



Pathfinder's Name

Heredity

1. What is meant by the term “heredity”?

2. Draw a picture of an animal cell and label the following parts: Cell membrane, cytoplasm, nucleus, nuclear membrane, ribosomes

3. What is a chromosome and where are they located?

What is a gene and where is it found?

4. What is meant by the term “allele”?

How does a dominant allele differ from a recessive allele?

Determine which allele you have of the following genetic traits:

Widow's peak _____

Free earlobe _____

Dimples _____

Curved Thumb _____

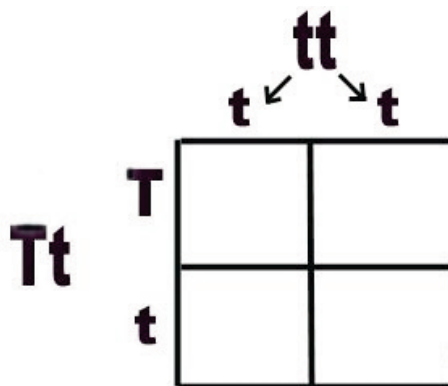
Bent pinky _____

Digit hair _____

Rolling tongue _____

Second toe longer _____

Using a punnet square, predict the ratio of offspring produced from these monohybrid crosses: TT (tall) crossed with tt (short), Tt (tall) crossed with Tt (tall), Tt (tall) crossed with tt (short)



- ❑ 5. What does the process of mitosis accomplish?

Draw a sequence of cells that shows the process of mitosis including: prophase, metaphase, anaphase and telophase.

Briefly explain how the DNA in the chromosomes is copied during this process.

- ❑ 6. What does the process of meiosis accomplish and how does it differ from mitosis?

Draw a sequence of cells that shows the process of meiosis including: prophase I & II, metaphase I & II, anaphase I & II and telophase I & II.

Do the cells resulting from meiosis remain haploid? Explain.

- 7. Describe how DNA encodes the specific proteins that result in genetic traits. Demonstrate your knowledge of this process by using diagrams or paper models.

- 8. What is a mutation? Using the diagrams or models created in question 7 to illustrate the effect of a mutation on the genetic trait.

- 9. Know at least five genetic disorders and tell a story about a famous person or someone that you know who has had one of these disorders.

1. _____

2. _____

3. _____

4. _____

5. _____

- 10. Is Biological Heredity the only factor contributing to your character, i.e., what makes you who you are?

- 11. Find 3 statements from Ellen Whites writings that relate to the previous question

1. _____

2. _____

3. _____

4. _____