

Example Items

Science 7

Pre-AP

Science 7 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.

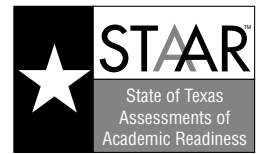
(1) Download the [Example Feedback Form](#) and email it. The form is located on the homepage of Assessment.dallasisd.org.

OR

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

First Semester
2017–2018
Code #: 3171

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

		Atomic number <u>14</u>		Symbol <u>Si</u>		Atomic mass <u>28.086</u>		Name <u>Silicon</u>																																																																																						
1 1A	2 2A	3 3B	4 4B	5 5B	6 6B	7 7B	8 8B	9 9B	10 10B	11 1B	12 2B																																																																																			
1 1 H 1.008 Hydrogen	2 2 Li 6.941 Lithium	3 3 Be 9.012 Beryllium	4 4 B 10.812 Boron	5 5 C 12.011 Carbon	6 6 N 14.007 Nitrogen	7 7 O 15.999 Oxygen	8 8 F 18.998 Fluorine	9 9 Ne 20.180 Neon	10 10 Na 22.990 Sodium	11 11 Mg 24.305 Magnesium	12 12 Al 26.982 Aluminum	13 13 Si 28.086 Silicon	14 14 P 30.974 Phosphorus	15 15 S 32.066 Sulfur	16 16 Cl 35.453 Chlorine	17 17 Ar 39.948 Argon	18 18 K 39.098 Potassium	19 19 Ca 40.078 Calcium	20 20 Sc 44.956 Scandium	21 21 Ti 47.867 Titanium	22 22 V 50.942 Vanadium	23 23 Cr 51.996 Chromium	24 24 Mn 54.938 Manganese	25 25 Fe 55.845 Iron	26 26 Co 58.933 Cobalt	27 27 Ni 58.693 Nickel	28 28 Cu 63.546 Copper	29 29 Zn 65.38 Zinc	30 30 Ga 69.723 Gallium	31 31 Ge 72.64 Germanium	32 32 As 74.922 Arsenic	33 33 Se 78.96 Selenium	34 34 Br 79.904 Bromine	35 35 Kr 83.798 Krypton	36 36 Rb 85.468 Rubidium	37 37 Sr 87.62 Strontium	38 38 Y 88.906 Yttrium	39 39 Zr 91.224 Zirconium	40 40 Nb 92.906 Niobium	41 41 Mo 95.96 Molybdenum	42 42 Tc (98) Technetium	43 43 Ru 101.07 Ruthenium	44 44 Rh 102.906 Rhodium	45 45 Pd 106.42 Palladium	46 46 Ag 107.868 Silver	47 47 Cd 112.412 Cadmium	48 48 In 114.818 Indium	49 49 Sn 118.711 Tin	50 50 Sb 121.760 Antimony	51 51 Te 127.60 Tellurium	52 52 I 126.904 Iodine	53 53 Xe 131.294 Xenon	54 54 Cs 132.905 Cesium	55 55 Ba 137.328 Barium	56 56 La 138.905 Lanthanum	57 57 Ce 140.116 Cerium	58 58 Pr 140.908 Praseodymium	59 59 Nd 144.242 Neodymium	60 60 Pm (145) Promethium	61 61 Sm 150.36 Samarium	62 62 Eu 151.964 Europium	63 63 Gd 157.25 Gadolinium	64 64 Tb 158.925 Terbium	65 65 Dy 162.500 Dysprosium	66 66 Ho 164.930 Holmium	67 67 Er 167.259 Erbium	68 68 Tm 168.934 Thulium	69 69 Yb 173.055 Ytterbium	70 70 Lu 174.967 Lutetium	71 71 Hf 178.49 Hafnium	72 72 Ta 180.948 Tantalum	73 73 W 183.84 Tungsten	74 74 Re 186.207 Rhenium	75 75 Os 190.23 Osmium	76 76 Ir 192.217 Iridium	77 77 Pt 195.085 Platinum	78 78 Au 196.967 Gold	79 79 Hg 200.59 Mercury	80 80 Tl 204.383 Thallium	81 81 Pb 207.2 Lead	82 82 Bi 208.980 Bismuth	83 83 Po (209) Polonium	84 84 At (210) Astatine	85 85 Ra (226) Radium	86 86 Fr (223) Francium	87 87 Lr (262) Lawrencium	88 88 Rf (267) Rutherfordium	89 89 Db (268) Dubnium	90 90 Sg (271) Seaborgium	91 91 Bh (272) Bohrium	92 92 Hs (270) Hassium	93 93 Mt (276) Meitnerium	94 94 Ds (281) Darmstadtium	95 95 Rg (280) Roentgenium

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

Lanthanide Series		Actinide Series	
57 La 138.905 Lanthanum	58 Ce 140.116 Cerium	59 Pr 140.908 Praseodymium	60 Nd 144.242 Neodymium
89 Ac (227) Actinium	90 Th 232.038 Thorium	91 Pa 231.036 Protactinium	92 U 238.029 Uranium
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
83 Bi 208.980 Bismuth	84 Po (209) Polonium	85 At (210) Astatine	86 Rn (222) Radon
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 (260) Lawrencium	104 Rf (261) Rutherfordium

EXAMPLE ITEMS Science 7 Pre-AP, Sem 1

- 1** Elements in the same family or group on the Periodic Table all —
- A** have the same size atoms
 - B** have the same number of neutrons
 - C** have similar chemical properties
 - D** are similar in metal properties
- 2** The atomic number of an element represents the number of —
- A** bonds formed
 - B** protons
 - C** neutrons
 - D** valence electrons
- 3** The chemical formula NH_4Cl indicates that the formula contains —
- A** 1 nitrogen atom, 1 hydrogen atom, and 1 chlorine atom
 - B** 1 nitrogen atom, 4 hydrogen atoms, and 4 chlorine atoms
 - C** 1 nitrogen atom, 4 hydrogen atoms, and 1 chlorine atom
 - D** 4 nitrogen atoms, 4 hydrogen atoms, and 1 chlorine atom
- 4** According to Modern Atomic Theory, the area around the nucleus is referred to as the —
- A** electron cloud
 - B** molecular region
 - C** neutral area
 - D** subatomic region
- 5** The instructions for heredity are found in the —
- A** chromosomes
 - B** cell membrane
 - C** mitochondria
 - D** ribosomes

EXAMPLE ITEMS Science 7 Pre-AP, Sem 1



Use the table to answer the next question.

Investigation 1	Investigation 2	Investigation 3	Investigation 4
<ul style="list-style-type: none">• Experiment: Red food coloring was added to water• Observation: Water turned pink	<ul style="list-style-type: none">• Experiment: Yeast was mixed with hydrogen peroxide• Observation: Bubbles formed	<ul style="list-style-type: none">• Experiment: Salt was added to warm water• Observation: Salt dissolved completely	<ul style="list-style-type: none">• Experiment: Crystals were added to a liquid• Observation: Crystals sank to the bottom of the container

6 Which investigation's observation indicated a chemical reaction occurred?

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

7 Organic compounds contain elements such as —

- A aluminum and nickel
- B sodium and chlorine
- C nitrogen and sulfur
- D magnesium and gold

8 Gills are an adaptation with a specific function. They allow fish to —

- A find shelter
- B raise their young
- C gather and store food for later use
- D take oxygen from a water molecule

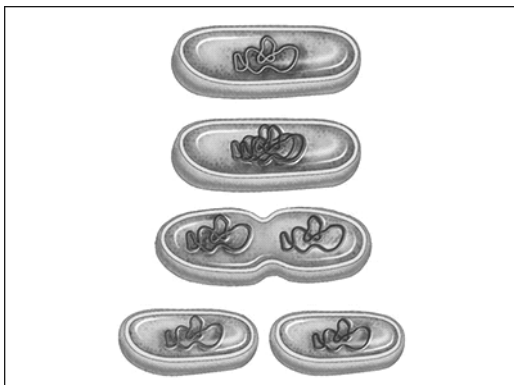
9 Which examples best represent an organ level of organization in plants and animals?

- A Shoot system, digestive system, and root system
- B Skeletal, smooth, and cardiac
- C Daisy, spider, and peacock
- D Leaf, skin, and gills

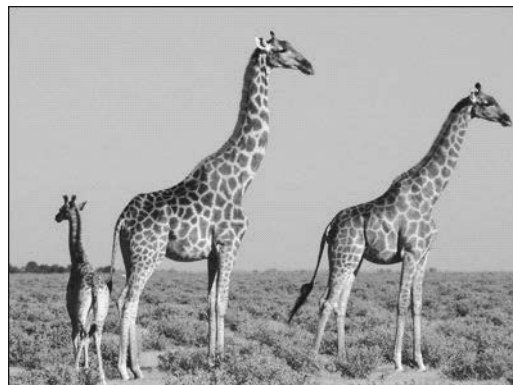
EXAMPLE ITEMS Science 7 Pre-AP, Sem 1

10 Which organisms produce offspring with the least genetic diversity?

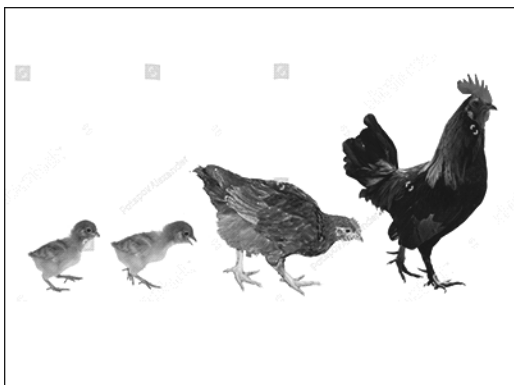
A



C



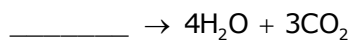
B



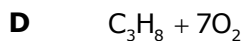
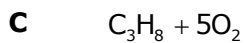
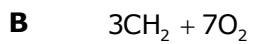
D



11 The equation shows a combustion reaction which produces water and carbon dioxide.



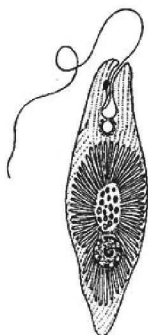
Which reactants correctly balance the equation?



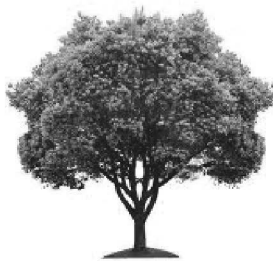
EXAMPLE ITEMS Science 7 Pre-AP, Sem 1



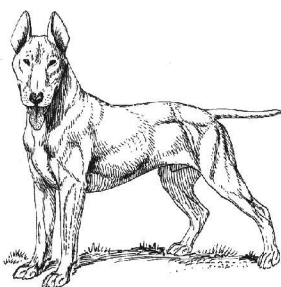
Use the pictures to answer the next question.



Protozoa



Tree



Dog



Mushroom

12 According to cell theory, what characteristics do the organisms share?

- A** All of the organisms share the same cell structure.
- B** All of the organisms must breathe oxygen to survive.
- C** Every cell in the organisms come from existing cells.
- D** Each cell in the organisms are created by sexual reproduction.

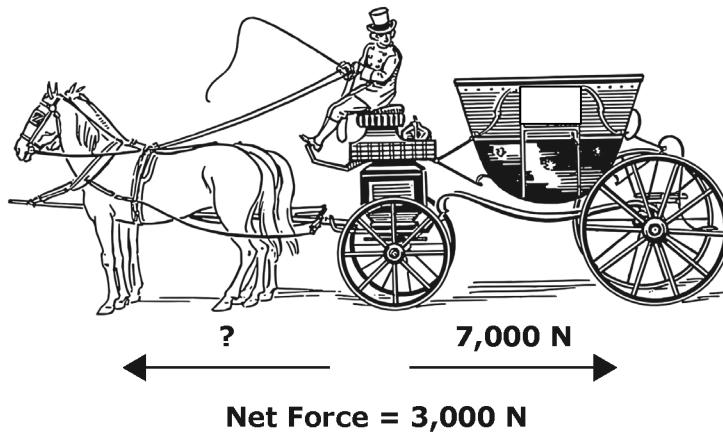
13 When George flies his model airplane, he wants to know how fast and the direction it is flying. What does he calculate to tell him both?

- A** Acceleration
- B** Distance
- C** Speed
- D** Velocity

EXAMPLE ITEMS Science 7 Pre-AP, Sem 1

14

Horses pull a carriage and the overall net force for the interaction is 3,000 N.

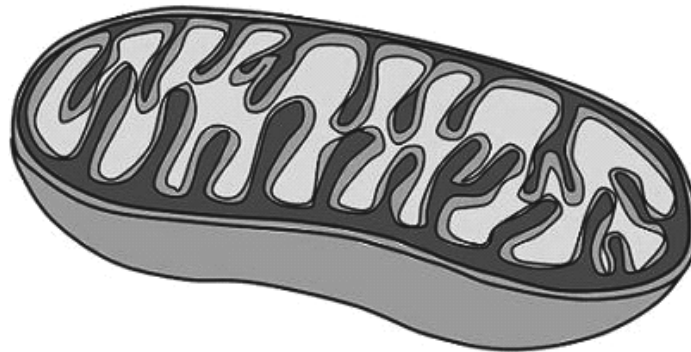


What is the pulling force provided by the horses?

- A 3,000 newtons
- B 4,000 newtons
- C 7,000 newtons
- D 10,000 newtons



Use the picture to answer the next question.



15

What is the function of the organelle?

- A Controls all life processes of the cell
- B Protects other organelles from damage
- C Stores waste to be removed from the cell
- D Releases the energy the cell needs to survive

EXAMPLE ITEMS Science 7 Pre-AP Key, Sem 1

Item#	Key	SE	Process Skills	SE Justification
1	C	8.5C	--	Interpret the arrangement of the Periodic Table, including groups, to explain how properties are used to classify elements.
2	B	8.5B	--	Identify that protons determine an element's identity and valence electrons determine its chemical properties, including reactivity.
3	C	8.5D	--	Recognize that chemical formulas are used to identify substances and determine the number of atoms of each element in chemical formulas containing subscripts.
4	A	8.5A	--	Describe the structure of atoms, including locations, of protons and neutrons in the nucleus and electrons in the electron cloud.
5	A	7.14C	--	Recognize that inherited traits of individuals are governed in the genetic material found in the genes within chromosomes in the nucleus.
6	B	8.5E	8.2E	Investigate how evidence of chemical reactions indicate that new substances with different properties are formed.
7	C	7.6A	--	Identify that organic compounds contain carbon and other elements such as hydrogen, oxygen, phosphorus, nitrogen, or sulfur.
8	D	7.12A	--	Investigate and explain how internal structures of organisms have adaptations that allow specific functions such as gills in fish.
9	D	7.12C	--	Recognize levels of organization in plants and animals, including cells, tissues, organs, organ systems, and organisms.
10	A	7.14B	--	Compare the results of uniform or diverse offspring from sexual reproduction or asexual reproduction.
11	C	8.5F	--	Recognize whether a chemical equation containing coefficients is balanced or not.
12	C	7.12F	--	Recognize that according to cell theory all organisms are composed of cells.
13	D	8.6B	--	Differentiate between speed, velocity, and acceleration.
14	B	8.6A	8.2E	Demonstrate and calculate how unbalanced forces change the speed or direction of an object's motion.
15	D	7.12D	--	Differentiate between structure and function in plant and animal cell organelles, including cell membrane, cell wall, nucleus, cytoplasm, mitochondrion, chloroplast, and vacuole.