

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.

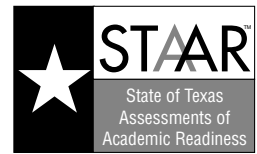
(1) Download the [Example Feedback Form](#) and email it. The form is located on the homepage of Assessment.dallasisd.org.

OR

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

First Semester
2017–2018
Code #: 3161

STAAR GRADE 8 SCIENCE REFERENCE MATERIALS



FORMULAS

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

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

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

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

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

$$F = ma$$

$$\text{Work} = (\text{force})(\text{distance})$$

$$W = Fd$$

STAAR GRADE 8 SCIENCE REFERENCE MATERIALS

PERIODIC TABLE OF THE ELEMENTS

1 1A	2 2A							10 8B	11 1B	12 2B							17 7A	18 8A	
1 H 1.008 Hydrogen	2 He 4.003 Helium	3 Li 6.941 Lithium	4 Be 9.012 Beryllium	5 B 10.812 Boron	6 C 12.011 Carbon	7 N 14.007 Nitrogen	8 O 15.999 Oxygen	9 F 18.998 Fluorine	10 Ne 20.180 Neon	11 Na 22.990 Sodium	12 Mg 24.305 Magnesium	13 Al 26.982 Aluminum	14 Si 28.086 Silicon	15 P 30.974 Phosphorus	16 S 32.066 Sulfur	17 Cl 35.453 Chlorine	18 Ar 39.948 Argon		
19 K 39.098 Potassium	20 Ca 40.078 Calcium	21 Sc 44.956 Scandium	22 Ti 47.867 Titanium	23 V 50.942 Vanadium	24 Cr 51.996 Chromium	25 Mn 54.938 Manganese	26 Fe 55.845 Iron	27 Co 58.933 Cobalt	28 Ni 58.693 Nickel	29 Cu 63.546 Copper	30 Zn 65.38 Zinc	31 Ga 69.723 Gallium	32 Ge 72.64 Germanium	33 As 74.922 Arsenic	34 Se 78.96 Selenium	35 Br 79.904 Bromine	36 Kr 83.798 Krypton		
37 Rb 85.468 Rubidium	38 Sr 87.62 Strontium	39 Y 88.906 Yttrium	40 Zr 91.224 Zirconium	41 Nb 92.906 Niobium	42 Mo 95.96 Molybdenum	43 Tc (98) Technetium	44 Ru 101.07 Ruthenium	45 Rh 102.906 Rhodium	46 Pd 106.42 Palladium	47 Ag 107.868 Silver	48 Cd 112.412 Cadmium	49 In 114.818 Indium	50 Sn 118.711 Tin	51 Sb 121.760 Antimony	52 Te 127.60 Tellurium	53 I 126.904 Iodine	54 Xe 131.294 Xenon		
55 Cs 132.905 Cesium	56 Ba 137.328 Barium	57 La 138.905 Lanthanum	58 Ce 140.116 Cerium	59 Pr 140.908 Praseodymium	60 Nd 144.242 Neodymium	61 Pm (145) Promethium	62 Sm 150.36 Samarium	63 Eu 151.964 Europium	64 Gd 157.25 Gadolinium	65 Tb 158.925 Terbium	66 Dy 162.500 Dysprosium	67 Ho 164.930 Holmium	68 Er 167.259 Erbium	69 Tm 168.934 Thulium	70 Yb 173.055 Ytterbium	71 Lu 174.967 Lutetium	72 Hf 178.49 Hafnium		
87 Fr (223) Francium	88 Ra (226) Radium	89 Ac (227) Actinium	90 Th 232.038 Thorium	91 Pa 231.036 Protactinium	92 U 238.029 Uranium	93 Np (237) Neptunium	94 Pu (244) Plutonium	95 Am (243) Americium	96 Cm (247) Curium	97 Bk (247) Berkelium	98 Cf (251) Californium	99 Es (252) Einsteinium	100 Fm (257) Fermium	101 Md (258) Mendelevium	102 No (259) Nobelium	103 Lr (262) Lawrencium	104 Rf (267) Rutherfordium		

Mass numbers in parentheses are those of the most stable or most common isotope.

Lanthanide Series

Actinide Series

EXAMPLE ITEMS Science 6 Pre-AP, Sem 1

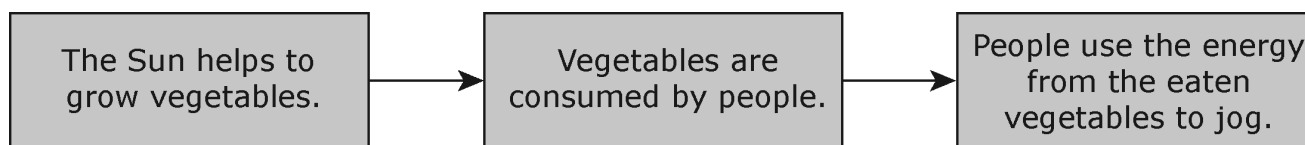
1 Science students completed the physical properties table shown.

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

→ Use the flow-chart to answer the next question.



2 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

3 Why do planets stay in an orbit and not wander into space?

- A The Sun's gravitational pull governs the motion of objects in the solar system.
- B The gravity of each planet keeps them in place and prevents them from being drawn in the Sun.
- C The moons' gravity of each planet creates a push or pull against each planet.
- D The gravitational pull of the asteroid belt shapes the rotational orbit that keeps the planet in its orbit.

EXAMPLE ITEMS Science 6 Pre-AP, Sem 1



Use the table to answer the next question.

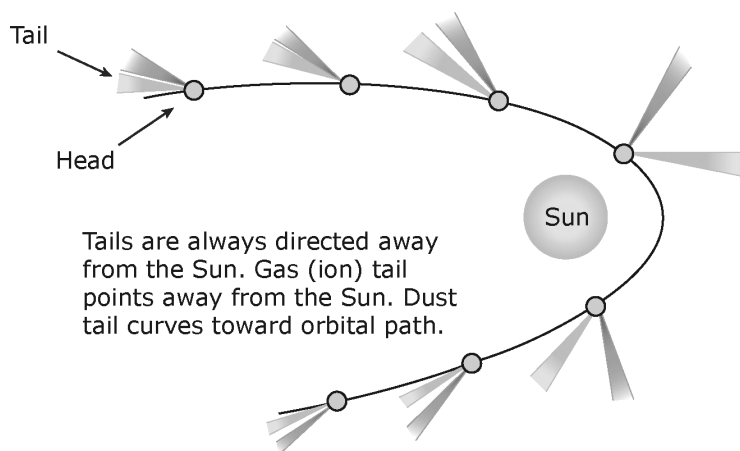
Properties of Unknown Substances

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

4 Which substance is a metalloid?

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

5 This "Dirty Space Snowball" orbits the Sun.



Which member of the solar system is described?

- A Comet
- B Meteor
- C Pluto
- D Shooting star

EXAMPLE ITEMS Science 6 Pre-AP, Sem 1

6 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

7 Which table classifies elements and compounds correctly?

A

Element	Compound
$C_6H_{12}O_6$	O_2
$CaCO_3$	N
CO_2	2 H_2
H_2O	Cl

B

Element	Compound
O_2	$C_6H_{12}O_6$
N	$CaCO_3$
H_2O	CO_2
C	Cl_2

C

Element	Compound
H_2O	$C_6H_{12}O_6$
N	$CaCO_3$
H_2	CH_4
C	CO_2

D

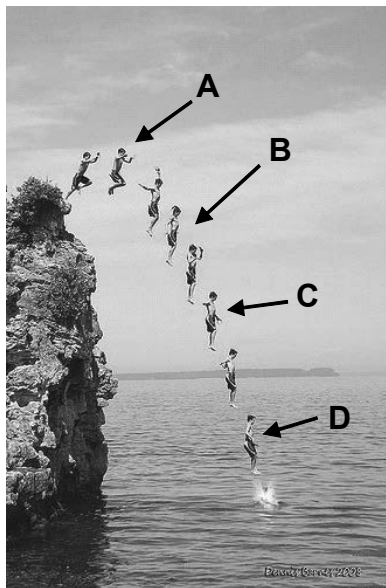
Element	Compound
O_2	$C_6H_{12}O_6$
N	$CaCO_3$
H_2	CO_2
C	H_2O

EXAMPLE ITEMS Science 6 Pre-AP, Sem 1

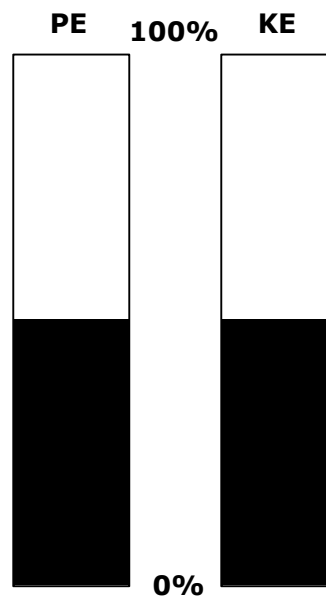


Use the picture and diagram to answer the next question.

Picture



Diagram



8 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

9 A student conducted an investigation to identify an unknown mineral. Which test determines the color of a mineral?

- A Cleavage
- B Luster
- C Scratch
- D Streak

EXAMPLE ITEMS Science 6 Pre-AP, Sem 1

10

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?

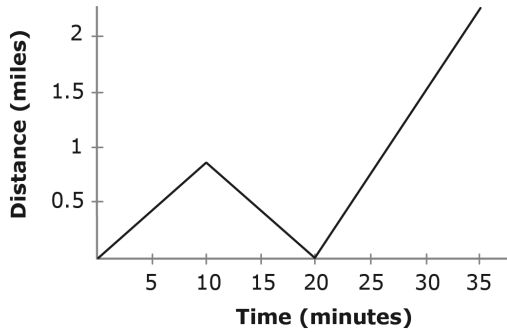
Record the answer and fill in the bubbles on the grid provided. Be sure to use the correct place value.

			.		
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

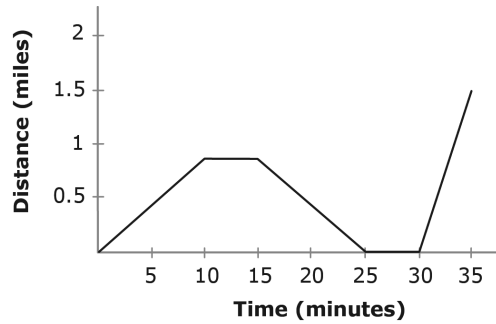
11

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?

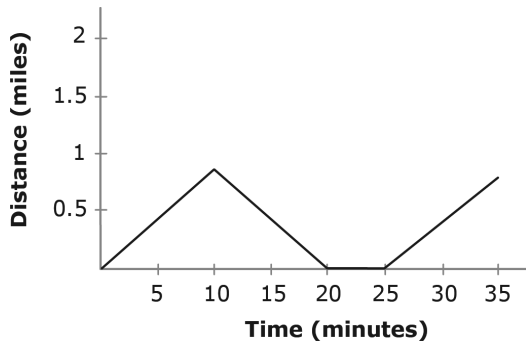
A



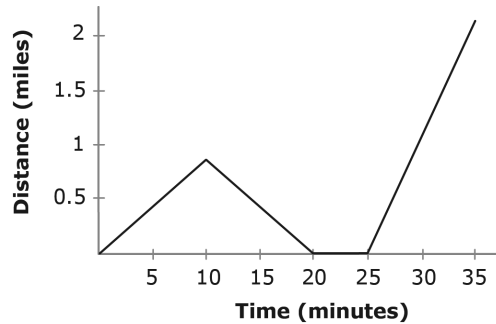
C



B



D

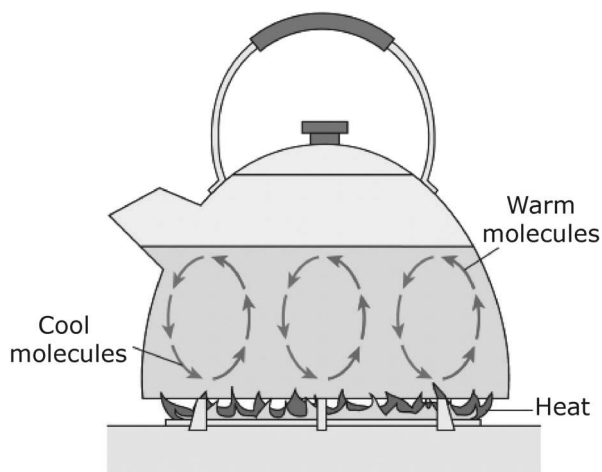


EXAMPLE ITEMS Science 6 Pre-AP, Sem 1

- 12 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.

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



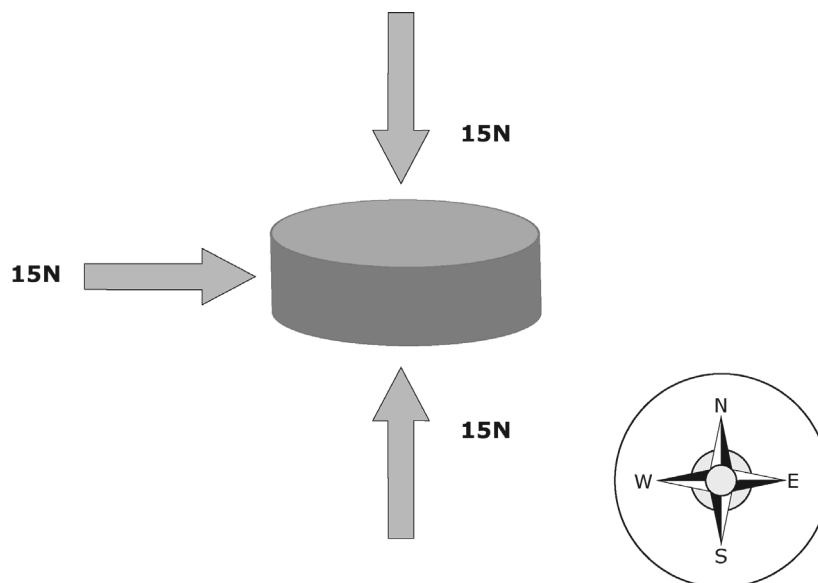
The type of energy transfer shown by the arrows is called —

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

EXAMPLE ITEMS Science 6 Pre-AP, Sem 1

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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.



Use the table to answer the next question.

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

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Which station contains a pure element?

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

EXAMPLE ITEMS Science 6 Pre-AP Key, Sem 1

Item#	Key	SE	Process Skills	SE Justification
1	A	6.6B	6.2C, 6.2E, 6.3A	Calculate density to identify an unknown substance.
2	D	6.9C	--	Demonstrate energy transformations.
3	A	6.11B	--	Understand that gravity is the force that governs the motion of our solar system.
4	C	6.6A	6.3A	Compare metals, nonmetals, and metalloids using physical properties such as luster, conductivity, or malleability.
5	A	6.11A	6.3B	Describe the physical properties, locations, and movements of comets.
6	A	6.5D	--	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.
7	D	6.5C	--	Differentiate between elements and compounds on the most basic level.
8	C	6.8A	6.3A	Compare and contrast potential and kinetic energy.
9	D	6.6C	--	Test the physical properties of minerals, including hardness, color, luster and streak.
10	6	6.8C	--	Calculate average speed using distance and time measurements.
11	D	6.8D	--	Measure and graph changes in motion.
12	A	6.7A	--	Research and debate the advantages and disadvantages of using coal, oil, natural gas, nuclear power, biomass, wind, hydropower, geothermal, and solar resources.
13	B	6.9A	--	Investigate methods of thermal energy transfer, including conduction, convection, and radiation.
14	A	6.8B	--	Identify and describe the changes in position, direction, and speed of an object when acted upon by unbalanced forces.
15	B	6.5A	--	Know that an element is a pure substance represented by chemical symbols.