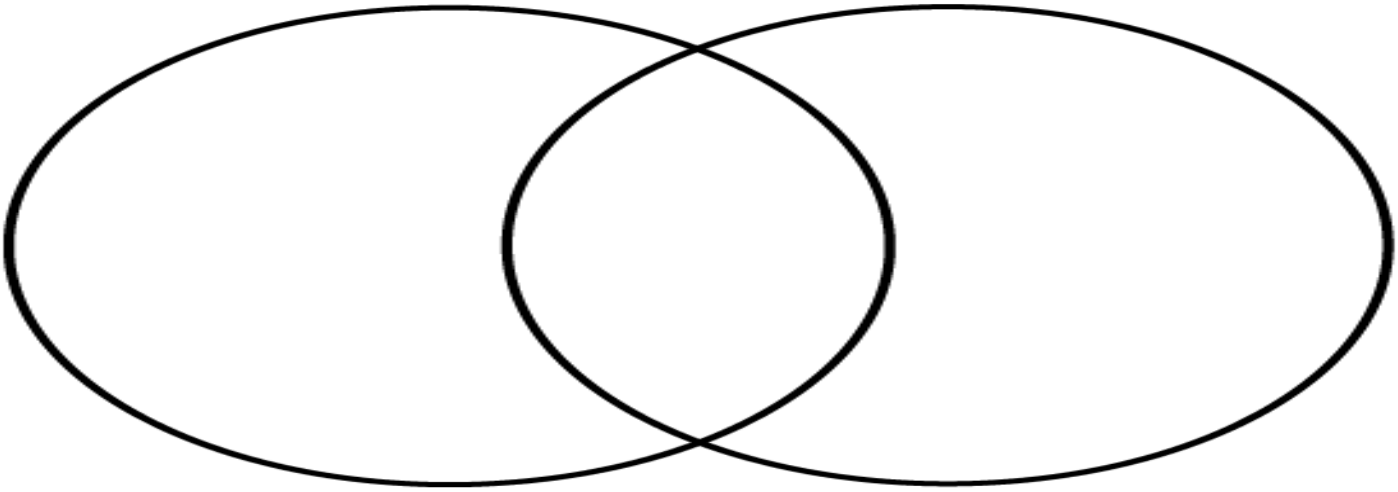
CALIFORNIA SCIENCE 7 STATE STANDARDS

CELL BIOLOGY - STANDARD # 1

1. All living organisms are composed of _____, from just one to many trillions, whose details usually are visible only through a _____.
2. Cells function _____ in all living organisms.
3. Characteristics that distinguish plant cells from animal cells, include _____ & _____.
4. The _____is the repository for genetic information in plant and animal cells.
5. What does repository mean? _____
6. _____ liberate energy for the work that cells do and _____ capture sunlight energy for photosynthesis.
7. Use a Venn diagram to compare the characteristics that distinguish plant cell from animal cells. The diagram should reflect the shape of a plant and animal cell overlapping each other.



8. Cells divide to increase their numbers through a process called _____, which results in two daughter cells with _____ sets of chromosomes.
9. As multicellular organisms develop, their cells _____.
10. What does differentiate mean? _____ .
11. What does differentiation mean? _____ .

GENETICS_STANDARD # 2

12. A typical cell of any organism contains _____ instructions that specify its traits.
13. Traits may be modified by_____ influences.
14. Sexual reproduction produces offspring that inherit _____ their genes from each parent.
15. An inherited trait can be determined by one or more _____ .

16. Plant and animal cells contain many thousands of different genes and typically have two copies of every_____ .
17. The two copies (_____) of the gene may or may not be identical and one may be dominant in determining the _____ while the other is _____.
18. DNA (deoxyribonucleic acid) is the genetic material of living organisms and is located in the _____ of each cell.

EVOLUTION – STANDARD# 3

19. Biological evolution accounts for the_____ developed through_____ processes over many generations.
20. _____ variation and environmental factors are causes of evolution and _____ of organisms.
21. The reasoning used by Charles Darwin in reaching his conclusion that _____ selection is the mechanism of evolution.
22. _____ lines of _____from _____, _____ , and comparative _____ provide the basis for the theory of evolution.
23. Constructing a simple branching diagram can be used to classify living groups of organisms by shared derived _____ and _____ organisms.
24. _____ of a species occurs when _____ changes and that the adaptive characteristics of a species are _____ for its survival.

EARTH AND LIFE HISTORY (EARTH SCIENCE) – STANDARD # 4

25. Evidence from _____ allows us to understand the evolution of life on Earth.
26. Earth processes today are similar to those that occurred in the past and slow processes have _____ cumulative effects over long periods of time.
27. The history of life on Earth has been disrupted by major _____ events, such as major _____ eruptions or the impacts of _____ .
28. The rock cycle includes the formation of new _____ and rocks and that rocks are often found in layers, with _____ generally on the bottom.
29. Evidence from geological layers and radioactive dating indicates Earth is approximately _____ billion years old and that life on this planet has existed for more than 3 billion years.
30. _____ provide evidence of how life and environmental conditions have changed.
31. Movements of Earth's continental and oceanic _____ through time, with associated changes in _____ and geographic connections, have affected the past and present _____ of organisms.
32. Explain the significant developments and extinctions of plant and animal life. Draw an illustration of the geologic time scale.

Explanation:

Illustration

33. The _____ and _____ of plants and animals illustrate the complementary nature of structure and function.
34. Plants and animals have levels of organization for structure and function, including, cells, _____ , organs, _____ , and the whole organism.
35. Organ systems function because of the contributions of individual _____, tissues, and cells. The failure of any part can affect the_____ system.
36. Bones and _____ work together to provide a structural framework for movement.
37. The reproductive organs of the human female and male generate _____ and sperm and how sexual activity may lead to fertilization and pregnancy.
38. What is the function of the umbilicus and placenta during pregnancy?

    _____

    _____

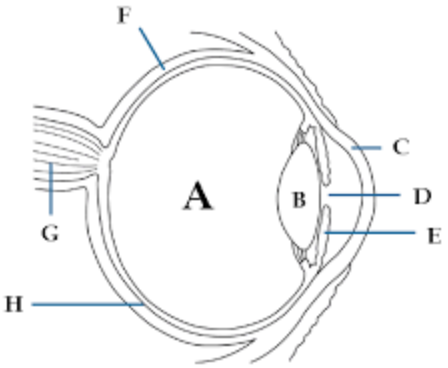
    _

39. Compare the structures of the eye and ear to their function.

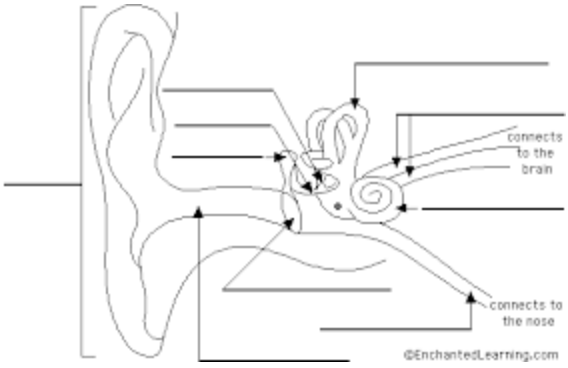
_____

    _____

    ___

Name/Function		Name/Function
	 Illustration	

41. Draw an illustration of the ear, label it, then explain how each organelle in the ear functions.

Name/Function	Illustration	Name/Function
		

PHYSICAL PRINCIPLES IN LIVING SYSTEMS

(PHYSICAL SCIENCE) – STANDARD 6

42. Physical principles underlie biological structures and functions.
43. Visible light is a _____ band within a very broad electromagnetic spectrum.
44. For an object to be seen, light emitted by or scattered from it must be detected by the _____ _____ .
45. Light travels in a _____ _____if the medium it travels through does not change.
46. Simple _____ are used in a magnifying glass, the eye, a camera, a telescope, and a microscope.
47. White light is a mixture of many _____ (colors) and that retinal cells react differently to different wavelengths.
48. Light can be _____ , _____ , transmitted, and absorbed by matter.

49. The angle of _____ of a light beam is equal to the angle of _____.

50. Use a chart to compare joints in the body (wrist, shoulder, thigh) with structures used in machines and simple devices (hinge, ball-and socket, and sliding joints.)

Place Joints Found	Type of Joint	Illustration	Where are “joints” found in machines?
	Sliding Joints		
	Ball and Socket		
	Hinge		

51. Explain how levers confer mechanical advantage and how the application of this principle applies to the musculoskeletal system.

_____

_____

__

52. Contractions of the heart generate _____ and heart valves prevent backflow of blood in the circulatory system.

INVESTIGATION AND EXPERIMENTATION – STANDARD 7

53. Scientific progress is made by asking meaningful _____ and conducting careful _____ .

54. Select and use appropriate tools and _____ (including calculators, computers, balances, spring scales, microscopes, and binoculars) to perform tests, collect data, and display data.

Tool	Illustration	Types of Measurements
Calculator		
Computer		
Balances		
Spring Scales		
Microscope		
Binoculars		N/A

Thermometer		
Graduated Cylinder		
Metric Ruler		
Petri Dish		N/A
Microscope Slide		N/A
Microscope Slide Cover Slip		N/A
Pipette		

55. Use a variety of print and electronic resources (including the World Wide Web) to collect _____ and _____ as part of a research project.
56. Communicate the logical connection among hypotheses, science concepts, tests conducted, data collected, and conclusions drawn from the scientific _____ .
57. _____ scale models, maps, and appropriately labeled diagrams to communicate scientific knowledge (e.g., motion of Earth's plates and cell structure).
58. _____ the steps and results from an investigation in written reports and oral presentations.