

# Example Items

## Science 6

**Science 6 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

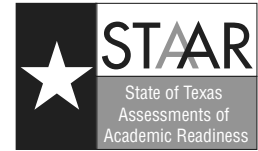
(2) To submit directly, click “Example Feedback” **after** you login to the [Assessment website](#).

First Semester

2018–2019

Code #: 3061

# 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, Sem 1



Use the table to answer the next question.

Properties of Unknown Substances

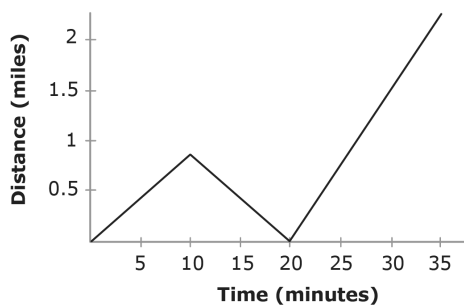
Substance	Malleability	Electrical Conductivity	Luster
A	High	High	Yes
B	High	Medium	Yes
C	Low	Medium	Yes
D	Low	Low	No

1 Which substance is a metalloid?

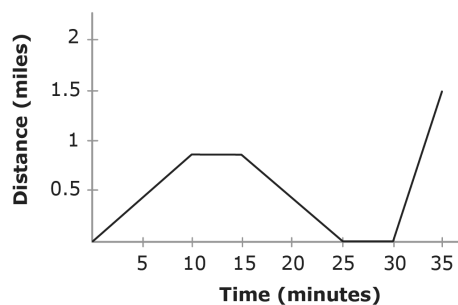
- A A
- B B
- C C
- D D

2 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?

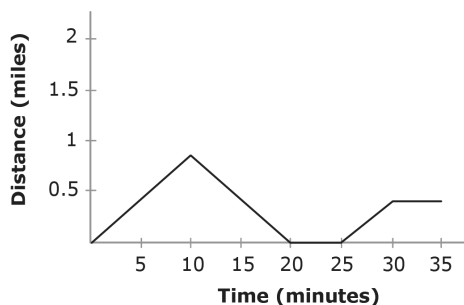
A



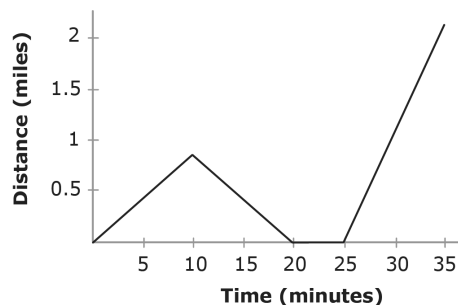
C



B

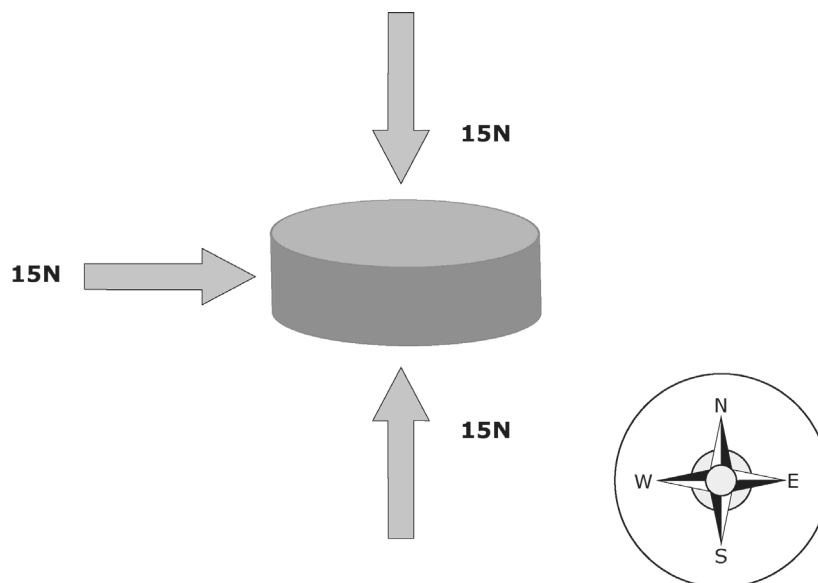


D



## EXAMPLE ITEMS Science 6, Sem 1

- 3 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.

- 4 Students calculated the density for an unknown substance. The sample had a mass of 90 kg and a volume of 8 L. What is the density of the unknown substance in kg/liter?

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, Sem 1

- 5 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

- 6 Students were given the Mohs scale during a lab.

**Mohs Scale**

Mineral	Hardness
Talc	1 (softest)
Gypsum	2
Calcite	3
Fluorite	4
Apatite	5
Feldspar	6
Quartz	7
Topaz	8
Corundum	9
Diamond	10 (hardest)

Which mineral can scratch feldspar but cannot scratch topaz?

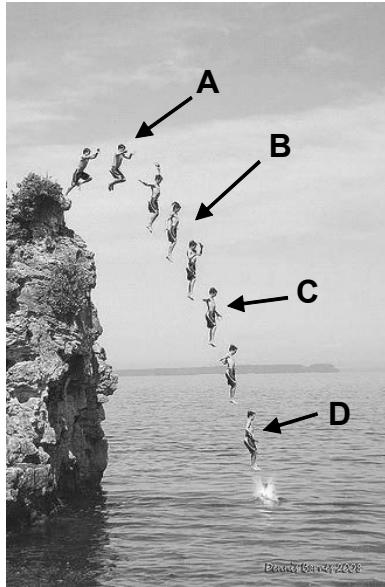
- A Apatite
- B Corundum
- C Fluorite
- D Quartz

# EXAMPLE ITEMS Science 6, Sem 1

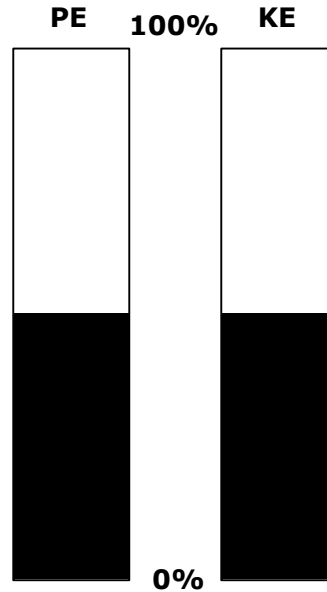


Use the picture and diagram to answer the next question.

**Picture**



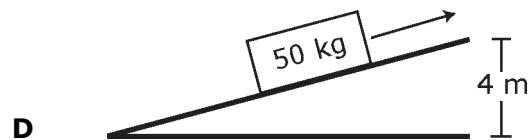
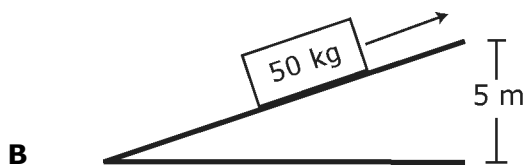
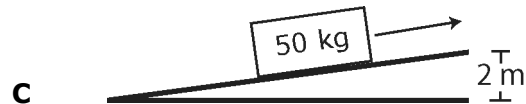
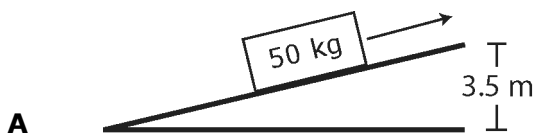
**Diagram**



**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

**8** Which ramp requires the least amount of force to move the same 50 kg object up the ramp?



## EXAMPLE ITEMS Science 6, Sem 1

**9** A teacher mixed baking soda and vinegar in a plastic bottle. Then she quickly stretched a balloon over the mouth of the bottle. The balloon inflated, which indicated a chemical change because —

- A** a gas was produced to inflate the balloon
- B** a liquid was produced to inflate the balloon
- C** a precipitate was produced to inflate the balloon
- D** an explosion occurred to inflate the balloon

**10** What are the main concerns in using crude oil as an energy resource?

- A** Health and technology issues
- B** Environmental and health issues
- C** Technology and economic issues
- D** Environmental and economic issues

**11** Wind energy is harnessed by using a wind turbine.



What type of energy transformation takes place in a wind turbine?

- A** Wind → Chemical
- B** Chemical → Electrical
- C** Mechanical → Electrical
- D** Electrical → Mechanical



## EXAMPLE ITEMS Science 6, Sem 1

12

A student listed all the substances she studied in her chemistry lab.

$\text{CO}_2$ (carbon dioxide)
$\text{CaCO}_3$ (calcium carbonate)
$\text{C}_3\text{H}_8$ (propane)
$\text{HC}_2\text{H}_3\text{O}_2$ (acetic acid)

Which element is common to all of the substances?

- A Carbon
- B Hydrogen
- C Calcium
- D Oxygen

**EXAMPLE ITEMS Science 6 Key, Sem 1**

<b>Item#</b>	<b>Key</b>	<b>SE</b>	<b>Process Skills</b>	<b>SE Justification</b>
<b>1</b>	C	6.6A	6.2D	Compare metals, nonmetals, and metalloids using physical properties such as luster, conductivity, or malleability.
<b>2</b>	D	6.8D	--	Measure and graph changes in motion.
<b>3</b>	A	6.8B	--	Identify and describe the changes in position, direction, and speed of an object when acted upon by unbalanced forces.
<b>4</b>	11.25	6.6B	--	Calculate density to identify an unknown substance.
<b>5</b>	6	6.8C	--	Calculate average speed using distance and time measurements.
<b>6</b>	D	6.6C	6.2E	Test the physical properties of minerals, including hardness.
<b>7</b>	C	6.8A	6.3A	Compare and contrast potential and kinetic energy.
<b>8</b>	C	6.8E	6.2E	Investigate how inclined planes can be used to change the amount of force to move an object.
<b>9</b>	A	6.5C	6.2E	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.
<b>10</b>	B	6.7	--	Debate the...disadvantages of using...oil.
<b>11</b>	C	6.9C	--	Demonstrate energy transformations.
<b>12</b>	A	6.5A	6.2E	Know that an element is a pure substance represented by chemical symbols.