

OCCT 8th Grade Science Study Guide

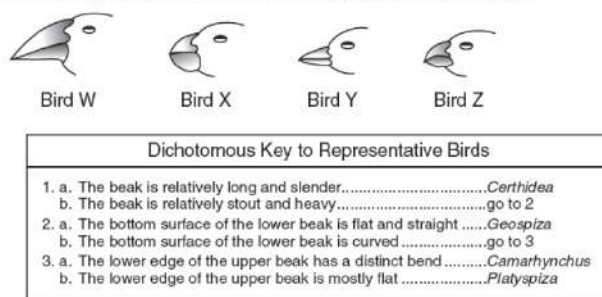
OAS Process Standard 1: Observe and Measure

1. What type of data includes numbers? _____
2. What type of data involves physical characteristics (looks)? _____
3. Identify the type of data in the following sentence. The rabbit is healthy. _____
4. Identify the type of data in the following sentence. The rat is 4 kg. _____
5. What type of tool do you use to measure liquid volume? _____
6. What type of tool do you use to measure mass? _____
7. What type of tool do you use to measure length? _____
8. What type of tool do you use to measure weight? _____
9. What is an anemometer used to measure? _____
10. What is a seismograph used to detect? _____
11. What is an appropriate SI unit for length? _____
12. What is an appropriate SI unit for liquid volume? _____
13. What is an appropriate SI unit for solid volume? _____
14. What is an appropriate SI unit for mass? _____
15. What is the appropriate SI unit for weight? _____
16. What SI unit would you use to measure the length of a fingernail? _____
17. What SI unit would you use to measure the length of a classroom? _____
18. What SI unit would you use to measure the mass of a person? _____
19. What SI unit would you use to measure the mass of a penny? _____
20. How do you find the volume of an irregular solid? _____

OAS Process Standard 2: Classify

21. List the levels of biological hierarchy in order of increasing specificity. _____
22. _____

The dichotomous key shown below can be used to identify birds W, X, Y, and Z.



Bird X is most likely

- (1) *Certhidea*
- (2) *Geospiza*
- (3) *Camarhynchus*
- (4) *Platyspiza*

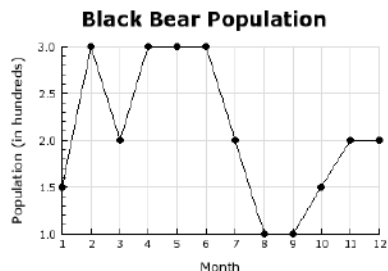
OAS Process Standard 3: Experiment Design

23. Define independent variable. _____
24. Define dependent variable. _____
25. Define controlled variable. _____
26. Define control. _____
27. Mr. Smith thinks that a special juice will increase the productivity of workers. He creates two groups of 50 workers each and assigns each group the same task of filing papers. Group A is given the special juice to drink while they work. Group B is not given the special juice. After an hour, Mr. Smith counts how many papers have been filed.
 - a. What is the independent variable? _____

- b. What is the dependent variable? _____
 - c. List a controlled variable. _____
 - d. What is the control? _____
28. If something goes wrong in the lab, what is the first thing you should do? _____

OAS Process Standard 4: Interpret and Communicate

29.



The graph shows the changes in population of black bears in rural Michigan during a single year. Competition for food among the black bear population was most likely the greatest during the

- A. winter.
- B. late fall.
- C. late spring.
- D. month of June.

OAS Content Standard 1: Properties and Chemical Changes in Matter

30. In a chemical equation, where are the reactants found? _____
31. In a chemical reaction, what do the reactants form? _____
32. When a chemical reaction occurs, the products have _____ characteristics than the reactants.
33. State the law of conservation of mass. _____
34. Finish this sentence: Whatever you start with, you end up with the _____.
35. Identify each of the following as either a physical property or chemical property of matter.
 - a. Color _____
 - b. Density _____
 - c. Hardness _____
 - d. Flammability _____
 - e. Texture _____
 - f. Mass _____
 - g. Reactivity _____
 - h. Volume _____
 - i. Temperature _____
36. Identify each as either a physical change or chemical change.
 - a. Bubbling in a reaction _____
 - b. A change of a state of matter _____
 - c. Burning a substance _____
 - d. A color change in a reaction _____
 - e. Changing the shape of an object _____
 - f. Gas production in a reaction _____
 - g. The formation of a solid precipitate _____
37. What is the formula for photosynthesis? _____
38. What are the three reactants in the photosynthesis reaction? _____
39. What are the products in the photosynthesis reaction? _____
40. What is the formula for cellular respiration? _____

41. What are the two reactants in the cellular respiration reaction? _____
42. What are the products in the cellular respiration reaction? _____

OAS Content Standard 2: Motion and Forces

43. What is the difference between speed and velocity? _____
44. State Newton's 1st Law of Motion. _____
45. What is inertia? _____
46. State Newton's 2nd Law of Motion. _____
47. State Newton's 3rd Law of Motion. _____
48. What is a balanced force? _____
49. What is an unbalanced force? _____

OAS Content Standard 3: Diversity and Adaptations of Organisms

50. What is echolocation? _____
51. Give an example of an animal that uses echolocation. _____
52. What are the two most common methods of seed dispersal? _____

OAS Content Standard 4: Structures and Forces of the Earth and Solar System

53. Draw the rock cycle and label all of the parts.

54. What type of rock is formed from compaction and cementation? _____
55. What type of rock is formed from heat and pressure? _____
56. What type of rock is formed from melting and then cooling below Earth's surface? _____
57. What type of rock is formed from melting and then cooling above Earth's surface? _____
58. What type of rock may contain fossils? _____
59. What is the difference between intrusive igneous rock and extrusive igneous rock? _____
60. What affect does El Niño have on sea surface temperatures? _____
61. What affect does La Niña have on sea surface temperatures? _____
62. The Gulf Stream is a _____ ocean current in the North Atlantic Ocean running along the east coast of the U.S.
63. What type of weather does the Gulf Stream bring to the coastal communities near it? _____
64. The Gulf Stream aids in the formation and strengthening of _____ in the Gulf of Mexico.
65. _____ creates friction as it travels over the water forming the Gulf Stream.
66. What is a sand bar? _____
67. What is a delta? _____
68. What process forms sand bars and deltas? _____

OAS Content Standard 5: Earth's History

69. If a big asteroid hit the Earth, what effect would it have on the climate? _____
70. What effect do enormous volcanic eruptions have on Earth's climate? _____
71. What happens to the sea level during a period of continental glaciation? _____
72. What happens to the sea level when a continental glacier melts? _____

73. The Law of Superposition states that the oldest fossils are found_____.

74. What is an index fossil? _____

Science Formulas and SI Units

75. Write the formula for density. _____

76. What are the two most common SI units for density? _____

77. Write the formula for speed. _____

78. What is the most common SI unit for speed? _____

79. Write the formula for velocity. _____

80. What is the most common SI unit for velocity? _____

81. Write the formula for force. _____

82. What is the most common unit for force? _____

83. Write the two formulas for volume? _____

84. What is the most common SI unit for the volume of a solid object? _____

85. What is the most common SI unit for the volume of a liquid? _____