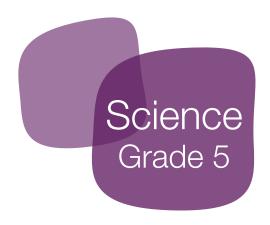


# 2013-2015 Released Test

Aligned to the Standards

CONTENT BUILDER FOR THE PLC





IQ Analysis   Investigating the Question	SE 3.5(C)	RC: 1
SE: 3.5(C)	Units:	

	<b>C)</b> predict, observe, and record changes in the state of matter caused neating or cooling		Analysi	s of Asse	ssed Standards		
201	5 – Q12	Dual Coding		Content	Supporting		
2013 – Q12		Dual County		Process			
12	A student observed liquid wax dripping down the side of a burning candle. After						
	putting out the candle's flame, the student left the room. Several hours later the	Stimul	us				
	Student observed that there was no longer any liquid on the side of the candle.  Which statement explains what most likely happened to the liquid wax?  The heat given off by the flame caused the candle wax to evaporate.	Thinking					
		Related SEs					
	<b>G</b> The liquid wax changed back into a solid as it cooled.	Data Analysis			nalysis		
	• The Berid way and aread and was absorbed by the sandle	Item	State	Local	Error Analysis		
	<b>H</b> The liquid wax condensed and was absorbed by the candle.	F	10		☐Guessing		
	J None of the above	G*	80		☐Careless Error		
		Н	4		Stopped too Early		
		J	6		☐Mixed Up Concepts		
			Implications for Instruction/Notes				
* Co	rrect answer (G)						



# 3.5(C) predict, observe, and record changes in the state of matter caused **Analysis of Assessed Standards** by heating or cooling Content Supporting 2014 - Q7 **Dual Coding** Process 5.3(C) 7 A student makes a model of the water cycle by using a cup, some water, and plastic **Stimulus** wrap. After the student places the model near a sunny window, moisture forms on the inside of the plastic wrap. **Thinking** Plastic wrap **Related SEs Data Analysis** Item State Local **Error Analysis** Α ☐Guessing Careless Error Stopped too Early Mixed Up Concepts В\* 78 С 9 D 13 Implications for Instruction/Notes Water What change is the student most likely observing in this model? **A** Freezing **B** Condensation C The warming of air **D** The formation of clouds

* Correct answer (B)					
3.5(C) predict, observe, and record changes in the state of matter caused	/	Analysi	s of Asses	ssed Standards	
by heating or cooling					
2013 – Q38		Dual Coding		Supporting	
				5.2(D)	
38 Some students put two ice cubes on separate plates. One ice cube had a mass of 80 grams. The other had a mass of 40 grams. Which result would be the same for		ıs			
both ice cubes in this investigation?	Thinking				
F The time it took each ice cube to melt completely	Related SEs				
G The temperature at which each ice cube melted	Data Analysis				
H The amount of liquid produced on each plate	Item	State	Local	alysis	
3 The total volume of each ice cube	F	17	LUCAI	Error Analysis  Guessing	
3 The total volume of each fee cube	G*	60		☐Careless Error	
	Н	11		Stopped too Early	
	J	12		☐Mixed Up Concepts	
	Implications for Instruction/Notes				
* Correct answer (G)					

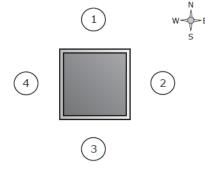


SE: 3.6(B)

**Units:** 

<b>3.6(B)</b> demonstrate and observe how position and motion can be changed
by pushing and pulling objects to show work being done such as swings,
balls, pulleys, and wagons
2015 <u> </u>

43 Four students stand facing a box. The diagram below shows an overhead view of the box. The numbered circles represent the positions of the students.



What do the students need to do to slide the box to the northeast?

- A Students 1 and 2 push, and Students 3 and 4 pull.
- **B** Students 1 and 4 push, and Students 2 and 3 pull.
- C Students 2 and 3 push, and Students 1 and 4 pull.
- D Students 3 and 4 push, and Students 1 and 2 pull.

\* Correct answer (D)

Dual Coding	Content	Supporting
Duai County	Process	5.2(D)
Stimulus		
Thinking		
Related SFs		

Data Analysis										
Item	State	Local	Error Analysis							
Α	7		Guessing							
В	7		Careless Error							
С	8		Stopped too Early							
D*	77		☐Mixed Up Concepts							



3.6(B) demonstrate and observe how position and motion can be changed **Analysis of Assessed Standards** by pushing and pulling objects to show work being done such as swings, balls, pulleys, and wagons Content Supporting 2014 - Q36**Dual Coding** Process 5.2(D) **36** The picture below shows a pulley system that can be used to lift a box. **Stimulus Thinking Related SEs** Ceiling hook **Data Analysis** Item State Local **Error Analysis** F 4 ☐Guessing ☐Careless Error G 17 End of rope ☐Stopped too Early H\* 76 Mixed Up Concepts J 3 Implications for Instruction/Notes Which of these should a person do to lift the box? **F** Tie the end of the rope to the box

- **G** Tie the end of the rope to the ceiling hook
- **H** Pull the end of the rope downward
- J Allow the end of the rope to move upward
- \* Correct answer (H)



3.6(B) demonstrate and observe how position and motion can be changed **Analysis of Assessed Standards** by pushing and pulling objects to show work being done such as swings, balls, pulleys, and wagons Content Supporting 2013 - Q1 **Dual Coding** Process 5.2(D) 1 The diagram below shows a view of a ball from above a table. The ball is rolling **Stimulus** across the table. A student lightly taps the rolling ball in the direction shown below **Thinking Related SEs Data Analysis** Direction of tap by student Item State Local **Error Analysis** 8 ☐Guessing ☐Careless Error В\* 86 ☐Stopped too Early С 4 Mixed Up Concepts D 2 Implications for Instruction/Notes In which direction does the ball most likely move after the student taps the ball? C D \* Correct answer (B)

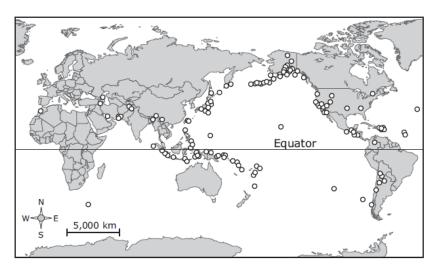
3.7 (B)

Units:

**3.7 (B)** investigate rapid changes in the Earth's surface such as volcanic eruptions, earthquakes, and landslides

# 2015 - Q28

**28** A scientist was studying a type of event that occurred on Earth in various places within a 30-day period. The circles indicate where the events happened.



The events being studied involved rapid changes to Earth's surface at the locations shown on the map. What type of event do the circles on the map most likely represent?

- F Landslides, because they are all located along ocean coastlines
- G Volcanoes, because they occur only near the equator
- H Earthquakes, because they occur on land and on the ocean floor
- J Floods, because heavy rains can make riverbeds deeper and create deltas
- \* Correct answer (H)

Dual Coding	Content	Supporting
Duai County	Process	5.2(G)
Stimulus		
Thinking		
Polated SEs		

Data Analysis										
Item	State	Local	Error Analysis							
F	16		Guessing							
G	10		☐Careless Error							
H*	57		Stopped too Early							
J	17		☐Mixed Up Concepts							



IQ Analysis   Investigating the Question	SE 3.8 (D)	RC: 3
3.8 (D)	Units:	

		identify the planets in Earth's solar system and their position in n to the Sun	,	Analysi	s of Asses	ssed Standards	
201	2014 – Q42		Dual Coding		Content	Supporting	
2014 - Q42		- Q42			Process		
42	0						
42		e of the brightest objects in the night sky is a planet that is closer to the sun than rth is. What is the name of this planet?	Stimulus Thinking Related SEs				
	F	Mars					
	G	Saturn					
	Н	Jupiter					
		V			Data Analysis		
	J	Venus	Item	State	Local		
			F	24		Error Analysis  ☐Guessing	
			G	3		☐Careless Error	
			Н	4		Stopped too Early	
				69		☐Mixed Up Concepts	
			<u> </u>	03			
			Implications for Instruction/Notes				
* Co	rre	ct answer (J)					



3.9(A)

-						
	(A) observe and describe the physical characteristics of environments d how they support populations and communities within an ecosystem		Analysi	s of Asse	ssed Standards	
				Content	Supporting	
20	15 – Q9	Dual C	oding	Process		
9	temperatures all year long, a dry winter season, and a rainy summer season. Which		ıs			
	group of animals is most likely supported by an African savanna?	Thinking				
		Related	d SEs			
	Forois oils			Data Aı	nalysis	
	Rivero / Podds/	Item	State	Local	Error Analysis	
	Lando ver/Fo	Α	7		☐Guessing	
		В	8		☐Careless Error	
		С	2		☐Stopped too Early ☐Mixed Up Concepts	
		D*	82			
	© Derrick Neal Fotolis  © makuipers/ Fotolis  © Auron Amat/ Fotolis  © sumikophoto/ Fotolis	lr	nplicat	ions for li	nstruction/Notes	
	© Dave/Potolia  Normal Reaz/a/Potolia  Sandpip ar/Potolia					
	Proclas Fercias Fercias Fercias					

\* Correct answer (D)

3.9 (A) observe and describe the physical characteristics of environments **Analysis of Assessed Standards** and how they support populations and communities within an ecosystem Content Supporting 2014 - Q11 **Dual Coding** Process 5.4(A) 11 A teacher is setting up the terrarium shown below in a science classroom. **Stimulus Thinking Related SEs Data Analysis** Item State Local **Error Analysis** Α 32 ☐Guessing В 9 ☐Careless Error Stopped too Early
Mixed Up Concepts C\* 51 D 8 Implications for Instruction/Notes Which of these organisms is best suited for the terrarium? A Blue jay **B** Lobster C Snail D Water lily \* Correct answer (C)



3.10(C)					Units:		
	vestigate and compare how anima changes in their diverse life cycles s bugs		, and the second	Analysis	s of Asse	ssed Standards	
2015 – Q37			Dual Coding		Content	Supporting	
					Process	5.2(D)	
<ul><li>37 Some species of rain forest frogs reproduce in the moist leaf litter on the forest floor. These frogs do not need a nearby body of water to complete their life cycle. Which stage of the typical frog life cycle is most likely missing from their life cycle?</li><li>A Egg</li></ul>							
	dpole		Related	I SES			
<b>C</b> Fro	oglet		Itom	Ctoto	Data Aı Local	nalysis	
<b>D</b> Ad	ult frog		Item A	State 10	Local	Error Analysis  ☐Guessing	
			B*	63		Careless Error	
			C D	18 9		☐Stopped too Early ☐Mixed Up Concepts	
			In	nplicati	ions for Ir	nstruction/Notes	
* Correct a	nswer (B)						
	vestigate and compare how anima			Analysi	s of Asse	ssed Standards	
of orderly and lady	changes in their diverse life cycles s bugs	uch as tomato plants, frogs,					
2013 – Q	g		Dual C	odina	Content	Supporting	
2013 – Q	11		Duai O	Juliy	Process		
<b>11</b> At wh	ich stage in the life cycle of a plant are seed	ds produced?	Stimulu	ıs			
			Thinkin	ıg			
			Related	I SEs			
	æ	6 ACC					
A	ه د		Item	State	Data Aı Local		
		7000	Α	11		Error Analysis ☐Guessing	
		Mature plant	B C*	15 67		☐Careless Error ☐Stopped too Early	
	Seedling		D	6		Mixed Up Concepts	
AD RA					ions for Ir	nstruction/Notes	
		The second second		- Filouti			

Young plant



Sprouting seed

\* Correct answer (C)

IQ Analysis   Investigating the Question	SE 4.7 (A)	RC: 3
4.7 (A)	Units:	

		examine properties of soils, including color and texture, capacity to water, and ability to support the growth of plants		Analysi	s of Asse	ssed Standards	
2014 – Q12		Dual Coding		Content	Supporting		
				Process	5.2(C)		
12	Se	everal students investigate the characteristics of soil. The students observe samples					
	of	common soils. In one sample they observe that water drains through the soil sily. When they rub the soil between their fingers, it feels rough and scratchy, and	Stimulus				
	its particles feel hard. The soil the students observed is most likely —			Thinking			
	F	clay	Related SEs				
	G	silt					
			Da		Data Ar	Data Analysis	
	Н	loam	Item	State	Local	Error Analysis	
	J	sand	F	15		☐Guessing	
			G	16		Careless Error	
			Н	12		Stopped too Early	
			J*	56		☐Mixed Up Concepts	
			Implications for Instruction/Notes				
* Co	rre	ct answer (J)					



4.7 (A) examine properties of soils, including color and texture, capacity to **Analysis of Assessed Standards** retain water, and ability to support the growth of plants Content Supporting 2013 - Q12 **Dual Coding** Process 5.2(D) 12 A student conducts an investigation using four identical cans, each with a hole in **Stimulus** the bottom. The student fills each can with a different type of soil and then adds 200 milliliters (mL) of water to each can. The graduated cylinders in the diagram **Thinking** below show the amount of water that drains through the soil and out the bottom **Related SEs** of each can. Soil 1 Soil 3 **Data Analysis** Item State Local **Error Analysis** F 14 ☐Guessing G 2 ☐Careless Error Stopped too Early
Mixed Up Concepts Н\* 83 2 Implications for Instruction/Notes Some plants have roots that reach very deep underground. Which type of soil will

most likely stop water from flowing to the deepest roots of these plants?

- F Soil 1
- G Soil 2
- H Soil 3
- J Soil 4

\* Correct answer (H)

IQ Analysis   Investigating the Question	SE 4.7(C)	RC: 3
4.7 (C)	Units:	

plan	c) identify and classify Earth's renewable resources, including air, ts, water, and animals; and nonrenewable resources, including coal, and natural gas; and the importance of conservation	Analysis of Assessed Standards			ssed Standards
2015 – Q26		Dual Coding		Content	Supporting
				110000	
<b>26</b> Resources can be classified as renewable or nonrenewable. Which of these resources is classified in the same category as coal?		Stimulus			
ı	F Wood	Thinkin	ng		
	G Wind	Related	d SEs		
	H Corn oil			Data Ar	nalysis
	Petroleum	Item	State	Data Ar Local	nalysis Error Analysis
		F	11		Error Analysis  Guessing
		F G	11 3		Error Analysis  Guessing Careless Error
		F G H	11 3 15		Error Analysis  Guessing Careless Error Stopped too Early
		F G	11 3		Error Analysis  Guessing Careless Error
		F G H J*	11 3 15 71	Local	Error Analysis  Guessing Careless Error Stopped too Early
		F G H J*	11 3 15 71	Local	Error Analysis  Guessing  Careless Error  Stopped too Early  Mixed Up Concepts



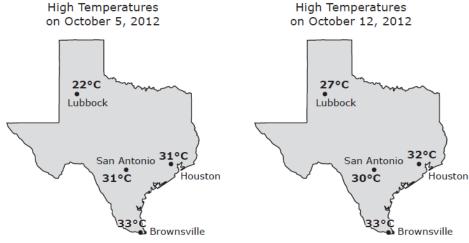
4.8 (A)

Units:

**4.8 (A)** measure and record changes in weather and make predictions using weather maps, weather symbols, and a map key

# 2015 - Q14

14 A student studies two Texas maps that showed some high temperatures for two days in October 2012.



Source: The Old Farmer's Almanac

How many degrees Celsius did the high temperature increase in the city that had the greatest change in high temperature?

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

\* Correct answer (5)

,		
Dual Coding	Content	Supporting
Dual County	Process	
Stimulus		
Thinking		
Related SEs		

**Analysis of Assessed Standards** 

Data Analysis							
Item	State	Local	Error Analysis				
	62		Guessing				
5	37		☐Careless Error				
)	0		Stopped too Early				
	0		☐Mixed Up Concepts				



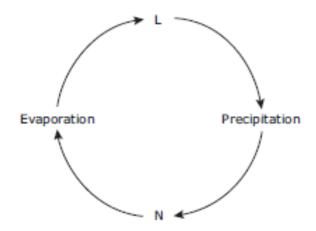
4.8(B)

Units:

**4.8(B)** describe and illustrate the continuous movement of water above and on the surface of Earth through the water cycle and explain the role of the Sun as a major source of energy in this process

2013 - Q28

28 A diagram of the stages in the water cycle is shown below.



Which of these observations would most likely be seen at Stage N?

- F Water flowing downhill
- G Fog forming along a highway
- H The water level of a lake decreasing
- J Dark clouds forming in the sky
- \* Correct answer (F)

Dual Coding	Content	Supporting
Duai Coung	Process	5.3(C)
Stimulus		
Thinking		

Data Analysis							
Item	State	Local	Error Analysis				
F*	71		☐Guessing				
G	6		☐Careless Error				
Н	14		Stopped too Early				
	_		Mixed Up Concepts				

**Related SEs** 



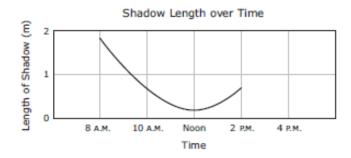
4.8(C)

Units:

**4.8(C)** collect and analyze data to identify sequences and predict patterns of change in shadows, tides, seasons, and the observable appearance of the Moon over time

2013 - Q7

7 The graph below shows changes in the length of the shadow of a tree during part of a day.



If this day continues to be sunny, what will most likely happen to the length of the shadow from  $2 \, \text{R.M.}$  to  $4 \, \text{R.M.}$ ?

- A The length of the shadow will stay the same.
- B The length of the shadow will decrease and then increase.
- C The length of the shadow will increase.
- D The length of the shadow will decrease.

\* Correct answer (C)

Dual Coding	Content	Supporting
Dual County	Process	5.2(D)
	1	
Stimulus		
Thinking		
Related SEs		

Data Analysis							
Item	State	Local	Error Analysis				
Α	3		Guessing				
В	10		Careless Error				
C*	74		Stopped too Early				
D	13		☐Mixed Up Concepts				



<b>5.5(A)</b> classify matter based on physical properties, including mass, magnetism, physical state (solid, liquid, and gas), relative density (sinking and floating), solubility in water, and the ability to conduct or insulate thermal energy or electric energy			Analysis of Assessed Standards				
2015 02			Dual Coding		Content	Readiness	
2015 – Q2					Process	5.02(C)	
2 A teacher gives a stude	nt four clear sealed containers. Each container ho	olds a					
different substance. Th	e student records some observations about the su		Stimul	ıs			
each container.			Thinkin	ng			
	Student Observations		Related	d SEs			
Contain	r Observations						
	The substance takes the shape of the			ı	Data Aı	nalysis	
1	container and is clear. Small particles float on top of the substance.	-	Item F	State 14	Local	Error Analysis ☐Guessing	
2	The substance is hard and cube-shaped. The surface of the substance is shiny.		G	2		☐Careless Error ☐Stopped too Early	
	, , , , , , , , , , , , , , , , , , , ,	-	H*	83		☐Mixed Up Concepts	
3	The substance is not visible, and the container appears empty.		J	1			
4	The substance is cold and made of crystals.		Ir	nplicat	tions for Instruction/Notes		
Based on these observ  F Container 1  G Container 2  H Container 3  J Container 4  * Correct answer (H)	ations, which container most likely holds only gas	?					



**5.5(A)** classify matter based on physical properties, including mass, magnetism, physical state (solid, liquid, and gas), relative density (sinking and floating), solubility in water, and the ability to conduct or insulate thermal energy or electric energy

# Analysis of Assessed Standards

# 2015 - Q8

**8** Some students investigate the properties of four objects using a hand lens, a magnet, and a beaker containing water. Their observations are recorded in the table.

# Stimulus Thinking

# Observed Properties

Related SEs	

Object	Mass (g)	Observations
Cork	2	Light brown     Has small holes     Floats in water
Marble	2	<ul><li>Blue</li><li>Shiny</li><li>Sinks in water</li></ul>
Wood cube	2	<ul><li>Light brown</li><li>Not attracted by a magnet</li><li>Floats in water</li></ul>
Rubber stopper	2	<ul><li>Black</li><li>Sinks in water</li><li>Not attracted by a magnet</li></ul>

Data Analysis							
Item	State	Local	Error Analysis				
F*	80		Guessing				
G	11		Careless Error				
Н	4		Stopped too Early				
J	5		☐Mixed Up Concepts				

Which statement identifies a property that could be used to classify these objects into two different groups?

- **F** Density can be used to separate objects that sink in water from objects that do not
- **G** Magnetism can be used to separate objects that are attracted by a magnet from objects that are not.
- **H** Solubility can be used to separate objects that dissolve in water from objects that do not.
- Physical state can be used to separate objects that are solids from objects that are not.

*	Cor	rect	ane	wer	(F)
	CUI	IEGL	aus	wei	



**Analysis of Assessed Standards 5.5(A)** classify matter based on physical properties, including mass, magnetism, physical state (solid, liquid, and gas), relative density (sinking and floating), solubility in water, and the ability to conduct or insulate thermal energy or electric energy **Content** Readiness 2015 - Q23**Dual Coding** Process 5.02(D) 23 A student classifies the objects shown based on their physical properties. **Stimulus Thinking** Related SEs **Data Analysis** Cotton ball Metal paper clip Item State Local Plastic ruler **Error Analysis** 12 Α ☐ Guessing ☐Careless Error ☐Stopped too Early В 21 С 14 ☐Mixed Up Concepts Iron nail D\* 53 Eraser Rubber band Implications for Instruction/Notes Which property cannot be used to classify these objects into more than one group? **A** Magnetism **B** Mass C Electrical conductivity D Solubility in water \* Correct answer (D) 5.5(A) classify matter based on physical properties, including mass, **Analysis of Assessed Standards** magnetism, physical state (solid, liquid, and gas), relative density (sinking and floating), solubility in water, and the ability to conduct or insulate thermal energy or electric energy 2015 - Q29

**29** A science class tested three properties of different materials. The results are shown in the table below.

Material	Conducts electricity? Conducts heat?		Is flexible?
Wood	No No		No
Plastic	No No		Yes
Copper	Copper Yes Yes		Yes
Steel	Yes	Yes	No

Based on the table, which material would be best to use to insulate electrical wires?

- A Wood
- **B** Plastic
- **C** Copper
- D Steel
- \* Correct answer (B)

Dual Coding	Content	Readiness
Duai Coung	Process	5.02(D)
Stimulus		
Thinking		
Related SEs		

Data Analysis							
Item	State	Local	Error Analysis				
Α	13		Guessing				
B*	47		☐Careless Error				
С	32		Stopped too Early				
D	8		☐Mixed Up Concepts				



<b>5.5(A)</b> classify matter based on physical properties, including mass, magnetism, physical state (solid, liquid, and gas), relative density (sinking and floating), solubility in water, and the ability to conduct or insulate thermal energy or electric energy					Analysi	s of Asses	ssed Standards
2014 – Q14					Dual Coding		Readiness
2014 – Q14					oung	Process	5.2(C)
<b>14</b> A student measures the	mass of several s	substances and	records the results in the				
table below.				Stimul	us		
	Substan	nces for		Thinkir	ng		
	Investi	gation		Related	d SEs		
	Substance	Mass (g)	1			Doto A	a a lucio
	Water	125	1	Item	State	Data Ar Local	
	Toothpicks	5	1	100111	56		Error Analysis  ☐Guessing
	Table salt	30	1	400	44		Careless Error
	Sugar cubes	20		168	0		Stopped too Early
	Alcohol	98			0		☐Mixed Up Concepts
	Cooking oil	75					
	Marbles	40	]	Ir	nplicat	ions for Ir	nstruction/Notes
	Plastic cubes	35	J				
the total mass of the solid substances used in the investigation?  Record your answer and fill in the bubbles on your answer document. Be sure to use the correct place value.							
* Correct answer (168)							
5.5(A) classify matter bas magnetism, physical stat and floating), solubility in thermal energy or electri	te (solid, liquid n water, and th	, and gas), re	elative density (sinking		Analysi	s of Asses	ssed Standards
2014 – Q23				Dual Coding Content Readiness			Readiness
2011 420						Process	5.1(A)
			led with boiling water from a	Stimuli			
hot plate. Why are the		•					
A The metal pan creat				Thinkir			
<b>B</b> The metal pan insula	ates thermal ene	rgy.		Related	d SES		
C The metal pan condu	ucts thermal ene	rgy.				Data Ar	nalysis
<b>D</b> The metal pan reduc	res thermal ener	av.		Item	State	Local	
2 me metar pari read		97.		Α	17		Error Analysis  ☐Guessing
				В	14		Careless Error
				C*	66		☐Stopped too Early ☐Mixed Up Concepts
				D	4		
				Ir	nplicat	ions for Ir	nstruction/Notes
* Correct answer (C)							

mag	gne I flo	classify matter based on physical properties, including mass, etism, physical state (solid, liquid, and gas), relative density (sinking pating), solubility in water, and the ability to conduct or insulate all energy or electric energy	Analysis of Assessed Standards				
2014 – Q33		Dual Coding		Content Process	Readiness		
33	Oh	jects that blow into a swimming pool or that are dropped into the pool by					
33	SW	immers need to be removed. These objects include foam cups, keys, and coins.	Stimul	ıs			
	W	nich of the following explains a useful method for removing some of these objects?	Thinkin	ng			
	A	The keys and coins are less dense than water, so they can be easily picked up off the bottom of the pool by divers.	Related	l SEs			
	В	The foam cups have the same density as water, so they can be crumbled up for	Data Analysis				
	_	removal by the pool filter.	Item	State	Local		
	С	The foam cups are less dense than water, so they can be removed from the	Α	16		Error Analysis ☐Guessing	
		surface with a pool cleaning net.	В	6		Careless Error	
	ь.	The keys and soins have the same density as water so they can be washed away	C*	73		☐Stopped too Early ☐Mixed Up Concepts	
	D The keys and coins have the same density as water, so they can be washed away when the pool is drained.		D	5			
		when the poor is drained.					
		when the poor is drained.	Ir	nplicati	ons for Ir	nstruction/Notes	
* Co	rrei	et answer (C)	Ir	nplicati	ons for Ir	nstruction/Notes	

5.5(A) classify matter based on physical properties, including mass, **Analysis of Assessed Standards** magnetism, physical state (solid, liquid, and gas), relative density (sinking and floating), solubility in water, and the ability to conduct or insulate thermal energy or electric energy Content Readiness 2014 - Q39 **Dual Coding** Process 5.02(D) **39** A cook uses the ingredients listed below to prepare a meal. **Stimulus** Ingredients **Thinking**  Sugar cubes **Related SEs**  Salt · Cooking oil **Data Analysis**  Carrots Item State Local **Error Analysis**  Butter 10 Α ☐ Guessing ☐Careless Error ☐Stopped too Early В 5 С 9 Which table correctly shows the physical properties of these ingredients when placed ☐Mixed Up Concepts in hot water? D\* 76 Implications for Instruction/Notes Ingredient Physical Property Ingredient Physical Property Solid that becomes a liquid Sugar cubes Sugar cubes Solid that does not dissolve Solid that becomes a liquid Solid that dissolves Salt Salt C Cooking oil Liquid that floats Liquid that sinks Cooking oil Solid that does not dissolve Carrots Solid that does not dissolve Carrots Solid that becomes a liquid Butter Solid that dissolves Butter Ingredient Physical Property Ingredient Physical Property Sugar cubes Solid that dissolves Sugar cubes Solid that dissolves Solid that dissolves Solid that dissolves Salt Salt В D Liquid that sinks Liquid that floats Cooking oil Cooking oil

Carrots

Solid that does not dissolve

Solid that becomes a liquid and floats

\* Correct answer (D)

Carrots

Butter

Solid that dissolves

Solid that becomes a liquid and floats



magr and f	classify matter based on physical properties, including mass, netism, physical state (solid, liquid, and gas), relative density (sinking loating), solubility in water, and the ability to conduct or insulate nall energy or electric energy	,	Analysi	s of Asses	ssed Standards
2013	– Q2	Dual Coding		Content	Readiness
				Process	
2	Which of these is the best conductor of electricity?	Stimulus			
	F Glass rod	Thinkin	g		
	G Cotton string	Related	SEs		
	H Plastic tubing			Data Ar	nalvsis
	n riastic tuding	Item	State	Local	Error Analysis
	J Copper penny	F	6		☐Guessing
		G	3		☐Careless Error ☐Stopped too Early
		H J*	8 83		☐Mixed Up Concepts
		J	03		
		In	nplicati	ons for Ir	nstruction/Notes
* Corre	ect answer (J)				
magr and f	classify matter based on physical properties, including mass, netism, physical state (solid, liquid, and gas), relative density (sinking loating), solubility in water, and the ability to conduct or insulate hal energy or electric energy	<i>A</i>	Analysi	s of Asse:	ssed Standards
2013		Dual Coding Content Readiness			
	– Q10	Dual Co	oding	Content	Readiness
	– Q10	Dual Co	oding	Content Process	Readiness 5.02(A)
10	A teacher mixes a white powder into a beaker of water. The powder cannot be seen in the water. The teacher then heats the mixture until the water evaporates	Dual Co			
10	A teacher mixes a white powder into a beaker of water. The powder cannot be		ıs		
10	A teacher mixes a white powder into a beaker of water. The powder cannot be seen in the water. The teacher then heats the mixture until the water evaporates and the powder can be seen again. Which property of the powder is the teacher	Stimulu	ıs g		
10	A teacher mixes a white powder into a beaker of water. The powder cannot be seen in the water. The teacher then heats the mixture until the water evaporates and the powder can be seen again. Which property of the powder is the teacher demonstrating?	Stimulu	ıs g	Process	5.02(A)
10	A teacher mixes a white powder into a beaker of water. The powder cannot be seen in the water. The teacher then heats the mixture until the water evaporates and the powder can be seen again. Which property of the powder is the teacher demonstrating?  F Solubility  G Density	Stimulu	ıs g		5.02(A)
10	A teacher mixes a white powder into a beaker of water. The powder cannot be seen in the water. The teacher then heats the mixture until the water evaporates and the powder can be seen again. Which property of the powder is the teacher demonstrating?  F Solubility  G Density  H Conductivity	Stimulu Thinkin Related	g   SEs	Process  Data Ar	5.02(A)  nalysis  Error Analysis  Guessing
10	A teacher mixes a white powder into a beaker of water. The powder cannot be seen in the water. The teacher then heats the mixture until the water evaporates and the powder can be seen again. Which property of the powder is the teacher demonstrating?  F Solubility  G Density	Stimulu Thinkin Related	g SES	Process  Data Ar	5.02(A)  nalysis  Error Analysis  Guessing  Careless Error
10	A teacher mixes a white powder into a beaker of water. The powder cannot be seen in the water. The teacher then heats the mixture until the water evaporates and the powder can be seen again. Which property of the powder is the teacher demonstrating?  F Solubility  G Density  H Conductivity	Stimulu Thinkin Related Item F* G H	g I SEs State 82 9 6	Process  Data Ar	5.02(A)  nalysis  Error Analysis  Guessing Careless Error Stopped too Early
10	A teacher mixes a white powder into a beaker of water. The powder cannot be seen in the water. The teacher then heats the mixture until the water evaporates and the powder can be seen again. Which property of the powder is the teacher demonstrating?  F Solubility  G Density  H Conductivity	Stimulu Thinkin Related Item F* G	g SEs State 82 9	Process  Data Ar	5.02(A)  nalysis  Error Analysis  Guessing  Careless Error
10	A teacher mixes a white powder into a beaker of water. The powder cannot be seen in the water. The teacher then heats the mixture until the water evaporates and the powder can be seen again. Which property of the powder is the teacher demonstrating?  F Solubility  G Density  H Conductivity	Stimulu Thinkin Related Item F* G H	SES   State   82   9   6   3	Process  Data Ar Local	5.02(A)  nalysis  Error Analysis  Guessing Careless Error Stopped too Early

**5.5(A)** classify matter based on physical properties, including mass, magnetism, physical state (solid, liquid, and gas), relative density (sinking and floating), solubility in water, and the ability to conduct or insulate thermal energy or electric energy

# **Analysis of Assessed Standards**

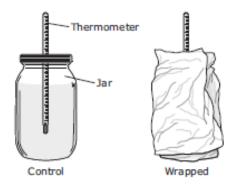
Dual Coding	Content	Readiness
Dual County	Process	5.02(A)
Stimulus		
Thinking		
Related SEs		

		Data A	nalysis
Item	State	Local	Error Analysis
F	8		Guessing
G*	65		Careless Error
Н	23		Stopped too Early
J	3		☐Mixed Up Concepts

# Implications for Instruction/Notes

## 2013 - Q26

26 A teacher sets up an experiment using five jars like the ones shown below. The teacher keeps one jar unwrapped as the control. The other four jars are wrapped with equal thicknesses of four different materials.



The jars are each filled with an equal amount of water that is 92°C. Students observe and record the water temperature in each jar after 10 minutes. The results are shown in the table below.

Water Temperature After 10 Minutes

Material Wrapping Jar	Water Temperature (°C)
No wrapping (control)	84
Newspaper	87
Construction paper	87
Paper towel	85
Cotton towel	90

Which property of the materials wrapping the jars are the students most likely investigating?

- F State of matter
- G Thermal energy insulation
- H Thermal energy production
- J Ability to conduct electricity
- \* Correct answer (G)

5.5(A) classify matter based on physical properties, including mass, **Analysis of Assessed Standards** magnetism, physical state (solid, liquid, and gas), relative density (sinking and floating), solubility in water, and the ability to conduct or insulate thermal energy or electric energy **Content** Readiness **Dual Coding** 2013 - Q33 Process 5.02(D) 33 A student reads the label on the bottle of salad dressing shown below. Stimulus **Thinking Related SEs** ngredients: **Data Analysis** Oil, Vinegar, Spices. State Local Item Directions: Shake well before **Error Analysis** Α\* 52 using. Refrigerate after ☐ Guessing Salad ☐Careless Error ☐Stopped too Early 27 opening. В Dressing С 4 ☐Mixed Up Concepts D 18 Implications for Instruction/Notes Why would the student shake the salad dressing well before using it? A Vinegar and oil have different densities. B Vinegar and oil easily form a solution. C Vinegar and oil both contain water.

\* Correct answer (A)

D Vinegar and oil are both liquids.

SE 5.5(B)

RC: 1

SE: 5.5(B)

Units:

<b>5.5(</b> sca	<b>B)</b> identify the boiling and freezing/melting points of water on the Celsius le	Analysis of Assessed Standards			
2015 – Q35		Dual Coding		Content	Supporting
201			Duai Odanig		
35	Cracks in the seafloor called hydrothermal vents send streams of hot water into the				
	ocean. The water from a vent is 387°C. How many degrees above the boiling point of water is this temperature?	Stimulus			
		Thinkir	Thinking		
	A 175°C	Related SEs			
	<b>B</b> 287°C				
	<b>C</b> 387°C			Data Ar	nalysis
	<b>C</b> 367 C	Item	State	Local	
					Frror Analysis
	<b>D</b> 487°C	Α	9		Error Analysis  ☐Guessing
	<b>D</b> 487°C	A B*	9 76		☐Guessing ☐Careless Error
	<b>D</b> 487°C		-		☐Guessing ☐Careless Error ☐Stopped too Early
	<b>D</b> 487°C	B*	76		☐Guessing ☐Careless Error
	<b>D</b> 487°C	B* C D	76 6 9		Guessing Careless Error Stopped too Early Mixed Up Concepts
	<b>D</b> 487°C	B* C D	76 6 9	ions for Ir	☐Guessing ☐Careless Error ☐Stopped too Early
	<b>D</b> 487°C	B* C D	76 6 9	ions for Ir	Guessing Careless Error Stopped too Early Mixed Up Concepts
	<b>D</b> 487°C	B* C D	76 6 9	ions for Ir	Guessing Careless Error Stopped too Early Mixed Up Concepts
	<b>D</b> 487°C	B* C D	76 6 9	ions for Ir	Guessing Careless Error Stopped too Early Mixed Up Concepts
* Co	D 487°C	B* C D	76 6 9	ions for Ir	Guessing Careless Error Stopped too Early Mixed Up Concepts

<b>5.5(B)</b> identify the boiling and freezing/melting points of water on the Celsius scale	Analysis of Assessed Standards								
2014 – 02	4 – Q2		Dual Coding						Supporting
2014 – Q2			Process						
2 A student observes ice forming on the edge of a school building.									
2 // Stadelite observes for forming on the eage of a serious sandring.	Stimul	ıs							
	Thinkir	ng							
	Related	d SEs							
			Data A	nalysis					
	Item	State	Local	Errer Analysis					
	F	3		Error Analysis  ☐Guessing					
	G	8		☐Careless Error					
	Н	5		Stopped too Early					
	J*	84		☐Mixed Up Concepts					
<u> </u>		0.7							
T + 1 = 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1	lr	nplicat	ions for lı	nstruction/Notes					
At what temperature did the water outside the school building most likely begin to change to ice?									
F 100°C									
<b>G</b> 32°C									
<b>H</b> 25°C									
<b>J</b> 0°C									
* Correct answer (J)									

<b>5.5(B)</b> identify the boiling and freezing/melting points of water on the Celsius scale	Analysis of Assessed Standards				
2013 – Q14			Content	Supporting	
2013 – Q14		Dual Coding			
14 A student measures the temperature of water being heated on a hot plate. The	Stimulu	ıs			
student observes that the temperature of the water is 53°C. How many more degrees Celsius must the temperature rise before it reaches the boiling temperature of water?	Thinkin	Thinking			
Record your answer and fill in the bubbles on your answer document. Be sure to use	Related SEs				
the correct place value.					
are correct place variet.	Data Analysis				
	Item	State	Local		
		80		Error Analysis ☐Guessing	
	47	20		☐Careless Error	
	47	0		☐Stopped too Early	
		0		☐Mixed Up Concepts	
	Implications for Instruction/Notes				
* Correct answer (47)					



SE: 5.5(C)	Units:	
IQ Analysis   Investigating the Question	SE 5.5(C)	RC: 1

	C) demonstrate that some mixtures maintain physical properties of their edients such as iron filings and sand		Analysi	s of Asse	of Assessed Standards	
2015 – Q42		Dual Coding		Content	Supporting	
201	0 - Q+2		Duai Gouing			
42	Some people add sugar to their hot tea. Which property of the sugar remains the					
	same when the sugar is in the tea solution?	Stimul	ıs			
	<b>F</b> The taste of the sugar	Thinkir	Thinking			
	<b>G</b> The size of the sugar crystals	Related SEs				
	H The color of the sugar			Data Aı	Data Analysis	
	J The texture of the sugar	Item	State	Local	Error Analysis	
		F*	79		☐Guessing	
		G	6		☐Careless Error	
		Н	6		☐Stopped too Early	
		J	9		☐Mixed Up Concepts	
		Implications for Instruction/Notes			nstruction/Notes	
* Co	rrect answer (F)					

	(C) demonstrate that some mixtures maintain physical properties of their gredients such as iron filings and sand	Analysis of Assessed Standards			ssed Standards
2014 – Q29		Dual Coding		Content	Supporting
20	17 023	0		Process	5.2(B)
				I	
29	A student made a mixture using equal amounts of salt and pepper. The salt grains	Stimul	ıs		
	were the same size as the pepper grains. What should the student do to most easily		ng		
	separate the pepper from the salt?	Related SEs			
	A Use a pair of tweezers to remove each grain of pepper				
	<b>B</b> Run a small magnet through the mixture to attract the pepper	Data Analysis			nalysis
		Item	State	Local	Error Analysis
	C Put the mixture in water and filter the pepper out of the water	Α	12		☐Guessing
	<b>D</b> Use a strainer with a fine wire screen to remove the pepper	В	11		Careless Error
		C*	60		☐Stopped too Early ☐Mixed Up Concepts
		D	18		
		Implications for Instruction/Notes			
* C	orrect answer (C)				



5.5(C) demonstrate that some mixtures maintain physical properties of their ingredients such as iron filings and sand	/	Analysi	s of Asses	ssed Standards
2013 – Q21	Dual C	Dual Coding		Supporting
2010 421		Dual County		
At A white of body we alread in a water or a few below. The body we of				
21 A mixture of beads was placed in a container, as shown below. The beads are of various sizes, and each one is made of plastic, glass, or steel.	Stimulus			
	Thinking			
	Related	l SEs		
Bull Com				
23 2 2 3			Data Ar	nalysis
	Item	State	Local	Error Analysis
	Α	11		☐Guessing
	B*	75		Careless Error
	С	5		☐Stopped too Early ☐Mixed Up Concepts
	D	9		□livilixed ob Concepts
The mixture would be easy to separate because all the beads —				
A are less dense than water	In	nplicati	ions for Ir	nstruction/Notes
B are solids				
C have the same mass				
D are attracted to a magnet				
* Correct answer (B)				

Q Analysis   Investigating the Question	SE 5.5(D)	RC: 1

SE: 5.5(D)	Units:

<b>5.5(D)</b> identify changes that can occur in the physical properties of the ingredients of solutions such as dissolving salt in water or adding lemon juice to water	Analysis of Assessed Standards Ce			
	Dual Coding		Content	Supporting
2015 – Q15			Process	5.2(B)
15 A student adds 10 grams of four different powdered solids into four different beakers. The student then adds 100 mL of water to each beaker, stirs the mixtures, and allows	Stimul			
them to sit for half an hour before recording observations. Which question is the student most likely trying to answer with this investigation?	Thinkir	Thinking		
A At what water temperature do the substances dissolve?	Related	d SEs		
<b>B</b> How much water is needed to cause a substance to change state?			Data Ar	nalysis
C What causes a substance to sink when put in water?	Item	State	Local	Error Analysis
<b>D</b> Which substances dissolve in water?	B	7 12		☐Guessing ☐Careless Error
	C	6		Stopped too Early
	D*	75		☐Mixed Up Concepts
	Ir	mnlicat	ions for Ir	nstruction/Notes
		приса	10113 101 11	istraction/Notes
* Correct answer (D)				
<b>5.5(D)</b> identify changes that can occur in the physical properties of the		Analysi	s of Asses	ssed Standards
ingredients of solutions such as dissolving salt in water or adding lemon juice to water	•	, unany si	3 01 71330.	ssed standards
2014 – Q17	Dual C	odina	Content	Supporting
2014 – Q17	Duai C	oung	Process	
17 When a powdered drink mix was added to water, the liquid turned orange. A student	041			
decided the taste was too strong, so he poured out half of the liquid and added more water. Which of the following most likely occurred when more water was added?	Stimul			
A The physical state changed.	Related			
<b>B</b> The orange color became lighter.	Related	J 3E3		
C The liquid had a sweeter taste.			Data Ar	nalysis
· · · · · · · · · · · · · · · · · · ·	Item	State	Local	Error Analysis
D None of the above	A B*	13		☐Guessing
	C	54 13		☐Careless Error ☐Stopped too Early
	D	20		☐Mixed Up Concepts
	Implications for Instruction/Notes			nstruction/Notes
* Correct answer (B)				
Contact anomer (D)				



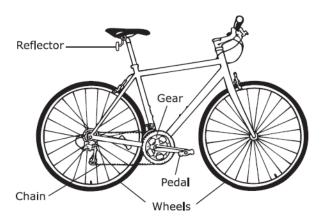
<b>5.5(D)</b> identify changes that can occur in the physical properties of the ingredients of solutions such as dissolving salt in water or adding lemon juice to water	Analysis of Assessed Standards			
2013 – Q40			Content	Supporting
2010 - Q40	Dual Coding		Process	5.2(D)
			I	
40 A worker built a sidewalk and pressed some large salt particles into the concrete while it was still wet. When the concrete was dry, the worker washed the sidewalk	Stimulus			
with water. The picture below shows the sidewalk after it was washed.	Thinking			
Holes in Concrete				
SHEWANDARD AND AND AND AND AND AND AND AND AND AN				
	14	Data Analysis		
	Item F	State 7	Local	Error Analysis
,	G	13		☐Guessing ☐Careless Error
1 90 gr. 1 0 cm 2 cm	H*	66		Stopped too Early
				☐Mixed Up Concepts
	Implications for Instruction/Notes			
What most likely happened to the salt?				
F It evaporated into a gas.				
G It turned into concrete.				
H It dissolved in the water.				
J It turned into a solid.				
* Correct answer (H)				

SE: 5.6(A) Units:

**5.6(A)** explore the uses of energy, including mechanical, light, thermal, electrical, and sound energy

# 2015 - Q1

Many people ride a bicycle for fun and exercise. Some people ride a bicycle to work because it saves money and benefits the environment by reducing the use of fossil fuels.



Which of these is **not** an example of the bicycle using mechanical energy?

- A The pedals, gears, and chain help turn the wheels.
- **B** The wheels turn when the bicycle moves.
- **C** The front wheel guides the bicycle as it moves.
- **D** The reflector allows the bicycle to be seen at night.

Dual Coding	Content	Readiness
Duai Counig	Process	
Stimulus		
Thinking		
Related SEs		

Data Analysis							
Item	State	Local	Error Analysis				
Α	4		Guessing				
В	5		Careless Error				
С	5		Stopped too Early				
D*	87		☐Mixed Up Concepts				



<b>5.6(A)</b> explore the uses of energy, including mechanical, light, thermal, electrical, and sound energy			Analysis of Assessed Standards				
2015 – Q39		Dual Coding		Content	Readiness		
				Process			
30	n a bat searches for prey at night, it makes sounds as it flies, and it uses the						
33	sounds' echoes to find its prey. When the bat flies and listens to echoes to locate		Stimulus				
	prey, it is using —	Thinking					
	A thermal energy and light energy	Related SEs					
	<b>B</b> sound energy and thermal energy						
	C mechanical energy and sound energy	Data Analysis			nalysis		
	The change and goal a chergy	Item	State	Local	Error Analysis		
	light energy and mechanical energy	Α	1		□Guessing		
		В	32		☐Careless Error		
		C*	65		Stopped too Early		
		D	2		☐Mixed Up Concepts		
		Implications for Instruction/Notes					
* Co	prrect answer (C)						

# **Analysis of Assessed Standards** 5.6(A) explore the uses of energy, including mechanical, light, thermal, electrical, and sound energy Content Readiness **Dual Coding** 2014 - Q19 Process 5.2(D) 19 A class is learning about states of matter. The teacher shows the students how to set up the investigation shown in the diagram. **Stimulus Thinking Related SEs Data Analysis** State Local Item Candle **Error Analysis** Α 24 ☐Guessing Careless Error Stopped too Early Mixed Up Concepts В\* 55 С 15 D 5 Implications for Instruction/Notes Wood block What kinds of energy are needed in this investigation to change the state of matter of the candle? A Light, mechanical, and thermal **B** Electrical and thermal C Mechanical, light, and electrical **D** Thermal and mechanical \* Correct answer (B)

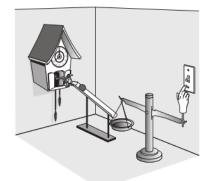
# **5.6(A)** explore the uses of energy, including mechanical, light, thermal, electrical, and sound energy

#### 2014 - Q44

44 Rube Goldberg was an artist who drew cartoons that showed a very complicated way to do a simple task. The picture below shows a cartoon like the ones Goldberg drew.

How to Turn On a Light Switch the Rube Goldberg Way

- 1. The bird in the clock hits the ball.
- 2. The ball rolls down the ramp.
- 3. The ball falls into the balance pan.
- 4. The balance pan moves down.
- 5. The hand moves up.
- 6. The switch turns on.



Data Analysis Item State Local **Error Analysis** F 4 ☐Guessing G ☐Careless Error 1 10 ☐Stopped too Early Н ☐Mixed Up Concepts J\* 84

Implications for Instruction/Notes

**Analysis of Assessed Standards** 

Process 5.2(C)

Content

**Dual Coding** 

Stimulus
Thinking
Related SEs

Readiness

Which form of energy is used to turn on the switch?

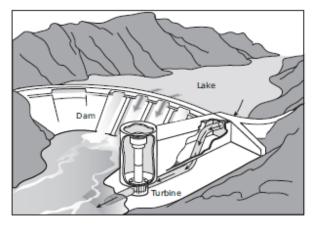
- F Light energy
- **G** Thermal energy
- **H** Electrical energy
- J Mechanical energy

# \* Correct answer (J)

# **5.6(A)** explore the uses of energy, including mechanical, light, thermal, electrical, and sound energy

# 2013 - Q6

6 Water flows through turbines in dams like the one shown below. The flowing water makes the turbines spin.



What type of energy is used to make the turbines spin in this type of dam?

- F Light energy
- G Thermal energy
- H Sound energy
- J Mechanical energy

# \* Correct answer (J)

# **Analysis of Assessed Standards**

Dual Coding	Content	Readiness
	Process	5.2(D)
Stimulus		
Thinking		
Related SEs		

Data Analysis								
Item	State	Local	Error Analysis					
F	2		Guessing					
G	8		Careless Error					
Н	1		Stopped too Early					
J*	89		☐Mixed Up Concepts					



<b>5.6(A)</b> explore the uses of energy, including mechanical, light, thermal, electrical, and sound energy			Analysis of Assessed Standards			
2013 – Q18	Dual C	Dual Coding		Readiness		
2013 – Q16	Duai			5.2(D)		
10 There different abiests that we the second of second as the second of						
18 Three different objects that use the same source of energy are shown below.						
	Thinkii	Thinking				
	Related	Related SEs				
0000			nalysis			
	Item	State	Local	Error Analysis		
	F*	63		☐Guessing		
	G	8		☐Careless Error		
Energy-efficient Calculator Satellite	Н	0		☐Stopped too Early		
nouse	J	28		☐Mixed Up Concepts		
What is the energy source for these objects?						
F Light energy	lr	nplicat	ions for li	nstruction/Notes		
<b>G</b> Mechanical energy						
H Sound energy						
J Electrical energy						
* Correct answer (F)						

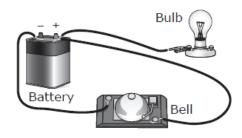
Units:

5.6(B) demonstrate that the flow of electricity in circuits requires a complete
path through which an electric current can pass and can produce light,
heat, and sound

**Analysis of Assessed Standards** 

#### 2015 - Q4

4 A group of students built the circuit shown below.



The lightbulb does not glow. Which statement explains this observation?

- **F** The battery is not charged.
- **G** The lightbulb is not part of a complete circuit.
- **H** The circuit does not have a switch.
- **J** The bell uses most of the energy from the battery.

\* Correct answer (G)

Dual Coding	Content	Readiness		
Duai Coung	Process	5.3(A)		
Stimulus				
Thinking				
Related SEs				
·				
Data Analysis				

Data Affaiysis						
Item	State	Local	Error Analysis			
F	1		☐Guessing			
G*	79		Careless Error			
Н	9		Stopped too Early			
J	10		☐Mixed Up Concepts			

## Implications for Instruction/Notes



<b>5.6(B)</b> demonstrate that the flow of electricity in circuits requires a complete path through which an electric current can pass and can produce light, heat, and sound		Analysis	s of Asse	ssed Standards
2015 – Q16	Dual Coding		Content	Readiness
2010 - Q10	Duai G	ounig	Process	
<b>16</b> Many types of fans are used in homes. One type of electric fan is shown below.				
	Stimul	ıs		
	Thinkir	ng		
	Related	l SEs		
		Data Analysis		
	Item	State	Local	Error Analysis
/	F*	74		Guessing
	G	9		☐Careless Error
	н	11		Stopped too Early
		5		☐Mixed Up Concepts
	J			
In addition to mechanical energy, which of these is produced as electric current	İr	nnlicati	one for Ir	nstruction/Notes
passes through the circuit of this fan?		присац	OHS IOI II	istruction/Notes
F Heat				
G Mass				
<b>H</b> Light				
J Water vapor				
* Correct answer (F)				

**5.6(B)** demonstrate that the flow of electricity in circuits requires a complete path through which an electric current can pass and can produce light, heat, and sound

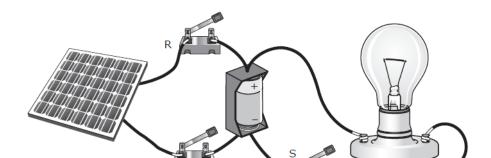
**Analysis of Assessed Standards** 

2015 – Q25

25 A simplified diagram of a system using solar energy is shown.

Dual Coding	Content	Readiness
Dual County	Process	5.4(A)
Stimulus		
Thinking		

**Related SEs** 



	Data Analysis					
Item	State	Local	Error Analysis			
Α	24		Guessing			
В	8		☐Careless Error			
C*	49		Stopped too Early			
D	19		☐Mixed Up Concepts			

To recharge the battery for later use without lighting the bulb, which of the following switches should be closed?

- A Switch S only
- B Switches R and S only
- C Switches R and T only
- **D** Switches R, S, and T

\* Correct answer (C)

Implications	for	Instruct	ion	'NIntac
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5.6(B) demonstrate that the flow of electricity in circuits requires a complete path through which an electric current can pass and can produce light, heat, and sound
2014 – Q15
15 The diagram shows the metal posts that are usually found on a battery.

Dual Coding	Content	Readiness
Dual County	Process	5.2(F)
Stimulus		
Thinking		
Related SEs		

**Analysis of Assessed Standards** 

Metal posts
Battery

Data Analysis					
Item	State	Local	Error Analysis		
Α	3		Guessing		
В*	75		☐Careless Error		
С	19		Stopped too Early		
D	3		Mixed Up Concepts		

The battery can be connected to a bell and a switch to produce sound. Which statement best explains why there are two metal posts on the battery?

- **A** The battery needs only one metal post to connect to the bell, but the other metal post is present in case the first post fails to work.
- **B** The battery needs to form a complete circuit that starts with one metal post and ends with the other metal post.
- **C** One metal post makes a complete circuit with the switch, and the other metal post makes a complete circuit with the bell.
- **D** One metal post makes the bell start to ring, and the other metal post makes the bell ring louder.

	*	Correct answer	(B)	١
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Implications	for	Instruction/Notes

**5.6(B)** demonstrate that the flow of electricity in circuits requires a complete **Analysis of Assessed Standards** path through which an electric current can pass and can produce light, heat, and sound Content Readiness 2014 - Q26 **Dual Coding** Process 5.2(D) **26** Most cars have lights, power locks, radios, and other equipment that use electricity. **Stimulus** Electric circuits power this equipment. Each circuit has a fuse that completes it. The picture below shows one type of fuse a car may have. **Thinking Related SEs** Glass case **Data Analysis** Metal wire Item State Local **Error Analysis** F 6 ☐Guessing ☐Careless Error Burned-out wire G\* 79 ☐Stopped too Early Н 14 Mixed Up Concepts J 1 Implications for Instruction/Notes Working fuse Burned-out fuse Which of these describes one thing that could happen if the wire in a car fuse burns out?

- F The car's lights will burn brighter.
- **G** The car's radio will not work.
- **H** The car's turn signal will blink too slowly.
- **J** The car's power windows will open faster.

*	Co	rrec	ct a	nsv	ver (	(G)
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land (
l€ad4ward

<b>5.6(B)</b> demonstrate that the flow of electricity in circuits requires a complete path through which an electric current can pass and can produce light, heat, and sound		Analysi	s of Asse	ssed Standards
2013 – Q16	Dual C	odina	Content	Readiness
2010 Q10		Dual County		
Battery	Stimul	ıs		
	Thinkir	ng		
	Related SEs			
100-07	Data Analysis			
T//	Item State Local			larysis
			Local	Error Analysis
	F*	63		□Guessing
Bulb 1 Switch Bulb 2 ♠ Bulb 3	G	21		Careless Error
	Н	10		Stopped too Early
Out wire	J	6		☐Mixed Up Concepts
here	J	0		
	Ir	nplicati	ions for Ir	nstruction/Notes
16 The diagram shows a series circuit with three lit bulbs. How many of the bulbs will remain lit if the wire is cut at the point shown by the arrow?				
F 0				
G 1				
H 2				
<b>J</b> 3				
* Correct answer (F)				



**5.6(B)** demonstrate that the flow of electricity in circuits requires a complete **Analysis of Assessed Standards** path through which an electric current can pass and can produce light, heat, and sound Content Readiness 2013 - Q35 **Dual Coding Process** 35 **Stimulus** Battery Battery holder **Thinking Related SEs Data Analysis** Item State Local **Error Analysis** 4 ☐Guessing ☐Careless Error Lightbulb В 14 ☐Stopped too Early C\* 78 Mixed Up Concepts D 3 Implications for Instruction/Notes Which of these changes to the electric dircuit shown above will cause the lightbulb to light up? A Straightening the wire so that the current can flow more easily B Adding a switch and more wire so that the current can flow more easily C Turning one battery so that its positive end connects to the other battery's

* Correct answer (C)					
<b>5.6(B)</b> demonstrate that the flow of electricity in circuits requires a complete path through which an electric current can pass and can produce light, heat, and sound	•	Analysi	s of Asse	ssed Standards	
0040 040			Content	Readiness	
3 – Q43		Dual Coding			
43 A string of lights with small bulbs is shown below. The bulbs are connected by wire that is covered with an insulator.	Stimul	us			
	Thinking				
	Related SEs				
	Data Analysis				
When the lights are on, electricity travels in —	Item A*	State 83	Local	Error Analysis	
When the lights are only electricity travels in	В	1		☐Guessing ☐Careless Error	
A a complete circuit	С	6		☐Stopped too Early	
B a sound wave	D	9		☐Mixed Up Concepts	
C a light ray	İr	mplicat	ions for Ir	nstruction/Notes	
D an incomplete path					
* Correct answer (A)					

negative end

D Making the length of wire the same on both sides of the lightbulb

SE: 5.6(C) Units:

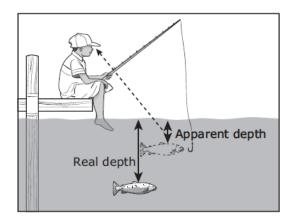
5.6(C) demonstrate that light travels in a straight line until it strikes an object **Analysis of Assessed Standards** or travels through one medium to another and demonstrate that light can be reflected such as the use of mirrors or other shiny surfaces and refracted such as the appearance of an object when observed through water Content Readiness **Dual Coding** 2015 - Q6Process 5.2(C) 6 A student looks into a mirror and sees an image of an object. Which diagram shows Stimulus an X where the object is most likely located? **Thinking** X **Related SEs** Mirror Data Analysis Mirror State Local Item F **Error Analysis** ☐Guessing Careless Error
Stopped too Early
Mixed Up Concepts G 8 Student Н 6 Student 2 Implications for Instruction/Notes Mirror Mirror G J Student Student \* Correct answer (F)

**5.6(C)** demonstrate that light travels in a straight line until it strikes an object or travels through one medium to another and demonstrate that light can be reflected such as the use of mirrors or other shiny surfaces and refracted such as the appearance of an object when observed through water

#### **Analysis of Assessed Standards**

2015 - Q19

19 The diagram below shows a fish being viewed from above the water.



The fish appears to be closer to the surface than it really is. What causes this difference?

- A Light is reflected.
- **B** Light is refracted.
- C Light is focused.
- **D** Light is blocked.

*	Cor	rect	ansv	wer	(B
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Dual Coding	Content	Readiness
	Process	5.2(D)
	1	
Stimulus		
Thinking		
Related SEs		

	Data Analysis										
Item	State	Local	Error Analysis								
Α	18		Guessing								
B*	78		☐Careless Error								
С	2		Stopped too Early								
D	2		☐Mixed Up Concepts								

#### Implications for Instruction/Notes

5.6(C) demonstrate that light travels in a straight line until it strikes an object **Analysis of Assessed Standards** or travels through one medium to another and demonstrate that light can be reflected such as the use of mirrors or other shiny surfaces and refracted such as the appearance of an object when observed through water Content Readiness **Dual Coding** 2015 - Q36 Process 5.2(D) 36 In 1859, Henry Bursill published a book of hand shadows. The picture below shows one of these hand shadows. **Stimulus Thinking Related SEs Data Analysis** State Item Local **Error Analysis** F 32 ☐ Guessing ☐Careless Error ☐Stopped too Early G 7 Н\* 59 ☐Mixed Up Concepts J 2 Implications for Instruction/Notes Which property of light makes it possible to produce hand shadows? F Light can be refracted. **G** Light is a form of energy. H Light travels in straight lines. J Light can be separated into different colors.

\* Correct answer (H)

**5.6(C)** demonstrate that light travels in a straight line until it strikes an object or travels through one medium to another and demonstrate that light can be reflected such as the use of mirrors or other shiny surfaces and refracted such as the appearance of an object when observed through water

#### **Analysis of Assessed Standards**

Content

**Process** 

**Dual Coding** 

Stimulus Thinking Readiness

#### 2014 - Q4

4 The picture below shows a child standing in a swimming pool.



Related	d SEs						
		Data A	Data Analysis				
Item	State	Local	Error Analysis				
F*	73		Guessing				
G	14		Careless Error				
Н	10		Stopped too Early				
J	3		☐Mixed Up Concepts				

Implications for Instruction/Notes

Why does the lower part of the child appear so much different in size from the upper part?

- **F** The light rays that travel through water and then into air are refracted.
- **G** The light rays that travel through water and then into air are enlarged.
- **H** The light rays that travel through air and then into water are reflected.
- J The light rays that travel through air and then into water are reduced.

\* Correct answer (F)

or t be	(C) demonstrate that light travels in a straight line until it strikes an object travels through one medium to another and demonstrate that light can reflected such as the use of mirrors or other shiny surfaces and refracted ch as the appearance of an object when observed through water	Analysis of Assessed Standards			
20.				Content	Readiness
2014 – Q22		Dual C	oumg	Process	5.2(D)
22	Some students paint the inside of several boxes. They paint each box a different color. They observe that the inside of the box painted white looks brighter than the others. What is the most likely reason this box looks brighter?	Stimul	us		
	F More light is reflected off white paint.	Thinkir	ng		
	G More light is refracted by white paint.	Related	d SEs		
	H More light passes through white paint.			Data Aı	aalveis
	J More light is absorbed by white paint.	Item	State	Local	
	Profe light is absorbed by write paint.	F*	54	Local	Error Analysis
		G	10		☐Guessing ☐Careless Error
		Н	11		Stopped too Early
		J	25		☐Mixed Up Concepts
			nplicati	ions for Ir	nstruction/Notes
* C	orrect answer (F)				

**5.6(C)** demonstrate that light travels in a straight line until it strikes an object **Analysis of Assessed Standards** or travels through one medium to another and demonstrate that light can be reflected such as the use of mirrors or other shiny surfaces and refracted such as the appearance of an object when observed through water Content Readiness 2014 - Q40**Dual Coding** Process 5.3(C) 40 The model shows a special glass fiber that is thinner than some metal wires. When light enters one end of the fiber, it moves through the fiber as shown. **Stimulus Thinking** Light entering fiber **Related SEs Data Analysis** State Item Local **Error Analysis** F\* 75 ☐Guessing Glass fiber G 4 ☐Careless Error Stopped too Early
Mixed Up Concepts Н 4 Light leaving 17 fiber Implications for Instruction/Notes After the light leaves the fiber, it travels -F in a straight line G back into the fiber H around the fiber **J** in a curve \* Correct answer (F)



<b>5.6(C)</b> demonstrate that light travels in a straight line until it strikes an object or travels through one medium to another and demonstrate that light can be reflected such as the use of mirrors or other shiny surfaces and refracted such as the appearance of an object when observed through water	•	Analysis	of Asse	ssed Standards	
2013 – Q4			Content	Readiness	
2010 Q4	Dual C	·g	Process		
4 Which of these best demonstrates the reflection of light?	Stimul	ıs			
F Looking through the glass of a large window	Thinking				
G Looking at an image formed on a silver spoon	Related	d SEs			
Cooking at an image formed on a sirver spoon					
H Looking at a lightbulb that is glowing		Data Analysis			
Tooking at a right ball a fact to glowing	Item	State	Local	Error Analysis	
J Looking at a star on a clear night	F	17		☐Guessing	
	G*	77		☐Careless Error	
	Н	4		Stopped too Early	
	J	3		☐Mixed Up Concepts	
			Implications for Instruction/Notes		

**5.6(C)** demonstrate that light travels in a straight line until it strikes an object or travels through one medium to another and demonstrate that light can be reflected such as the use of mirrors or other shiny surfaces and refracted such as the appearance of an object when observed through water

# **Analysis of Assessed Standards**

Stimulus

Thinking

Related SEs

Prism
-------

23 When light travels through air into a prism, it bends and separates into many colors.

Data Analysis

Item State Local Error A

Implications for Instruction/Notes

In which other situation does light bend?

- A When light moves through air into water
- B When light hits a wall
- C When light passes through outer space
- D When light hits a mirror

\* Correct answer (A)

\* Correct answer (G)

2013 - Q23

5.6(C) demonstrate that light travels in a straight line until it strikes an object **Analysis of Assessed Standards** or travels through one medium to another and demonstrate that light can be reflected such as the use of mirrors or other shiny surfaces and refracted such as the appearance of an object when observed through water Content Readiness 2013 - Q31 **Dual Coding** Process 5.3(C) 31 Scientists use telescopes to make distant objects appear doser. Some parts of a **Stimulus** telescope are shown below. **Thinking** Objective lens **Related SEs** Data Analysis State Item Local **Error Analysis** 60 Α ☐ Guessing Incoming light ☐Careless Error ☐Stopped too Early В 5 С 3 Which of the following best describes how the objective lens of this telescope helps a ☐Mixed Up Concepts D\* 31 scientist observe the moon? Implications for Instruction/Notes A The objective lens produces light. B The objective lens blocks light. C The objective lens reflects light. D The objective lens refracts light.

\* Correct answer (D)

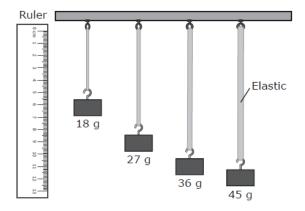
SE 5.6(D)

SE: 5.6(D) Units:

5.6(D) design an experiment that tests the effect of force on an object

2015 - Q31

31 A student designs an experiment to test the effect of the width of a piece of elastic on the elastic's ability to stretch. The student selects four pieces of elastic with different widths but the same length. The student then attaches blocks with different masses to the pieces of elastic. The results of the student's experiment are shown below.



What should the student do to improve this experiment?

- A Use blocks of equal mass on the four pieces of elastic
- B Use blocks with enough mass to cause the four pieces of elastic to break
- C Use more than four pieces of elastic and four blocks
- **D** Use four pieces of elastic with different lengths but the same width
- \* Correct answer (A)

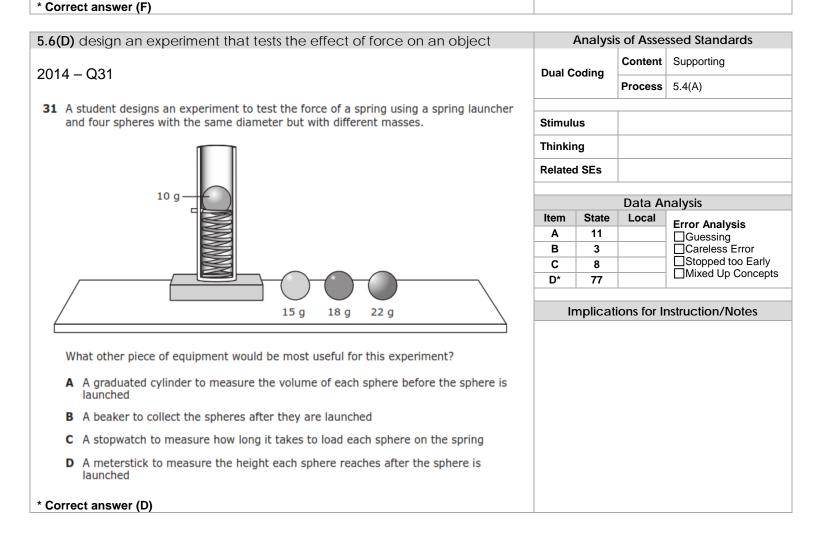
Analysis of Assessed Standards							
Dual Coding	Content	Supporting					
Zua. Coung	Process	5.2(A)					
	ı						
Stimulus							
Thinking							
Related SEs							

Data Analysis						
Item	State	Local	Error Analysis			
A*	43		Guessing			
В	12		☐Careless Error			
С	12		Stopped too Early			
D	33		☐Mixed Up Concepts			

#### Implications for Instruction/Notes



#### **Analysis of Assessed Standards** 5.6(D) design an experiment that tests the effect of force on an object Content Supporting **Dual Coding** 2014 - Q10 Process 5.2(A) 10 A student observes that the craters on the moon are different sizes. The student designs an experiment to study the formation of craters. The materials for the Stimulus experiment are marbles and a pan of flour. The student makes a hypothesis that the **Thinking** size of the craters made on the surface of the flour will depend on the height from which the marble is dropped. Some of the steps in the student's experiment are **Related SEs** described below. **Data Analysis** 1. Fill a round pan with flour State Local Item **Error Analysis** 2. Smooth out the flour in the pan F\* 50 ☐Guessing ☐Careless Error ☐Stopped too Early G 14 н 30 4. For each trial, measure the size of the crater Mixed Up Concepts formed and then smooth out the flour again J 6 Implications for Instruction/Notes Which of these is most likely Step 3 in the student's experiment? F Drop the same marble from different heights into the pan of flour **G** Drop marbles of different masses from the same height into the pan of flour H Drop marbles of different sizes from different heights into the pan of flour J Drop a single marble one time into the pan of flour



5.6(D) design an experiment that tests the effect of force on an object		Analysi	s of Asse	ssed Standards
2042 044			Content	Supporting
2013 – Q41	Dual Coding		Process	5.2(B)
41 A student uses a spring scale to pull a 50-gram block horizontally across a wood desk. Then the student pulls the block the same distance across surfaces of carpet,	Stimulus			
sandpaper, and glass.	Thinkin	ng		
50 g block Spring scale	Related	l SEs		
	Item	State	Data Aı Local	naiysis
		10	Local	Error Analysis
Desk	A B*	69		Guessing
		5		☐Careless Error ☐Stopped too Early
Which question is this investigation most likely designed to answer?	С			☐Mixed Up Concepts
	D	16		
A How do blocks of different sizes react to force?				
B How do different surfaces affect the amount of force needed to move a block?	In	nplicat	ions for Ir	nstruction/Notes
C How do blocks affect spring scales?				
D How does the mass of a block change when it is pulled across a desk?				
* Correct answer (B)				

IQ Analysis	Investigating	the Question

SE 5.7(A)

RC: 3

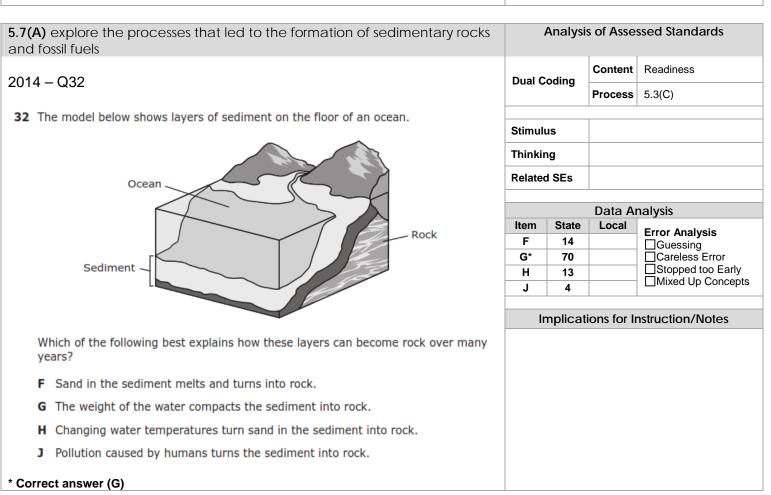
SE: 5.7(A)

Units:

<b>5.7(A)</b> explore the processes that led to the formation of sedimentary rocks and fossil fuels	l l	Analysis	s of Asse	ssed Standards
2015 – Q20	Dual Coding		Content	Readiness
2013 – Q20			Process	
20 Fossil fuels formed over long periods of time after particles in water settled to the				
sea floor and formed marine mud. What kinds of particles needed to be present in the marine mud in order for fossil fuels to form?		ıs		
	Thinkin	g		
F Mostly sand and a few small bits of wood	Related	SEs		
<b>G</b> Mostly decaying organisms			Data A	achucic
H Mostly lava and a few sedimentary rocks	Item	State	Data Aı Local	
J Mostly metal minerals	F	7		Error Analysis  ☐Guessing
Trosaly metal minorals	G*	75		☐Careless Error
	Н	14		☐Stopped too Early ☐Mixed Up Concepts
	J	4		
	In	nnlicati	ons for Ir	nstruction/Notes
		iplicati	0113 101 11	istraction/14otes
* Correct answer (G)				
5 7(A) explore the processes that led to the formation of sedimentary rocks	 	Analysis	s of Asse	ssed Standards
5.7(A) explore the processes that led to the formation of sedimentary rocks and fossil fuels	<i>P</i>	Analysis	s of Asse	ssed Standards
5.7(A) explore the processes that led to the formation of sedimentary rocks and fossil fuels	ļ ,	Analysis		
	Dual Co		Content	Readiness
and fossil fuels				
and fossil fuels  2015 – Q44  44 Some students make a model to show one of the first steps in the formation of	Dual Co	oding	Content	Readiness
<ul> <li>and fossil fuels</li> <li>2015 – Q44</li> <li>44 Some students make a model to show one of the first steps in the formation of sedimentary rock. The students pour 2 centimeters of light-colored sand into a clear</li> </ul>		oding	Content	Readiness
<ul> <li>and fossil fuels</li> <li>2015 – Q44</li> <li>44 Some students make a model to show one of the first steps in the formation of sedimentary rock. The students pour 2 centimeters of light-colored sand into a clear plastic box. Then they add 1 centimeter of gravel. Finally they pour 2 centimeters of dark-colored sand on top of the gravel. Which characteristic of sedimentary rock</li> </ul>	Dual Co	oding	Content	Readiness
<ul> <li>and fossil fuels</li> <li>2015 – Q44</li> <li>44 Some students make a model to show one of the first steps in the formation of sedimentary rock. The students pour 2 centimeters of light-colored sand into a clear plastic box. Then they add 1 centimeter of gravel. Finally they pour 2 centimeters of</li> </ul>	Dual Co	oding us	Content	Readiness
<ul> <li>and fossil fuels</li> <li>2015 – Q44</li> <li>44 Some students make a model to show one of the first steps in the formation of sedimentary rock. The students pour 2 centimeters of light-colored sand into a clear plastic box. Then they add 1 centimeter of gravel. Finally they pour 2 centimeters of dark-colored sand on top of the gravel. Which characteristic of sedimentary rock</li> </ul>	Dual Co Stimulu	oding us	Content	Readiness 5.3(C)
<ul> <li>and fossil fuels</li> <li>2015 – Q44</li> <li>44 Some students make a model to show one of the first steps in the formation of sedimentary rock. The students pour 2 centimeters of light-colored sand into a clear plastic box. Then they add 1 centimeter of gravel. Finally they pour 2 centimeters of dark-colored sand on top of the gravel. Which characteristic of sedimentary rock does this model best show?</li> </ul>	Dual Co Stimulu	oding us	Content	Readiness 5.3(C)
<ul> <li>and fossil fuels</li> <li>2015 – Q44</li> <li>44 Some students make a model to show one of the first steps in the formation of sedimentary rock. The students pour 2 centimeters of light-colored sand into a clear plastic box. Then they add 1 centimeter of gravel. Finally they pour 2 centimeters of dark-colored sand on top of the gravel. Which characteristic of sedimentary rock does this model best show?</li> <li>F Sedimentary rock is made of layers.</li> </ul>	Dual Co Stimulu Thinkin Related	oding as g	Content Process	Readiness  5.3(C)  nalysis  Error Analysis  Guessing
<ul> <li>and fossil fuels</li> <li>2015 – Q44</li> <li>44 Some students make a model to show one of the first steps in the formation of sedimentary rock. The students pour 2 centimeters of light-colored sand into a clear plastic box. Then they add 1 centimeter of gravel. Finally they pour 2 centimeters of dark-colored sand on top of the gravel. Which characteristic of sedimentary rock does this model best show?</li> <li>F Sedimentary rock is made of layers.</li> <li>G Sedimentary rock is cemented bits of rock.</li> <li>H Sedimentary rock is often limestone.</li> </ul>	Stimulu Thinkin Related Item F* G	oding  ISS  State  82  11	Content Process	Readiness  5.3(C)  nalysis  Error Analysis  Guessing Careless Error
<ul> <li>and fossil fuels</li> <li>2015 – Q44</li> <li>44 Some students make a model to show one of the first steps in the formation of sedimentary rock. The students pour 2 centimeters of light-colored sand into a clear plastic box. Then they add 1 centimeter of gravel. Finally they pour 2 centimeters of dark-colored sand on top of the gravel. Which characteristic of sedimentary rock does this model best show?</li> <li>F Sedimentary rock is made of layers.</li> <li>G Sedimentary rock is cemented bits of rock.</li> </ul>	Stimulu Thinkin Related  Item F* G H	oding  ISS  State  82  11  4	Content Process	Readiness  5.3(C)  nalysis  Error Analysis  Guessing Careless Error Stopped too Early
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<b>5.7(A)</b> explore the processes that led to the formation of sedimentary rocks and fossil fuels			4	Analysi	s of Asse	ssed Standards
2014 – Q20		Dual C	Dual Coding		Readiness	
		QZU	Duui 0	- Cumg	Process	
20	ΔΠ	of these are related to the formation of oil or natural das EVCEDT —				
20	All	of these are related to the formation of oil or natural gas <b>EXCEPT</b> —	Stimul	us		
	F	decomposed animals	Thinkir	ng		
	G	decayed plants	Related	d SEs		
	Н	sedimentary rocks				
	п	Sedifferitally focks			Data Aı	nalysis
	J	active volcanoes	Item	State	Local	Error Analysis
			F	11		☐Guessing
			G	7		☐Careless Error
			Н	28		Stopped too Early
			J*	53		☐Mixed Up Concepts
		Ir	nplicat	ions for Ir	nstruction/Notes	
* Cor	rect	answer (J)				





<b>5.7(A)</b> explore the processes that led to the formation of sedimentary rocks and fossil fuels	,	Analysi	s of Asse	ssed Standards
2013 – Q17	Dual Coding		Content	Readiness
2010 – Q17			Process	5.2(D)
17 The diagram below shows the sequence of the processes that turn solid rock into sandstone.	Stimulu	ıs		
	Thinkir	ng		
Solid rock Weathering, erosion, and → Beach sand ? → Sandstone	Related	l SEs		
deposition deposition				
			Data A	nalysis
	Item	State	Local	Error Analysis
Which two processes best complete this diagram?	Α	14		☐Guessing
A Melting and cooling	В	37		☐Careless Error
A Prefuting and cooling	C*	43		Stopped too Early
B Erosion and compaction	D	6		☐Mixed Up Concepts
C Compaction and cementation	In	nnlicat	ions for l	nstruction/Notes
D Evaporation and dissolving		приса	10113 101 11	istruction/ivotes
Evaporation and dissolving				
* Correct answer (C)				

SE: 5.7(B) Units:

**5.7(B)** recognize how landforms such as deltas, canyons, and sand dunes are the result of changes to Earth's surface by wind, water, and ice

2015 - Q22

22 The photograph below shows a canyon in northern Arizona.



Canyon walls

Which of these describes how this canyon was most likely formed?

- F Floods eroded the sandstone away from the canyon walls.
- G Glaciers eroded the canyon rock as they melted and moved.
- H Ice wedged into cracks in the rock and weathered the canyon walls.
- J Wind blew large rocks that smashed against the canyon walls.

*	Col	rect	answer	(F

Analysis of Assessed Standards							
Dual Coding	Content	Readiness					
	Process	5.2(D)					
Stimulus	Stimulus						
Thinking							
Related SEs							

Data Analysis						
Item	State	Local	Error Analysis			
F*	53		Guessing			
G	14		☐Careless Error			
Н	19		Stopped too Early			
J	13		Mixed Up Concepts			

#### Implications for Instruction/Notes



**5.7(B)** recognize how landforms such as deltas, canyons, and sand dunes are the result of changes to Earth's surface by wind, water, and ice

2015 - Q40

40 A wide U-shaped valley is shown in the photograph below.



Dual Coding		Content	Readiness
		Process	5.2(D)
Stimulu	ıs		
Thinkir	ng		
Related SEs			
		Data Aı	nalysis
Item	State	Local	Error Analysis
F	23		Guessing
G*	67		☐Careless Error
Н	6		Stopped too Early
J	3		☐Mixed Up Concepts
le	nnlicati	one for l	astruction/Notes

**Analysis of Assessed Standards** 

This valley was most likely formed by -

F flash flooding

G a glacier

H a hurricane

J melting snow

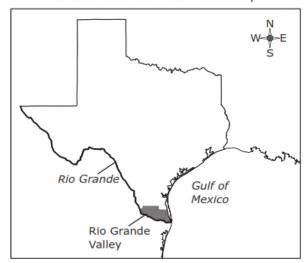
\* Correct answer (G)

**5.7(B)** recognize how landforms such as deltas, canyons, and sand dunes are the result of changes to Earth's surface by wind, water, and ice

#### 2014 - Q8

**8** The Rio Grande Valley is located at the southern tip of Texas at the end of a long river known as the Rio Grande.

Location of the Rio Grande Valley



How did the delta at the end of the Rio Grande form?

- F Sand and mud from the Gulf of Mexico were washed ashore by tsunamis.
- **G** The river cut through the solid bedrock of the valley.
- **H** The river deposited large amounts of sediment from land erosion.
- **J** Hurricanes pushed soil and debris from the Gulf of Mexico onto the land.

#### \* Correct answer (H)

Analysis of Assessed Standards						
Dual Coding	Content	Readiness				
Dual County	Process	5.2(D)				
Stimulus						
Thinking						
Related SEs						

Data Analysis						
Item	State	Local	Error Analysis			
F	5		Guessing			
G	18		Careless Error			
H*	72		Stopped too Early			
J	4		☐Mixed Up Concepts			

### Implications for Instruction/Notes

<b>5.7(B)</b> recognize how landforms such as deltas, canyons, and sand dunes are the result of changes to Earth's surface by wind, water, and ice	Δ	Analysi	s of Asse	ssed Standards
2014 – Q24	Dual Coding		Content	Readiness
2014 - Q24	Duai Ge	zamig	Process	
24 A student hiking in a rocky area on a mountain notices that wide, deep cracks have				
formed in some of the large rocks. Some of the cracks are so large that the rocks have broken apart. Which process most likely caused these rocks to crack and	Stimulu	s		
break?	Thinkin	g		
<b>F</b> Erosion by wind	Related	SEs		
<b>G</b> Water freezing and thawing			Data Aı	nalveie
H Erosion by fast-moving water	Item	State	Local	
	F	24		Error Analysis  ☐Guessing
J Sediments being deposited	G*	48		☐Careless Error
	Н	19		☐Stopped too Early ☐Mixed Up Concepts
	J	9		□ winxed ob concepts
	lm	nnlicat	ions for Ir	nstruction/Notes
		ipiicat	10113 101 11	isti detion/14otes
* Correct answer (G)				
•				
<b>5.7(B)</b> recognize how landforms such as deltas, canyons, and sand dunes are the result of changes to Earth's surface by wind, water, and ice	Д	Analysi	s of Asse	ssed Standards
2013 – Q20	Dual Co	odina	Content	Readiness
2010 - 420	Process		Process	
20 Gladers are masses of ice that move slowly on land. Which of these features was	Stimulu	s		

**Thinking** 

Item

G

Н

**Related SEs** 

State

62

13

23

Data Analysis

Implications for Instruction/Notes

Error Analysis

Guessing
Careless Error
Stopped too Early
Mixed Up Concepts

Local



\* Correct answer (F)

most likely formed by a glacier?

F A wide valley

G A deep ocean

J A mountain range

H A lava flow

	Analy	ısis l	Investic	atina	the	Question
_	,a.	, 0.0	1111000110	1 - 1 - 1 - 1 - 1		200011011

SE 5.7(C)

RC: 3

SE: 5.7(C) Units:

<b>5.7(C)</b> identify alternative energy resources such as wind, solar, hydroelectric, geothermal, and biofuels			Analysis of Assessed Standards					
2015 – Q7				Dual C	oding	Content		
<b>7</b> An	energy company wants to build a hydr	ooloctr	ic nower plant Whi	ch of those			Process	5.2(D)
cha	aracteristics of an area is most importal wer plant?				Stimul	ıs		
					Thinkir	ng		
A	The area has a cool, rainy climate.				Related	d SEs		
В	The area is located in a valley with ver	y little	wind and frequent	heavy fog.			1	
С	The area has a river that flows rapidly	from n	earby mountains th	rough a valley.	Item	State	Data Ar Local	
D	The area has no geysers or hot springs	6.			A	15	Local	Error Analysis  ☐Guessing
	3,7 1 3				В	7		☐Careless Error
* Corre	ct answer (C)				C*	68		☐Stopped too Early ☐Mixed Up Concepts
000					D	9		
					Ir	nplicat	ions for Ir	nstruction/Notes
E 7(0)						۸ ا:		d Ck dd-
	identify alternative energy resourd electric, geothermal, and biofuels		ch as wind, solar,		•	Anaiysi	s of Asses	ssed Standards
2015 -	- Q38				Dual C	Readiness		
20.4	of COL and a students was	leder	- Drawn - Eliza - an array	and the Man			Process	
sc	group of fifth-grade students was resea hool library. Each student made a list of ternative energy resources?				Stimul	ıs		
ait	erriative energy resources:				Thinkir	ng		
	Alternative Energy Resources		Alternative Energy Resources	/	Related	d SEs		
							Data Ar	nalysis
F	Wind     Solar	н	Hydroelectric     Coal		Item	State	Local	Error Analysis
	• Oil		• Gas		F	10		Guessing
	Geothermal		• Wind		G	8		Careless Error
			***************************************		H J*	8		☐Stopped too Early ☐Mixed Up Concepts
					J"	74		· · ·
	Alternative Energy Resources		Alternative Energy Resources	′	Ir	nplicat	ions for Ir	nstruction/Notes
	Biofuel		• Solar					
G	• Coal	J	Biofuel					
	Geothermal		• Wind					
	• Solar		Geothermal					



\* Correct answer (J)

<b>5.7(C)</b> identify alternative energy resources such as wind, solar, hydroelectric, geothermal, and biofuels		Analy	sis of Asse	ssed Standards
2014 – Q6	Dua	Dual Coding		Readiness
			Process	
6 Which of the methods of generating electricity shown below does NOT unalternative energy resources?	Jse Stir	nulus		
	Thi	nking		
	Rel	ated SEs		
	2		5	
	Ite	n State	Data A Local	
F A H	F		Local	Error Analysis
	4 G	_		☐Guessing ☐Careless Error
	H	_		☐Stopped too Early
	J	16		☐Mixed Up Concepts
		Implica	ations for I	nstruction/Notes
Correct answer (F)				
<b>5.7(C)</b> identify alternative energy resources such as wind, solar, hydroelectric, geothermal, and biofuels		Analy	sis of Asse	ssed Standards
2014 – Q38	Dua	al Coding	Content	Readiness
2011 400		·	Process	
<b>38</b> Which alternative energy source is generated beneath Earth's crust and can be used to heat buildings?	Stir	nulus		
F Hydroelectric energy		nking		
<b>G</b> Geothermal energy		ated SEs		
H Wind energy				
			Data A	nalysis
J Solar energy	Ite	n State	Local	Error Analysis
	F			☐Guessing
	G			Careless Error
	Н			☐Stopped too Early ☐Mixed Up Concepts
	J	12		
		Implica	ations for I	nstruction/Notes
		-		
* Correct answer (G)				

5.7(C) identify alternative energy resources such as wind, solar, **Analysis of Assessed Standards** hydroelectric, geothermal, and biofuels Readiness Content 2013 - Q24 **Dual Coding** Process 5.2(D) 24 The poster shown below advertises tours of a power plant. Stimulus **Thinking** Visit the Power Plant **Related SEs** We have enough cheap energy to last thousands of years. **Data Analysis** Our energy does not pollute the air. Here's how it works. Power plant Cold water into well Steam from nearby well Water flowing through hot rocks underground

This power plant produces electricity most likely by using -

- F fossil fuels
- G biofuels
- H solar energy
- J geothermal energy
- \* Correct answer (J)

Item	State	Local	Error Analysis
F	11		Guessing
G	13		☐Careless Error
Н	14		Stopped too Early
	62		☐Mixed Up Concepts
<u> </u>	02		
lr	nnlicati	ons for Ir	nstruction/Notes
	iipiicati	0113 101 11	istraction/redics



•	identify alternative energy resources such as wind, solar, pelectric, geothermal, and biofuels	,	Analysi	s of Asses	ssed Standards
2013 – Q30		Dual Coding		Content	Readiness
2013	2013 – Q30		Juliy	Process	5.1(B)
30	Many cities are taking actions to cause less harm to the environment. Which action produces energy from an alternative source?	Stimulu	ıs		
	F Burning coal to heat homes	Thinkin			
	G Replacing lawns with plants that require less water	Related	I SEs		
	H Using biofuels to generate electricity			Data Ar	nalysis
	Building a new water-treatment plant to improve water quality	Item	State	Local	Error Analysis
	5 balang a new water-treatment plant to improve water quality	F G	15 16		☐Guessing ☐Careless Error
		H*	54		☐Stopped too Early
		J	15		☐Mixed Up Concepts
		In	nplicat	ons for Ir	nstruction/Notes
		Ir	nplicat	ons for Ir	nstruction/Notes
		Ir	nplicat	ons for Ir	nstruction/Notes
* Cori	ect answer (H)	In	nplicat	ons for Ir	nstruction/Notes



3 1 0 0	Unite	
IQ Analysis   Investigating the Question	SE 5.8(A)	RC: 3

5.8(A) differentiate between weather and climate	А	nalysis	of Asses	ssed Standards
2011			Content	Supporting
2014 – Q18	Dual Coding		Process	
18 Each school year for 30 years, the amount of rain that fell at a school was measured				
and recorded. Tracking rainfall over a long period provides the most information about which characteristic of an area?	Stimulus	s		
	Thinking	g		
F Climate	Related	SEs		
<b>G</b> Temperature of one day			<b>5</b>	
<b>H</b> Weather	Item	State	Data Ar Local	
J Type of soil	F*	71	Local	Error Analysis ☐Guessing
	G	2		☐Careless Error
	Н	26		Stopped too Early
	J	1		☐Mixed Up Concepts
	_			
	Im	plicati	ons for Ir	nstruction/Notes
* Correct answer (F)				
5.8(A) differentiate between weather and climate	Λ	nalysis	of Accor	ssed Standards
5.8(A) differentiate between weather and climate	^	illalysis		
2013 – Q37	Dual Co	ding	Content	Supporting
			Process	
37 Which of these best describes dimate rather than weather?	Stimulus			
A Wind speed is changing as a storm moves through an area.	Thinking	g		
B The temperature is decreasing in a slow-moving cold front.	Related	SEs		
C Annual high temperatures in the summer have increased over many decades.			Data Ar	nalveie
D The rainfall during one year was greater than the rainfall during the following	Item	State	Local	
year.	A	11		Error Analysis  ☐Guessing
	В	15		☐Careless Error
	C*	49		Stopped too Early
	D	24		☐Mixed Up Concepts



Implications for Instruction/Notes

\* Correct answer (C)

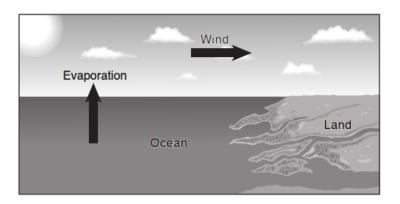
SE 5.8(B)

**RC: 3** 

5.8(B) Units:

5.8(B) explain how the Sun and the ocean interact in the water cycle

2014 - Q27



- **27** The diagram above shows the process of evaporation over the ocean. What is the most likely effect of this process on the land areas nearby?
  - A Increased drought conditions
  - **B** Decreased erosion of the shoreline
  - C Increased precipitation
  - **D** Decreased solar energy
- \* Correct answer (C)

Analysis of Assessed Standards				
Dual Coding	Content	Supporting		
Duai Counig	Process			
Stimulus				
Thinking				
Related SEs				
Data Δnalvsis				

		Data A	nalysis
Item	State	Local	Error Analysis
Α	16		Guessing
В	17		☐Careless Error
C*	62		Stopped too Early
D	5		☐Mixed Up Concepts

Implications for Instruction/Notes

5.8(B) explain how the Sun and the ocean interact in the water cycle

2013 - Q15

- 15 Which of the following events in the water cycle is an example of solar energy being absorbed?
  - A Water vapor condensing to form douds
  - B Water evaporating from the surface of an ocean
  - C Rain freezing as it falls toward the ground
  - D Clouds releasing predpitation over a mountain

Analysis of Assessed Standards					
Dual Coding	Content	Supporting			
Duai County	Process				
Stimulus					
Thinking					
Related SEs					
Data Analysis					

Data Analysis							
Item	State	Local	Error Analysis				
Α	21		Guessing				
В*	73		Careless Error				
С	3		Stopped too Early				
D	4		☐Mixed Up Concepts				

<b>Implica</b>	tions foi	r Instruction	/Notes
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\* Correct answer (B)

10:15 A.M.

# SE: 5.8(C)

**Units:** 

**5.8(C)** demonstrate that Earth rotates on its axis once approximately every **Analysis of Assessed Standards** 24 hours causing the day/night cycle and the apparent movement of the Sun across the sky Readiness Content **Dual Coding** 2015 - Q18 Process 5.2(C) 18 A student draws diagrams of her house and the location of the sun in the sky. Which diagram below does **not** correctly represent the location of the sun at the time **Stimulus** indicated? **Thinking Related SEs** Data Analysis Item State Local **Error Analysis** Guessing
Careless Error
Stopped too Early F 12 West East East G 21 12:05 р.м. 8:45 а.м. Н\* 51 ☐Mixed Up Concepts 16 J Implications for Instruction/Notes G

7:00 P.M.

* Correct answer (H)						
<b>5.8(C)</b> demonstrate that Earth rotates on its axis once approximately every 24 hours causing the day/night cycle and the apparent movement of the Sun across the sky	Analysis of Assessed Standards					
2015 – Q33		Dual Coding		Readiness		
				5.3(A)		
<b>33</b> A student is looking for evidence that Earth is always rotating on its axis. Which of the following would provide the best evidence?	Stimulu					
the following would provide the best evidence:	Stimulu	ıs				
A The different amount of rain that falls each day	Thinking					
<b>B</b> The appearance of shadows changing throughout the day	Related SEs					
C The presence of other planets in the night sky						
The presence of care, prantees in and right only	•.		Data Analysis			
<b>D</b> The different phases of the moon in a month	Item	State	Local	Error Analysis		
	A	3		☐Guessing_		
	B*	67		☐Careless Error ☐Stopped too Early		
	С	6		☐Mixed Up Concepts		
	D	24				
		Implications for Instruction/Notes				
* Correct answer (B)						



5.8(C) demonstrate that Earth rotates on its axis once approximately every **Analysis of Assessed Standards** 24 hours causing the day/night cycle and the apparent movement of the Sun across the sky Content Readiness 2014 - Q1 **Dual Coding** Process 5.3(C) 1 Some students used a globe to model the rotation of Earth. They shaded in Texas on the globe, as shown below. They rotated the globe and observed that Texas was in **Stimulus** exactly the same place after each rotation. **Thinking Related SEs Data Analysis** Item State Local **Error Analysis** 2 ☐Guessing ☐Careless Error В 1 ☐Stopped too Early C\* 86 Mixed Up Concepts 10 D Implications for Instruction/Notes The students could rotate the globe quickly or slowly. If the globe could rotate only at

the rate that Earth actually rotates, about how long would each complete rotation

take?

A 30 days

B 60 minutes

C 24 hours

D 365 days

\* Correct answer (C)



5.8(C) demonstrate that Earth rotates on its axis once approximately every **Analysis of Assessed Standards** 24 hours causing the day/night cycle and the apparent movement of the Sun across the sky Content Readiness 2014 - Q35 **Dual Coding** 5.2(D) Process 35 Shadows cast by objects change throughout the day. The picture below shows the **Stimulus** shadow cast by a tree at 3:00 P.M. **Thinking** View from Above **Related SEs Data Analysis** Item State Local **Error Analysis** Α\* 63 ☐Guessing ☐Careless Error В 8 ☐Stopped too Early С 18 Mixed Up Concepts D 11 Which picture shows how the tree's shadow most likely looked at 9:00 A.M.? Implications for Instruction/Notes View from Above View from Above Tree View from Above View from Above В

Tree

\* Correct answer (A)

Tree

<b>5.8(C)</b> demonstrate that Earth rotates on its axis once approximately every 24 hours causing the day/night cycle and the apparent movement of the Sun across the sky	,	Analysi	s of Asses	ssed Standards		
2040 05			Content	Readiness		
2013 – Q5		oding	Process			
Ar.						
	Stimulus					
	Thinking					
Rotation	Related SEs					
01						
Earth	Data Analysis					
	Item A*	State 84	Local	Error Analysis		
	В	2		☐Guessing ☐Careless Error		
8	С	0		Stopped too Early		
	D	14		☐Mixed Up Concepts		
5 Which of these cycles is a direct result of Earth's rotation?	Ir	nplicati	ons for Ir	nstruction/Notes		
A Day and night						
B Moon phases						
C Rainfall and evaporation						
<b>D</b> Seasons						
* Correct answer (A)						
<b>5.8(C)</b> demonstrate that Earth rotates on its axis once approximately every		∆nalvsi	s of Asses	ssed Standards		
24 hours causing the day/night cycle and the apparent movement of the Sun across the sky		, maryolo ol rissessou standards				
	Dual Coding		Content	Readiness		
2013 – Q32			Process			
32 On which side of a house in Texas should a window be placed so that the people inside the house can see the sunrise each day through the window?	Stimul	ıs				
	Thinking					
F North	Related SEs					
G South			l			
H East	lt a un	C4-4-	Data Analysis			
J West	Item F	State 16	Local	Error Analysis ☐Guessing		
	G	8		☐Careless Error		
	H*	54		☐Stopped too Early ☐Mixed Up Concepts		
	J	22		Divinced ob Concepts		
		Implications for Instruction/Notes				
		•				
* Correct answer (H)						



SE 5.8(D)

**RC: 3** 

5.8 (D) Units:

**5.8 (D)** identify and compare the physical characteristics of the Sun, Earth, **Analysis of Assessed Standards** Content Supporting 2015 - Q10 **Dual Coding Process 10** Some characteristics of objects in the solar system are listed below. Stimulus Characteristics of Some Objects in **Thinking** the Solar System Related SEs The core temperature is 15 million degrees Celsius. **Data Analysis** • Meteor craters can be found on the surface. Item State Local **Error Analysis** • The source of light is the sun. F 15 ☐Guessing · Water covers most of the surface. ☐Careless Error G\* 53 ☐Stopped too Early Н 6 Rocks and dust can be found on the surface. Mixed Up Concepts 26 Implications for Instruction/Notes Which of the listed characteristics describe both Earth and the moon? • The core temperature is 15 million degrees Celsius. Meteor craters can be found on the surface. Water covers most of the surface. Rocks and dust can be found on the surface. · Meteor craters can be found on the surface. • The source of light is the sun. G · Rocks and dust can be found on the surface. • The core temperature is 15 million degrees Celsius. · Water covers most of the surface. Rocks and dust can be found on the surface. · Meteor craters can be found on the surface. • The source of light is the sun. J · Water covers most of the surface. Rocks and dust can be found on the surface.

\* Correct answer (G)

SE: 5.9(A)

**D** Mountain lion

\* Correct answer (A)

Units:

<b>5.9(A)</b> observe the way organisms live and survive in their ecosystem by interacting with the living and non-living elements			Analysis of Assessed Standards				
2015 011			Dual Coding		Content	Readiness	
2015 – Q11				Dual County		5.2(D)	
11 T	he table below lists	ways that four organisms obtain energy.					
	,			Stimulus			
	Methods for Obtaining Energy						
	Organism	Method	Related	d SEs			
Oak tree Produces food through photosynthesis							
	Mushroom Absorbs nutrients from decomposing plants and animals			Data Analysis			
	Cottontail rabbit	Eats grasses, twigs, and bark	Item	State	Local	Error Analysis	
	Mountain lion	Preys on deer, wild hogs, and rodents	<b>A</b> *	79		Guessing	
				8		☐Careless Error	
Which organism obtains energy without depending on another organism?			C	8		☐Stopped too Early ☐Mixed Up Concepts	
	The state of the s			5			
Α	Oak tree		_				
В	B Mushroom Implications for Instruc			nstruction/Notes			
	Trasm com						
C	Cottontail rabbit						

<b>5.9(A)</b> observe the way organisms live and survive in their ecosystem by interacting with the living and non-living elements		Analysis of Assessed Standards				
2015 021			Dual Coding		Content	Readiness
2015 – Q	2015 – Q21			Dual Couling		5.2(G)
21 The table below lists the preferred diet of several types of birds.						
	1	Preferred Diets of Birds	Stimulus			
		Preferred Diets of Birds	Thinking			
	Type of Bird	Preferred Diet	Related SEs			
	American goldfinch	Seeds from grasses and wildflowers				
	Eastern bluebird A large variety of insects		Data Analysis			
	Lesser goldfinch	Seeds from sunflower plants	Item A	State 9	Local	Error Analysis
	Purple martin	Winged insects	В	12		☐Guessing ☐Careless Error
	Yellow warbler	Caterpillars, moths, mosquitoes, and beetles	C*	43		☐Stopped too Early
		_	D	37		☐Mixed Up Concepts
Based on this information, which two types of birds do <b>not</b> compete for food						
resources?			Implications for Instruction/Notes			
A Purple martin and yellow warbler						
B Eastern bluebird and purple martin						
C Lesser goldfinch and eastern bluebird						
<b>D</b> American goldfinch and lesser goldfinch						

\* Correct answer (C)

	way organisms live and survive in their e living and non-living elements	ecosystem by		Analysi	s of Asse	ssed Standards
2015 – Q27			Dual C	odina	Content	Readiness
2015 – Q21			Duu. C	oumg	Process	
27 A student observe	es the following activities while walking in a pa	ark.				
Z / / Stadent observe			Stimul	ıs		
	A fire ant digging a tunnel in sandy soil		Thinkir	ng		
	<ul> <li>A blue jay drinking water from a puddle</li> <li>A bee collecting pollen from a tree</li> </ul>		Related	d SEs		
	A hawk circling in the air over a tree				Data Aı	nalysis
		•	Item	State	Local	Error Analysis
Which of these liv	ring organisms was interacting with another liv	ing organism in the	Α	6		☐Guessing
environment?			В	6		☐Careless Error
			C*	66		Stopped too Early
A Fire ant			D	22		☐Mixed Up Concepts
<b>B</b> Blue jay			lr	nnlicat	ions for Ir	nstruction/Notes
<b>C</b> Bee				присат	10113 101 11	isi dollorii rioles
<b>D</b> Hawk						
- Harri						
* Correct answer (C)						

# **Analysis of Assessed Standards 5.9(A)** observe the way organisms live and survive in their ecosystem by interacting with the living and non-living elements Content Readiness 2014 - Q21 **Dual Coding Process** 21 A prickly pear cactus is shown below. **Stimulus Thinking Related SEs Data Analysis** State Local Item **Error Analysis** Α 28 ☐Guessing ☐Careless Error В 6 ☐Stopped too Early C\* 58 ☐Mixed Up Concepts D 8 Implications for Instruction/Notes The roots of the prickly pear cactus spread out in a wide underground network. How does this type of root system benefit a prickly pear cactus? A By producing fruit and storing water B By capturing sunlight and getting rid of waste materials C By absorbing water and supporting the plant in loose, sandy soil D By releasing nutrients into the sandy soil and taking in oxygen \* Correct answer (C)

	A) observe the way organisms live and survive in their ecosystem by acting with the living and non-living elements		Analysi	s of Asses	ssed Standards
				Content	Readiness
2014	4 – Q41	Dual C	oding	Process	5.2(D)
41	Same facts about hirds called cattle egrets are listed below				
41	Some facts about birds called cattle egrets are listed below.	Stimul	ıs		
	Cattle Egrets	Thinkir	ng		
	1. They have yellow bills and light-orange legs.	Related	d SEs		
	2. They make nests in trees away from predators.				
	3. They eat ticks off cattle while the cattle graze.			Data Ar	nalysis
	n 2	Item	State	Local	Error Analysis
	4. They are often found in the same fields as cattle.	Α	2		☐Guessing
	2 25	В	19		☐Careless Error
		C*	74		☐Stopped too Early ☐Mixed Up Concepts
	Which of these facts best describes how these birds depend on other animals to survive?	D	5		
		Ir	nplicat	ions for Ir	nstruction/Notes
	A Fact 1		•		
	B Fact 2				
	D Tuck 2				
	C Fact 3				
	D Fact 4				
* Cor	rect answer (C)				
-	A) observe the way organisms live and survive in their ecosystem by acting with the living and non-living elements	4	Analysi	s of Asses	ssed Standards
				Content	Readiness
2013	3 – Q3	Dual C	oding	Process	
3	Some beetles break down the remains of dead animals. Some mushrooms break down the remains of dead trees. How do these actions most benefit plants?	Stimul	ıs		
		Thinkir	ng		
	A By returning nutrients to the soil	Related	d SEs		
	B By releasing oxygen into the air				
	C By making space for new animals	Itom	State	Data Ar	
	D By decreasing the population of herbivores	Item A*	82	LUCAI	Error Analysis
	by according the population of heromotes	В	10		☐Guessing ☐Careless Error
		С	4		☐Stopped too Early
		D	5		☐Mixed Up Concepts
		ע	∣ o		



Implications for Instruction/Notes

\* Correct answer (A)

		rganisms live and survive in their ecosystem by and non-living elements	,	Analysi	s of Asses	ssed Standards
20.	13 – Q25		Dual C	odina	Content	Readiness
20	13 – Q25		Duai C	oung	Process	5.2(D)
25	Some facts about a bird of below.	alled the painted redstart are listed in the box shown	Stimulu	ıs		
			Thinkin	ıg		
_	Fa	cts About the Painted Redstart	Related	l SEs		
		Builds nests on hillsides covered with dense vegetation				
	40.00	Usually raises one group of young each year			Data Ar	nalysis
	AMERICA		Item	State	Local	Error Analysis
		3. Hunts for insects and spiders on plant leaves	<b>A</b> *	46		Guessing
		4. Feeds on sugar water and peanut butter at feeders	В	10		Careless Error
			С	23		Stopped too Early
	Which fact best describes	one way this bird changes its environment to meet its	D	21		☐Mixed Up Concepts
	needs?	one may this bird changes to environment to meet to				
			In	nplicati	ions for Ir	nstruction/Notes
	A Fact 1					
	B Fact 2					
	C Fact 3					
	D Fact 4					
* C	orrect answer (A)					
	· • •	rganisms live and survive in their ecosystem by and non-living elements	,	Analysi	s of Asses	ssed Standards
	13 – Q29	<u>-</u>	Dual C	odina	Content	Readiness
20	13 – 429		Duai C	oung	Process	

<b>5.9(A)</b> observe the way organisms live and survive in their ecosystem by interacting with the living and non-living elements	-	Analysi	s of Asse	ssed Standards
2012 020	Dual C	adina	Content	Readiness
2013 – Q29	Dual Co	oaing	Process	
			1	
29 In fall and winter many trees lose their leaves in response to cooler temperatures	Stimulu	ıs		
and —	Thinkin	ng		
A a decrease in average wind speed	Related	l SEs		
<b>B</b> fewer hours of daylight			Data A	nalysis
C an increase in humidity	Item	State	Local	Error Analysis
D more direct sunlight	A B*	13 47		☐Guessing ☐Careless Error
	C	32		☐Stopped too Early
	D	8		☐Mixed Up Concepts
	In	nplicat	ions for lı	nstruction/Notes
* Correct answer (B)				



SE: 5.9(B) **Units:** 

**5.9(B)** describe how the flow of energy derived from the Sun, used by producers to create their own food, is transferred through a food chain and food web to consumers and decomposers

# **Analysis of Assessed Standards**

# Readiness Content

Process 5.3(C)

**Dual Coding** 

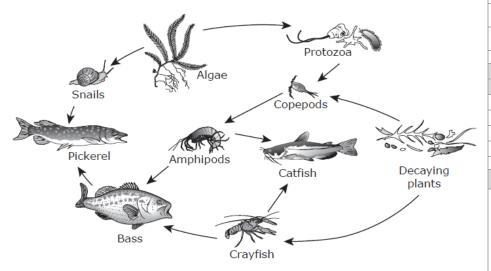
Stimulus	
Thinking	
Related SEs	
	Data Δnalysis

		Data A	naiysis
Item	State	Local	Error Analysis
Α	18		Guessing
В	14		Careless Error
С	7		Stopped too Early
D*	61		☐Mixed Up Concepts

# Implications for Instruction/Notes

# 2015 - Q17

17 A freshwater ecosystem has various food webs. One of these food webs is shown below.



Which organisms transfer the most energy within the food web?

- A Bass, because they are predators in this web
- **B** Copepods, because they support two chains in this web
- C Crayfish, because they are at the bottom of this web
- **D** Algae, because they are the producers in this web

\* Correct answer (D)

**5.9(B)** describe how the flow of energy derived from the Sun, used by **Analysis of Assessed Standards** producers to create their own food, is transferred through a food chain and food web to consumers and decomposers Content Readiness 2015 - Q32 **Dual Coding** Process 5.3(C) 32 A food web for some organisms in an African rain forest is shown below. **Stimulus Thinking** Related SEs Data Analysis Item State Local **Error Analysis** F 7 ☐Guessing ☐Careless Error G 8 Noody ☐Stopped too Early Н\* 75 Mixed Up Concepts vines 10 Implications for Instruction/Notes Grasshoppers Gorillas Wild celery Which organisms in this food web eat only consumers? F Okapis **G** Civets **H** Leopards J Gorillas \* Correct answer (H)

produc	cers to create	the flow of en their own foo ners and deco	d, is transferr		n, used by food chain and		Analysi	s of Asses	ssed Standards
2014	00					Dual C	adina	Content	Readiness
2014 –	- <b>Q</b> 9					Dual C	oding	Process	5.2(D)
<b>9</b> Whi	ich table shows	the correct role	of each organi	sm in the food c	hain below?				
	Algae → sl	hrimp —> arctic	cod → ring	ed seals> po	olar bears	Stimul	ıs		
	/ ligate / or	p / areas	, coa	, ca 30ai3 , p	olar bears	Thinkir	ng		
	Organism	Role		Organism	Role	Related	d SEs		
	Algae	Producers			Producers			Data Ar	a a lucio
	Shrlmp	Consumers		Algae Shrimp	Producers	Item	State	Data Ar Local	
Α	Arctlc cod	Consumers	С	Arctic cod	Consumers	A*	73	Looui	Error Analysis  ☐Guessing
	Ringed seals	Consumers		Ringed seals	Consumers	В	11		☐Careless Error
	Polar bears	Consumers		Polar bears	Consumers	С	9		Stopped too Early
						D	7		☐Mixed Up Concepts
	0	D.I.		0	n.l.	lr	nplicat	ions for Ir	nstruction/Notes
	Organism	Role		Organism	Role	••	присат	10113 101 11	istraction, redica
	Algae	Decomposers		Algae	Producers				
В	Shrimp	Producers	D	Shrimp	Decomposers				
	Arctic cod	Producers		Arctic cod	Decomposers				
	Ringed seals	Producers		Ringed seals	Decomposers				
	Polar bears	Consumers		Polar bears	Consumers				
* Correc	ct answer (A)								
		the flow of en			n, used by food chain and		Analysi	s of Asses	ssed Standards
		ners and deco		ea illiough a	1000 Chairi and	4			
								Content	Readiness
2014 –	- Q28					Dual C	oding	Process	
					_				
<b>28</b> I	n a food ch	ain, energy o	does <b>NOT</b> 1	flow directly	from —	Stimul	ıs		
F	producer	to decompo	ser			Thinkir	ng		
	•					Related	d SEs		
,	<b>producer</b>	to consume	Г					ı	
H	d consume	r to decomp	oser			Itom	Stata	Data Ar	nalysis
						Item F	State 30	Local	Error Analysis
]	consume	r to produce	r			G	11		☐Guessing ☐Careless Error
						Н	12		Stopped too Early
						J*	47		☐Mixed Up Concepts
						Ir	nplicat	ions for Ir	nstruction/Notes
* Correc	ct answer (J)								
	- (-)								



**5.9(B)** describe how the flow of energy derived from the Sun, used by producers to create their own food, is transferred through a food chain and food web to consumers and decomposers

# **Analysis of Assessed Standards**

Pr	ocess	5.3(C)
		5.0(0)
Dual Coding Co	ontent	Readiness

Stimulus

Thinking

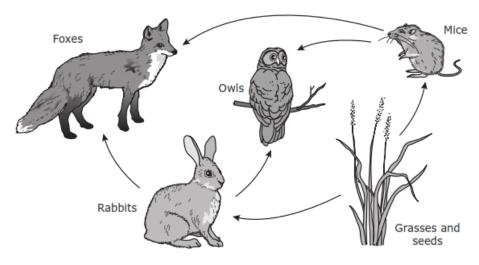
**Related SEs** 

		Data A	nalysis
Item	State	Local	Error Analysis
Α	4		Guessing
В*	83		☐Careless Error
С	6		Stopped too Early
D	7		☐Mixed Up Concepts

# Implications for Instruction/Notes

# 2014 - Q37

37 The food web below is made up of organisms that live in a forest.



Which change would most likely occur if all the producers in this ecosystem were removed?

- A The mice would become the new producers.
- B All the animals would either die or move away.
- C The number of mice would increase.
- D All the animal populations would increase.

\* Correct answer (B)

**5.9(B)** describe how the flow of energy derived from the Sun, used by **Analysis of Assessed Standards** producers to create their own food, is transferred through a food chain and food web to consumers and decomposers Content Readiness 2013 - Q8**Dual Coding** 5.3(C) Process 8 The food web below represents organisms in a field. **Stimulus** Raccoons **Thinking** Robins **Related SEs Data Analysis** Worms Item State Local **Error Analysis**  Mosquitoes Groundhogs -F 10 ☐Guessing ☐Careless Error G 6 ☐Stopped too Early Н 9 Mixed Up Concepts J\* 75 Clover White-tailed Implications for Instruction/Notes d eer Alder trees What role do raccoons play in this food web? F Prey Producer Decomposer Consumer

\* Correct answer (J)

* *	eate their own	f energy derived from the Sun, u food, is transferred through a foo ecomposers	3		Analysi	s of Asse	ssed Standards
2013 – Q27				Dual C	odina	Content	Readiness
	f several types of p	prairie animals are described in the tab	le below.	Duai	oung	Process	5.2(D)
		of Some Prairie Animals		Stimul	us		
	Type of Animal	Foods Eaten	1	Thinki	ng		
	Badger	Prairie dogs, rabbits	1	Relate	d SEs		
	Prairie dog	Leaves, stems, and roots of grasses	1				
	Grasshopper	Grasses, wildflowers	1			Data Aı	nalvsis
	Sparrow	Insects, seeds	]	Item	State	Local	Error Analysis
	Coyote	Prairie dogs, rabbits		Α	14		Guessing
	Eagle	Prairie dogs, rabbits, coyotes	]	В	3		☐Careless Error
				С	12		☐Stopped too Early ☐Mixed Up Concepts
Which of th	e following prairie	food chains is in the correct order?		D*	71		□lvlixed of Colicept
A Eagles -	→ prairie dogs → o	coyotes		lı	nplicat	ions for Ir	nstruction/Notes
B Wildflow	vers → badgers →	grasshoppers					
C Sparrow	vs → seeds → inse	ects					
D Grasses	→ prairie dogs →	badgers					

\* Correct answer (D)

SE: 5.9(C) Units:

**5.9(C)** predict the effects of changes in ecosystems caused by living organisms, including humans, such as the overpopulation of grazers or the building of highways

2015 - Q30

**30** The nesting habits of four types of birds are described in the table below.

## **Nesting Habits**

Type of Bird	Nest Description
Baltimore oriole	The nest hangs from thin branches in tall trees.
Barn swallow	The nest is attached under the roof of a house or barn.
Downy woodpecker	The nest is dug into rotting or decaying trees.
Belted kingfisher	The nest is built in tunnels or burrows.

If all the dead branches and dying trees in a wooded area are removed, which bird's nesting habit would be most affected?

- F Baltimore oriole
- **G** Barn swallow
- H Downy woodpecker
- J Belted kingfisher
- \* Correct answer (H)

Analysis of Assessed Standards					
Dual C	adina	Content	Supporting		
Dual Coding		Process	5.2(D)		
Stimul	ıs				
Thinkir	ng				
Related	l SEs				
		Data Analysis			
Item	State	Local	Error Analysis		
Item F	State 36	Local	Error Analysis ☐Guessing		
		Local	☐Guessing ☐Careless Error		
F	36	Local	☐Guessing ☐Careless Error ☐Stopped too Early		
F G	36 4	Local	☐Guessing ☐Careless Error		
F G H* J	36 4 57 3		☐Guessing ☐Careless Error ☐Stopped too Early		



**5.9(C)** predict the effects of changes in ecosystems caused by living organisms, including humans, such as the overpopulation of grazers or the building of highways

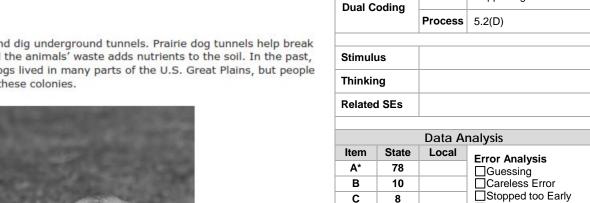
# **Analysis of Assessed Standards**

Supporting

Content

# 2014 - Q25

25 Prairie dogs eat plants and dig underground tunnels. Prairie dog tunnels help break up hard prairie soils, and the animals' waste adds nutrients to the soil. In the past, large groups of prairie dogs lived in many parts of the U.S. Great Plains, but people have destroyed most of these colonies.



В

С

D

10

8

4

lm	plications	s for	Instruction	/Notes
		,	II ISU GCUCII	140103

☐Mixed Up Concepts

Which of these will most likely happen when prairie dogs are removed from an area?

- A The population of predators that eat prairie dogs will decrease.
- B The population of plants that prairie dogs eat will decrease.
- C The nutrients in the soil will increase.
- D The number of underground tunnels will increase.

\* Correct answer (A)

**Analysis of Assessed Standards 5.9(C)** predict the effects of changes in ecosystems caused by living organisms, including humans, such as the overpopulation of grazers or the building of highways Content Supporting 2014 - Q43**Dual Coding** Process 5.2(D) 43 Wild Texas hogs, similar to the one shown below, are descended from hogs brought here from other countries. Stimulus **Thinking Related SEs Data Analysis** Item State Local **Error Analysis** Α\* 78 ☐Guessing ☐Careless Error ☐Stopped too Early В 3 С 10 ☐Mixed Up Concepts D 9 Implications for Instruction/Notes These wild hogs eat many different kinds of foods, including plants, fungi, and insects. Besides being very destructive to the habitats of other animals, how do wild hogs most likely harm other animals? A By competing with other animals for food **B** By moving slower than most other animals C By causing other animals to reproduce more

D By eating foods that no other animals eat

\* Correct answer (A)

**Analysis of Assessed Standards 5.9(C)** predict the effects of changes in ecosystems caused by living organisms, including humans, such as the overpopulation of grazers or the building of highways Content Supporting 2013 - Q36 **Dual Coding** Process 5.2(D) Stimulus 36 The picture below shows a type of plant called kudzu. Kudzu is a fast-growing Asian vine that was introduced into the United States. Kudzu quickly uses available **Thinking** resources and can completely cover the plants in an area. **Related SEs** Data Analysis Item State Local **Error Analysis** 59 F\* ☐Guessing ☐Careless Error ☐Stopped too Early G 13 7 Н ☐Mixed Up Concepts J 21 Implications for Instruction/Notes What effect does the rapid growth of kudzu most likely have on an ecosystem?

*	Correct	answer	(F)

F The variety of native plants decreases.
G The water supply in the area increases.
H Weather patterns in the area change.
J The number of other plants increases.



IQ Analysis   Investigating the Question	SE 5.9(D)	
--	-----------	--

SE: 5.9(D) Units:

	(D) identify the significance of the carbon dioxide-oxygen cycle to the rival of plants and animals	,	Analysi	s of Asse	ssed Standards
201	5 – Q13	Dual C	odina	Content	Supporting
201				Process	
	Which statement best describes the relationship between humans and plants in the				
	carbon dioxide-oxygen cycle?	Stimul	ıs		
	A Humans depend on oxygen released into the air by plants, and plants depend on carbon dioxide that humans release into the air.	Thinkir			
		Related	l SEs		
	<b>B</b> Plants produce carbon dioxide as a product of photosynthesis and release it into the air to provide energy for humans.			Data Aı	nalysis
	C Plants depend primarily on energy supplied by oxygen for photosynthesis, a	Item	State	Local	Error Analysis
	process which releases carbon dioxide needed by humans.	A* B	83 9		☐Guessing ☐Careless Error
	<b>D</b> Humans and plants use gases in the air and the energy of sunlight to produce	C	6		Stopped too Early
	their own food.	D	2		☐Mixed Up Concepts
		Ir	nnlicat	ions for l	nstruction/Notes
			присат	10113 101 11	isti uction/ Notes
* Co	rrect answer (A)				
	• •				
	(D) identify the significance of the carbon dioxide-oxygen cycle to the rival of plants and animals		Analysi	s of Asse	ssed Standards
surv	rival of plants and animals			s of Asse	
surv		Dual C		Content	
surv	rival of plants and animals				
surv 201	vival of plants and animals  4 – Q5		oding	Content	
surv 201	Animals and plants use substances that cycle through the environment. Which substance is needed by plants to survive and is released into the environment by	Dual C	oding	Content	
surv 201	Animals and plants use substances that cycle through the environment. Which substance is needed by plants to survive and is released into the environment by animals?	Dual C	oding us	Content	
surv 201	Animals and plants use substances that cycle through the environment. Which substance is needed by plants to survive and is released into the environment by animals?  A Oxygen	Dual C Stimulu	oding us	Content Process	Supporting
surv 201	Animals and plants use substances that cycle through the environment. Which substance is needed by plants to survive and is released into the environment by animals?	Dual C Stimulu Thinkir Related	oding us ng I SEs	Content Process	Supporting
surv 201	Animals and plants use substances that cycle through the environment. Which substance is needed by plants to survive and is released into the environment by animals?  A Oxygen	Dual C Stimulu	oding us	Content Process	Supporting  nalysis  Error Analysis
surv 201	Animals and plants use substances that cycle through the environment. Which substance is needed by plants to survive and is released into the environment by animals?  A Oxygen  B Sugar	Dual C Stimulu Thinkir Related Item A B	oding us us us us us us us us us us us us us	Content Process	Supporting  nalysis  Error Analysis  Guessing Careless Error
surv 201	Animals and plants use substances that cycle through the environment. Which substance is needed by plants to survive and is released into the environment by animals?  A Oxygen  B Sugar  C Salt	Dual C Stimulu Thinkir Related Item A B C	oding us ng us State 20 0	Content Process	Supporting  nalysis  Error Analysis  Guessing
surv 201	Animals and plants use substances that cycle through the environment. Which substance is needed by plants to survive and is released into the environment by animals?  A Oxygen  B Sugar  C Salt	Dual C Stimulu Thinkir Related Item A B	oding us us us us us us us us us us us us us	Content Process	Supporting  nalysis  Error Analysis  Guessing Careless Error Stopped too Early
surv 201	Animals and plants use substances that cycle through the environment. Which substance is needed by plants to survive and is released into the environment by animals?  A Oxygen  B Sugar  C Salt	Dual C Stimulu Thinkir Related Item A B C D*	oding us ng d SEs State 20 0 0 79	Process  Data Al	Supporting  nalysis  Error Analysis  Guessing Careless Error Stopped too Early
surv 201	Animals and plants use substances that cycle through the environment. Which substance is needed by plants to survive and is released into the environment by animals?  A Oxygen  B Sugar  C Salt	Dual C Stimulu Thinkir Related Item A B C D*	oding us ng d SEs State 20 0 0 79	Process  Data Al	Supporting  malysis  Error Analysis  Guessing  Careless Error  Stopped too Early  Mixed Up Concepts
surv 201	Animals and plants use substances that cycle through the environment. Which substance is needed by plants to survive and is released into the environment by animals?  A Oxygen  B Sugar  C Salt	Dual C Stimulu Thinkir Related Item A B C D*	oding us ng d SEs State 20 0 0 79	Process  Data Al	Supporting  malysis  Error Analysis  Guessing  Careless Error  Stopped too Early  Mixed Up Concepts
surv 201	Animals and plants use substances that cycle through the environment. Which substance is needed by plants to survive and is released into the environment by animals?  A Oxygen  B Sugar  C Salt	Dual C Stimulu Thinkir Related Item A B C D*	oding us ng d SEs State 20 0 0 79	Process  Data Al	Supporting  malysis  Error Analysis  Guessing  Careless Error  Stopped too Early  Mixed Up Concepts



RC: 4

	) identify the significance of the carbon dioxide-oxygen cycle to the val of plants and animals	•	Analysis of Assessed Standards		
2013 – Q42		Dual C	Decel On the se		Supporting
2013	- Q42	Duai C	Dual Coding		
42	Many types of plants grow in a forest ecosystem. How do plants affect the air that forest animals breathe?	Stimul	us		
	F Plants use oxygen from the air to make food.	Thinki			
	<b>G</b> Plants release pollution into the air.	Related	d SEs		
	H Plants release energy from the sun into the air.			Data A	nalysis
	Plants take in carbon dioxide and release oxygen into the air.	Item	State	Local	Error Analysis
	Fights take in carbon dioxide and release oxygen into the an.	F	8		□Guessing
		G	5		Careless Error
		Н	3		☐Stopped too Early ☐Mixed Up Concepts
		J*	83		
		lr	nplicat	ions for II	nstruction/Notes
			•		
* Cor	rect answer (J)				



SE: 5.10(A) **Units:** 

**5.10(A)** compare the structures and functions of different species that help them live and survive such as hooves on prairie animals or webbed feet in aquatic animals

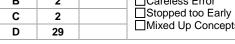
5 The whiskers of a river otter and the antennae of a cockroach are shown below.

# **Analysis of Assessed Standards**

Content Readiness **Dual Coding Process** 

**Stimulus** 

Data Analysis Item State Local **Error Analysis** Α\* 67 В 2



Guessing
Careless Error
Stopped too Early
Mixed Up Concepts

**Thinking** 

**Related SEs** 

How do structures such as whiskers and antennae benefit organisms?

- A They help the organisms detect their surroundings.
- B They help the organisms eat food quickly.
- C They help the organisms fight predators.
- D None of these
- \* Correct answer (A)

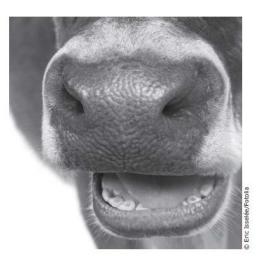
2015 - Q5

**5.10(A)** compare the structures and functions of different species that help them live and survive such as hooves on prairie animals or webbed feet in aquatic animals

# 2015 - Q34

**34** Some animals, such as lions, have pointed teeth, while other animals, such as cattle, have flat teeth.





The difference in the shape of these animals' teeth is most closely related to -

- F the type of organisms the animals consume
- G the sounds the animals make
- H the habitat the animals live in
- J the type of predators the animals have

# \* Correct answer (F)

# **Analysis of Assessed Standards**

Dual Coding	Content	Readiness
Duai Coung	Process	
Stimulus		
Thinking		
Related SEs		

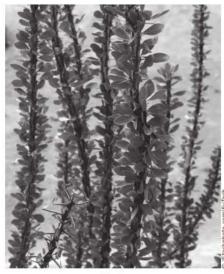
		Data A	nalysis
Item	State	Local	Error Analysis
F*	79		Guessing
G	3		☐Careless Error
Н	8		Stopped too Early
J	11		☐Mixed Up Concepts

# Implications for Instruction/Notes

**5.10(A)** compare the structures and functions of different species that help them live and survive such as hooves on prairie animals or webbed feet in aquatic animals

# 2014 - Q16

16 The ocotillo is a desert plant with long, straight branches. Its leaves are small and appear for only a short time after a rain. Most of the time, the branches of the ocotillo do not have leaves. Maple trees grow in areas where water is more abundant than in the desert. Maple leaves can be very large and are present for most months of the year.





Ocotillo leaves

Maple leaves

Ocotillo plants are better adapted for surviving in the desert than maple trees because the characteristics of ocotillo leaves -

- F allow more sunlight to reach the soil
- G prevent the plant from producing flowers
- $\boldsymbol{\mathsf{H}}$   $\,$  encourage the release of carbon dioxide from the stems
- J reduce the amount of water lost through evaporation

# \* Correct answer (J)

Analysis of	Assessed	Standards
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Dual Coding	Content	Readiness
Duai Coung	Process	5.2(D)
Stimulus		
Thinking		
Related SEs		

		Data A	nalysis
Item	State	Local	Error Analysis
F	26		Guessing
G	6		☐Careless Error
Н	9		Stopped too Early
J*	58		☐Mixed Up Concepts

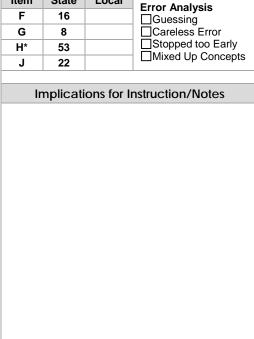
# Implications for Instruction/Notes

the	<b>D(A)</b> compare the structures and functions of different species that help m live and survive such as hooves on prairie animals or webbed feet in patic animals		Analysi	s of Asse	ssed Standards
	4 – Q34	Dual C	odina	Content	Readiness
20	4 – 004	Duai O	oung	Process	
34	Most kangaroos have large, heavy tails, while spider monkeys have long, thin tails.	041			
	Kangaroo tails are useful when the kangaroos are hopping and also when they are	Stimul	us ———		
	crawling around on the ground to feed. Spider monkey tails are useful when the spider monkeys are moving through trees. Both of these animals use their tails	Thinkir	ng		
	primarily for —	Related	d SEs		
	F grabbing and holding their food				
	<b>G</b> supporting and balancing their body			Data Aı	nalysis
	Supporting and balancing their body	Item	State	Local	Error Analysis
	<b>H</b> attracting the attention of other animals	F	18		☐Guessing
	J carrying their young	G*	75 3		☐Careless Error ☐Stopped too Early
		J	3		☐Mixed Up Concepts
			3		
		Ir	nplicat	ions for Ir	nstruction/Notes
* Co	rrect answer (G)				

5.10(A) compare the structures and functions of different species that help **Analysis of Assessed Standards** them live and survive such as hooves on prairie animals or webbed feet in aquatic animals Content Readiness 2013 - Q22 **Dual Coding Process Stimulus** Prickly Pear Cactus **Thinking** Waxy Sharp **Related SEs** stem spine **Data Analysis** Item State Local Sweet 16 G 8 Large H\* 53 flower

22 Which two traits best help a cactus conserve water in the dry conditions of a West Texas desert ecosystem?

- F Large flowers and sweet fruit
- G Sweet fruit and sharp spines
- H Sharp spines and waxy stems
- J Waxy stems and large flowers
- \* Correct answer (H)





5.10(A) compare the structures and functions of different species that help **Analysis of Assessed Standards** them live and survive such as hooves on prairie animals or webbed feet in aquatic animals Content Readiness 2013 - Q44 **Dual Coding** 5.2(D) Process 44 Eagles catch fish in rivers with their talons. They fly with the fish to a tree branch and **Stimulus** tear the fish into small pieces. Which bird most likely catches and eats its food the way an eagle does? **Thinking Related SEs** Data Analysis Item State Local **Error Analysis** F 5 ☐Guessing ☐Careless Error 87 G\* ☐Stopped too Early Н 1 Mixed Up Concepts 6 Implications for Instruction/Notes \* Correct answer (G)

IQ Analysis   Investigating the Question	SE 5.10(B)	RC: 4

5.10(B) differentiate between inherited traits of plants and animals such as spines on a cactus or shape of a beak and learned behaviors such as an animal learning tricks or a child riding a bicycle			Analysis of Assessed Standards				
201	5 – Q3			Dual Coding		Content	Readiness
201	J – QJ					Process	
3	A farmer kee	eps bees to pollinate crops. The farmer makes several ob	servations about	Stimulus Thinking			
	the bees.		1				
		Bees make return trips to drink sugar water from a bowl placed 40 meters from their hive.	Related SEs				
		Bees have dark eyes and black-and-yellow stripes.				l	
		Bees produce honey from the nectar they collect.			Data Analysis		
		Bees will sting when threatened or disturbed.		Item	State	Local	Error Analysis
		Dood iiiii danig iiiida diii dada di dada dada		A* B	65 1		□Guessing
							Careless Error
	Which of the	se observations describes a learned behavior?		С	17		☐Stopped too Early ☐Mixed Up Concepts
A Bees make return trips to drink sugar water from a bowl placed 40 meters from			D	17			
	their hive.  B Bees have dark eyes and black-and-yellow stripes.						
				Implications for Instruction/Notes			
<b>C</b> Bees produce honey from the nectar they collect.							
	<b>D</b> Bees will	sting when threatened or disturbed.					
* Co	orrect answe	r (A)					
		. ,					
5.10(B) differentiate between inherited traits of plants and animals such as			Analysis of Assessed Standards				
spines on a cactus or shape of a beak and learned behaviors such as an							
		g tricks or a child riding a bicycle					
2015 – Q41		Dual Coding		Content	Readiness		
				Process	5.02(C)		
41 A group of students made the observations listed below about the size, shape, and							
appearance of their hands.			Stimulu	s			

# 41 A group of students made the observations listed below about the size, s appearance of their hands. 1. Two students have scars on their hands. 2. Five students have pointer fingers that are longer than their ring fingers. 3. Nine students have ring fingers that are longer than their pointer fingers. 4. Six students have rings on their fingers. 5. Seven students have pointer fingers and ring fingers that are the same length.

Item	State	Local	Error Analysis					
Α	10		Guessing					
В	5		☐Careless Error					
C*	75		Stopped too Early					
D	10		☐Mixed Up Concepts					
Implications for Instruction/Notes								

**Data Analysis** 

**Thinking** 

**Related SEs** 

Which of the students' observations describe inherited traits?

- A Observations 2 and 5 only
- **B** Observations 1, 3, and 4 only
- C Observations 2, 3, and 5 only
- **D** All the observations

*	Co	rract	ansv	ıρr	(C)
	CU	HEGL	alisv	vei i	

5.10(B) differentiate between inherited traits of plants and animals such as **Analysis of Assessed Standards** spines on a cactus or shape of a beak and learned behaviors such as an animal learning tricks or a child riding a bicycle Content Readiness 2014 - Q3**Dual Coding** 5.02(D) **Process** 3 The caterpillars of monarch butterflies eat milkweed leaves. Milkweed leaves contain sap that is toxic to many animals but not to monarch butterfly caterpillars. This sap **Stimulus** makes the monarch butterfly caterpillars toxic to predators and protects them from **Thinking** being eaten. **Related SEs Data Analysis** Item State Local **Error Analysis** 4 ☐Guessing В\* 87 ☐Careless Error ☐Stopped too Early С 7 ☐Mixed Up Concepts D 2 Implications for Instruction/Notes Which of these is an inherited trait of monarch butterfly caterpillars? A The size of the milkweed leaves that the caterpillars eat B The ability of the caterpillars to eat toxic leaves without being harmed C The number of milkweed leaves the caterpillars eat each day **D** The number of leaves on the milkweed plants that the caterpillars visit each summer \* Correct answer (B)

5.10(B) differentiate between inherited traits of plants and animals such as spines on a cactus or shape of a beak and learned behaviors such as an animal learning tricks or a child riding a bicycle	Analysis of Assessed Standards					
2011 200	Dual Coding		Content	Readiness		
2014 – Q30			Process			
<b>30</b> Which of these is a learned behavior of a dog?						
which of these is a learned behavior of a dog:	Stimulus					
<b>F</b> Begging for food	Thinking					
G Drinking water	Related SEs					
H Panting on a hot day		<b>0</b> 11	Data Analysis			
	Item F*	Item State		Error Analysis		
J Chewing on a bone	F* 72 G 4			☐Guessing ☐Careless Error		
	Н	12		Stopped too Early		
	J	12		☐Mixed Up Concepts		
		Implications for Instruction/Notes				
* Correct answer (F)						



5.10(B) differentiate between inherited traits of plants and animals such as **Analysis of Assessed Standards** spines on a cactus or shape of a beak and learned behaviors such as an animal learning tricks or a child riding a bicycle Readiness Content **Dual Coding** 2013 - Q13 5.2(D) **Process** 13 Fox squirrels live in the trees of city parks throughout Texas. Each spring they build nests of twigs and leaves in the tops of the trees. Fox squirrels are often found near **Stimulus** park benches, waiting to be fed by visitors. **Thinking Related SEs Data Analysis** Item State Local **Error Analysis** 27 ☐Guessing В\* 71 ☐Careless Error ☐Stopped too Early С 1 ☐Mixed Up Concepts D 1 Implications for Instruction/Notes Fox squirrel For fox squirrels, which of these is a learned behavior? A Building a nest each spring B Taking food from people

C Having a long, bushy tail

D Having sharp claws

\* Correct answer (B)

5.10(B) differentiate between inherited traits of plants and animals such as **Analysis of Assessed Standards** spines on a cactus or shape of a beak and learned behaviors such as an animal learning tricks or a child riding a bicycle Content Readiness 2013 - Q19 **Dual Coding** 5.2(B) **Process** 19 A scientist observes sea otters using rocks to break open clamshells. Stimulus **Thinking Related SEs Data Analysis** Item State Local **Error Analysis** 5 ☐Guessing В 8 ☐Careless Error Stopped too Early C\* 50 ☐Mixed Up Concepts D 37 Which of these investigations would best help the scientist determine whether this skill is a learned or an inherited behavior? Implications for Instruction/Notes A Determining what sizes and kinds of rocks are used most often by sea otters B Determining whether shellfish are an important food source in the diet of sea otters C Raising young sea otters away from adult otters that use rocks and observing whether the young otters use rocks Observing families of sea otters over time to see whether adults that use rocks have offspring that use rocks



\* Correct answer (C)

5.10(B) differentiate between inherited traits of plants and animals such as **Analysis of Assessed Standards** spines on a cactus or shape of a beak and learned behaviors such as an animal learning tricks or a child riding a bicycle Readiness Content 2013 - Q39 **Dual Coding Process** 39 Crayfish live in water and often hide under rocks or plants. They come out to look for food and will eat both plants and animals. **Stimulus Thinking Related SEs Data Analysis** Item State Local **Error Analysis** 5 ☐Guessing В\* 81 ☐Careless Error ☐Stopped too Early С 8 ☐Mixed Up Concepts D 6 Implications for Instruction/Notes Which of these is a trait that a crayfish most likely inherits from its parents?

- A The average distance it travels each day
- B The number of legs it has
- C The amount of food it eats each day
- D The type of plants in its habitat

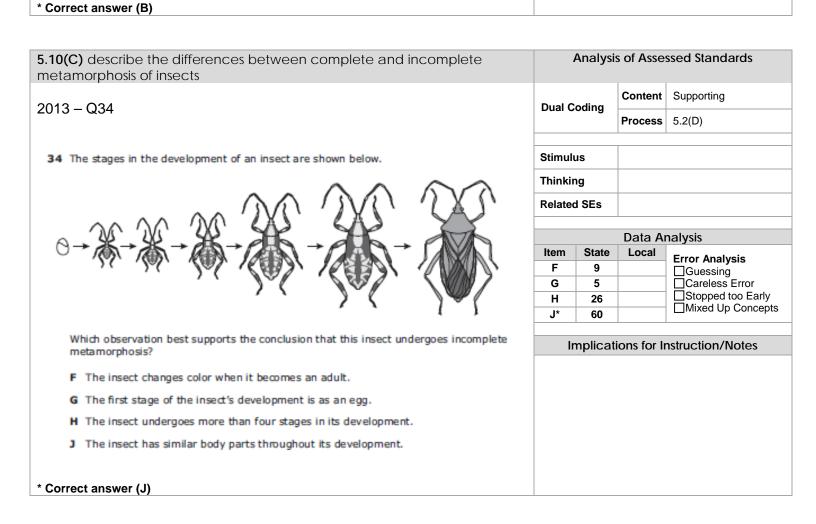
	*	Cor	rect	ans	wer	(B)
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CE. F 40/C)	lia!4a.	
IQ Analysis   Investigating the Question	SE 5.10(C)	RC: 4

5.10(C) describe the differences between complete and incomplete metamorphosis of insects			,	Analysis	of Asse	ssed Standards		
2015 024			Dual Coding		Content	Supporting		
2013	2015 – Q24			Dual County		5.04(A)		
	me students examined two samples of pond water with a hand lens over three							
days. Each day they compared what they saw with pictures of samples their teacher had labeled. Their observations are listed below.			Stimulus					
			Thinking					
	On Day 1 the students identified mosquito eggs and mosquito larvae		Related	l SEs				
	in one water sample and dragonfly nymphs in the other water sample.							
	On Day 2 the students saw that the mosquito larvae had curled up		Item	State	Data Analysis Local			
	and stopped moving.	-	F*	61	Local	Error Analysis		
	On Day 3 the students saw that a dragonfly with wings had developed	-	G	13		☐Guessing ☐Careless Error		
	from one of the nymphs.			17		Stopped too Early		
			J	9		☐Mixed Up Concepts		
Based on their observations, the students concluded that mosquitoes undergo								
complete metamorphosis while dragonflies undergo incomplete metamorphosis. Which of these explains why the students' conclusion is correct?			Implications for Instruction/Notes					
F	The mosquito life cycle includes larvae that become pupae, while the dragonf cycle includes adults that develop directly from nymphs.	fly life						
G	The mosquito life cycle includes larvae with wings, while the dragonfly life cycle includes nymphs.	rde						
Н	The mosquito life cycle includes eggs that hatch in water, while the dragonfly cycle includes nymphs that develop in water.	life						
J	The mosquito life cycle includes nymphs that hatch from eggs, while the drag life cycle includes adults that develop directly from larvae.	gonfly						
Corre	ect answer (F)							



### 5.10(C) describe the differences between complete and incomplete **Analysis of Assessed Standards** metamorphosis of insects Supporting Content 2014 - Q13**Dual Coding** Process 5.2(D) 13 The life cycles of a butterfly and a chigger are shown below. **Stimulus Thinking** Related SEs **Data Analysis** Item State Local **Error Analysis** 12 Α ☐Guessing В\* 75 ☐Careless Error ☐Stopped too Early С 9 ☐Mixed Up Concepts D Implications for Instruction/Notes How is the life cycle of chiggers different from the life cycle of butterflies? A Chigger larvae have legs. **B** Chiggers have a nymph phase. C Chiggers go through metamorphosis.





D Chigger larvae hatch from eggs.