dominant to the gene for non-white hair (w). A cat with genotype of (WW) was crossed with a cat with the genotype (ww). What fraction of the offspring should be expected to have white hair? Make a Punnett square and answer the question:
3. What does a single nucleotide include?
4. If you were given a Punnett square with babies

BB

BB

What would the parents look like? Add to Punnett

Bb

Bb

1. In Forensics what most directly led to advances in the identification of suspects in criminal investigations and in the identification of genetic diseases? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. A chromosome is best described as a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. If you had a sequence of DNA bases below. What would pair with this partial strand?

ACT GCG TAG AAA GTC TAC

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1. Describe the DNA molecule by stating shape, sugar, and bases.
2. Why would the use of DNA analysis be effective in establish identity and allowed in court.
3. A large percentage of the human population contains the same DNA.
4. The procedure for DNA analysis is an accurate series of simple techniques.
5. The probability of two people having the similar DNA fingerprints is small.
6. The purpose of DNA analysis is to match sections of base pairs.
7. Two rats of the same breed have different coat colors. What determines their coat color?
8. Chromosome of every cell
9. Cell membranes of every cell
10. Mitochondria of hair cells
11. Cytoplasm of skin cells
12. In humans, B is the allele for brown hair and b is the allele for blonde hair. Two sisters have both brown hair, but one of them has both a Bb while the other has B alleles. What can you state about their genotypes and phenotypes? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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1. If you think of a protein, cell, and DNA. What is the relationship between the 3 different structures?

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1. A fury 3 eyed creature has the “T” allele for three eyes and ”t” is the allele for two eyes. Two sisters both have three eyes, but one of them has both T and t while the other only has T alleles.

What statement is true about the sisters concerning phenotype and genotype? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Complete the two guinea pigs Punnett square below if (W) is white hair which is

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to the gene for non-white hair (w). What fraction of the offspring should be expected to have white hair? One of the parent guinea pigs is homozygous for non-white hair. Please complete the Punnett square below:

W W