

# 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](http://Assessment.dallasisd.org).

OR

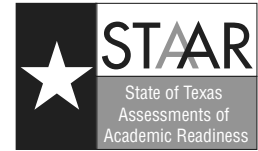
(2) To submit directly, click “Example Feedback” **after** you login to the [Assessment website](#).

First Semester

2018–2019

Code #: 3171

# 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 7 Pre-AP, Sem 1

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- 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  $\text{NH}_4\text{Cl}$  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** A farmer's garden burned down and was left alone for ten years. Which description indicates that the garden is currently undergoing secondary succession?
- A** The presence of lichen
  - B** The absence of topsoil
  - C** The presence of a pioneer species
  - D** The presence of woody bushes

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

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

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

7 What reduces soil erosion?

- A Blowing wind
- B Heavy rainfall
- C High-sloped hills
- D Trees and plants

8 Scientists think that life may have existed on Mars. Which discovery on Mars best supports this theory?

- A Polar ice caps
- B Presence of wind
- C Presence of rocks
- D Composition of the atmosphere

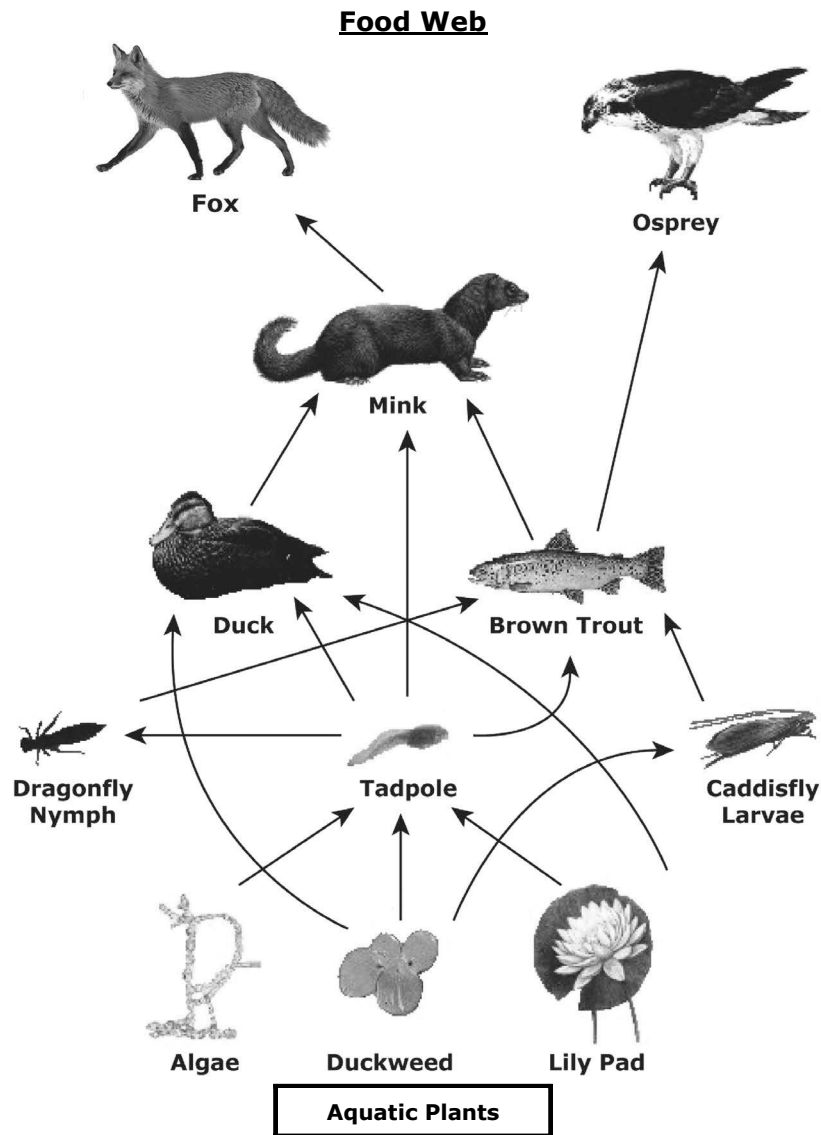
9 Which factor will help maintain stability in an ecosystem?

- A Sudden changes in the climate
- B Diversity in the niches of the animals
- C The types of gases available in the atmosphere
- D The ability of animal populations to resist change

# EXAMPLE ITEMS Science 7 Pre-AP, Sem 1



Use the food web to answer the next question.



Source: ed101.bu.edu

**10** Fishermen caught many brown trout fish. How are the other organisms in the food web affected once the brown trout population decreases?

- A** The tadpole population will decrease, and the duckweed population will increase.
- B** The caddisfly larvae population will increase, and the osprey population will decrease.
- C** The duck population will increase, and the duckweed population will decrease.
- D** The mink population will increase, and the caddisfly larvae population will decrease.

# EXAMPLE ITEMS Science 7 Pre-AP, Sem 1



Use the key to answer the next question.

## Dichotomous Key for Leaves

1. Presence of petiole
  - 1a. Leaf connected to branch by a stem (with petiole) ..... Go to 3
  - 1b. Leaf connected directly to branch (no petiole) ..... Go to 2
2. Leaflet arrangement
  - 2a. Leaflets palmate (all attached at one point) ..... *Aesculus* (Buckeye)
  - 2b. Leaflets pinnate (attached at several points) ..... Go to 4
3. Arrangement of veins in leaves
  - 3a. Veins branch out from one central point ..... *Cercis* (Redbud)
  - 3b. Veins branch out from one central vein ..... Go to 2
4. Leaflets pinnate
  - 4a. Needlelike leaves attached at several points ..... *Pinus Virginiana* (Virginia Pine)
  - 4b. Non-needlelike leaves attached at several points ..... *Carra* (Pecan)

11

Which leaves are from a redbud tree?

A



C



B



D



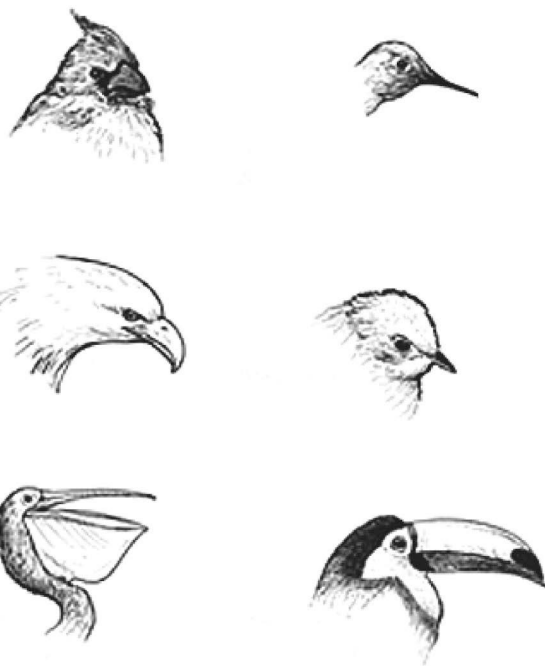
## EXAMPLE ITEMS Science 7 Pre-AP, Sem 1

**12** Students visiting a zoo see a poison dart frog. This bright red frog is about 2 centimeters long. It eats ants and other small insects. The poison dart frog secretes a poisonous chemical from its skin. It lives around green tropical plants. What is the advantage of this frog having a bright red color in a green environment?

- A** It prevents the frog from overheating
- B** It helps it camouflage in its environment
- C** It helps it to sneak up on small insects
- D** It serves as a warning to hungry predators

 Use the illustrations that demonstrate natural selection to answer the following question.

### Bird beaks of different types of birds



**13** Birds developed beak adaptations based on their —

- A** nesting habits
- B** reproductive cycles
- C** food source
- D** colorations



## EXAMPLE ITEMS Science 7 Pre-AP, Sem 1

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**14** Tornadoes cause —

- A** coastal erosion
- B** climate change
- C** ecological damage
- D** plate faults

**15** Groundwater and surface water are both sources of water for communities. A community prevents contamination of surface water by —

- A** fertilizing lawns prior to heavy rains
- B** recycling motor oil in designated containers
- C** disposing of used batteries in landfills
- D** pouring raw sewage into the river

**EXAMPLE ITEMS Science 7 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>	C	8.5C	--	Interpret the arrangement of the Periodic Table, including groups, to explain how properties are used to classify elements.
<b>2</b>	B	8.5B	--	Identify that protons determine an element's identity.
<b>3</b>	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.
<b>4</b>	A	8.5A	--	Describe the structure of atoms, including the...locations, of...electrons in the electron cloud.
<b>5</b>	D	7.10C	--	Observe, record, and describe the role of ecological succession such as in a microhabitat of a garden with weeds.
<b>6</b>	B	8.5E	8.2E	Investigate how evidence of chemical reactions indicate that new substances with different properties are formed.
<b>7</b>	D	7.8B	--	Analyze the effects of weathering, erosion, and deposition on the environment in ecoregions of Texas.
<b>8</b>	A	7.9A	--	Analyze the characteristics of objects in our solar system that allow life to exist such as the proximity of the Sun, presence of water, and composition of the atmosphere.
<b>9</b>	B	7.10B	--	Describe how biodiversity contributes to the sustainability of an ecosystem.
<b>10</b>	B	7.5B	8.2E	Diagram the flow of energy through living systems, including food webs.
<b>11</b>	C	7.11A	8.2E	Examine organisms or their structures such as insects or leaves and use dichotomous keys for identification.
<b>12</b>	D	7.11B	--	Explain variation within a population or species by comparing external features of organisms that enhance their survival.
<b>13</b>	C	7.11C	--	Identify some changes in genetic traits that have occurred after several generations through natural selection.
<b>14</b>	C	7.8A	--	Describe how different types of catastrophic events such as tornadoes impact ecosystems.
<b>15</b>	B	7.8C	--	Model the effects of human activity on groundwater and surface water in a watershed.