



Science Assessment Samples

Grade	3	Item Type	MS
Standard	3.LS.2.1	DOK	2
Stem	A scientist is studying animals in the wild. He believes that animals forming groups helps members survive. Which observations best support this belief? Select two correct answers.		
Answer Options	<p>A. Some meerkats watch for danger while other meerkats look for food.</p> <p>B. A sick antelope may get other members of the group sick because they live close together.</p> <p>C. Zebras travel in herds; their stripes provide camouflage so predators cannot focus on one.</p> <p>D. Rhinos live alone. There are not many grasses and shrubs for them to eat during a drought, but they only need to find enough food for themselves.</p>		
Option Rationales	<p>A. Correct</p> <p>B. This is a negative consequence of living in groups.</p> <p>C. Correct</p> <p>D. This is a benefit of living alone.</p>		





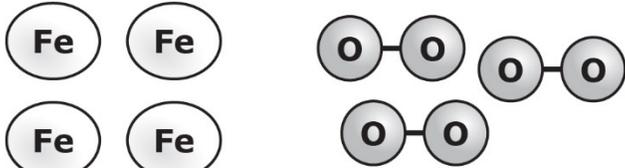
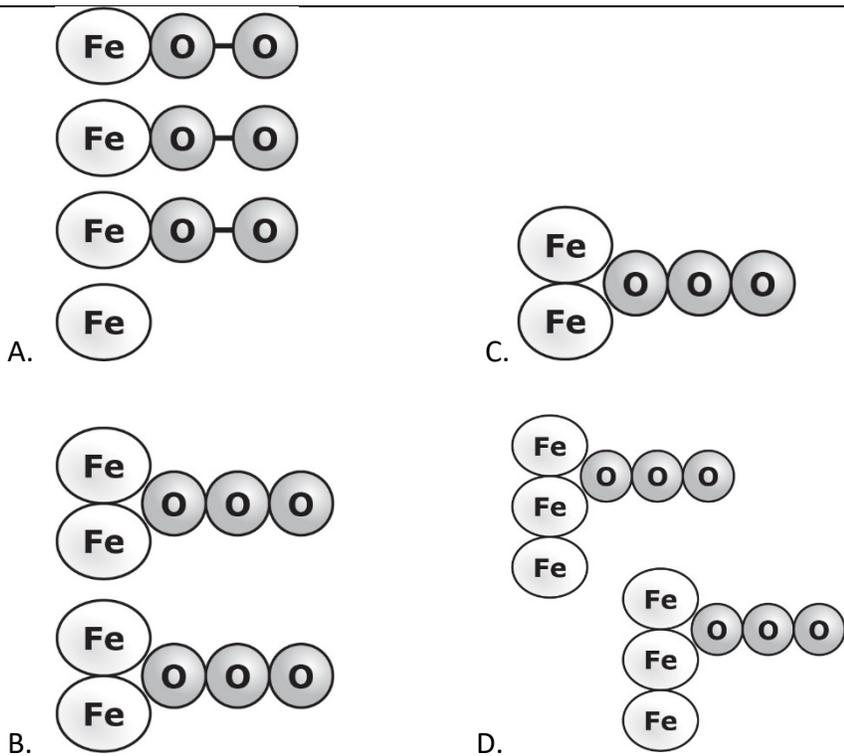
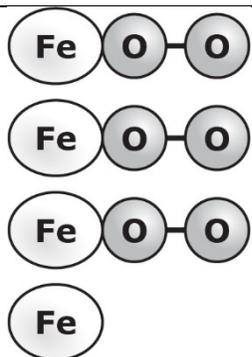
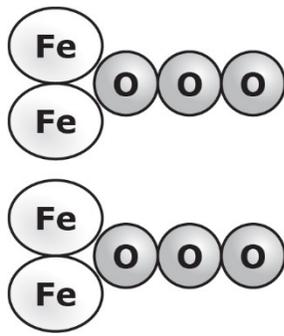
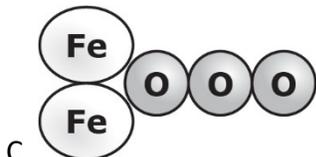
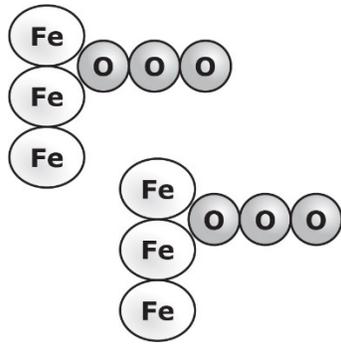
Grade	3	Item Type	MC
Standard	3-PS2-4	DOK	1
Stem	<p>Mrs. Hill wants more room in her pantry. The drawing shows how she adds magnets to the bottom of some shelves so she can hang food there.</p>  <p>Which item can Mrs. Hill hang from the magnets?</p>		
Answer Options	<p>A. steel can of corn B. plastic bag of rice C. glass jar of applesauce D. cardboard box of pasta</p>		
Option Rationales	<p>A. Correct B. This item is not attracted to magnets. C. This item is not attracted to magnets. D. This item is not attracted to magnets.</p>		





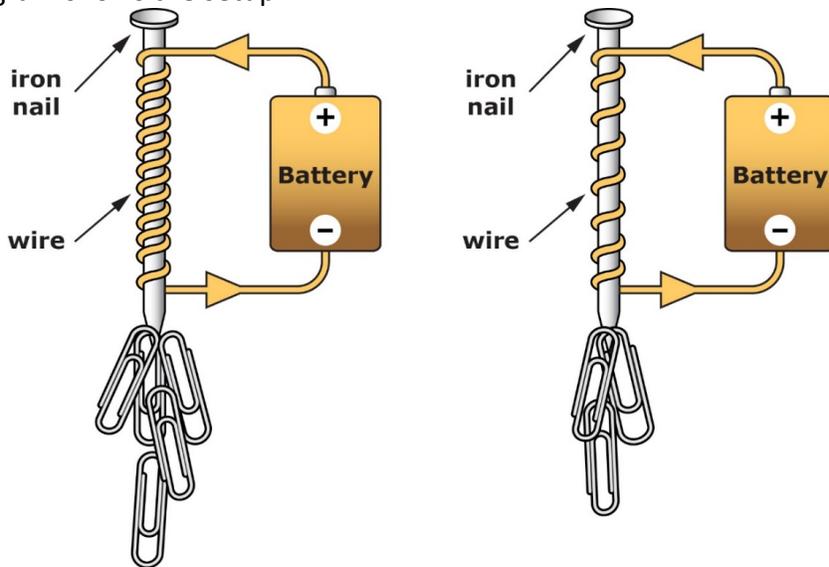
Grade	3	Item Type	CR
Standard	3-LS3-2	DOK	3
Stem	<p>Izzy plants sunflower seeds in two different areas of her yard. She plants some seeds in a sunny area by a fence, and she plants some seeds in a shady area under a tree. She waters areas all of the plants equally and uses the same soil. After a month, she finds that the sunflowers by the fence are much taller than the sunflowers under the tree.</p> <p>In one to two sentences, explain why the sunflowers did not grow equally tall and what this means about the traits of the plants.</p>		
Answer Options			
Option Rationales	<p>Sample Answer: The sunflowers did not grow at an equal rate because plants need sunlight to grow. The plants kept in the shade have the same inherited traits as the others, but their shady environment kept them from growing as they would have.</p>		



Grade	MS	Item Type	MC
Standard	MS-PS1-5	DOK	2
Stem	The model shows the reactants of an unbalanced chemical reaction. $4\text{Fe} + 3\text{O}_2 \rightarrow \text{Fe}_2\text{O}_3$  <p>Which model correctly demonstrates the conservation of mass?</p>		
Answer Options/Objects/Rubric	 <p>A. </p> <p>B. </p> <p>C. </p> <p>D. </p>		
Option Rationales	A. The student did not correctly combine the reactants. B. Correct C. The student did not balance the products. D. The student did not apply the conservation of mass.		





Grade	MS	Item Type	MC
Standard	MS-PS2-3	DOK	2
Stem	<p>A student is conducting an investigation using two electromagnets. The diagram shows the setup.</p>  <p>Which question is this student most likely investigating?</p>		
Answer Options	<p>A. How does an electromagnet work? B. Is a switch used to power this electromagnet? C. How does the number of coils of wire impact the electromagnet's strength? D. Will increasing the number of batteries in an electromagnet increase its strength?</p>		
Option Rationales	<p>A. The student asked a question not answered by the investigation shown. B. The student asked about a part of an electromagnet not used in this investigation. C. Correct D. The student asked a question that does apply, as the number of batteries is not increasing.</p>		





Grade	MS	Item Type	MS
Standard	MS-LS1-3	DOK	1
Stem	A student claims that the respiratory and circulatory systems work together. Select all given evidence that supports this claim.		
Answer Options	<p>A. Veins bring blood rich in carbon dioxide to the heart.</p> <p>B. How often a breath is taken is regulated by the brain.</p> <p>C. Oxygen from alveoli is diffused into the blood.</p> <p>D. The left atrium receives oxygen-rich blood.</p> <p>E. The aorta pumps blood to the rest of the body.</p> <p>F. Both the trachea and the heart contain muscle cells.</p>		
Option Rationales	<p>A. Correct</p> <p>B. The student identified a system other than respiratory and circulatory.</p> <p>C. Correct</p> <p>D. Correct</p> <p>E. The student identified an example that does not show the systems working together.</p> <p>F. The student identified an example that does not show the systems working together.</p>		





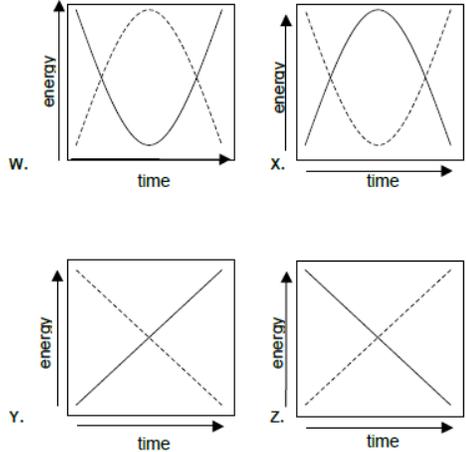
Grade	HS	Item Type	MC
Standard	VA.PH.5d	DOK	2
Stem	<div style="text-align: center;">  <p>On a frictionless track, cart A moves forward at a velocity of 5 m/s and hits cart B, which has been at rest, as shown. Which action will most likely take place?</p> </div>		
Answer Options	<p>A. Cart A will travel in reverse, while cart B will remain motionless.</p> <p>B. Cart A will stop moving, and cart B will move forward at 5 m/s.</p> <p>C. Cart A will travel in reverse at less than 5 m/s, while cart B will move forward at less than 5 m/s.</p> <p>D. Cart A will stop moving, and cart B will move forward at more than 5 m/s.</p>		
Option Rationales	<p>A. While cart A will travel in reverse, cart B will move slowly in a forward direction because energy will be transferred from cart A to cart B.</p> <p>B. Cart A will bounce off of cart B because cart B has a greater mass and less velocity, while cart B will move forward at less than 5 m/s.</p> <p>C. Correct</p> <p>D. Cart A will not stop moving. It will travel in reverse, bouncing off of the more massive cart B. Cart B will move forward at less than 5 m/s because it is more massive than cart A.</p>		



Grade	HS	Item Type	MC
Standard	VA.CH.2g	DOK	1
Stem	A magnesium atom becomes an ion when it loses its two valance electrons. Which symbol represents a magnesium ion?		
Answer Options	<ul style="list-style-type: none"> A. Mg^{-} B. Mg^{+} C. Mg^{+2} D. Mg^{-2} 		
Option Rationales	<ul style="list-style-type: none"> A. An atom that loses electrons has a net positive charge, not a negative one. B. An atom that loses two electrons has a net positive charge of two, not one. C. Correct D. An atom that loses electrons has a net positive charge. 		





Grade	HS	Item Type	MC
Standard	VA.PH.6a	DOK	2
Stem	<div style="text-align: center;">  </div> <div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;"> <p>KEY potential energy ----- kinetic energy _____</p> </div> <p>Which graph best represents the potential and kinetic energies of a ball thrown directly upward?</p>		
Answer Options	<p>A. W B. X C. Y D. Z</p>		
Option Rationales	<p>A. Correct B. A ball does not speed up (gain kinetic energy and lose potential energy) as it rises, nor does it slow (lose kinetic energy and gain potential energy) as it falls. C. The ball shown, which is gaining kinetic energy and losing potential energy, is falling. D. The ball shown, which is losing kinetic energy and gaining potential energy, is rising.</p>		

