Physical Science: CRCT STUDY GUIDE

Words to know:

Physical property	Chemical property	Physical change	Chemical change	Law of conservation of matter
Melting point	Boiling point	Density	Reactivity	Combustibility
Atom	Molecule	Pure substance	Element	Compound
Mixture	Solid state	Liquid state	Gas state	Plasma state
Periodic table	Metals	Metalloids	Groups	Periods
Atomic mass	Atomic number	Chemical symbol	Chemical formula	Conductor
Insulator		Malleable	Ductile	Law of conservation of energy
Potential energy	Kinetic energy	Heat energy	Chemical energy	Nuclear energy
Light energy	Electrical energy	Mechanical energy	Sound energy	Conduction
Convection	Radiation	Heat	Temperature	Thermal Expansion
	Thermal energy	Heat transfer	Absorption	Amplitude
Diffraction	Electromagnetic wave	Frequency	Lens	Mechanical wave
Pitch	Reflection	Refraction	wavelength	medium
Gravity	Law of universal gravitation	Mass	Weight	force
Speed	Velocity	Acceleration	Inertia	Mechanical advantage
Simple machines	Compound machine	Lever	Inclined plane	Wheel and axle
Screw	Wedge	Pulley	Friction	Unbalanced force
Balanced force	Newton's 1st law	Newton's 2nd law	Newton's 3rd law	Work
Power	Time	Watt	Joule	Electricity
Load	Cell	Switch	Fuse	Induction
Static electricity	Current electricity	Series circuit	Parallel circuit	Solenoid
Circuit breaker	Circuit	Magnetism	Electric charge	Electric current
	Magnetic/electric force	Magnetic energy	Magnetic/electric field	Electromagnet

1. What is matter?
2. What is a physical property? Give examples.
3. What is a chemical property? Give examples.
4. What are some examples of physical change?
5. What are some examples of chemical change?
6. What is the law of conservation of matter?
7. How can the law of conservation of matter be demonstrated?
8. What is an atom?
9. What is a molecule?
10. What is a pure substance?
11. What is an element?
12. What is a compound?
13. What is a mixture?
14. What is the difference between a pure substance (elements and compounds) and mixtures?
15. Describe the movement of particles in solids, liquids, gases, and plasma.
16. What are some characteristics of metals? Give examples.
17. What are some characteristics of metalloids? Give examples.
18. What are some characteristics of nonmetals? Give examples.
19. How is the periodic table organized?
20. What does the atomic number tell you?
21. What are the families in the periodic table? Give characteristics.
22. What are the noble gases and where are they on the Periodic Table?
23. What are the common chemical formulas for table salt, water, and carbon dioxide?
24. What is the law of conservation of energy?
25. What is potential energy?
26. What is kinetic energy?
27. Explain kinetic and potential energy using a roller coaster.
28. Define each of the 7 forms of energy.
29. How does temperature relate to kinetic energy?
30. What is heat?
31. What is thermal energy?
32. What are the three ways that heat can transfer?
33. Explain conduction, convection, and radiation.
34. What is the difference between thermal energy and temperature?
35. How can heat cause matter to expand and contract?
36. What is a reflection?
37. How do we see things that do not emit their own light?
38. What is refraction?
39. How do mirrors reflect light?
40. How do lenses work?
41. How do objects have different colors?

42. How does refraction create the colors of visible spectrum?
43. Draw and label a transverse wave.
44. Draw and label a longitudinal wave.
45. What is a vibration?
46. What is a wave?
47. What is the frequency of a wave?
48. What is a wavelength?
49. What is the amplitude of a wave?
50. What is the relationship between amplitude and energy?
51. What is the Doppler effect?
52. What does the term pitch mean?
53. How are amplitude and volume related?
54. How does a wave's changing frequency affect its pitch?
55. What is energy conversion/transformation?
56. What is work?
57. What is friction?
58. How is the strength of the force of gravity related on the mass of objects and the distance between them?
59. What is the difference between weight and mass?
60. What is speed?
61. What is the unit for speed used in science?
62. What is velocity?
63. What is acceleration?
64. Draw, label and explain a distance-time graph.
65. What are the six simple machines? Give real-world examples of each.
66. What is force, mass, and inertia? How are they related?
67. What is the difference between a balanced and unbalanced force?
68. What is inertia?
69. Describe each Newton's three laws of motion.
70. What is required to do work?
71. What is power?
72. What is the relationship between work, power, and time?
73. What is electric current/current electricity?
74. What is static electricity?
75. What are three essential parts of a circuit and what do they do?
76. What are the advantages and disadvantages of parallel and series circuits?
77. What is a generator and how does it produce an electric current?
78. Illustrate a magnetic field for a bar magnet.
79. What is an electromagnet and how does it work?
80. What is a solenoid?