



What Darwin Never Knew
PBS NOVA Special
Dec. 2009



Name:

Date:

Per:

Charles Darwin was born _____ years ago.

- 1.) What did Charles Darwin want to understand?
- 2.) What is called the best idea anyone ever had?
- 3.) Name the molecule shown in the beginning of this program.
- 4.) What was Darwin's job on the ship, the Beagle?
- 5.) List four organisms Darwin observed on the Galapagos Islands.
- 6.) What could the islanders tell about the tortoises on the Galapagos?
- 7.) Back in Britain, what did Darwin learn about the birds he collected? How many different species were there?
- 8.) What did Darwin discover while studying developing embryos (snakes, whales, human)?
- 9.) Darwin thought humans were descended from what animal?
- 10.) What helped Darwin come up with the idea for natural selection?
- 11.) Explain what it means to say survival of the fittest?
- 12.) How did Darwin explain how one species of finch had turned into many? What led to the different shaped beaks?
- 13.) Because species have v_____, nature selects which individuals survive and which don't.
- 14.) What is the name of Darwin's book?
- 15.) Describe the two kinds of mice in the desert.
- 16.) What can we study today that Darwin couldn't?
- 17.) What is a gene? What do genes turn into?
- 18.) Name one way that DNA can change.

- 19.) Are mutations always bad? Explain.
- 20.) What did the researchers find that explained the different color mice fur?
- 21.) How many genes are in the human genome?
- 22.) Research on the fruit fly showed there are "switches" in DNA. What are switches?
- 23.) How did the lake stickleback fish lose its spikes?
- 24.) Finch beaks are all made by the same gene, so why are there different shaped beaks?
- 25.) Define transitional fossil:
- 26.) Why is the tiktalik fossil so important?
- 27.) What do HOX genes do?
- 28.) Humans and chimps share a common a_____.
- 29.) The DNA of humans and chimps is _____% identical.
- 30.) Why is the human hand so unique?
- 31.) Stedman believes that a mutation in the human jaw muscle allowed for what unique feature of the human brain?
- 32.) When comparing the gene that controls brain development between humans and chimps, what did researchers discover?
- 33.) In Pollards research, she found that most of the DNA differences between human and chimp DNA were in which type of genes?
- 34.) The gene for the development of the brain cortex is different by _____ letters between chimps and humans.
- 35.) Complete the table below by defining the function of each type of gene.

| Protein Coding Genes | Switch Genes | Hox genes |
|----------------------|--------------|-----------|
| | | |

- 36.) If Darwin were alive today, how do you think he would react to current scientific evidence and support of his theory of evolution?