Name _____ Date _____ Block _____

Genetics Webquest

What is DNA? (look at the navigation bar and click on What is DNA?)

1. Why is DNA important?
2. What does DNA stand for?
3. Why is DNA called a blueprint?
4. The "twisted ladder" shape of the DNA molecule is called a _____.
5. Name the four bases found in a DNA molecule.
6. A DNA strand is made of _____ which make up _____ which make up sentences.
7. These "sentences" are called _____.
8. **What is a Gene?** (just look at the navigation bar and you'll see What is a Gene?)
9. What is a gene?
10. Blood cells use a protein called _____ to capture and carry oxygen.
11. When a gene is changed, it is said to be _____.
12. A mutation in the hemoglobin gene cause what disorder?

What is a Chromosome?

13. If you stretched the DNA from a cell out, how long would it be?
14. How many chromosomes are in a
    a. human cell?
    b. In a mosquito?
    c. In a carp?

Adapted from https://sites.google.com/site/gw7science/Home/genetics-webquest

What is a Protein?

15. How is a protein like a car engine?

16. Receptor proteins are responsible for picking up _____.

17. Each gene in DNA encodes information on how to make a _____.

18. Once in the cytoplasm, the _____ reads the message.

What is Heredity?

19. The passing of traits from parents to a child is the basis of _____.

20. Every child receives _____of its chromosomes from his mother, and _____from his father.

21. When a sperm and egg join, they create a single cell called a _____.

22. Each child inherits a _____ set of chromosomes.

What is a Trait?

23. Give an example of a physical trait: _____

24. A dog fetching a bone is an example of what kind of trait.

25. Scientists describe the set of information for each form of a trait as an _____.

Build a DNA Molecule

26. What is the base pair rule?

27. Draw a small 5 base pair DNA molecule showing how A/T and G/C go together.

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Transcribe and Translate a Gene

28. Define transcription.

29. Define translation.

30. Follow the instructions for the activity. List the amino acid sequence you created.

What Makes a Firefly Glow

31. Fireflies glow to attract a _____and to avoid _____.

32. RNA polymerase binds to the _____gene.

33. When transcription is complete, the LUC mRNA moves to the _____

34. The ribosome interprets the mRNA to produce the string of _____

35. In order to become a functioning luciferase enzyme, the string must _____.

36. The enzymes bind to _____to create light.

What is a Stem Cell

37. What is special about stem cells?

38. What is a special kind of stem cell and why is it special?

39. How are somatic stem cells different? What can they turn into?

40. **Game**
Mouse Party - follow the directions and drag the mice to the chair to observe how the brain is affected by the different drugs.

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