Cumulative Test Study Guide
Answer Section

COMPLETION

1 ANS: energy

STA: TEKS 6.8A NOT: Grade 6 Ch. 1.1.1—Define matter and energy.

2 ANS: matter

STA: TEKS 6.8A NOT: Grade 6 Ch. 1.1.1—Define matter and energy.

3 ANS: properties

STA: TEKS 6.7B
NOT: Grade 6 Ch. 1.1.2—Explain that substances can be identified or classified by their physical and chemical properties.

4 ANS: properties

STA: TEKS 6.7B
NOT: Grade 6 Ch. 1.1.2—Explain that substances can be identified or classified by their physical and chemical properties.

5 ANS: elements

STA: TEKS 6.7A
NOT: Grade 6 Ch. 1.1.3—Explain the differences among elements, compounds, and mixtures.

6 ANS: physical

NOT: Grade 6 Ch. 1.1.4—Distinguish between chemical and physical changes.

7 ANS: reaction

STA: TEKS 6.7A NOT: Grade 6 Ch. 1.1.4—Distinguish between chemical and physical changes.

8 ANS: matter

STA: TEKS 6.8A NOT: Grade 6 Ch. 1.2.1—Explain the difference between weight and mass.

9 ANS: mass

NOT: Grade 6 Ch. 1.2.1—Explain the difference between weight and mass.

10 ANS: volume

NOT: Grade 6 Ch. 1.2.2—Calculate the density of substances using SI units for mass and volume.

11 ANS: density

STA: TEKS 6.7B
NOT: Grade 6 Ch. 1.2.2—Calculate the density of substances using SI units for mass and volume.

12 ANS: ratio

NOT: Grade 6 Ch. 1.3.2—Describe Dalton's theory of atoms.

13 ANS: atoms

NOT: Grade 6 Ch. 1.3.2—Describe Dalton's theory of atoms.

14 ANS: molecule

NOT: Grade 6 Ch. 1.3.3—Identify chemical bonds as the force holding atoms together in molecules.

15 ANS: gold

STA: TEKS 6.7B NOT: Grade 6 Ch. 1.4.1—Describe how the density of gold allows it to be panned.

16 ANS: chemical

STA: TEKS 6.7A
NOT: Grade 6 Ch. 1.4.2—Explain that a chemical reaction is needed to obtain an element from one of its compounds.

17 ANS: gas

STA: TEKS 6.7B
NOT: Grade 6 Ch. 2.1.1—Define and differentiate among solids, liquids, and gases in terms of shape and volume.

18 ANS: crystalline

STA: TEKS 6.7B
NOT: Grade 6 Ch. 2.1.1—Define and differentiate among solids, liquids, and gases in terms of shape and volume.

19 ANS: viscosity

STA: TEKS 6.7B NOT: Grade 6 Ch. 2.1.2—Compare the particle motion in solids, liquids, and gases.

20 ANS: crystals

STA: TEKS 6.7B NOT: Grade 6 Ch. 2.1.2—Compare the particle motion in solids, liquids, and gases.

21 ANS: liquid

STA: TEKS 6.7B NOT: Grade 6 Ch. 2.1.2—Compare the particle motion in solids, liquids, and gases.

22 ANS: thermal

NOT: Grade 6 Ch. 2.4.1—Explain that thermal energy always flows from a warmer substance to a cooler substance.

23 ANS: temperature

STA: TEKS 6.7B
NOT: Grade 6 Ch. 2.4.1—Explain that thermal energy always flows from a warmer substance to a cooler substance.

24 ANS: Condensation

NOT: Grade 6 Ch. 2.4.2—Identify examples of changes in state, and explain how thermal energy is involved in each example.

25 ANS: gas

NOT: Grade 6 Ch. 2.4.2—Identify examples of changes in state, and explain how thermal energy is involved in each example.

26 ANS: stationary

STA: TEKS 6.6A
NOT: Grade 6 Ch. 3.1.1—Explain when an object is in motion and how motion is relative to a reference point.

27 ANS: motion

STA: TEKS 6.6A
NOT: Grade 6 Ch. 3.1.1—Explain when an object is in motion and how motion is relative to a reference point.

28 ANS: bicycle

STA: TEKS 6.6A
NOT: Grade 6 Ch. 3.1.1—Explain when an object is in motion and how motion is relative to a reference point.

29 ANS: south

STA: TEKS 6.6A
NOT: Grade 6 Ch. 3.1.1—Explain when an object is in motion and how motion is relative to a reference point.

30 ANS: speed

STA: TEKS 6.6A
NOT: Grade 6 Ch. 3.1.2—Calculate an object's speed and velocity using SI units of distance.

31 ANS: meter

STA: TEKS 6.6A
NOT: Grade 6 Ch. 3.1.2—Calculate an object's speed and velocity using SI units of distance.

32 ANS: constant

STA: TEKS 6.6A
NOT: Grade 6 Ch. 3.1.2—Calculate an object's speed and velocity using SI units of distance.

33 ANS: velocity

STA: TEKS 6.6A
NOT: Grade 6 Ch. 3.1.2—Calculate an object's speed and velocity using SI units of distance.

34 ANS: km/h

STA: TEKS 6.6A
NOT: Grade 6 Ch. 3.1.2—Calculate an object's speed and velocity using SI units of distance.

35 ANS: slope

STA: TEKS 6.6B
NOT: Grade 6 Ch. 3.1.3—Graph motion showing changes in distance as a function of time.

36 ANS: force

STA: TEKS 6.6A NOT: Grade 6 Ch. 3.2.1—Explain how forces are related to motion.

37 ANS: velocity

STA: TEKS 6.6B
NOT: Grade 6 Ch. 3.2.2—Describe what happens to the motion of an object as it accelerates.

38 ANS: Deceleration

STA: TEKS 6.6B
NOT: Grade 6 Ch. 3.2.2—Describe what happens to the motion of an object as it accelerates.

39 ANS: accelerates

STA: TEKS 6.6B
NOT: Grade 6 Ch. 3.2.2—Describe what happens to the motion of an object as it accelerates.

40 ANS: negative

STA: TEKS 6.6B
NOT: Grade 6 Ch. 3.2.2—Describe what happens to the motion of an object as it accelerates.

41 ANS: m/s^2

STA: TEKS 6.6B
NOT: Grade 6 Ch. 3.2.3—Calculate the acceleration of an object and graph changing speed and distance of an accelerating object.

42 ANS: km/h

STA: TEKS 6.6B
NOT: Grade 6 Ch. 3.2.3—Calculate the acceleration of an object and graph changing speed and distance of an accelerating object.

43 ANS: less

STA: TEKS 6.6B
NOT: Grade 6 Ch. 3.2.2—Describe what happens to the motion of an object as it accelerates.

44 ANS: 0.5 m/s^2

STA: TEKS 6.6B
NOT: Grade 6 Ch. 3.2.3—Calculate the acceleration of an object and graph changing speed and distance of an accelerating object.

45 ANS: erosion

STA: TEKS 6.6C
NOT: Grade 6 Ch. 3.3.3—Explain how a flood affects the land near a river and how floods can be controlled.

SHORT ANSWER

46 ANS:
The density of liquid water, 1.0 g/cm^3, is slightly greater than the density of ice, 0.9 g/cm^3.

STA: TEKS 6.7B
NOT: Grade 6 Ch. 1.2.2—Calculate the density of substances using SI units for mass and volume.

47 ANS:
The mass of lead would be 0.8 g greater than the mass of silver.

NOT: Grade 6 Ch. 1.2.2—Calculate the density of substances using SI units for mass and volume.

48 ANS:
Gasoline will float on water because it is less dense.

STA: TEKS 6.7B
NOT: Grade 6 Ch. 1.2.2—Calculate the density of substances using SI units for mass and volume.

49 ANS:
Yes, because the density of the sample is 54 g/20 cm^3, or 2.7 g/cm^3, which is the density of aluminum.

STA: TEKS 6.7B
NOT: Grade 6 Ch. 1.2.2—Calculate the density of substances using SI units for mass and volume.

50 ANS:
150 g. Density is equal to mass divided by volume. The density of liquid water is 1.0 g/cm ^{3}, so 1.0 g/cm^3 = mass of water/150 cm^3. Mass is equal to 150 cm^3 ´ 1.0 g/cm^3, or 150 g.

NOT: Grade 6 Ch. 1.2.2—Calculate the density of substances using SI units for mass and volume.

51 ANS:
It could be silver because 21 g/2 cm ^{3} equals 10.5 g/cm ^{3}, which is the density of silver.

STA: TEKS 6.7B
NOT: Grade 6 Ch. 1.2.2—Calculate the density of substances using SI units for mass and volume.

52 ANS:
In Figure 2, which represents a compound, two kinds of atoms are present. One kind of atom is represented by the dark circles; the other kind is represented by the white circles.

NOT: Grade 6 Ch. 1.3.1—Identify atoms as the smallest particles of an element.

53 ANS:
A and B are both molecules. Particle A, containing the same kind of atoms, is the molecule of an element. Particle B, containing two different kinds of atoms, is the molecule of a compound.

STA: TEKS 6.7B
NOT: Grade 6 Ch. 1.1.3—Explain the differences among elements, compounds, and mixtures.

54 ANS:
Figure 1 is a model of a mixture, and Figure 2 is a model of a compound. Figure 1 contains four different substances. Two substances are made of single atoms or pairs of identical atoms. Two others are made of molecules containing two kinds of atoms. Figure 2 contains a single substance, which has the same kind of molecules made of two kinds of atoms.

STA: TEKS 6.7B
NOT: Grade 6 Ch. 1.1.3—Explain the differences among elements, compounds, and mixtures.

55 ANS:
In Figure 1, which models a mixture, two substances are compounds, and two are elements. The single atoms represent one element. The molecules made of pairs of identical atoms represent another element. The molecules of the compounds each contain two different kinds of atoms.

STA: TEKS 6.7B
NOT: Grade 6 Ch. 1.1.3—Explain the differences among elements, compounds, and mixtures.

56 ANS:
The atoms in particle B, which is a molecule, are held together by chemical bonds.

NOT: Grade 6 Ch. 1.3.3—Identify chemical bonds as the force holding atoms together in molecules.

57 ANS:
It would be a chemical change. If the particles combine in different ways, new substances are formed, which is what happens in a chemical change.

STA: TEKS 6.7A
NOT: Grade 6 Ch. 1.3.3—Identify chemical bonds as the force holding atoms together in molecules.

58 ANS:
State C. The particles are shown to be moving freely, fast, and far apart from one another, which are properties of a gas. A gas does not have a definite volume or shape.

STA: TEKS 6.7B
NOT: Grade 6 Ch. 2.1.1—Define and differentiate among solids, liquids, and gases in terms of shape and volume.

59 ANS:
State A is a solid, state B is a liquid, and state C is a gas.

STA: TEKS 6.7B NOT: Grade 6 Ch. 2.1.2—Compare the particle motion in solids, liquids, and gases.

60 ANS:
State A, a solid. The figure shows that the particles are arranged in a pattern in definite, fixed positions, which means they can vibrate but not move around one another.

STA: TEKS 6.7B NOT: Grade 6 Ch. 2.1.2—Compare the particle motion in solids, liquids, and gases.

61 ANS:
State C. It is a gas, so its particles would spread farther apart than the particles of either the solid or the liquid.

STA: TEKS 6.7B NOT: Grade 6 Ch. 2.1.2—Compare the particle motion in solids, liquids, and gases.

62 ANS:
The particles in both states appear to be the same size and just about the same distances from one another. The particles in State A are shown as vibrating in rigid positions, while the particles in State B are moving freely around one another.

STA: TEKS 6.7B NOT: Grade 6 Ch. 2.1.2—Compare the particle motion in solids, liquids, and gases.

63 ANS:
state B, a liquid

STA: TEKS 6.7B NOT: Grade 6 Ch. 2.1.2—Compare the particle motion in solids, liquids, and gases.

64 ANS:
distance and time

STA: TEKS 6.6A
NOT: Grade 6 Ch. 3.1.3—Graph motion showing changes in distance as a function of time.

65 ANS:
Kathy is jogging at a constant speed. Her speed does not change as she moves.

STA: TEKS 6.6A
NOT: Grade 6 Ch. 3.1.3—Graph motion showing changes in distance as a function of time.

66 ANS:
600 m

STA: TEKS 6.6A
NOT: Grade 6 Ch. 3.1.3—Graph motion showing changes in distance as a function of time.

67 ANS:
Average speed = distance/time = 1,500 m/10 min = 150 m/min

STA: TEKS 6.6A
NOT: Grade 6 Ch. 3.1.3—Graph motion showing changes in distance as a function of time.

68 ANS:
2 minutes

STA: TEKS 6.6A
NOT: Grade 6 Ch. 3.1.3—Graph motion showing changes in distance as a function of time.

69 ANS:
Rachel is not moving; she is at rest.

STA: TEKS 6.6A
NOT: Grade 6 Ch. 3.1.3—Graph motion showing changes in distance as a function of time.

70 ANS:
speed and time

STA: TEKS 6.6B
NOT: Grade 6 Ch. 3.2.3—Calculate the acceleration of an object and graph changing speed and distance of an accelerating object.

71 ANS:
The segment represents constant acceleration. The speed increases by the same amount during each second.

STA: TEKS 6.6B
NOT: Grade 6 Ch. 3.2.3—Calculate the acceleration of an object and graph changing speed and distance of an accelerating object.

72 ANS:
1 m/s^2
(3m/s - 0 m/s)/3 s = (3 m/s)/(3 s) = (1 m/s)/s = 1 m/s^2

STA: TEKS 6.6B
NOT: Grade 6 Ch. 3.2.3—Calculate the acceleration of an object and graph changing speed and distance of an accelerating object.

73 ANS:
The ball's speed was constant; it did not change.

STA: TEKS 6.6B
NOT: Grade 6 Ch. 3.2.3—Calculate the acceleration of an object and graph changing speed and distance of an accelerating object.

74 ANS:
No, deceleration is a negative acceleration, which means an object slows down. According to the graph, the ball's velocity increased in the first three seconds and then remained the same. It did not slow down. Deceleration would be indicated by a line that slopes downward.

STA: TEKS 6.6B
NOT: Grade 6 Ch. 3.2.3—Calculate the acceleration of an object and graph changing speed and distance of an accelerating object.

75 ANS:
6 m (3.0 m/s ´ 2 s = 6 m)

STA: TEKS 6.6B
NOT: Grade 6 Ch. 3.2.3—Calculate the acceleration of an object and graph changing speed and distance of an accelerating object.

76 ANS:
Colin's data show that the times of the high tides occurred slightly later each day.

NOT: Grade 6 Ch. 0.0.2—Identify and describe the skills used by scientists in their work.

77 ANS:
The high tides on Sunday will be roughly 40 minutes later than the high tides on Saturday.

NOT: Grade 6 Ch. 0.0.2—Identify and describe the skills used by scientists in their work.