

Name \_\_\_\_\_ Date \_\_\_\_\_

**"Bill Nye: Genes" Video Worksheet**

1. Where do your genes come from?
2. What is inside every cell in your body?
3. What does DNA stand for?
4. What did Bill climb to get out of the Nye Lab?
5. How long is the DNA string model of science?
6. How many times longer is DNA than it is wide?
7. How does Bill define a Gene?
8. Why is the white blood cell dark on the computer screen?
9. What does the nucleus of the cell contain?
10. What can you do with DNA after you take it out of an organism?
  - a.
  - b.
11. What 2 organisms were combined to create the message to Bill in the petri dish?
12. What do genes do?
13. Mom tells Richie: Genes are the set of \_\_\_\_\_  
\_\_\_\_\_ that get passed down from \_\_\_\_\_ to child.  
In the process, of course, the genetic material is \_\_\_\_\_  
in new ways, which is why people bear resemblance to their \_\_\_\_\_  
and \_\_\_\_\_ without looking like any one relative in  
particular.
14. What analogy does Bill use to describe the human set of chromosomes?
15. What is each chapter analogous to?

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16. How many genes to humans have?

17. What do cells in the body not need to do? \_\_\_\_\_

18. Most species have fewer than \_\_\_\_\_ chromosomes but thousands and thousands of genes

19. Bill calls the babies "bundles of \_\_\_\_\_"

20. The reproductive cell that a mother donates to her child is called the \_\_\_\_\_

21. The reproductive cell that a father donates to his child is called the \_\_\_\_\_

22. The number of cells needed to make a baby is: \_\_\_\_\_

23. DNA is the \_\_\_\_\_ print for the future

24. Earlobes can be \_\_\_\_\_ or \_\_\_\_\_

25. A \_\_\_\_\_ is a piece of the \_\_\_\_\_ molecule

26. The four chemicals of DNA are

- a.
- b.
- c.
- d.

27. The number of chromosomes that a mule foal has is \_\_\_\_\_

28. The number of chromosomes that a horse has is \_\_\_\_\_

29. The number of chromosomes that a donkey has is \_\_\_\_\_

30. In the demonstration, the \_\_\_\_\_ gene for rolling your tongue is represented by the letter "R"

31. In the demonstration, the \_\_\_\_\_ gene for rolling your tongue is represented by the letter "r"

32. If a person has the pattern RR, then the person \_\_\_\_\_ roll their tongue

33. If a person has the pattern Rr, then the person \_\_\_\_\_ roll their tongue

34. If a person has the pattern rr, then the person \_\_\_\_\_ roll their tongue

35. What is special about the turtle in this movie?

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**"Bill Nye: Genes" Video Worksheet -- ANSWERS**

1. Where do your genes come from? *Your parents*
2. What is inside every cell in your body? *Chromosomes*
3. What does DNA stand for? *Deoxyribonucleic Acid*
4. What did Bill climb to get out of the Nye Lab? *A DNA molecule*
5. How long is the DNA string model of science? *About 20*
6. How many times longer is DNA than it is wide? *About 200 km*
7. How does Bill define a Gene? *A specific piece of DNA*
8. Why is the white blood cell dark on the computer screen? *Because it has chromosomes in it.*
9. What can you do with DNA after you take it out of an organism?
  - a. *Cut it into smaller pieces*
  - b. *Place into another organism*
10. What 2 organisms were combined to create the message to Bill in the petri dish? *Sea Jelly and a bacteria*
11. What do genes do? *They tell cells what to do*
12. Mom tells Richie: Genes are the set of chemical instructions that get passed down from Parent to child. In the process, of course, the genetic material is recombined in new ways, which is why some people bear resemblance to their Parents and Grandparents without looking like any one relative in particular.
13. What analogy does Bill use to describe the human set of chromosomes?  
A set of books that have 23 pairs.
14. What is each chapter analogous to? A gene
15. How many genes to humans have? 80 000 genes
16. What do cells in the body not need to do? Read every gene in the whole cell.

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17. Most species have fewer than 100 chromosomes but thousands and thousands of genes
18. Bill calls the babies "bundles of Genetic Code"
19. The reproductive cell that a mother donates to her child is called the Egg
20. The reproductive cell that a father donates to his child is called the Sperm
21. The number of cells needed to make a baby is: 50 000 000 000 000
22. DNA is the Blue print for the future
23. Earlobes can be Attached or Dangling
24. A Gene is a piece of the DNA molecule
25. The four chemicals of DNA are
  1. adenine
  2. thymine
  3. cytosine
  4. guanine
26. The number of chromosomes that a mule foal has is 63
27. The number of chromosomes that a horse has is 64
28. The number of chromosomes that a donkey has is 62
29. In the demonstration, the Dominant gene for rolling your tongue is represented by the letter "R"
30. In the demonstration, the Recessive gene for rolling your tongue is represented by the letter "r"
31. If a person has the pattern RR, then the person can roll their tongue
32. If a person has the pattern Rr, then the person can roll their tongue
33. If a person has the pattern rr, then the person cannot roll their tongue
34. What is special about the turtle in this movie? It has 2 heads