

Navigate™ - Grade 05
ITEM CARD

Item Information

Item Code: 400051

Content Area: Science

Difficulty Level: M

Bloom's Level: Understanding

DOK Level: II

Item Type: Multiple Choice

Standard: Texas Science Essential Knowledge and Skills 2009 112.16. Grade 5
6 The student knows that energy occurs in many forms and can be
observed in cycles, patterns, and systems.

**6.A explore the uses of energy, including mechanical, light,
thermal, electrical, and sound energy**

Correct Answer: D

When a guitar string is plucked, sound is produced by

- A. the size of the guitar.
- B. the metal on the guitar.
- C. the wood on the guitar.
- D. the vibrations of the string.

Navigate™ - Grade 05
ITEM CARD

Item Information

Item Code: 400590

Content Area: Science

Difficulty Level: M

Bloom's Level: Applying

DOK Level: II

Item Type: Multiple Choice

Standard: Texas Science Essential Knowledge and Skills 2009 112.16. Grade 5
2 The student uses scientific methods during laboratory and outdoor investigations.

2.C collect information by detailed observations and accurate measuring

Correct Answer: D

A student walking through the forest notices moss growth increases as the density of the forest increases. The student has made

- A.** a hypothesis.
- B.** a conclusion.
- C.** an assumption.
- D.** an observation.

Navigate™ - Grade 08
ITEM CARD

Item Information

Item Code: 400545

Content Area: Science

Difficulty Level: M

Bloom's Level: Applying

DOK Level: II

Item Type: Multiple Choice

Standard: Texas Science Essential Knowledge and Skills 2009 112.20. Grade 8

6 The student knows that there is a relationship between force, motion, and energy.

6.A demonstrate and calculate how unbalanced forces change the speed or direction of an object's motion

Correct Answer: A

Which statement BEST explains why a car that is rolling on a level surface will eventually come to a stop?

- A. Frictional forces oppose the motion of the car.
- B. Forward motion slowly runs out as energy is expended.
- C. The natural state of an object is to be at rest.
- D. Inertia acting on an object will dissipate.

**Navigate™ - Grade 08
ITEM CARD**

Item Information

Item Code: 400631

Content Area: Science

Difficulty Level: D

Bloom's Level: Applying

DOK Level: II

Item Type: Multiple Choice

Standard: Texas Science Essential Knowledge and Skills 2009 112.20. Grade 8

5 The student knows that matter is composed of atoms and has chemical and physical properties.

5.E investigate how evidence of chemical reactions indicate that new substances with different properties are formed

Correct Answer: B

A student performs an experiment and the results are shown below.

Before: Iron filings are brown, small, and magnetic; copper sulfate crystals are blue, brittle, and not magnetic.

After: The copper formed was reddish, solid, and not magnetic; iron sulfide solution was colorless and not magnetic.

Which statement supports that a chemical reaction took place?

- A.** Changes in color occurred.
- B.** A new substance was formed.
- C.** A physical change in the iron occurred.
- D.** The original substances were present after.

Navigate™ - Grade 08
ITEM CARD

Item Information

Item Code: 400929

Content Area: Science

Difficulty Level: E

Bloom's Level: Understanding

DOK Level: II

Item Type: Multiple Choice

Standard: Texas Science Essential Knowledge and Skills 2009 112.20. Grade 8

1 The student, for at least 40% of instructional time, conducts laboratory and field investigations following safety procedures and environmentally appropriate and ethical practices.

1.B practice appropriate use and conservation of resources, including disposal, reuse, or recycling of materials

Correct Answer: B

What is the proper procedure for safely disposing of an acid solution after finishing an experiment?

- A. pour the solution down the sink
- B. neutralize the solution with a base
- C. dilute the solution with more acid
- D. absorb the liquid with paper towels

Navigate™ - Biology
ITEM CARD

Item Information

Item Code: 409079
Difficulty Level: M
Bloom's Level: Analyzing
DOK Level: III
Standard: Texas Science Essential Knowledge and Skills 2009 112.34. Biology 11 The student knows that biological systems work to achieve and maintain balance.

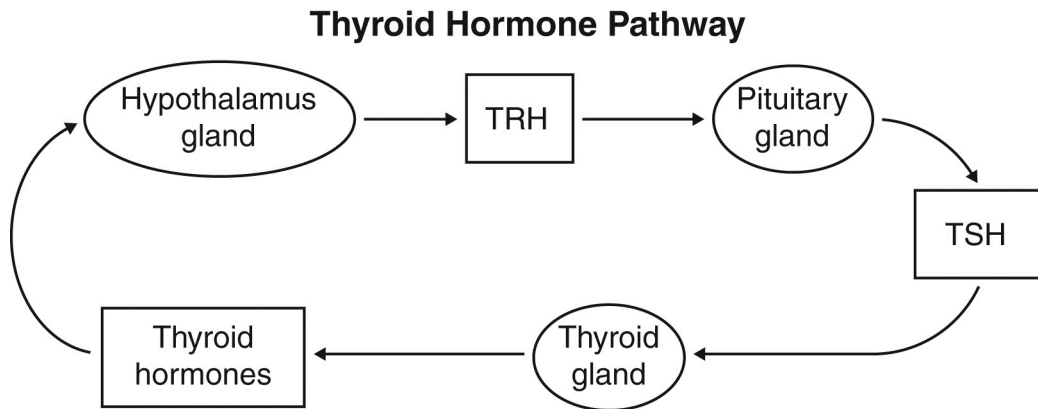
Content Area: Science

Item Type: Multiple Choice

11.A describe the role of internal feedback mechanisms in the maintenance of homeostasis

Correct Answer: B

Metabolic rate is regulated by thyroid hormones. The hypothalamus secretes thyroid-releasing hormone (TRH) which stimulates the pituitary gland to release thyroid-stimulating hormone (TSH). The TSH then stimulates the thyroid to release thyroid hormones. The diagram shows the thyroid hormone pathway which is a negative feedback mechanism.



Which would MOST likely occur if too much thyroid hormone is released?

- A. The pituitary gland would secrete more TSH.
- B. The hypothalamus would not release TRH.
- C. The thyroid gland would increase in size.
- D. TSH would stimulate the thyroid.

Navigate™ - Chemistry
ITEM CARD

Item Information

Item Code: 411201

Content Area: Science

Difficulty Level: M

Bloom's Level: Applying

DOK Level: II

Item Type: Multiple Choice

Standard: Texas Science Essential Knowledge and Skills 2009 112.35. Chemistry
8 The student can quantify the changes that occur during chemical reactions.

8.E perform stoichiometric calculations, including determination of mass relationships between reactants and products, calculation of limiting reagents, and percent yield

Correct Answer: B

Plants use the process of photosynthesis to convert carbon dioxide and water into glucose and oxygen.



Carbon Dioxide Water Glucose Oxygen

If a plant uses 44 grams of carbon dioxide and 18 grams of water to produce 32 grams of oxygen, how many grams of glucose are produced for the plant to use?

- A. 26 grams
- B. 30 grams
- C. 62 grams
- D. 94 grams

Navigate™ - Chemistry
ITEM CARD

Item Information

Item Code: 408197

Content Area: Science

Difficulty Level: M

Bloom's Level: Analyzing

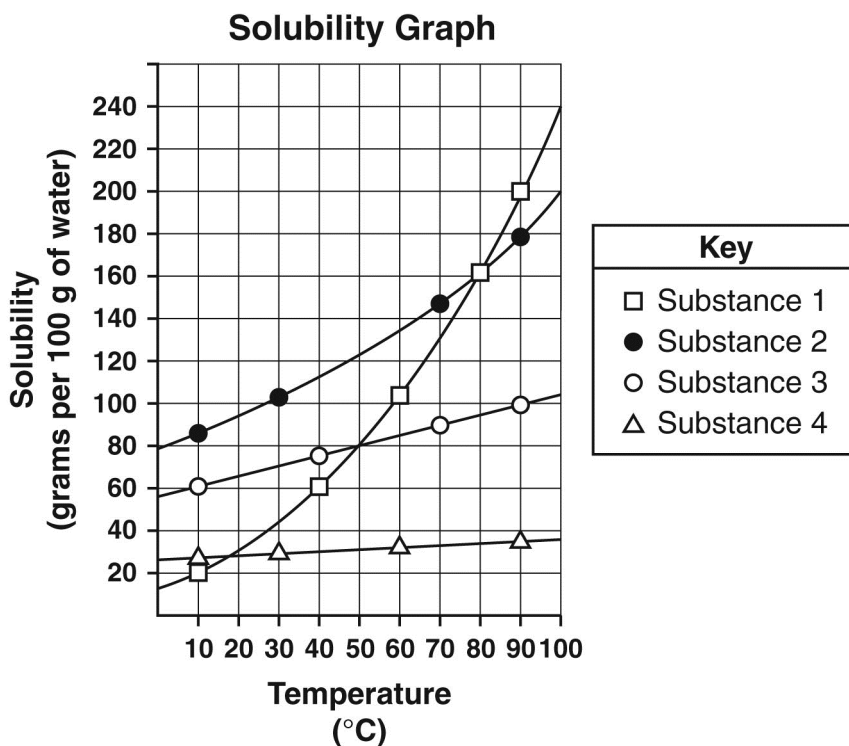
DOK Level: III

Item Type: Multiple Choice

Standard: Texas Science Essential Knowledge and Skills 2009 112.35. Chemistry
2 The student uses scientific methods to solve investigative questions.
2.H organize, analyze, evaluate, make inferences, and predict trends from data

Correct Answer: D

Dora and Miguel were investigating solubility by dissolving different substances in water. The graph shows the results of their investigation on solubility.



Which conclusion about solubility can be drawn from the information in the graph?

- A. Some substances do not dissolve in water.
- B. Solubility decreases as more solute is added.
- C. The solubility of Substance 4 increases the most.
- D. As temperature increases, the solubility increases.

Navigate™ - Chemistry
ITEM CARD

Item Information

Item Code: 407484
Difficulty Level: M
Bloom's Level: Analyzing
DOK Level: III
Standard: Texas Science Essential Knowledge and Skills 2009 112.35. Chemistry 5 The student understands the historical development of the Periodic Table and can apply its predictive power.
Content Area: Science
Item Type: Multiple Choice
5.C use the Periodic Table to identify and explain periodic trends, including atomic and ionic radii, electronegativity, and ionization energy

Correct Answer: B

The chart shows the electronegativity values as the elements are arranged on the periodic table.

Electronegativity Values for Atoms of Selected Elements

Hydrogen H 2.1						
Lithium Li 1.0	Beryllium Be 1.5	Boron B 2.0	Carbon C 2.5	Nitrogen N 3.0	Oxygen O 3.5	Fluorine F 4.0
Sodium Na 0.9	Magnesium Mg 1.2	Aluminum Al 1.5	Silicon Si 1.8	Phosphorus P 2.1	Sulfur S 2.5	Chlorine Cl 3.0
Potassium K 0.8	Calcium Ca 1.0	Gallium Ga 1.6	Germanium Ge 1.8	Arsenic As 2.0	Selenium Se 2.4	Bromine Br 2.8

Which statement **BEST** describes the electronegativity values of the elements shown?

- A. Electronegativity decreases with increasing atomic number within a period.
- B. Electronegativity decreases with increasing atomic number within a group.
- C. Electronegativity tends to be higher in the metals than in the nonmetals.
- D. Electronegativity tends to be lower in the gases than in the solids.

Navigate™ - Physics
ITEM CARD

Item Information

Item Code: 406306
Difficulty Level: D
Bloom's Level: Applying
DOK Level: II
Standard: Texas Science Essential Knowledge and Skills 2009 112.39. Physics
5 The student knows the nature of forces in the physical world.

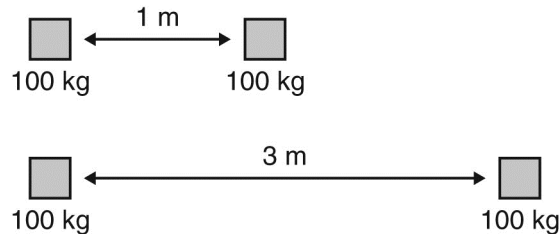
Content Area: Science

Item Type: Multiple Choice

5.B describe and calculate how the magnitude of the gravitational force between two objects depends on their masses and the distance between their centers

Correct Answer: A

Two 100 kilogram (kg) masses are one meter (m) apart. The masses are moved three meters apart.



By what factor has the gravitational force of attraction between the two masses changed?

- A. $\frac{1}{9}$
- B. $\frac{1}{4}$
- C. $\frac{1}{3}$
- D. $\frac{1}{2}$

Navigate™ - Physics
ITEM CARD

Item Information

Item Code: 407890

Content Area: Science

Difficulty Level: M

Bloom's Level: Analyzing

DOK Level: III

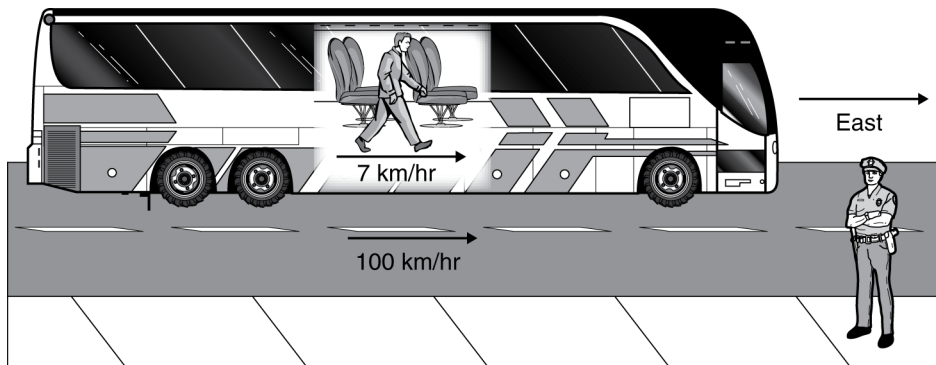
Item Type: Multiple Choice

Standard: Texas Science Essential Knowledge and Skills 2009 112.39. Physics
4 The student knows and applies the laws governing motion in a variety
of situations.

**4.F identify and describe motion relative to different frames of
reference**

Correct Answer: D

A bus is moving east at a velocity of 100 km/hr. A passenger on the bus walks toward the front of the bus at 7 km/hr. A police officer is standing on the sidewalk as the bus passes.



The passenger's relative velocity is 107 km/hr to which person?

- A. the driver of the bus
- B. the bus passenger moving 0.2 km/hr east
- C. the passenger in a car passing the bus at 120 km/hr
- D. the police officer standing on the street as the bus passes

