

LIFE SCIENCE FINAL STUDY GUIDE

Standard 1: Cell Biology (Chapter: 4 & 5, pgs 78-119)

1. Living things can be made of _____ to _____ of cells. (p. 80)
2. How do we generally look at cells? _____ (p. 85)
3. What are two differences between plant and animal cells? _____ and _____ (p. 99)
4. Where is the DNA or genetic material of a plant or animal found? _____ (p. 93)
5. Which organelle is the "powerhouse" of the cell? Why is this organelle called the "powerhouse"? (p. 95 & 113)
6. Where does photosynthesis happen in a cell? _____ (p.95 & 112)
7. What is mitosis? What is the result of a cell going through mitosis? (p. 116-118)
8. As a multi-cellular organism develops, what happens to their cells? (p. 80)

9. What is the smallest unit of life? (p. 80) Name an organism that is single-celled and one that is multi-cellular.
10. Where do cells come from? (p. 86) _____

Standard 2: Genetics (Chapter: 6 & 7, pgs 38, 128-167)

1. Define asexual reproduction. How is it different from sexual reproduction? (p. 38)
2. How many parents are needed for each kind of reproduction? (p. 38, 135, & 534)
How much of the DNA come from the parent in each kind of reproduction?
Asexual Parents = _____ DNA = _____ Sexual Parents = _____ DNA = _____
3. What kind of reproduction gives the offspring the most variety? _____
4. A trait can be determined by _____ genes. (p. 158-159) Plants and animals have _____ genes.

5. How many copies of each gene do organisms have? _____
Different copies of a gene are called _____. (p. 135)

6. Alleles can be _____ which will always show itself if it is present or _____ which will only show itself if both alleles present are the same. (p.133)

7. If you cross a rabbit with white fur (bb) and a rabbit with brown fur (BB), what will the genotype and phenotype be? (p.135) Genotype: _____ Phenotype: _____

8. If you cross two hybrid rabbits (Bb), what will the genotype and phenotype be? (p.135)
Genotype: _____ Phenotype: _____

9. The genetic material (hereditary information) of living things is called _____ and is found in the _____ of a cell. (p.152)

10. Humans have _____ pair of chromosomes (or _____ total). (p.138)

11. DNA has a _____ shape. (p.154)

12. What are the 3 parts that make up DNA: _____, _____, and _____. There are _____ possible bases for DNA: _____, _____, _____, and _____. The bases pair up with the same partner each time: _____ pairs with _____ and _____ pairs with _____. (p.152)

13. What is a mutagen? What are some examples of mutagens? (p.162)
When DNA mutates, it is generally fixed by the _____.

Standard 3: Evolution (Chapter 8, pgs 175-193)

1. What did Darwin propose was the mechanism for evolution? (p.188)
_____.

2. What are the four steps of Natural Selection? (p.188)
a. _____ c. _____
b. _____ d. _____

3. When individuals in a population are slightly different, we call this _____. (p.188)

4. How can geographic separation lead to speciation (the forming of new species)? (p.192-93)

5. What evidence do we have from the geologic record that life on Earth has changed over time? (p.208-13)

6. How can we use the fossil record for figuring out the relative age of fossils? (p. 203)

7. What methods can we use to absolutely date fossils? (p. 203)

8. How do the similarities in the forelimb bones of humans, cats, whales, and bats support the theory of evolution? (p. 182)

9. What did Darwin think happened to the first group of finches that came to the Galapagos Islands? (p. 185)

10. In branching diagrams, organisms are closer to each other on the diagram if they have more shared _____ . (p. 230)

11. What happens if a species cannot adapt when its environment changes drastically (a lot)? (p. 205)

12. Which of the follow is considered a vestigial structure in whales? (p. 179)
 - a. flippers
 - b. hind leg bones
 - c. blow holes
 - d. eyes

13. What do we know about now that Darwin did not know about? (p. 189) _____ .

Standard 4: Earth and Life History (Chapter: 9, pgs 200-213)

1. How old is the Earth? _____ (p. 204)
 How long has life existed on Earth? _____ (p. 209)

2. What is igneous rock and how is it formed? (p. 224)

3. What is sedimentary rock and how is it formed? (p. 224)

4. What is metamorphic rock and how is it formed? (p. 224)

5. What is erosion?

6. What are possible explanations for mass extinctions? What is an example of a famous mass extinction? (p. 205)

7. What is a fossil? How are they formed? What can we learn from fossils? (p. 202-203)

8. What is Pangaea? What evidence do we have that Pangaea existed? (p. 206-207)

9. What is the theory of plate tectonics? (p. 207)

10. How did ocean fossils found on mountain tops get there?

11. Potassium has a half-life of 1,200,000,000 years. How much potassium will be left after 3,600,000,000 years? (p.203)

Standard 5: Structure and Function in Living Systems (Chapter 11, pgs 268-271, 67)

1. Organisms are made up of _____, which are made up of _____
 _____, which are made up of _____, which are made up of _____,
 which are made up of millions of _____. (p. 80-83)

2. Name the 2 parts that make up the stamen. Are they male or female? _____
 _____ (p. 270-71)

3. Name the 3 parts that make up the pistil. Are they male or female? _____
 _____ (p. 270-71)

4. What are the structures called that produce pollen? _____ (p. 270-71)

5. Is the pupil an anatomical structure? How does it get bigger and smaller? (p.519)

6. How does your eye focus? (p.519)

Standard 6: Physical Principles in Living Systems (Chapter 3, pgs 54-67)

7. How do we see things? (Explain using how light works.) (p. 62 & 518)

8. Light travels in _____ lines except when
 _____. (p. 55 & 66)

9. Angle of _____ is equal to the angle of _____. (p. 59)

10. Why do limes appear green? (p. 62 & 518)

11. What is the relationship between frequency and wavelength? (p. 56)

12. How are waves classified or organized in the EM Spectrum? (p. 56)

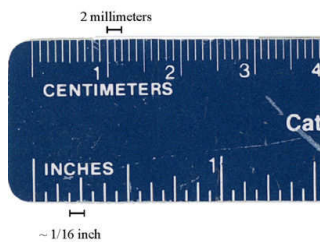
13. What types of waves have the most amount of energy? What types of waves have the least amount of energy? (p. 56)

14. How are rainbows formed? What happens when white light shines through a prism? (p. 66)

15. As you look through a compound microscope with an eyepiece magnification of 10x and an objective magnification of 20x, what is the total magnification?

Standard 7: Investigation and Experimentation (Appendix, pgs 641, 644-646, 660)

1. How many centimeters are there in 10 meters? (p. 641 & 643) _____
2. How many millimeters are there in 2 centimeters? (p. 641 & 643) _____



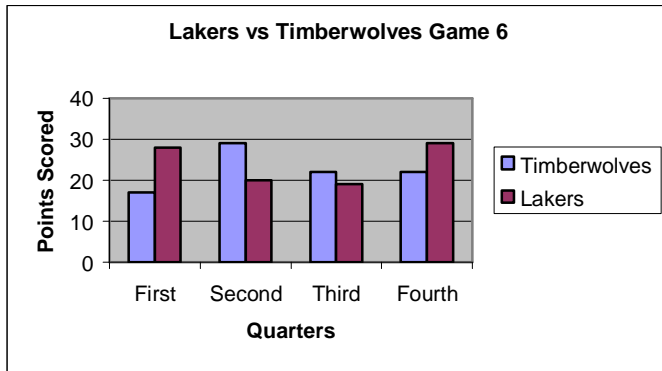
3. What is the measurement at point A? _____
 What is the measurement at point B? _____

4. Name the 2 focus knobs on a microscope. Which one do you focus first? (p. 660-661)

5. What objective do you use when first looking at a slide under the microscope? (p. 660-661) _____

6. Name the 6 steps of the Scientific Method. (p. 10-17)

7. What 3 things must be on all graphs and charts? (p. 648-649)



8. In what quarter did the Lakers score the most points? _____
9. Between which quarters was the greatest decrease in points for the Timberwolves? _____
10. Between which quarters was there the greatest increase in points for the Lakers?