

# Example Items

## Science 6 Pre-AP

**Science 6 Pre-AP Example Items** are a **representative set** of items for the ACP. Teachers may use this set of items along with the test blueprint as guides to prepare students for the ACP. On the last page, the correct answer, content SE and SE justification are listed for each item.

*The specific part of an SE that an Example Item measures is **NOT** necessarily the only part of the SE that is assessed on the ACP.* None of these Example Items will appear on the ACP.

Teachers may provide feedback regarding Example Items.

(1) Download the [Example Feedback Form](#) and email it. The form is located on the homepage of [Assessment.dallasisd.org](http://Assessment.dallasisd.org).

OR

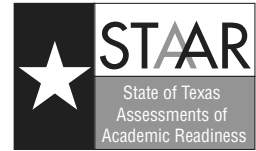
(2) To submit directly, click “Example Feedback” **after** you login to the [Assessment website](#).

First Semester

2018–2019

Code #: 3161

# STAAR GRADE 8 SCIENCE REFERENCE MATERIALS



## FORMULAS

$$\text{Density} = \frac{\text{mass}}{\text{volume}}$$

$$D = \frac{m}{V}$$

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$$\text{Average speed} = \frac{\text{total distance}}{\text{total time}}$$

$$s = \frac{d}{t}$$

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$$\text{Net force} = (\text{mass})(\text{acceleration})$$

$$F = ma$$

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# STAAR GRADE 8 SCIENCE REFERENCE MATERIALS

## PERIODIC TABLE OF THE ELEMENTS

1 1A	2 2A	3 3B	4 4B	5 5B	6 6B	7 7B	8 8B	9	10	11 1B	12 2B	13 3A	14 4A	15 5A	16 6A	17 7A	18 8A														
1 <b>H</b> 1.008 Hydrogen	2 <b>He</b> 4.0026 Helium	3 <b>Li</b> 6.94 Lithium	4 <b>Be</b> 9.0122 Beryllium	5 <b>B</b> 10.81 Boron	6 <b>C</b> 12.011 Carbon	7 <b>N</b> 14.007 Nitrogen	8 <b>O</b> 15.999 Oxygen	9 <b>F</b> 18.998 Fluorine	10 <b>Ne</b> 20.180 Neon	11 <b>Na</b> 22.990 Sodium	12 <b>Mg</b> 24.305 Magnesium	13 <b>Al</b> 26.982 Aluminum	14 <b>Si</b> 28.085 Silicon	15 <b>P</b> 30.974 Phosphorus	16 <b>S</b> 32.06 Sulfur	17 <b>Cl</b> 35.45 Chlorine	18 <b>Ar</b> 39.948 Argon														
19 <b>K</b> 39.098 Potassium	20 <b>Ca</b> 40.078 Calcium	21 <b>Sc</b> 44.956 Scandium	22 <b>Ti</b> 47.867 Titanium	23 <b>V</b> 50.942 Vanadium	24 <b>Cr</b> 51.996 Chromium	25 <b>Mn</b> 54.938 Manganese	26 <b>Fe</b> 55.845 Iron	27 <b>Co</b> 58.933 Cobalt	28 <b>Ni</b> 58.693 Nickel	29 <b>Cu</b> 63.546 Copper	30 <b>Zn</b> 65.38 Zinc	31 <b>Ga</b> 69.723 Gallium	32 <b>Ge</b> 72.630 Germanium	33 <b>As</b> 74.922 Arsenic	34 <b>Se</b> 78.971 Selenium	35 <b>Br</b> 79.904 Bromine	36 <b>Kr</b> 83.798 Krypton														
37 <b>Rb</b> 85.468 Rubidium	38 <b>Sr</b> 87.62 Strontium	39 <b>Y</b> 88.906 Yttrium	40 <b>Zr</b> 91.224 Zirconium	41 <b>Nb</b> 92.906 Niobium	42 <b>Mo</b> 95.95 Molybdenum	43 <b>Tc</b> Technetium	44 <b>Ru</b> 101.07 Ruthenium	45 <b>Rh</b> 102.91 Rhodium	46 <b>Pd</b> 106.42 Palladium	47 <b>Ag</b> 107.87 Silver	48 <b>Cd</b> 112.41 Cadmium	49 <b>In</b> 114.82 Indium	50 <b>Sn</b> 118.71 Tin	51 <b>Sb</b> 121.76 Antimony	52 <b>Te</b> 127.60 Tellurium	53 <b>I</b> 126.90 Iodine	54 <b>Xe</b> 131.29 Xenon														
55 <b>Cs</b> 132.91 Cesium	56 <b>Ba</b> 137.33 Barium	57 <b>La</b> 138.91 Lanthanum	58 <b>Ce</b> 140.12 Cerium	59 <b>Pr</b> 140.91 Praseodymium	60 <b>Nd</b> 144.24 Neodymium	61 <b>Pm</b> Promethium	62 <b>Sm</b> 150.36 Samarium	63 <b>Eu</b> 151.96 Europium	64 <b>Gd</b> 157.25 Gadolinium	65 <b>Tb</b> 158.93 Terbium	66 <b>Dy</b> 162.50 Dysprosium	67 <b>Ho</b> 164.93 Holmium	68 <b>Er</b> 167.26 Erbium	69 <b>Tm</b> 168.93 Thulium	70 <b>Yb</b> 173.05 Ytterbium	71 <b>Lu</b> 174.97 Lutetium	72 <b>Hf</b> 178.49 Hafnium														
87 <b>Fr</b> Francium	88 <b>Ra</b> Radium	89 <b>Ac</b> Actinium	90 <b>Th</b> 232.04 Thorium	91 <b>Pa</b> 231.04 Protactinium	92 <b>U</b> 238.03 Uranium	93 <b>Np</b> Neptunium	94 <b>Pu</b> Plutonium	95 <b>Am</b> Americium	96 <b>Cm</b> Curium	97 <b>Bk</b> Berkelium	98 <b>Cf</b> Californium	99 <b>Es</b> Einsteinium	100 <b>Fm</b> Fermium	101 <b>Md</b> Mendelevium	102 <b>No</b> Nobelium	103 <b>Lr</b> Lawrencium	104 <b>Rf</b> Rutherfordium	105 <b>Db</b> Dubnium	106 <b>Sg</b> Seaborgium	107 <b>Bh</b> Bohrium	108 <b>Hs</b> Hassium	109 <b>Mt</b> Meitnerium	110 <b>Ds</b> Darmstadtium	111 <b>Rg</b> Roentgenium	112 <b>Cn</b> Copernicium	113 <b>Nh</b> Nihonium	114 <b>Fl</b> Flerovium	115 <b>Mc</b> Moscovium	116 <b>Lv</b> Livermorium	117 <b>Ts</b> Tennessine	118 <b>Og</b> Oganesson

Atomic number — 14  
Symbol — **Si**  
Atomic mass — 28.085  
Name — Silicon

Atomic masses are not listed for elements with no stable or common isotopes.

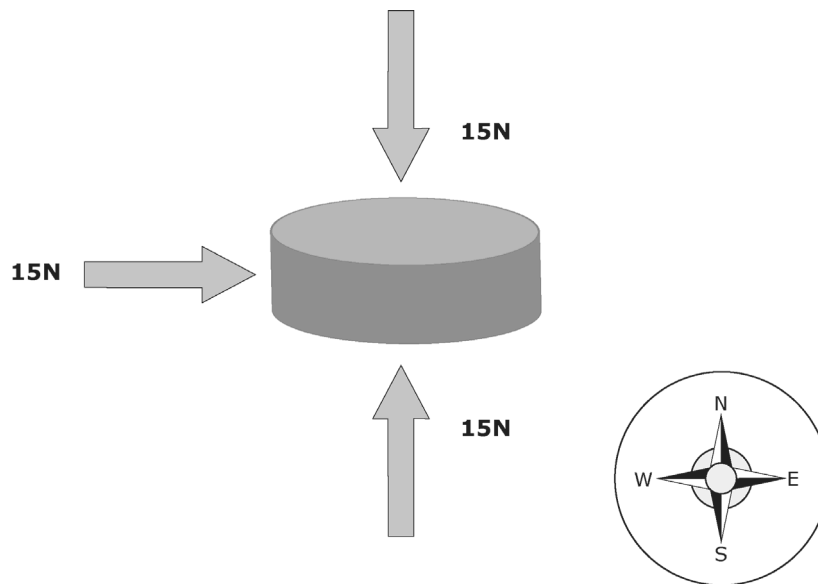
Lanthanide Series

Actinide Series

Source: International Union of Pure and Applied Chemistry

## EXAMPLE ITEMS Science 6 Pre-AP, Sem 1

1 The object in the diagram is moving east when the forces shown are applied.



How do the forces affect the motion of the object?

- A The object moves to the east faster.
- B The object continues its path unaffected.
- C The object stops.
- D The object moves west.

2 Science students completed the physical properties table shown.

**Physical Properties**

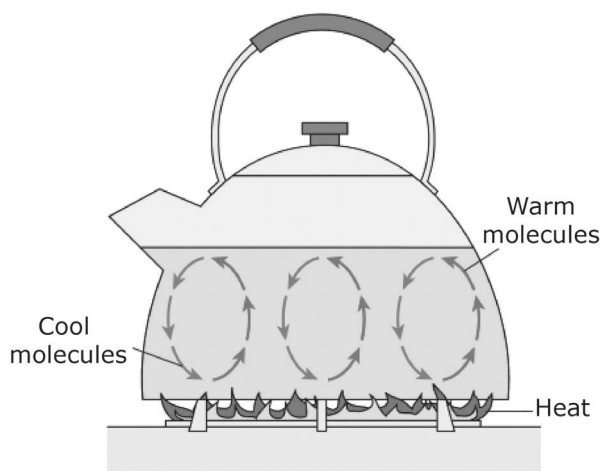
Substance	Density (g/mL)	Color
Aluminum	2.750	Silver
Gasoline	0.713	Clear
Water	1.000	Blue
Methane	660.100	Clear

Which substance has a mass of 11 g and a volume of 4 mL?

- A Aluminum
- B Gasoline
- C Water
- D Methane

## EXAMPLE ITEMS Science 6 Pre-AP, Sem 1

- 3 A tea kettle is filled with water and placed on a hot stove.



The type of energy transfer shown by the arrows is called —

- A conduction
- B convection
- C radiation
- D solar

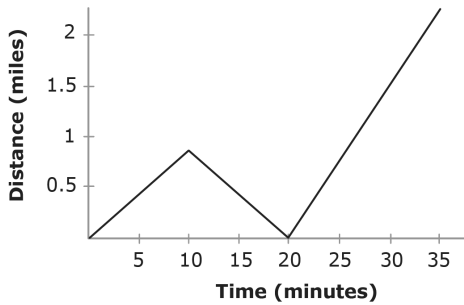
- 4 Which table correctly shows an advantage and disadvantage of using renewable energy resources?

	Advantage	Disadvantage
A	Renewable energy is easier to replenish than nonrenewable energy.	The equipment for renewable energy is more expensive than nonrenewable energy.
B	Wind and solar resources are more reliable than nonrenewable energy.	Renewable energy is more expensive than nonrenewable energy.
C	Renewable energy is more environmentally friendly than nonrenewable energy.	Renewable energy offers fewer jobs than nonrenewable energy.
D	Renewable energy is cheaper to harness than nonrenewable energy.	Renewable energy leads to more air pollution than nonrenewable energy.

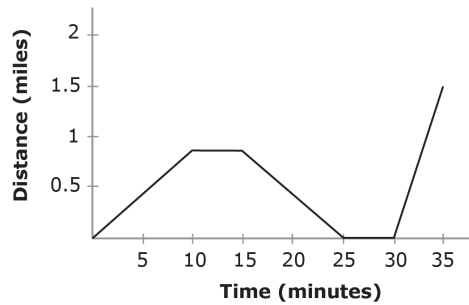
# EXAMPLE ITEMS Science 6 Pre-AP, Sem 1

**5** José walks to school, which is about two miles from his home. José was 10 minutes into his journey when he returned home for his forgotten books. After resting for 5 minutes, he ran to school. Which graph best describes his motion?

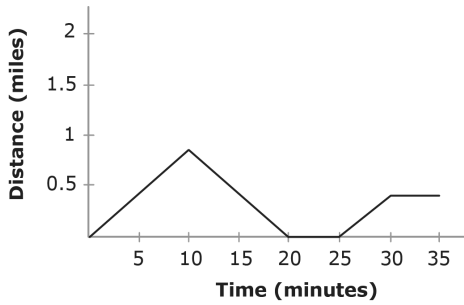
**A**



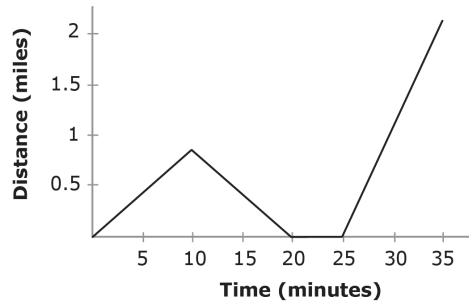
**C**



**B**



**D**



**6** Curtis traveled a distance of 12 miles in 2 hours from the park to his home. What was his average speed in miles per hour?

Record the answer and fill in the bubbles on the grid provided. Be sure to use the correct place value.

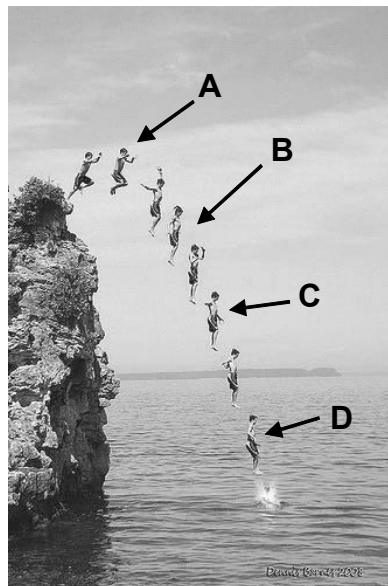
			.		
0	0	0		0	0
1	1	1		1	1
2	2	2		2	2
3	3	3		3	3
4	4	4		4	4
5	5	5		5	5
6	6	6		6	6
7	7	7		7	7
8	8	8		8	8
9	9	9		9	9

## EXAMPLE ITEMS Science 6 Pre-AP, Sem 1

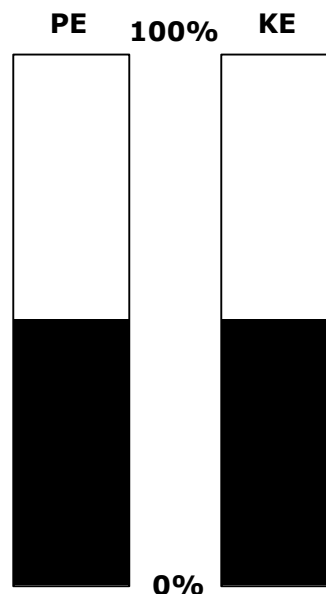


Use the picture and diagram to answer the next question.

**Picture**



**Diagram**



7

Which position of the diver in the picture best matches the potential and kinetic energy diagram on the right?

- A A
- B B
- C C
- D D



Use the table to answer the next question.

Station 1	Station 2	Station 3	Station 4
Table Salt (NaCl)	Iron Filings (Fe)	Limestone (CaCO <sub>3</sub> )	Pure Water (H <sub>2</sub> O)

8

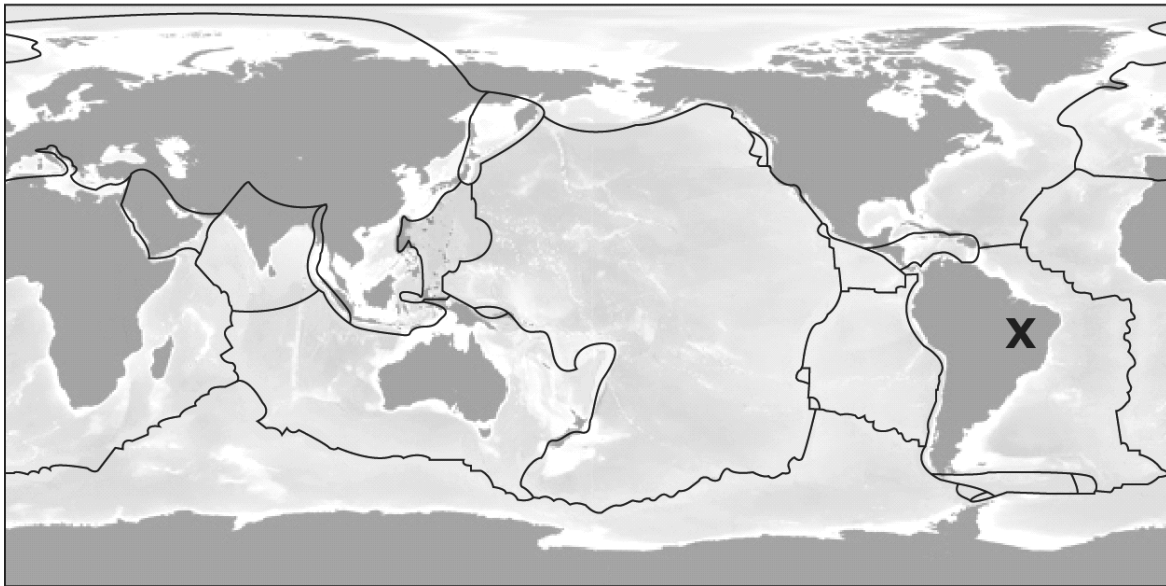
Which station contains a pure element?

- A Station 1
- B Station 2
- C Station 3
- D Station 4

## EXAMPLE ITEMS Science 6 Pre-AP, Sem 1



Use the map to answer the next question.



- 9** Which tectonic plate is marked with an **X**?
- A** African plate
  - B** Indo-Australian plate
  - C** Pacific plate
  - D** South American plate
- 10** What processes change rock into sediments and begin the formation of sedimentary rocks?
- A** Pressure and heat
  - B** Melting and cooling
  - C** Weathering and erosion
  - D** Compaction and cementing
- 11** When two oceanic plates collide, what geological formation occurs?
- A** Faults
  - B** Ridges
  - C** Valleys
  - D** Volcanoes



## EXAMPLE ITEMS Science 6 Pre-AP, Sem 1

- 12** As a student holds a glass of iced tea, the temperature of the tea increases and the temperature of his hand decreases. Will the temperature of his hand continue to change?
- A** No, because all the heat will flow from his hand to the tea.
  - B** Yes, because the ice will cause the temperature of the tea to decrease.
  - C** No, because heat will continue to flow back and forth between both objects equally.
  - D** Yes, because heat will not stop flowing until both objects reach the same temperature.

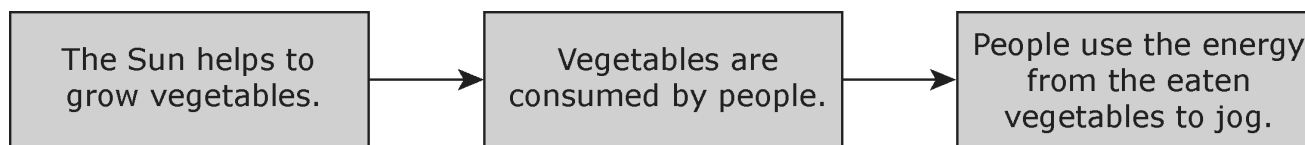
➡ Use the table to answer the next question.

**Properties of Unknown Substances**

Substance	Malleability	Electrical Conductivity	Luster
A	High	High	Yes
B	High	Medium	Yes
C	Low	Medium	Yes
D	Low	Low	No

- 13** Which substance is a metalloid?
- A** A
  - B** B
  - C** C
  - D** D

➡ Use the flowchart to answer the next question.



- 14** What energy transformations took place in the flowchart?
- A** Chemical energy → thermal energy → radiant energy
  - B** Radiant energy → thermal energy → chemical energy
  - C** Chemical energy → mechanical energy → thermal energy
  - D** Radiant energy → chemical energy → mechanical energy

## EXAMPLE ITEMS Science 6 Pre-AP, Sem 1

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- 15** Evidence that a chemical change has taken place includes the production of a —
- A** precipitate, a change in color and/or a change in temperature
  - B** gas, a change in temperature, a change in size and/or change in shape
  - C** gas, a change in color, a change in temperature and/or change in shape
  - D** precipitate, formation of a new substance, a change in shape, and/or a change in temperature

**EXAMPLE ITEMS Science 6 Pre-AP Key, Sem 1**

<b>Item#</b>	<b>Key</b>	<b>SE</b>	<b>Process Skills</b>	<b>SE Justification</b>
<b>1</b>	A	6.8B	--	Identify and describe the changes in position, direction, and speed of an object when acted upon by unbalanced forces.
<b>2</b>	A	6.6B	6.2C, 6.2E, 6.3A	Calculate density to identify an unknown substance.
<b>3</b>	B	6.9A	--	Investigate methods of thermal energy transfer, including conduction, convection, and radiation.
<b>4</b>	A	6.7	--	Research and debate the advantages and disadvantages of using coal, oil, natural gas, nuclear power, biomass, wind, hydropower, geothermal, and solar resources.
<b>5</b>	D	6.8D	--	Measure and graph changes in motion.
<b>6</b>	6	6.8C	--	Calculate average speed using distance and time measurements.
<b>7</b>	C	6.8A	6.3A	Compare and contrast potential and kinetic energy.
<b>8</b>	B	6.5A	--	Know that an element is a pure substance represented by a chemical symbol.
<b>9</b>	D	6.10C	6.3B	Identify the major tectonic plates, including Eurasian, African, Indo-Australian, Pacific, North American, and South American.
<b>10</b>	C	6.10B	--	Classify rocks as sedimentary by the processes of their formation.
<b>11</b>	D	6.10D	--	Describe how plate tectonics causes major geological events.
<b>12</b>	D	6.9B	6.2E	Verify through investigations that thermal energy moves in a predictable pattern from warmer to cooler until all the substances attain the same temperature.
<b>13</b>	C	6.6A	6.3A	Compare metals, nonmetals, and metalloids using physical properties such as luster, conductivity, or malleability.
<b>14</b>	D	6.9C	--	Demonstrate energy transformations.
<b>15</b>	A	6.5C	--	Identify the formation of a new substance by using the evidence of a possible chemical change such as production of a gas, change in temperature, production of a precipitate, or color change.