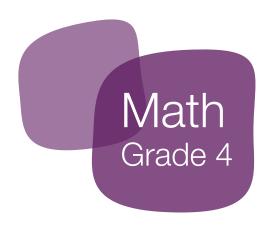


2013-2015 Released Test

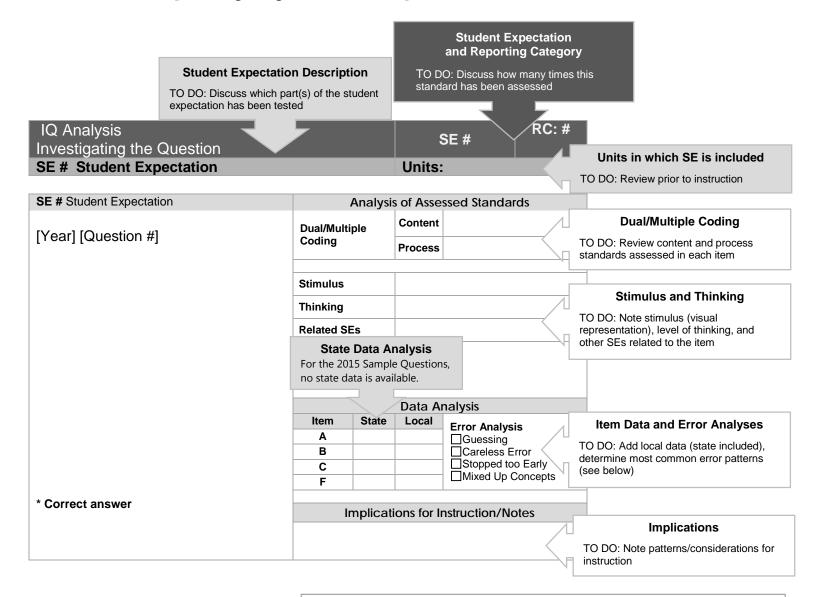
Aligned to the Standards

CONTENT BUILDER FOR THE PLC





Users Guide - IQ [Investigating the Questions] Released Tests



Error Analysis | Type of Errors

The pattern of incorrect responses (highly chosen or distributed) indicates students may have made one or more of these error types:

- Guessing: Generally represented by equal distribution of incorrect answers. Students may not know how to start or may not know what the question is about.
- Careless Errors: Students cannot complete content specific procedures accurately. Make low-level, careless mistakes.
- Stopped Too Early: Students cannot transfer learning between contexts (item doesn't look like samples used in class), or they stop too early in problem solving.
- **Mixed Up Concepts:** Students misunderstand the underlying concepts. They may mix up concepts often related to academic vocabulary.

IQ Analysis Investigating the Question	SE 4.2(A)	RC: 1
4.2(A)	Units:	

	(A) interpret the value of each place-value position as 10 times the position to right and as one-tenth of the value of the place to its left		Analysi	s of Asses	ssed Standards
2045 0 1 04			Multi Coding		Supporting
2015 – Sample Q1		Multi	oung	Process	4.1(B), 4.1(G)
1	In the number shown, one digit is underlined and one digit is circled.	Stimuli			
		Sumuit	15		
	<u>7</u> ⑦,000	Thinkir	ng		
	Which statement about the circled digit is true?	Related	l SEs		
	Which statement about the circled digit is true?				
				Data Ar	nalysis
	A Its value is 10 times greater than the value of the underlined digit.	Item	State	Local	Error Analysis
		Α			☐Guessing
		B*	NA		Careless Error
	B Its value is $\frac{1}{10}$ the value of the underlined digit.	С	144		☐Stopped too Early ☐Mixed Up Concepts
	10	D			
		Implications for Instruction/Notes			
C Its value is 70 times the value of the underlined digit.					
	_ , , , 1 , , , , , , , , , , , , , , ,				
	D Its value is $\frac{1}{70}$ the value of the underlined digit.				
* Cc	orrect answer (B)				



IQ Analysis Investigating the Question	SE 4.2(B)	RC: 1
4.2(B)	Units:	

	(B) represent the value of the digit in whole numbers through 1,000,000,000 d decimals to the hundredths using expanded notation and numerals		Analysi	s of Asse	ssed Standards	
0045 Operate 00		Madd On diam		Content	Readiness	
20	15 – Sample Q2	Multi Coding		Process	4.1(A), 4.1(B), 4.1(D), 4.1(F)	
2	Lillian paid sixty-one dollars and thirty-nine cents for groceries. The digit 3 in this					
	number has a value of —	Stimul	us			
	A (3×10) dollars	Thinkir	ng			
	B (3 × 1) dollars		Related SEs			
	C (3 × 0.01) dollar					
	(3 × 0.01) dollal		I =	Data Aı	nalysis	
	D (3×0.1) dollar	Item	State	Local	Error Analysis	
		A			☐Guessing ☐Careless Error ☐Stopped too Early	
		В	NA -			
		C			☐Mixed Up Concepts	
		D*				
		Implications for Instruction/Notes				
		implications for instruction/Notes				
* C	orrect answer (D)					

IQ Analysis Investigating the Question	SE 4.2(C)	RC: 1
4.2(C) compare and order whole numbers to 1,000,000,000 and represent comparisons using the symbols >, <, or =	Units:	

No test questions 2013 – 2015

IQ Analysis Investigating the Question	SE 4.2(D)	RC: 1
4.2(D) round whole numbers to a given place value through the hundred thousands	Units:	
place		

No test questions 2013 – 2015



Units:

4.2(E) (New) represent decimals, including tenths and hundredths, using concrete and visual models and money

4.1(B) (Old) use place value to read, write, compare, and order decimals involving tenths and hundredths, including money, using concrete objects and pictorial models

2013 - Q7

Each picture below represents a different amount of money. In which amount of money is the digit 9 in the hundredths place?









* Correct answer (B)

Analysis of Assessed Standards

Dual Coding	Content	Supporting
Duai Coung	Process	4.1(A)
Stimulus		
Thinking		
Related SEs		

Data Analysis									
Item	State	Local	Error Analysis						
Α	7		Guessing						
В*	41		Careless Error						
С	2		Stopped too Early						
D	50		☐Mixed Up Concepts						

Implications for Instruction/Notes

 4.2(E) (New) represent decimals, including tenths and hundredths, using concrete and visual models and money 4.1(B) (Old) use place value to read, write, compare, and order decimals involving tenths and hundredths, including money, using concrete objects and pictorial models 			Analysis of Assessed Standards			
2013 – Q37		Dual C	odina	Content	Supporting	
2013 – Q37		Duai C	Juliy	Process	4.1(C)	
The model below is shaded to represent a decimal.		Stimulu				
		Thinkin	g			
		Related	SEs			
				Data Aı	nalysis	
		Item	State	Local	Error Analysis	
					☐Guessing	
		B C	3 17		☐Careless Error ☐Stopped too Early	
		D	11		☐Mixed Up Concepts	
		In	nplicati	ions for Ir	nstruction/Notes	
How is this decimal written in words?						
A Six and thirty hundredths						
B Six hundred three						
C Six and thirty tenths						
D Six and three hundredths						
* Correct answer (A)						



4.2(F) (New) compare and order decimals using concrete and visual models to the hundredths **Analysis of Assessed Standards** 4.1(B) (Old) use place value to read, write, compare, and order decimals involving tenths and hundredths, including money, using concrete objects and pictorial models Content Supporting 2014 - Q10 **Dual Coding** Process 4.1(A) Sherri has an amount of money that would make the comparison below true. **Stimulus Thinking Related SEs Data Analysis** Item State Local **Error Analysis** F 5 ☐Guessing Careless Error G 8 ☐Stopped too Early Н* 82 ☐Mixed Up Concepts Implications for Instruction/Notes Which amount of money would make the comparison true?

* Correct answer (H)

4.2(F) (New) compare and order decimals using concrete and visual models to the					
hundredths		Analysis of Assessed Standards			
4.1(B) (Old) use place value to read, write, compare, and order decimals involving tenths and hundredths, including money, using concrete objects and pictorial models					
2014 – Q31	Dual Coding	Content	Supporting		
	Dual County	Process	4.1(C)		
The decimal number 0.82 can be shaded on the grid below.	Stimulus				
	Thinking				
	Related SEs				
		Data A	nalysis		
	Item State	Local	Error Analysis		
	A* 65 B 2		☐Guessing ☐Careless Error		
	C 32		☐Stopped too Early		
	D 1		☐Mixed Up Concepts		
Which grid is shaded to represent a decimal less than 0.82?	lmam li n a		anturration /Bloton		
	implica	ILIONS IOI II	nstruction/Notes		
A C					
B Correct answer (A)					

4.2(F) (New) compare and order decimals using concrete and visual models to the hundredths **Analysis of Assessed Standards** 4.1(B) (Old) use place value to read, write, compare, and order decimals involving tenths and hundredths, including money, using concrete objects and pictorial models Content Supporting **Dual Coding** 2013 - Q47 **Process** The shaded models below represent four different decimal numbers. Stimulus **Thinking Related SEs Data Analysis** Item State Local **Error Analysis** ☐Guessing Which list shows these decimal numbers in order from least to greatest? ☐Careless Error ☐Stopped too Early B* 79 С 10 **A** 0.53 0.41 0.48 0.56 ☐Mixed Up Concepts D 3 **B** 0.41 0.48 0.53 0.56 Implications for Instruction/Notes C 0.56 0.53 0.48 0.41 **D** 0.41 0.53 0.56 0.48 * Correct answer (B)

IQ Analysis Investigating the Question	SE 4.2(G)	RC: 1
4.2(G)	Units:	

4.2	(G) relate decimals to fractions that name tenths and hundredths	Analysis of Assessed Standards					
2015 – Sample Q3		Multi Coding		Content	Readiness		
20	.010 – Sample Q5		Watti County		4.1(A), 4.1(B), 4.1(F)		
3	Antwaan decorated 2.5 cakes with chocolate icing. Which fraction is equivalent to this number?	Stimulus					
	is number:						
	25	Thinkir	ng				
	A $\frac{25}{100}$	Related	d SEs				
	_ 5		Data Analy		nalysis		
	B $\frac{5}{10}$		State	Local	Error Analysis		
		A			Guessing Careless Error Stopped too Early Mixed Up Concepts		
	c $2\frac{5}{10}$	B C*	NA				
	10	D					
	- - 5						
	D $2\frac{5}{100}$	Ir	nplicat	ions for Ir	nstruction/Notes		
* C	orrect answer (C)						

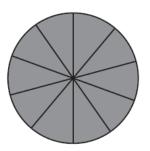


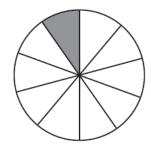
4.2(G) (New) relate decimals to fractions that name tenths and hundredths 4.2(D) (Old) relate decimals to fractions that name tenths and hundredths using concrete objects and pictorial models		Analysi	s of Asses	ssed Standards	
2044 - 024	Dural C	I!	Content	Readiness	
2014 – Q24	Dual Coding		Process	4.1(C)	
The model below is shaded to represent the part of two cakes eaten at a party.					
	Stimulu	IS			
	Thinkin	g			
	Related	SEs			
			5		
	Item	State	Local	ata Analysis	
	F	10	Local	Error Analysis ☐Guessing	
	G*	69		☐Careless Error	
Which fraction and decimal represent the part of these cakes eaten at the party?	H	9		☐Stopped too Early ☐Mixed Up Concept	
,	J	12			
- 17 0.17	In	nplicati	ions for Ir	nstruction/Notes	
$=\frac{17}{20}$ and 0.17					
G $1\frac{7}{10}$ and 1.7					
H 1 7/20 and 1.7					
$1\frac{7}{10}$ and 1.07					
Correct answer (G)					

4.2(G) (New) relate decimals to fractions that name tenths and hundredths **4.2(D) (Old)** relate decimals to fractions that name tenths and hundredths using concrete objects and pictorial models

2014 - Q33

The model below is shaded to represent $1\frac{1}{10}$.





		Data A	nalysis
Item	State	Local	Error Analysis
A *	76		Guessing
В	3		Careless Error
С	16		Stopped too Early
D	5		☐Mixed Up Concepts

Analysis of Assessed Standards

Readiness

Content

Process

Dual Coding

Stimulus
Thinking
Related SEs

Which decimal does the model represent?

- A 1.1
- **B** 11.0
- C 1.01
- **D** 10.1
- * Correct answer (A)

4.2(G) (New) relate decimals to fractions that name tenths and hundredths4.2(D) (Old) relate decimals to fractions that name tenths and hundredths using concrete objects and pictorial models	I	Analysi	s of Asse	ssed Standards
2013 – Q2	Dual Co	oding	Content	Readiness
4			1 100033	
The model below is shaded to represent $1\frac{4}{100}$.	Stimulu	IS		
	Thinkin	g		
	Related	SEs		
			Data A	nalysis
	Item	State	Data Aı Local	
	F*	85		Error Analysis ☐Guessing
	G	11		☐Careless Error
	H	3		☐Stopped too Early ☐Mixed Up Concepts
	3			
Which decimal does the model represent?	In	nplicat	ions for Ir	nstruction/Notes
F 1.04				
G 1.4				
H 14.0				
J 1.004				
* Correct answer (F)				

4.2(G) (New) relate decimals to fractions that name tenths and hundredths4.2(D) (Old) relate decimals to fractions that name tenths and hundredths using concrete objects and pictorial models			Analysis of Assessed Standards			
0040 004	D I O		Content	Readiness		
2013 – Q31	Dual C	oaing	Process	4.1(C)		
The model below is shaded to represent a number greater than 1.						
,	Stimulu	ıs				
	Thinkin	ng				
	Related	l SEs				
			Doto A	a a lucio		
	Item	State	Data Ar Local			
	A	12		Error Analysis ☐Guessing		
	B*	67		☐Careless Error		
	С	4		☐Stopped too Early ☐Mixed Up Concepts		
	D	17				
	In	nplicati	ions for Ir	nstruction/Notes		
Which fraction and decimal represent this number?						
A $\frac{35}{100}$ and 0.35						
B $3\frac{5}{10}$ and 3.5						
C $3\frac{5}{100}$ and 3.5						
D $3\frac{5}{10}$ and 3.05						

* Correct answer (B)

Units:

 4.2(H) (New) determine the corresponding decimal to the tenths or hundredths place of a specified point on a number line 4.10(A) (Old) locate and name points on a number line using whole numbers, fractions such as halves and fourths, and decimals such as tenths 			Analysis of Assessed Standards			
2013 – Q5	Dual C	oding	Content Process	Supporting 4.1(C)		
Which number does point Y best represent on the number line below? Y						
22 25 26		Related SEs				
A 24.8	Data Analysis			aalysis		
A 24.0	Item	State	Local			
B 23.2	A	6		Error Analysis ☐Guessing		
C 24.2	В	2		☐Careless Error☐Stopped too Early		
B 22.0	С	4				
D 23.8	D*	87		☐Mixed Up Concepts		
	Ir	nplicat	ions for Ir	nstruction/Notes		
* Correct answer (D)						

4.3(A)

Units:

4.3(A) represent a fraction a/b as a sum of fractions 1/b, where a and b are wl	nole
numbers and b > 0, including when a > b	

2015 - Sample Q4

4 Which expression is equivalent to $\frac{6}{5}$?

A
$$\frac{1}{6} + \frac{1}{5}$$

B
$$\frac{1}{5} + \frac{1}{5} + \frac{1}{5} + \frac{1}{5} + \frac{1}{5} + \frac{1}{5}$$

$$C = \frac{1}{5} + \frac{6}{1}$$

$$D \quad \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6}$$

* Correct answer (B)

Analysis of A	Assessed	Standards
---------------	----------	-----------

Content	Supporting
Process	4.1(B), 4.1(F)

Thinking

Related SEs

Data Analysis									
Item	State	Local	Error Analysis						
Α			Guessing						
В*	NA		☐Careless Error						
С	NA		Stopped too Early						
D	1		☐Mixed Up Concepts						

Implications for Instruction/Notes



4.3(B)

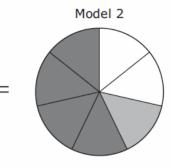
Units:

4.3(B) decompose a fraction in more than one way into a sum of fractions with the same denominator using concrete and pictorial models and recording results with symbolic representations

2015 - Sample Q5

5 The two models are shaded to represent the same fraction, $\frac{5}{7}$.





Which equation shows that the two models represent the same fraction?

A
$$\frac{2}{7} + \frac{3}{7} = \frac{4}{7} + \frac{1}{7}$$

B
$$\frac{2}{7} + \frac{3}{7} = \frac{5}{7} + \frac{1}{7}$$

$$\mathbf{C} \quad \frac{1}{2} + \frac{1}{3} = \frac{1}{4} + \frac{1}{1}$$

* Correct answer (A)

Analysis of Assessed Standards

Multi Coding	Content	Supporting
main ooung	Process	4.1(B), 4.1(E), 4.1(F)
Stimulus		
Thinking		
Related SEs		

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

Implications for Instruction/Notes

* Correct answer (D)

+	5(C)			Ullits.		
1.3	G(C) determine if two given fractions are equivalent using a variety of methods	Analysis of Assessed Standards				
2015 – Sample Q6				Content	Supporting	
				Process	4.1(B), 4.1(G)	
6	Which statement about the fractions $\frac{5}{10}$ and $\frac{6}{12}$ is true?					
O	which statement about the fractions $\frac{1}{10}$ and $\frac{1}{12}$ is true?	Stimul	IS			
	A These fractions are both greater than 1, because their denominators are	Thinkin	ıg			
	greater than their numerators.	Related SEs				
	nese fractions are both equal to 1, because their denominators are greater	er				
	than their numerators.	Data Analysis				
	C These fractions are equivalent, because their denominators are half their	Item	State	Local	Error Analysis	
	numerators.	Α			☐Guessing	
	numerators.	В	NA		☐Careless Error	
	D These fractions are equivalent, because their denominators are twice their	С	IIA		☐Stopped too Early ☐Mixed Up Concepts	
	numerators.	D*			Minised ob Concepts	
			Implications for Instruction/Notes			

4.3(C) (New) determine if two given fractions are equivalent using a variety of methods5.2(A) (Old) generate a fraction equivalent to a given fraction such as 1/2 and 3/6 or 4/12 and 1/3		Analysi	s of Asses	ssed Standards
2014 – Q19		Dual Coding		Supporting
2014 – Q19	Dual Coding		Process	4.1(B)
Last year Ryan went to school for 36 out of 52 weeks. Which fraction is				
	Stimul	ıs		
NOT equivalent to $\frac{36}{52}$?	Thinkin	ng		
	Related	l SEs		
10				
A $\frac{10}{26}$			Data Ar	nalysis
26	Item	State	Local	Error Analysis
	A *	73		☐Guessing
9	В	11		☐Careless Error
B $\frac{9}{13}$	С	11		☐Stopped too Early ☐Mixed Up Concepts
13	D	5		□ Inlined ob collectio
c 72	Ir	nplicat	ions for Ir	nstruction/Notes
$c \frac{72}{104}$				
10				
$\mathbf{D} = \frac{18}{26}$				
26				
* Correct answer (A)				



4.3(C) (New) determine if two given fractions are equivalent using a variety of				
methods	Analysis of Assessed Standards			
5.2(A) (Old) generate a fraction equivalent to a given fraction such as 1/2 and 3/6 or 4/12 and 1/3				
2014 – Q30	Dual Coding		Content	Supporting
			Process	4.1(A)
Jackson sold towels at the beach. If he sold 7 out of every 9 towels he had, which statement could be true?	Stimul	ıs		
F Out of 27 towels, he sold 21.	Thinkin	ıg		
G Out of 18 towels, he sold 7.	Related	l SEs		
H Out of 36 towels, he sold 35.			D	
	Item	State	Data Ar	naiysis
J Out of 72 towels, he sold 63.	F*	56	LUCAI	Error Analysis
	G	13		☐Guessing ☐Careless Error
	Н	11		☐Stopped too Early
	J	20		☐Mixed Up Concepts
	Ir	nplicati	ions for Ir	nstruction/Notes
* Correct answer (F)				
4.3(C) (New) determine if two given fractions are equivalent using a variety of				
methods 5.2(A) (Old) generate a fraction equivalent to a given fraction such as 1/2 and 3/6 or 4/12	-	Analysi	s of Asses	ssed Standards
methods 5.2(A) (Old) generate a fraction equivalent to a given fraction such as 1/2 and 3/6 or 4/12 and 1/3	-	Analysis	s of Asses	ssed Standards
5.2(A) (Old) generate a fraction equivalent to a given fraction such as 1/2 and 3/6 or 4/12 and 1/3			s of Asses	ssed Standards Supporting
5.2(A) (Old) generate a fraction equivalent to a given fraction such as 1/2 and 3/6 or 4/12 and 1/3 2014 – Q42	Dual C			
5.2(A) (Old) generate a fraction equivalent to a given fraction such as 1/2 and 3/6 or 4/12 and 1/3		oding	Content	Supporting
5.2(A) (Old) generate a fraction equivalent to a given fraction such as 1/2 and 3/6 or 4/12 and 1/3 2014 – Q42	Dual C	oding	Content	Supporting
 5.2(A) (Old) generate a fraction equivalent to a given fraction such as 1/2 and 3/6 or 4/12 and 1/3 2014 – Q42 A teacher bought a bag of clothespins. In the bag, 6/18 of the clothespins are blue. 	Dual C	oding us	Content	Supporting
 5.2(A) (Old) generate a fraction equivalent to a given fraction such as 1/2 and 3/6 or 4/12 and 1/3 2014 – Q42 A teacher bought a bag of clothespins. In the bag, 6/18 of the clothespins are blue. 	Dual C Stimulu Thinkir	oding us	Content Process	Supporting 4.1(A)
 5.2(A) (Old) generate a fraction equivalent to a given fraction such as 1/2 and 3/6 or 4/12 and 1/3 2014 – Q42 A teacher bought a bag of clothespins. In the bag, 6/18 of the clothespins are blue. 	Dual C Stimulu Thinkir Related	oding us	Content Process	Supporting 4.1(A)
5.2(A) (Old) generate a fraction equivalent to a given fraction such as 1/2 and 3/6 or 4/12 and 1/3 $2014 - Q42$ A teacher bought a bag of clothespins. In the bag, $\frac{6}{18}$ of the clothespins are blue. Which fraction is equivalent to the fraction of clothespins that are blue? $\mathbf{F} \frac{1}{2}$	Dual C Stimulu Thinkir	oding us	Content Process	Supporting 4.1(A) nalysis Error Analysis
5.2(A) (Old) generate a fraction equivalent to a given fraction such as 1/2 and 3/6 or 4/12 and 1/3 $2014 - Q42$ A teacher bought a bag of clothespins. In the bag, $\frac{6}{18}$ of the clothespins are blue. Which fraction is equivalent to the fraction of clothespins that are blue? $\mathbf{F} \frac{1}{2}$	Dual C Stimulu Thinkir Related	oding us ug ug us ug ug us ug ug us	Content Process	Supporting 4.1(A) nalysis Error Analysis Guessing Careless Error
5.2(A) (Old) generate a fraction equivalent to a given fraction such as 1/2 and 3/6 or 4/12 and 1/3 $2014 - Q42$ A teacher bought a bag of clothespins. In the bag, $\frac{6}{18}$ of the clothespins are blue. Which fraction is equivalent to the fraction of clothespins that are blue? $\mathbf{F} = \frac{1}{2}$	Dual C Stimulu Thinkir Related Item F	oding us us us us State 5	Content Process	Supporting 4.1(A) halysis Error Analysis Guessing Careless Error Stopped too Early
5.2(A) (Old) generate a fraction equivalent to a given fraction such as 1/2 and 3/6 or 4/12 and 1/3 $2014 - Q42$ A teacher bought a bag of clothespins. In the bag, $\frac{6}{18}$ of the clothespins are blue. Which fraction is equivalent to the fraction of clothespins that are blue? $\mathbf{F} \frac{1}{2}$	Dual C Stimulu Thinkir Related Item F G	oding us us us us State 5	Content Process	Supporting 4.1(A) nalysis Error Analysis Guessing Careless Error
5.2(A) (Old) generate a fraction equivalent to a given fraction such as 1/2 and 3/6 or 4/12 and 1/3 $2014 - Q42$ A teacher bought a bag of clothespins. In the bag, $\frac{6}{18}$ of the clothespins are blue. Which fraction is equivalent to the fraction of clothespins that are blue? $\mathbf{F} \frac{1}{2}$	Dual C Stimulu Thinkir Related Item F G H J*	oding us	Process Data Ar Local	Supporting 4.1(A) halysis Error Analysis Guessing Careless Error Stopped too Early Mixed Up Concepts
5.2(A) (Old) generate a fraction equivalent to a given fraction such as 1/2 and 3/6 or 4/12 and 1/3 2014 – Q42 A teacher bought a bag of clothespins. In the bag, $\frac{6}{18}$ of the clothespins are blue. Which fraction is equivalent to the fraction of clothespins that are blue? F $\frac{1}{2}$ G $\frac{2}{3}$	Dual C Stimulu Thinkir Related Item F G H J*	oding us	Process Data Ar Local	Supporting 4.1(A) halysis Error Analysis Guessing Careless Error Stopped too Early
5.2(A) (Old) generate a fraction equivalent to a given fraction such as 1/2 and 3/6 or 4/12 and 1/3 2014 – Q42 A teacher bought a bag of clothespins. In the bag, $\frac{6}{18}$ of the clothespins are blue. Which fraction is equivalent to the fraction of clothespins that are blue? F $\frac{1}{2}$ G $\frac{2}{3}$	Dual C Stimulu Thinkir Related Item F G H J*	oding us	Process Data Ar Local	Supporting 4.1(A) halysis Error Analysis Guessing Careless Error Stopped too Early Mixed Up Concepts



4.3(C) (New) determine if two given fractions are equivalent using a variety of methods **Analysis of Assessed Standards** 4.2(A) (Old) use concrete objects and pictorial models to generate equivalent fractions Content Supporting **Dual Coding** 2014 - Q45 **Process** 4.1(C) Which pair of models is shaded to represent equivalent fractions? **Stimulus Thinking Related SEs** C A **Data Analysis** State Item Local **Error Analysis** Guessing Careless Error В 9 Stopped too Early C* 72 Mixed Up Concepts D 10 Implications for Instruction/Notes В D * Correct answer (C) 4.3(C) (New) determine if two given fractions are equivalent using a variety of methods **Analysis of Assessed Standards**

an improper fraction equivalent to a given mixed number				
2013 – Q6	Dual Coding		Content	Supporting
2013 – Q0			Process	
Edna completed $4\frac{2}{3}$ puzzles. Which improper fraction is equivalent to the number of	Stimulu	ıs		
puzzles Edna completed?	Thinkin	ıg		
	Related	l SEs		
$\frac{9}{3}$				
$\mathbf{F} = \frac{1}{3}$			Data Ar	nalysis
	Item	State	Local	Error Analysis
_ 14	F	7		Guessing
$\frac{14}{3}$	G*	82		☐Careless Error
	Н	5		Stopped too Early
$H = \frac{10}{3}$	J	6		☐Mixed Up Concepts
$\frac{\pi}{3}$				
	In	nplicati	ons for Ir	nstruction/Notes
_ 24				
$\frac{24}{3}$				
-				
* Correct answer (G)				

4.3(C) (New) determine if two given fractions are equivalent using a variety of methods		Analysi	s of Asses	ssed Standards
5.2(A) (Old) generate a fraction equivalent to a given fraction such as 1/2 and 3/6 or 4/12 and 1/3		a.yo	3 01 7 1330	osou otanuarus
	Dual Coding		Content	Supporting
2013 – Q17	Duai C	oung	Process	4.1(A)
Kwan has a garden. If $\frac{7}{10}$ of the plants in his garden are daisies, which statement could be true?	Stimul	ıs		
A Out of a total of 7 plants 1 plant is a dainy	Thinkin	ıg		
A Out of a total of 7 plants, 1 plant is a daisy.	Related	I SEs		
B Out of a total of 50 plants, 7 plants are daisies.			Data Ar	aalveis
C Out of a total of 35 plants, 15 plants are daisies.	Item	State	Data Ar Local	
D Out of a total of 50 plants, 35 plants are daisies.	Α	11		Error Analysis ☐Guessing
	В	27		☐Careless Error ☐Stopped too Early
	C D*	11 51		☐Mixed Up Concepts
		31		
	Ir	nplicat	ions for Ir	nstruction/Notes
* Correct answer (D)				
4.3(C) (New) determine if two given fractions are equivalent using a variety of				
methods				101 1
5.2(A) (Old) generate a fraction equivalent to a given fraction such as 1/2 and 3/6 or 4/12 and 1/3	Analysis of Assessed Standards			ssed Standards
2013 – Q35	Dual C	oding	Content	Supporting
20.0 400		•	Process	4.1(B)
Antonia colored 36 of the 60 pictures in her coloring book. Which fraction is				
NOT equivalent to the fraction of pictures Antonia colored?	Stimulu			
6	Thinking Related SEs			
A $\frac{\sigma}{10}$	Related	1 355		
			Data Ar	nalysis
_ 3	Item	State	Local	Error Analysis
B $\frac{3}{5}$	Α	10		□Guessing
	B C*	15		☐Careless Error ☐Stopped too Early
		65	1	☐Mixed Up Concepts
8				□lvlixed ob Concepts
c $\frac{8}{20}$	D	10		□ IMIXed Op Concepts
$c \frac{8}{20}$	D	10	ions for Ir	nstruction/Notes
c $\frac{8}{20}$ D $\frac{18}{30}$	D	10	ions for Ir	<u> </u>

* Correct answer (C)

met	(C) (New) determine if two given fractions are equivalent using a variety of chods A) (Old) generate a fraction equivalent to a given fraction such as 1/2 and 3/6 or 4/12 1/3	Analysis of Assessed Standards			
204	13 040	Dual Coding		Content	Supporting
20	3 – Q49			Process	4.1(A)
Sc	ott completed $\frac{4}{6}$ of a project on Saturday. Which fraction is equivalent to $\frac{4}{6}$?				
	6	Stimulu	ıs		
	16	Thinkin	ıg		
Α	$\frac{16}{24}$	Related SEs			
	24				
	8			Data Ar	nalysis
B		Item	C4-4-		
	18		State	Local	Error Analysis
	$\frac{8}{18}$	A *	77	Local	☐Guessing
		A* B	77 10	Local	☐Guessing ☐Careless Error
С	18 16 18	A *	77	Local	☐Guessing
С		A* B C D	77 10 7 5		Guessing Careless Error Stopped too Early Mixed Up Concepts
C	$\frac{16}{18}$	A* B C D	77 10 7 5		☐Guessing ☐Careless Error ☐Stopped too Early
C		A* B C D	77 10 7 5		Guessing Careless Error Stopped too Early Mixed Up Concepts
C D	$\frac{16}{18}$	A* B C D	77 10 7 5		Guessing Careless Error Stopped too Early Mixed Up Concepts
C D	$\frac{16}{18}$	A* B C D	77 10 7 5		Guessing Careless Error Stopped too Early Mixed Up Concepts

4	4.3(D)	Units:		
	4.3(D) compare two fractions with different numerators and different denominators and represent the comparison using the symbols >, =, or <	Analysi	s of Asse	ssed Standards
	2015 – Sample Q7	Multi Coding	Content	Readiness
-	2010 Cample &		Process	4.1(A), 4.1(B), 4.1(G)
١.				
	Faith has completed $\frac{6}{18}$ of her math homework. Olivia has completed $\frac{4}{9}$ of her	Stimulus		
	math homework. Which of these girls has completed a greater fraction of her	Thinking		

- math homework?
 - $\textbf{A} \ \ \text{Faith, because} \ \frac{6}{18} > \frac{4}{9}$

IQ Analysis | Investigating the Question

- $\textbf{B} \ \ \text{Faith, because} \ \frac{6}{18} < \frac{4}{9}$
- $\textbf{C} \quad \text{Olivia, because } \frac{4}{9} < \frac{6}{18}$
- **D** Olivia, because $\frac{4}{9} > \frac{6}{18}$

	*	Correct answer	(D)	١
--	---	----------------	-----	---

Stimulus							
Thinking							
Related SEs							
Data Analysis							
Item State Local Error Analysis							
Α			☐Guessing				
В	NA		☐Careless Error				
С	INA		Stopped too Early				
D*			☐Mixed Up Concepts				
	1						
Implications for Instruction/Notes							

SE 4.3(D)



RC: 1

4.3(D) (New) compare two fractions with different numerators and different denominators and represent the comparison using the symbols >, =, or < 4.2(C) (Old) compare and order fractions using concrete objects and pictorial models		Analysi	s of Asses	ssed Standards
2042 046	Dual Coding		Content	Readiness
2013 – Q16	Dual C	builig	Process	4.1(E)
The models below are shaded to represent two different fractions.				
	Stimulu	IS		
	Thinkin	g		
	Related	SEs		
			D . A	
	Item	State	Data Ar Local	
	F	14	20001	Error Analysis ☐Guessing
Which statement is true?	G	8		☐Careless Error
	H*	77		☐Stopped too Early ☐Mixed Up Concepts
	J	1		
$\mathbf{F} = \frac{3}{7} > \frac{7}{12}$	In	nplicat	ions for Ir	nstruction/Notes
, 12				
a 3 7				
G $\frac{3}{4} < \frac{7}{12}$				
$H \frac{3}{7} < \frac{7}{12}$				
$\frac{1}{7} \times \frac{1}{12}$				
J $\frac{4}{7} > \frac{5}{7}$				

* Correct answer (H)

4.3(D) (New) compare two fractions with different numerators and different denominators and represent the comparison using the symbols >, =, or < **5.2(C) (Old)** compare two fractional quantities in problem solving situations using a variety of methods, including common denominators

Analysis of Assessed Standards

Readiness

2013 –	\cap 22
- といっこー	· (J.3Z

Process 4.1(F)

Dual Coding

Related SEs

A teacher wrote several nouns, verbs, adjectives, and adverbs on the board. The table below shows the fraction of each type of word written on the board.

Stimulus
Thinking

Content

Words

	Data Analysis							
Item	State	Local	Error Analysis					
F	7		Guessing					
G*	76		☐Careless Error					
Н	6		Stopped too Early					
J	12		☐Mixed Up Concepts					

Type of Word	Fraction of Words on Board
Noun	3 7
Verb	3 14
Adjective	1 14
Adverb	<u>2</u> 7

Implications for Instruction/Notes

Which correctly compares two of these fractions?

$$\mathbf{F} = \frac{1}{14} > \frac{3}{7}$$

G
$$\frac{3}{7} > \frac{3}{14}$$

H
$$\frac{3}{14} < \frac{1}{14}$$

J
$$\frac{2}{7} < \frac{3}{14}$$

* Correct answer (G)

	Unite	
IQ Analysis Investigating the Question	SE 4.3(E)	RC: 2

den	E) represent and solve addition and subtraction of fractions with equal ominators using objects and pictorial models that build to the number line and perties of operations	,	Analysis	s of Asse	ssed Standards					
204	F. Comple O0	Multi C	a din a	Content	Readiness					
201	2015 – Sample Q8			Process	4.1(A), 4.1(B), 4.1(E), 4.1(F)					
8	Cara and Elena used fabric to make costumes for a talent show. Cara used $\frac{4}{8}$ of	Stimulu	16							
	the fabric for her costume. The girls used $\frac{6}{9}$ of the fabric altogether.	Sumuit	12							
	8	Thinkir	ng							
	⊢———— Cara and Elena ————	Related	I SEs							
			-	Data Aı	nalysis					
	Cara	Item A	State	Local	Error Analysis					
					☐Guessing					
	What fraction of the fabric did Elena use?	В	NA	NA -	NA -	NA .	NA -	NA NA		☐Careless Error ☐Stopped too Early
		<u>C*</u>			☐Mixed Up Concepts					
		D			,					
	A $\frac{10}{16}$				/51					
	16	ır	npiicati	ons for ir	nstruction/Notes					
	B $\frac{10}{8}$									
	8									
	2									
	$c \frac{2}{8}$									
	8									
	$D = \frac{1}{2}$									
	2									
* Co	errect answer (C)									



		evaluate the reasonableness of sums and differences of fractions using mark fractions 0, 1/4, 1/2, 3/4, and 1, referring to the same whole		Analysi	s of Asse	ssed Standards		
2015 – Sample Q9 Multi Co		odina	Content	Supporting				
20		•	Water C	oding	Process	4.1(A), 4.1(B), 4.1(G)		
9	Ha	ailey and Wendy painted an entire wall together. Hailey painted $\frac{3}{7}$ of the wall,				(-),(-)		
	ar	nd Wendy painted the rest. Which statement is true?	Stimul	ıs				
	A	Hailey painted less than half the wall, and Wendy painted more than half the wall.	Thinkir	Thinking		hinking		
			Related SEs					
	В	Hailey painted more than half the wall, and Wendy painted less than half the						
		wall.		Data Analysis				
	C	Each girl painted more than half the wall.	Item	State	Local	Error Analysis		
	_	Each airl painted loss than half the wall	A *			☐Guessing		
	D	Each girl painted less than half the wall.	В	NΔ	NA	☐ Careless Error ☐ Stopped too Early ☐ Mixed Up Concepts		
			С					
			D			Пинхед ор обносрьз		
			Ir	nplicat	ions for Ir	nstruction/Notes		
* C	orre	ect answer (A)						



4.3(G)

Units:

- **4.3(G) (New)** represent fractions and decimals to the tenths or hundredths as distances from zero on a number line
- **4.11 (A) (Old)** locate and name points on a number line using whole numbers, fractions such as halves and fourths, and decimals such as tenths

2013 - Q46

46 Which point best represents $36\frac{1}{4}$ on the number line below?



- F Point R
- G Point S
- H Point T
- J Point U

Analysis of Assessed Standards

Dual Coding	Content	Supporting
Duai County	Process	4.1(B)
Stimulus		
Thinking		
Related SEs		

		nalysis	
Item	State	Local	Error Analysis
F	7		Guessing
G	10		Careless Error
H*	67		Stopped too Early
J	16		☐Mixed Up Concepts

Implications for	Instruction/Notes

* Correct answer (H)

4.4(A)	Unite:	
IQ Analysis Investigating the Question	SE 4.4(A)	RC: 2

4.4(A) add and subtract whole numbers and decimals to the hundredths place using the standard algorithm	F	nalysi	s of Asses	ssed Standards
2045 0 1 040				Readiness
2015 – Sample Q10	Multi Coding		Process	4.1(A), 4.1(B), 4.1(F)
10 The locations and lengths of three of the longest tunnels in the world are listed.	Stimulu	e		
 Gotthard Base Tunnel in Switzerland, 57.07 km 	Thinkin			
Seikan Tunnel in Japan, 53.85 km	Related			
 Channel Tunnel between England and France, 50.45 km 	Related	SES		
What is the difference between the length of the Channel Tunnel and the length			Data Ar	nalysis
of the Gotthard Base Tunnel in kilometers?	Item A	State	Local	Error Analysis
A 3.22 km	В			☐Guessing ☐Careless Error
B 7.62 km	C*	NA		☐Stopped too Early
B 7.02 KIII	D			☐Mixed Up Concepts
C 6.62 km	lm	ndiaat	one for In	estruction /Notes
D 7.42 km	III	іріісаі	OHS IOI II	struction/Notes
 4.4(A) (New) add and subtract whole numbers and decimals to the hundredths place using the standard algorithm 5.3(A) (Old) use addition and subtraction to solve problems involving whole numbers and 	- μ	ınalysi	s of Asses	ssed Standards
decimals				
2014 – Q22	Dual Co	oding	Content	Readiness
			Process	4.1(B)
22 Mrs. Zapata paid a total of \$8.17 to mail three packages.	Stimulu	s		
 She paid \$2.77 to mail the first package. 	Thinkin			
 She paid \$3 to mail the second package. 	Related	SEs		
 She paid \$3 to mail the second package. 	Related	SEs		
 She paid \$3 to mail the second package. How much did Mrs. Zapata pay to mail the third package? 	Related	SEs	Data Ar	nalysis
	Item	State	Data Ar	nalysis Error Analysis
				Error Analysis Guessing
How much did Mrs. Zapata pay to mail the third package?	Item F G*	State 6 72 3		Error Analysis Guessing Careless Error Stopped too Early
How much did Mrs. Zapata pay to mail the third package? F \$3.60 G \$2.40	Item F G*	State 6 72		Error Analysis Guessing Careless Error
How much did Mrs. Zapata pay to mail the third package? F \$3.60 G \$2.40 H \$6.37	Item F G* H J	State 6 72 3 19	Local	Error Analysis Guessing Careless Error Stopped too Early
How much did Mrs. Zapata pay to mail the third package? F \$3.60 G \$2.40	Item F G* H J	State 6 72 3 19	Local	Error Analysis Guessing Careless Error Stopped too Early Mixed Up Concepts
How much did Mrs. Zapata pay to mail the third package? F \$3.60 G \$2.40 H \$6.37	Item F G* H J	State 6 72 3 19	Local	Error Analysis Guessing Careless Error Stopped too Early Mixed Up Concepts



4.4(A) (New) add and subtract whole numbers and decimals to the hundredths place using the standard algorithm6.2B (Old) use addition and subtraction to solve problems involving fractions and decimals			Analysi	s of Asses	ssed Standards
V.LL	(Cla) and dashed and dashed for the solve prosicing involving nactions and dominate			Content	Readiness
201	4 – Q42	Dual Coding		Process	4.1(A)
42	Enrique bought a football and a puzzle at a store.				
	the sold data as football	Stimul	ıs		
	 He paid \$15.35 for the football. He paid a total of \$24.02 for the football and the puzzle. 	Thinkin	ng		
		Related	l SEs		
	How much did Enrique pay for the puzzle, in dollars and cents?			Data A	
	Record your answer and fill in the bubbles on your answer document. Be sure to use the	Item	State	Data Ar Local	
	correct place value.		65		Error Analysis ☐Guessing
		8.67	35		☐Careless Error ☐Stopped too Early
			0		☐Mixed Up Concepts
			U		· · ·
		Ir	nplicat	ions for Ir	nstruction/Notes
* Co	rrect answer (8.67)				
	Trect allswer (0.07)				
plac 5.3(A) (New) add and subtract whole numbers and decimals to the hundredths e using the standard algorithm A) (Old) use addition and subtraction to solve problems involving whole numbers and mals	-	Analysi	s of Asses	ssed Standards
				Content	Readiness
201	4 – Q45	Dual C	oding	Process	
45	The table below shows the scores for two divers at a diving championship.				
43	The table below shows the scores for two divers at a diving championship.	Stimul	ıs		
	Diving Championship	Thinkin	ng		
	Diver Score	Related	l SEs		
	Carl 399.8				
	Eric 462.25	Itom	State	Data Ar Local	nalysis
		Item A	6	LOCAI	Error Analysis
	What is the difference between these two scores?	В	7		☐Guessing ☐Careless Error
		C*	83		Stopped too Early
	A 73.45	D	3		☐Mixed Up Concepts
	B 137.65	Ir	nplicat	ions for Ir	nstruction/Notes
	C 62.45		1		
	D 173.45				
* Co	rrect answer (C)				

 4.4(A) (New) add and subtract whole numbers and decimals to the hundredths place using the standard algorithm 5.3(A) (Old) use addition and subtraction to solve problems involving whole numbers and decimals Analysis of Assessed Standard algorithm			ssed Standards	
2013 – Q4	Dual Coding		Content	Readiness
2013 – Q4			Process	4.1(A)
4 Owen lives 145.25 kilometers from Houston, Texas. Sharon lives 209.5 kilometers			I	
from Houston. What is the difference between these two distances?	Stimul			
F 64.25 km	Thinkin			
G 54.35 km	Related	I SEs		
H 124.30 km			Data Aı	nalveis
	Item	State	Local	
J 144.35 km	F*	85		Error Analysis ☐Guessing
	G	4		☐Careless Error
	Н	3		Stopped too Early
	J	7		☐Mixed Up Concepts
	Ir	nplicat	ions for Ir	nstruction/Notes
* Correct answer (F)				
4.4(A) (New) add and subtract whole numbers and decimals to the hundredths place using the standard algorithm		Analysi	s of Asse	ssed Standards
6.2B (Old) use addition and subtraction to solve problems involving fractions and decimals				
2013 – Q41	Dual Coding		Content	Readiness
			Process	5.1(B)
41 Mr. Lee mailed 3 packages. The greatest amount he paid to mail one of these packages was \$3.60. The least amount he paid to mail one of these packages was \$1.70. What could be the	Stimul	ıs		
total amount Mr. Lee paid to mail the 3 packages?	Thinkin	ng		
A \$8.30	Related	l SEs		
B \$11.50				
C \$5.10		-	Data Aı	nalysis
D \$10.80	Item	State	Local	Error Analysis
	A*	61		☐Guessing ☐Careless Error
	B C	5		☐Stopped too Early
	D	22 11		☐Mixed Up Concepts
	Implications for Instruction/Notes			



* Correct answer (A)

4 4/D)		Unito	
IQ Analysis	Investigating the Question	SE 4.4(B)	RC: 2

4.4(B) (New) determine products of a number and 10 or 100 using properties of operations and place value understandings 4.6(B) (Old) use patterns to multiply by 10 and 100					_	Analysi	is of Assessed Standards			
2014 – Q29					Dual Coding		Content	Supporting		
							Process	4.1(B)		
Lionel sells boxes of greeting cards. The table below shows the number of cards				011						
in different numbers of boxes.				Stimuli						
Greeting Cards					Thinkir					
	Number of Boxes 49 67 82 114					Related SEs				
	Number of Boxes	49	67	02	114			nalysis		
	Number of	4,900	6,700	8,200			Item A	State 16	Local	Error Analysis
	Greeting Cards	.,,,,,	0,7.00	3,200			B 11			☐Guessing ☐Careless Error
How many o	greeting cards are ir	114 of	those ho	voc7			C*	70		☐Stopped too Early ☐Mixed Up Concepts
	greeting cards are in	111401	inese bo.	xc3:			_			
A 10,000							İr	nplicat	ions for Ir	nstruction/Notes
B 1,140										
C 11,400										
D 11,004										
* Correct ans	wer (C)									
4.4(5) (1)				1.4040						
operations ar	determine products nd place value unde se patterns to multiply	erstanding	gs	1 10 or 10	00 using	properties of		Analysi	s of Asses	ssed Standards
2013 – Q25							Dual Coding		Content	Supporting
2013 – Q23	•								Process	4.1(A)
	ss at a water park of was the total cost of				eople pa	id for a season	Stimuli	us		
A \$225							Thinkir	ng		
B \$12,500							Related	d SEs		
c \$12,005									Data Ar	nalysis
D \$1,250							Item	State	Local	Error Analysis
D \$1,230							B*	24 56		☐Guessing ☐Careless Error
							С	3		☐Stopped too Early
							D	16		☐Mixed Up Concepts
						Implications for Instruction/Notes				
* Correct ans	wer (B)									



IQ Analysis | Investigating the Question SE 4.4(C) RC: 2 4.4(C) represent the product of 2 two-digit numbers using arrays, area models, or equations, including perfect squares through 15 by 15

No test questions 2013 – 2015

io Analysis investigating the Question					RC: 2		
4.4(D)				Units:			
 4.4(D) (New) use strategies and algorithms, including the standard algorithm, to multiply up to a four-digit number by a one-digit number and to multiply a two-digit number by a two-digit number. Strategies may include mental math, partial products, and the commutative, associative, and distributive properties 4.4(D) (Old) use multiplication to solve problems (no more than two digits times two digits without technology 	Analysis of Asse			essed Standards			
2014 – 14		Dual Coding		Suppo	rting		
		oung	Process	4.1(B)			
There are 990 football players on high school teams in a city. Each team has the same number of players. Which group of teams could NOT describe the teams of football players in this city? F 45 teams with 22 players on each team							
		Stimulus					
		Thinking					
		Related SEs					
G 27 teams with 70 players on each team							
H 33 teams with 30 players on each team	Item State		Data Ar	nalysis			
J 18 teams with 55 players on each team	Item State F 21		Local	Error Analysis ☐Guessing			
10 teams with 33 players on each team	G*	51			eless Error		
	Н	14			oped too Early		
	J	14			ed Up Concepts		
		Implications for Instruction/Notes					
* Correct answer (G)							



 4.4(D) (New) use strategies and algorithms, including the standard algorithm, to multiply up to a four-digit number by a one-digit number and to multiply a two-digit number by a two-digit number. Strategies may include mental math, partial products, and the commutative, associative, and distributive properties 4.4(D) (Old) use multiplication to solve problems (no more than two digits times two digits without technology 	Analysis of Assessed Standards				
2013 – Q13	Dual Coding		Content Supporting		
2013 – Q13	Duai Co	Juliy	Process	4.1(B)	
The list below shows the number of picture frames Shelly sold on each day of an art sale.	Ctimoulu				
	Stimulu				
She sold 16 picture frames on Thursday. She sold 22 picture frames on Friday.	Thinkin				
She sold 25 picture frames on Saturday. She sold 25 picture frames on Saturday.	Related	SES			
She sold 25 picture frames on Saturday.			Data Aı	nalveie	
The cost of each picture frame was \$14. What was the total cost of these picture	Item	State	Local		
frames in dollars?		44		Error Analysis ☐Guessing	
	882	56		☐Careless Error	
Record your answer and fill in the bubbles on your answer document. Be sure to	33_	0		☐Stopped too Early ☐Mixed Up Concepts	
use the correct place value.		0			
	In	nplicati	ons for Ir	nstruction/Notes	
* Correct answer (882)					
4.4(D) (New) use strategies and algorithms, including the standard algorithm to					
 4.4(D) (New) use strategies and algorithms, including the standard algorithm, to multiply up to a four-digit number by a one-digit number and to multiply a two-digit number by a two-digit number. Strategies may include mental math, partial products, and the commutative, associative, and distributive properties 4.4(D) (Old) use multiplication to solve problems (no more than two digits times two digits without technology 	Į.	Analysis	s of Asse	ssed Standards	
multiply up to a four-digit number by a one-digit number and to multiply a two-digit number by a two-digit number. Strategies may include mental math, partial products, and the commutative, associative, and distributive properties 4.4(D) (Old) use multiplication to solve problems (no more than two digits times two digits without technology	-	•	of Asse	ssed Standards Supporting	
multiply up to a four-digit number by a one-digit number and to multiply a two-digit number by a two-digit number. Strategies may include mental math, partial products, and the commutative, associative, and distributive properties 4.4(D) (Old) use multiplication to solve problems (no more than two digits times two digits	Dual Co	•		Supporting	
multiply up to a four-digit number by a one-digit number and to multiply a two-digit number by a two-digit number. Strategies may include mental math, partial products, and the commutative, associative, and distributive properties 4.4(D) (Old) use multiplication to solve problems (no more than two digits times two digits without technology 2013 – Q39 There are 39 containers of water for the students at a race. Each container holds	Dual Co	oding	Content	Supporting	
multiply up to a four-digit number by a one-digit number and to multiply a two-digit number by a two-digit number. Strategies may include mental math, partial products, and the commutative, associative, and distributive properties 4.4(D) (Old) use multiplication to solve problems (no more than two digits times two digits without technology 2013 – Q39 There are 39 containers of water for the students at a race. Each container holds 24 quarts of water. How many quarts of water are in the 39 containers?	Dual Co	oding	Content	Supporting	
multiply up to a four-digit number by a one-digit number and to multiply a two-digit number by a two-digit number. Strategies may include mental math, partial products, and the commutative, associative, and distributive properties 4.4(D) (Old) use multiplication to solve problems (no more than two digits times two digits without technology 2013 – Q39 There are 39 containers of water for the students at a race. Each container holds	Dual Co Stimulu	oding is	Content	Supporting	
multiply up to a four-digit number by a one-digit number and to multiply a two-digit number by a two-digit number. Strategies may include mental math, partial products, and the commutative, associative, and distributive properties 4.4(D) (Old) use multiplication to solve problems (no more than two digits times two digits without technology 2013 – Q39 There are 39 containers of water for the students at a race. Each container holds 24 quarts of water. How many quarts of water are in the 39 containers?	Dual Co	oding is	Content	Supporting	
multiply up to a four-digit number by a one-digit number and to multiply a two-digit number by a two-digit number. Strategies may include mental math, partial products, and the commutative, associative, and distributive properties 4.4(D) (Old) use multiplication to solve problems (no more than two digits times two digits without technology 2013 – Q39 There are 39 containers of water for the students at a race. Each container holds 24 quarts of water. How many quarts of water are in the 39 containers? A 234 qt	Dual Co Stimulu	oding is	Content	Supporting 4.1(A)	
multiply up to a four-digit number by a one-digit number and to multiply a two-digit number by a two-digit number. Strategies may include mental math, partial products, and the commutative, associative, and distributive properties 4.4(D) (Old) use multiplication to solve problems (no more than two digits times two digits without technology 2013 – Q39 There are 39 containers of water for the students at a race. Each container holds 24 quarts of water. How many quarts of water are in the 39 containers? A 234 qt B 936 qt C 1,026 qt	Dual Co Stimulu	oding is	Content	Supporting 4.1(A)	
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multiply up to a four-digit number by a one-digit number and to multiply a two-digit number by a two-digit number. Strategies may include mental math, partial products, and the commutative, associative, and distributive properties 4.4(D) (Old) use multiplication to solve problems (no more than two digits times two digits without technology 2013 – Q39 There are 39 containers of water for the students at a race. Each container holds 24 quarts of water. How many quarts of water are in the 39 containers? A 234 qt B 936 qt C 1,026 qt	Dual Co	oding g SES State 13 68	Content Process	Supporting 4.1(A) nalysis Error Analysis Guessing Careless Error	
multiply up to a four-digit number by a one-digit number and to multiply a two-digit number by a two-digit number. Strategies may include mental math, partial products, and the commutative, associative, and distributive properties 4.4(D) (Old) use multiplication to solve problems (no more than two digits times two digits without technology 2013 – Q39 There are 39 containers of water for the students at a race. Each container holds 24 quarts of water. How many quarts of water are in the 39 containers? A 234 qt B 936 qt C 1,026 qt	Stimulu Thinkin Related Item A B* C D	oding ISES State 13 68 7 11	Content Process Data Ai Local	Supporting 4.1(A) halysis Error Analysis Guessing Careless Error Stopped too Early	
multiply up to a four-digit number by a one-digit number and to multiply a two-digit number by a two-digit number. Strategies may include mental math, partial products, and the commutative, associative, and distributive properties 4.4(D) (Old) use multiplication to solve problems (no more than two digits times two digits without technology 2013 – Q39 There are 39 containers of water for the students at a race. Each container holds 24 quarts of water. How many quarts of water are in the 39 containers? A 234 qt B 936 qt C 1,026 qt	Stimulu Thinkin Related Item A B* C D	oding ISES State 13 68 7 11	Content Process Data Ai Local	Supporting 4.1(A) halysis Error Analysis Guessing Careless Error Stopped too Early Mixed Up Concepts	



 4.4(D) (New) use strategies and algorithms, including the standard algorithm, to multiply up to a four-digit number by a one-digit number and to multiply a two-digit number by a two-digit number. Strategies may include mental math, partial products, and the commutative, associative, and distributive properties 5.3(B) (Old) use multiplication to solve problems involving whole numbers (no more than three digits times two digits without technology) 	Analysis of Assessed Standards				
2013 – Q47		Dual Coding		Supporting	
			Process	4.1(B)	
On Monday 149 people each bought 1 CD at a music store. On Tuesday 263 people each bought 1 CD. All the CDs cost \$9. What was the total amount paid for the CDs					
on these two days?	Thinking Related SEs				
A \$3,608					
B \$1,341					
C \$2,367	Data Analysis			nalysis	
\$2,307	Item	State	Local	Error Analysis	
D \$3,708	A B	11 7		☐Guessing ☐Careless Error	
	С	9		Stopped too Early	
	D*	72		☐Mixed Up Concepts	
		1			
	Implications for Instruction/Notes				
* Correct anguar (D)					
* Correct answer (D)					



A 4/C)	Linita.	
IQ Analysis Investigating the Question	SE 4.4(E)	RC: 2

 4.4(E) (New) represent the quotient of up to a four-digit whole number divided by a one-digit whole number using arrays, area models, or equations 4.4(E) (Old) use division to solve problems (no more than one-digit divisors and three-digit dividends without technology 			Analysis of Assessed Standards				
2013 – Q9			Content				
			FIOCESS	4.1(G)			
Terrell spent \$306 on a television and 3 video games. He spent \$243 on the television. Each video game was the same price. How much did Terrell spend on each video game?		Stimulus					
		Thinking					
A \$21, because $306 - 243 = 63$ and $63 \div 3 = 21$	Related	l SEs					
B \$1,647, because $306 + 243 = 549$ and $549 \times 3 = 1,647$							
		-	Data Ar Local	Data Analysis			
C \$183, because $306 + 243 = 549$ and $549 \div 3 = 183$	Item	Item State		Error Analysis			
D \$189, because $306 - 243 = 63$ and $63 \times 3 = 189$	A* B	73 7		☐Guessing ☐Careless Error			
D \$189, because $306 - 243 = 63$ and $63 \times 3 = 189$				☐Careless Error ☐Stopped too Early			
D \$189, because $306 - 243 = 63$ and $63 \times 3 = 189$	В	7		Careless Error			
D \$189, because $306 - 243 = 63$ and $63 \times 3 = 189$	ВС	7		☐Careless Error ☐Stopped too Early			
D \$189, because $306 - 243 = 63$ and $63 \times 3 = 189$	B C D	7 9 10	ions for Ir	☐Careless Error ☐Stopped too Early			
D \$189, because $306 - 243 = 63$ and $63 \times 3 = 189$	B C D	7 9 10	ions for Ir	Careless Error Stopped too Early Mixed Up Concepts			



IQ Analysis Investigating the Question					RC: 2		
4.4(F)				Units:			
· ·							
 4.4(F) (New) use strategies and algorithms, including the standard algorithm, to divide up to a four-digit dividend by a one-digit divisor 4.4(E) (Old) use division to solve problems (no more than one-digit divisors and three-digit dividends without technology use division to solve problems (no more than one-digit divisors and three-digit dividends without technology 		Analysis of Assessed Standards					
2014 – Q20		Dual Coding		Supporting			
		oung	Process	4.1(A)			
Isaiah put 301 floor tiles in 7 rows. Each row had the same number of tiles. How many tiles did Isaiah put in each row? F 43							
G 41	Related	d SEs					
H 42	Item		Data Ar	nalysis			
J 40		State	Local		Analysis		
	F*	78 7		Gue	essing eless Error		
	Н	8			oped too Early		
	J	6		☐Mix	ed Up Concepts		
			Implications for Instruction/Notes				
		-					



* Correct answer (F)

4.4(E) (Nov.) was attacked as and algorithms, including the atondard algorithm to			
 4.4(F) (New) use strategies and algorithms, including the standard algorithm, to divide up to a four-digit dividend by a one-digit divisor 5.3(C) (Old) use division to solve problems involving whole numbers (no more than two-digit 	Analys	is of Asse	ssed Standards
divisors and three-digit dividends without technology), including interpreting the remainder within a given context			
2014 – Q24	Dual Coding	Content	Supporting
	Dual Couling	Process	4.1(B)
A water dispenser contains 512 fluid ounces of water. What is the total number of 8-fluid-ounce cups of water that can be filled from the dispenser?	Stimulus		
F 611	Thinking		
G 64	Related SEs		
L 4.006		Data Aı	nalysis
H 4,096	Item State	Local	
J 61	F 5		Error Analysis ☐Guessing
	G* 74		☐Careless Error
	H 16		Stopped too Early
	J 5		☐Mixed Up Concepts
	lua u li a a	iana far l	notureties /Neteo
	Implica	lions for it	nstruction/Notes
* Correct answer (G)			
4.4(F) (New) use strategies and algorithms, including the standard algorithm, to			
divide up to a four-digit dividend by a one-digit divisor			
4.4(E) (Old) use division to solve problems (no more than one-digit divisors and three-digit dividends without technology use division to solve problems (no more than one-digit divisors	Analys	is of Asse	
			ssed Standards
			sseu statiuatus
and three-digit dividends without technology	Dual Coding	Content	
	Dual Coding	Content Process	Supporting
and three-digit dividends without technology			Supporting
and three-digit dividends without technology $2013 - Q24$	Stimulus		Supporting
and three-digit dividends without technology $2013 - Q24$	Stimulus Thinking		Supporting
and three-digit dividends without technology 2013 – Q24 The picture below shows the number of prizes that were in 5 treasure chests.	Stimulus		Supporting
and three-digit dividends without technology 2013 – Q24 The picture below shows the number of prizes that were in 5 treasure chests.	Stimulus Thinking	Process	Supporting 4.1(B)
and three-digit dividends without technology 2013 – Q24 The picture below shows the number of prizes that were in 5 treasure chests.	Stimulus Thinking Related SEs	Process Data Ai	Supporting 4.1(B)
and three-digit dividends without technology 2013 – Q24 The picture below shows the number of prizes that were in 5 treasure chests. 54 31 47 64 56 prizes prizes prizes prizes	Stimulus Thinking Related SEs Item State	Process	Supporting 4.1(B) nalysis Error Analysis
and three-digit dividends without technology 2013 – Q24 The picture below shows the number of prizes that were in 5 treasure chests.	Stimulus Thinking Related SEs Item State F 13	Process Data Ai	Supporting 4.1(B) nalysis Error Analysis Guessing
and three-digit dividends without technology 2013 – Q24 The picture below shows the number of prizes that were in 5 treasure chests. 54 31 47 64 56 prizes prizes prizes prizes Mr. Washington opened the chests and put all the prizes into 7 equal groups. How many prizes did Mr. Washington put into each group?	Stimulus Thinking Related SEs Item State	Process Data Ai	Supporting 4.1(B) nalysis Error Analysis Guessing Careless Error Stopped too Early
and three-digit dividends without technology 2013 – Q24 The picture below shows the number of prizes that were in 5 treasure chests. The picture below shows the number of prizes that were in 5 treasure chests. The picture below shows the number of prizes that were in 5 treasure chests. The picture below shows the number of prizes that were in 5 treasure chests. The picture below shows the number of prizes that were in 5 treasure chests. The picture below shows the number of prizes that were in 5 treasure chests. The picture below shows the number of prizes that were in 5 treasure chests. The picture below shows the number of prizes that were in 5 treasure chests.	Stimulus Thinking Related SEs Item State F 13 G 4	Process Data Ai	Supporting 4.1(B) nalysis Error Analysis Guessing Careless Error
and three-digit dividends without technology 2013 – Q24 The picture below shows the number of prizes that were in 5 treasure chests. 54 31 47 64 56 prizes prizes prizes prizes Mr. Washington opened the chests and put all the prizes into 7 equal groups. How many prizes did Mr. Washington put into each group?	Stimulus Thinking Related SEs Item State F 13 G 4 H* 54 J 28	Process Data Al	Supporting 4.1(B) malysis Error Analysis Guessing Careless Error Stopped too Early Mixed Up Concepts
and three-digit dividends without technology 2013 – Q24 The picture below shows the number of prizes that were in 5 treasure chests. 54 31 47 64 56 prizes prizes prizes Mr. Washington opened the chests and put all the prizes into 7 equal groups. How many prizes did Mr. Washington put into each group? F 34	Stimulus Thinking Related SEs Item State F 13 G 4 H* 54 J 28	Process Data Al	Supporting 4.1(B) nalysis Error Analysis Guessing Careless Error Stopped too Early
and three-digit dividends without technology 2013 – Q24 The picture below shows the number of prizes that were in 5 treasure chests. The picture below shows the number of prizes that were in 5 treasure chests. The picture below shows the number of prizes that were in 5 treasure chests. The picture below shows the number of prizes that were in 5 treasure chests. The picture below shows the number of prizes that were in 5 treasure chests. The picture below shows the number of prizes that were in 5 treasure chests. The picture below shows the number of prizes that were in 5 treasure chests. The picture below shows the number of prizes that were in 5 treasure chests. The picture below shows the number of prizes that were in 5 treasure chests. The picture below shows the number of prizes that were in 5 treasure chests.	Stimulus Thinking Related SEs Item State F 13 G 4 H* 54 J 28	Process Data Al	Supporting 4.1(B) malysis Error Analysis Guessing Careless Error Stopped too Early Mixed Up Concepts
and three-digit dividends without technology 2013 – Q24 The picture below shows the number of prizes that were in 5 treasure chests. The picture below shows the number of prizes that were in 5 treasure chests. The picture below shows the number of prizes that were in 5 treasure chests. The picture below shows the number of prizes that were in 5 treasure chests. The picture below shows the number of prizes that were in 5 treasure chests. The picture below shows the number of prizes that were in 5 treasure chests. The picture below shows the number of prizes that were in 5 treasure chests. The picture below shows the number of prizes that were in 5 treasure chests. The picture below shows the number of prizes that were in 5 treasure chests. The picture below shows the number of prizes that were in 5 treasure chests.	Stimulus Thinking Related SEs Item State F 13 G 4 H* 54 J 28	Process Data Al	Supporting 4.1(B) malysis Error Analysis Guessing Careless Error Stopped too Early Mixed Up Concepts
and three-digit dividends without technology 2013 – Q24 The picture below shows the number of prizes that were in 5 treasure chests. The picture below shows the number of prizes that were in 5 treasure chests. The picture below shows the number of prizes that were in 5 treasure chests. The picture below shows the number of prizes that were in 5 treasure chests. The picture below shows the number of prizes that were in 5 treasure chests. The picture below shows the number of prizes that were in 5 treasure chests. The picture below shows the number of prizes that were in 5 treasure chests. The picture below shows the number of prizes that were in 5 treasure chests. The picture below shows the number of prizes that were in 5 treasure chests. The picture below shows the number of prizes that were in 5 treasure chests.	Stimulus Thinking Related SEs Item State F 13 G 4 H* 54 J 28	Process Data Al	Supporting 4.1(B) malysis Error Analysis Guessing Careless Error Stopped too Early Mixed Up Concepts

4.4(G)	Units:	
IQ Analysis Investigating the Question	SE 4.4(G)	RC: 2

4.4(G) (New) round to the nearest 10, 100, or 1,000 or use compatible numbers to estimate solutions involving whole numbers 5.4(A) (Old) use strategies, including rounding and compatible numbers to estimate solutions to addition, subtraction, multiplication, and division problems		Analysi	s of Asse	ssed Standards
2014 – Q20	Dual C	odina	Content	Supporting
2014 – Q20	Duai	oung	Process	4.1(B)
Yuan has a game board like the one shown below.				
	Stimulu	ıs		
	Thinkin	ıg		
	Related	l SEs		
			Data A	nalysis
	Item	State	Local	Error Analysis
	F	6		Guessing
	G	10		☐Careless Error ☐Stopped too Early
	H	9		☐Mixed Up Concepts
	J*	75		
	In	nplicat	ions for lı	nstruction/Notes
		-		
Which of the following is the best estimate of the number of black squares that are on 188 of these game boards?				
F 4,000				
G 3,000				
H 2,500				
J 6,000				
* Correct answer (J)				



4.4(G) (New) round to the nearest 10, 100, or 1,000 or use compatible numbers to estimate solutions involving whole numbers		Analysi	s of Asse	ssed Standards
8.2(C) (Old) evaluate a solution for reasonableness				
2014 – Q33	Dual Coding		Content	Supporting
2014 Q00			Process	4.1(B)
A baseball coach bought some bats and gloves for the school's baseball team. The bats cost \$20 to \$35, and the gloves cost \$30 to \$60. Which of these does NOT represent a reasonable total purchase price for 15 bats and 12 gloves?	Stimul	ıs		
	Thinkin	ng		
A \$1,350 B \$890	Related	l SEs		
B \$890			Data A	nalycic
C \$1,200	Item	State	Data Aı Local	
D \$705	A*	57		Error Analysis ☐Guessing
	В	8		☐Careless Error
	С	7		Stopped too Early
	D	26		☐Mixed Up Concepts
	In	nnlicat	ions for l	nstruction/Notes
	- "	приса	10113 101 11	istruction/notes
* Correct answer (A)				
4.4(G) (New) round to the nearest 10, 100, or 1,000 or use compatible numbers to		N n a lvei	o of Asso	seed Standards
 4.4(G) (New) round to the nearest 10, 100, or 1,000 or use compatible numbers to estimate solutions involving whole numbers 4.5(A) (Old) round whole numbers to the nearest ten, hundred, or thousand to approximate 	-	Analysi	s of Asse	ssed Standards
4.4(G) (New) round to the nearest 10, 100, or 1,000 or use compatible numbers to estimate solutions involving whole numbers		Analysi	s of Asse	
 4.4(G) (New) round to the nearest 10, 100, or 1,000 or use compatible numbers to estimate solutions involving whole numbers 4.5(A) (Old) round whole numbers to the nearest ten, hundred, or thousand to approximate 	Dual C		Content	Supporting
 4.4(G) (New) round to the nearest 10, 100, or 1,000 or use compatible numbers to estimate solutions involving whole numbers 4.5(A) (Old) round whole numbers to the nearest ten, hundred, or thousand to approximate reasonable results in problem situations 2014 – Q44 				Supporting
 4.4(G) (New) round to the nearest 10, 100, or 1,000 or use compatible numbers to estimate solutions involving whole numbers 4.5(A) (Old) round whole numbers to the nearest ten, hundred, or thousand to approximate reasonable results in problem situations 2014 – Q44 The number of worker bees in two bee colonies is shown below. 		oding	Content	Supporting
 4.4(G) (New) round to the nearest 10, 100, or 1,000 or use compatible numbers to estimate solutions involving whole numbers 4.5(A) (Old) round whole numbers to the nearest ten, hundred, or thousand to approximate reasonable results in problem situations 2014 – Q44 The number of worker bees in two bee colonies is shown below. Colony A has 24,815 worker bees. 	Dual C	oding	Content	Supporting
 4.4(G) (New) round to the nearest 10, 100, or 1,000 or use compatible numbers to estimate solutions involving whole numbers 4.5(A) (Old) round whole numbers to the nearest ten, hundred, or thousand to approximate reasonable results in problem situations 2014 – Q44 The number of worker bees in two bee colonies is shown below. 	Dual C	oding	Content	Supporting
 4.4(G) (New) round to the nearest 10, 100, or 1,000 or use compatible numbers to estimate solutions involving whole numbers 4.5(A) (Old) round whole numbers to the nearest ten, hundred, or thousand to approximate reasonable results in problem situations 2014 – Q44 The number of worker bees in two bee colonies is shown below. Colony A has 24,815 worker bees. 	Dual C Stimulu	oding	Content	Supporting
 4.4(G) (New) round to the nearest 10, 100, or 1,000 or use compatible numbers to estimate solutions involving whole numbers 4.5(A) (Old) round whole numbers to the nearest ten, hundred, or thousand to approximate reasonable results in problem situations 2014 – Q44 The number of worker bees in two bee colonies is shown below. Colony A has 24,815 worker bees. Colony B has 7,144 worker bees. 	Dual C Stimulu	oding	Content	Supporting 4.1(B)
 4.4(G) (New) round to the nearest 10, 100, or 1,000 or use compatible numbers to estimate solutions involving whole numbers 4.5(A) (Old) round whole numbers to the nearest ten, hundred, or thousand to approximate reasonable results in problem situations 2014 – Q44 The number of worker bees in two bee colonies is shown below. Colony A has 24,815 worker bees. Colony B has 7,144 worker bees. Which of the following is the best estimate of the difference between the number of worker bees in these colonies? 	Dual C Stimulu Thinkir Related	ooding us ng t SEs	Content Process	Supporting 4.1(B)
 4.4(G) (New) round to the nearest 10, 100, or 1,000 or use compatible numbers to estimate solutions involving whole numbers 4.5(A) (Old) round whole numbers to the nearest ten, hundred, or thousand to approximate reasonable results in problem situations 2014 – Q44 The number of worker bees in two bee colonies is shown below. Colony A has 24,815 worker bees. Colony B has 7,144 worker bees. Which of the following is the best estimate of the difference between the number of worker bees in these colonies? F 23,000 	Dual C Stimulu Thinkir Related Item F	oding us ng 1 SEs State 12	Content Process	Supporting 4.1(B) nalysis Error Analysis Guessing
 4.4(G) (New) round to the nearest 10, 100, or 1,000 or use compatible numbers to estimate solutions involving whole numbers 4.5(A) (Old) round whole numbers to the nearest ten, hundred, or thousand to approximate reasonable results in problem situations 2014 – Q44 The number of worker bees in two bee colonies is shown below. Colony A has 24,815 worker bees. Colony B has 7,144 worker bees. Which of the following is the best estimate of the difference between the number of worker bees in these colonies? 	Dual C Stimulu Thinkir Related Item F G*	oding us us us us state 12 58	Content Process	Supporting 4.1(B) nalysis Error Analysis Guessing Careless Error
 4.4(G) (New) round to the nearest 10, 100, or 1,000 or use compatible numbers to estimate solutions involving whole numbers 4.5(A) (Old) round whole numbers to the nearest ten, hundred, or thousand to approximate reasonable results in problem situations 2014 – Q44 The number of worker bees in two bee colonies is shown below. Colony A has 24,815 worker bees. Colony B has 7,144 worker bees. Which of the following is the best estimate of the difference between the number of worker bees in these colonies? F 23,000 	Dual C Stimulu Thinkir Related Item F	oding us ng 1 SEs State 12	Content Process	Supporting 4.1(B) nalysis Error Analysis Guessing
 4.4(G) (New) round to the nearest 10, 100, or 1,000 or use compatible numbers to estimate solutions involving whole numbers 4.5(A) (Old) round whole numbers to the nearest ten, hundred, or thousand to approximate reasonable results in problem situations 2014 – Q44 The number of worker bees in two bee colonies is shown below. Colony A has 24,815 worker bees. Colony B has 7,144 worker bees. Which of the following is the best estimate of the difference between the number of worker bees in these colonies? F 23,000 G 18,000 	Dual C Stimulu Thinkir Related Item F G* H J	oding us ng us State 12 58 16 12	Process Data Al Local	Supporting 4.1(B) halysis Error Analysis Guessing Careless Error Stopped too Early Mixed Up Concepts
 4.4(G) (New) round to the nearest 10, 100, or 1,000 or use compatible numbers to estimate solutions involving whole numbers 4.5(A) (Old) round whole numbers to the nearest ten, hundred, or thousand to approximate reasonable results in problem situations 2014 – Q44 The number of worker bees in two bee colonies is shown below. Colony A has 24,815 worker bees. Colony B has 7,144 worker bees. Which of the following is the best estimate of the difference between the number of worker bees in these colonies? F 23,000 G 18,000 H 13,000 	Dual C Stimulu Thinkir Related Item F G* H J	oding us ng us State 12 58 16 12	Process Data Al Local	Supporting 4.1(B) nalysis Error Analysis Guessing Careless Error Stopped too Early
 4.4(G) (New) round to the nearest 10, 100, or 1,000 or use compatible numbers to estimate solutions involving whole numbers 4.5(A) (Old) round whole numbers to the nearest ten, hundred, or thousand to approximate reasonable results in problem situations 2014 – Q44 The number of worker bees in two bee colonies is shown below. Colony A has 24,815 worker bees. Colony B has 7,144 worker bees. Which of the following is the best estimate of the difference between the number of worker bees in these colonies? F 23,000 G 18,000 H 13,000 	Dual C Stimulu Thinkir Related Item F G* H J	oding us ng us State 12 58 16 12	Process Data Al Local	Supporting 4.1(B) halysis Error Analysis Guessing Careless Error Stopped too Early Mixed Up Concepts
 4.4(G) (New) round to the nearest 10, 100, or 1,000 or use compatible numbers to estimate solutions involving whole numbers 4.5(A) (Old) round whole numbers to the nearest ten, hundred, or thousand to approximate reasonable results in problem situations 2014 – Q44 The number of worker bees in two bee colonies is shown below. Colony A has 24,815 worker bees. Colony B has 7,144 worker bees. Which of the following is the best estimate of the difference between the number of worker bees in these colonies? F 23,000 G 18,000 H 13,000 	Dual C Stimulu Thinkir Related Item F G* H J	oding us ng us State 12 58 16 12	Process Data Al Local	Supporting 4.1(B) halysis Error Analysis Guessing Careless Error Stopped too Early Mixed Up Concepts



* Correct answer (G)

 4.4(G) (New) round to the nearest 10, 100, or 1,000 or use compatible numbers to estimate solutions involving whole numbers 4.5(B) (Old) use strategies including rounding and compatible numbers to estimate solutions to multiplication and division problems 	Analysis of Assessed Standar			ssed Standards				
2013 – Q27	Dual Coding						Content	Supporting
2010 - Q21			Process	4.1(B)				
Nathan washes 26 cars each day he works at a car wash. He worked 34 days								
during the summer. About how many cars did Nathan wash during these	Stimul	us						
34 days?	Thinking							
A 900	Related SEs							
B 600								
b 600			Data Ar	nalysis				
C 1,800	Item A*	State 70	Local	Error Analysis				
D 1,200	В	18		☐Guessing ☐Careless Error				
D 1,200	C	6		Stopped too Early				
	D	6		☐Mixed Up Concepts				
		U						
	Ir	mplicat	ions for Ir	nstruction/Notes				
* Correct answer ()								

IQ Analysis Investigating the Question	SE 4.4	l(H)	RC: 2		
4.4(H)					
4.4(H) solve with fluency one- and two-step problems involving multiplication and division, including interpreting remainders		Analysi	s of Asse	ssed St	andards
2015 – Sample Q11	Multi C	oding	Content	Readii	ness
2010 Campie Q. I		J	Process	4.1(A)	, 4.1(B), 4.1(F)
11 Kareem will use beads to make bracelets. He has 475 beads and needs to use 9 beads for each bracelet. What is the greatest number of bracelets Kareem can	Stimul	us			
make with 475 beads?	Thinkir	ng			
A 52	Related	d SEs			
B 49					
C 45	Item	State	Data A	nalysis	
D 53	A*	State	Local		Analysis
D 53	В				eless Error
	С	NA	NA	☐Stopped too Early ☐Mixed Up Concepts	
	D			IVIIX	ed Op Concepts
	lr	nplicat	ions for I	nstructi	on/Notes
* Correct answer (A)					



multiplication and	lve with fluency one- d division, including i	nterpreting re	emainders			Analysi	s of Asse	ssed Standards
	nultiplication to solve pr two digits without techn		ing whole num	ibers (no more than				
0044 04		0,,					Content	Readiness
2014 – Q1					Dual C	oaing	Process	4.1(B)
The table below	shows the prices of di	ifferent movie	tickets.					
	Movie ⁻	Ticket Prices			Stimuli			
	Type of Movie	Adult	Child	1	Related			
		Ticket	Ticket		Related	J 3E8		
	General admission	\$10	\$7				Data Aı	nalysis
	Matinee	\$8	\$7		Item	State	Local	Error Analysis
	Special event 3-D	\$14	\$12		A	2		□Guessing
	3-0	\$13	\$10	J	B	7		☐Careless Error ☐Stopped too Early
Mr. Callaga haus	ght 2 adult tickets and	4 child ticket	a for his famil	ly and paid a total of	D*	87		☐Mixed Up Concepts
	type of movie are Mr. (y and paid a total of	_			
A General adm	iccion				Ir	nplicat	ions for Ir	nstruction/Notes
	1331011							
B Matinee								
C Special event								
D 3-D								
* Correct answer	(D)							
multiplication and	lve with fluency one- d division, including i and apply multiplicatio	nterpreting re	emainders	volving		Analysi	s of Asse	ssed Standards
	ана арріу тапірпсано	in lacis inlougi	11 12 % 12		Dual C	odina	Content	Readiness
2014 – Q26					Duai C	oung	Process	4.1(B)
	irge pictures and 4 si							
What is the tota album?	l number of large pic	tures and sm	nall pictures o	on 9 pages of the	Stimul	us		
albam.					Thinkir	ng		
Record your ans use the correct	swer and fill in the bu	ıbbles on you	r answer doc	cument. Be sure to	Related	d SEs		
ase the correct	place value.						Data Aı	achesis
					Item	State	Local	
					110111	51		Error Analysis ☐Guessing
					60	48		☐Careless Error
					63	0		☐Stopped too Early ☐Mixed Up Concepts
						0		□ Ivilxed Up Concepts
					Ir	nnlicat	ions for Ir	nstruction/Notes
						. ipiicat	.51.3 101 11	ion delicity (voice)
* Correct answer	(63)							



mul	(H) (New) solve with fluency one- and two-step problems involving tiplication and division, including interpreting remainders D) (Old) use multiplication to solve problems (no more than two digits times two digits	_	Analysi	s of Asses	ssed Standards
with	out technology				
201	14 – Q37	Dual Coding		Content	Readiness
				Process	4.1(A)
	ch of 16 students in a class made a poetry book. Each book contained poems. How many poems are in 16 books?	Stimul	ıs		
	404	Thinkir	ıg		
А	484	Related	I SEs		
В	364			D-4- A-	a li cella
C	384	Item	State	Data Ar	
D	168	Α	7		Error Analysis ☐Guessing
		В	7		☐Careless Error ☐Stopped too Early
		C*	78 7		☐Mixed Up Concepts
			•		
		Ir	nplicat	ions for Ir	nstruction/Notes
* Cc	orrect answer (C)				
mul 4.4((H) (New) solve with fluency one- and two-step problems involving tiplication and division, including interpreting remainders E) (Old) use division to solve problems (no more than one-digit divisors and three-digit dends without technology	_	Analysi	s of Asses	ssed Standards
201	14 – Q40	Dual C	oding	Content	Readiness
				Process	4.1(G)
	abel has 745 strawberries. She separated the strawberries into 5 equal groups. www.many.strawberries are in 2 of the groups?	Stimul	ıs		
F	202, because $745 \div 5 = 101$ and $101 \times 2 = 202$	Thinkir	ıg		
G	282, because $745 \div 5 = 141$ and $141 \times 2 = 282$	Related	l SEs		
н	298, because $745 \div 5 = 149$ and $149 \times 2 = 298$			Data Ar	nalveie
_		Item	State	Local	
J	290, because 745 \div 5 = 145 and 145 \times 2 = 290	F	13		Error Analysis ☐Guessing
		G	12		Careless Error
		H*	65		☐Stopped too Early ☐Mixed Up Concepts
		J	9		
		Ir	nplicat	ions for Ir	nstruction/Notes

* Correct answer (H)

4.4(L) (New) calve with fluorey and and two stan problems involving				
 4.4(H) (New) solve with fluency one- and two-step problems involving multiplication and division, including interpreting remainders 5.3(B) (Old) use multiplication to solve problems involving whole numbers (no more than three digits times two digits without technology) 	-	Analysis	s of Asses	ssed Standards
2013 – Q24	Dual Coding		Content	Readiness
2013			Process	4.1(A)
There are four times as many cows as horses on a farm. There are twice as many horses as pigs on the farm. Which list shows the number of each type of animal on	Stimulu	ıs		
this farm?	Thinkin	ıg		
F 9 cows, 36 horses, and 18 pigs	Related	l SEs		
G 48 cows, 12 horses, and 24 pigs			Data Ar	nalveie
H 32 cows, 16 horses, and 8 pigs	Item	State	Local	Error Analysis
J 72 cows, 18 horses, and 9 pigs	F	15		☐Guessing
	G H	20 17		☐Careless Error ☐Stopped too Early
	J*	47		☐Mixed Up Concepts
	l.	! !	ana fan In	ostavistica (Nictor
	ın	npiicati	ons for ir	nstruction/Notes
* Correct answer (J)				
 4.4(H) (New) solve with fluency one- and two-step problems involving multiplication and division, including interpreting remainders 4.4(E) (Old) use division to solve problems (no more than one-digit divisors and three-digit dividends without technology 	- ,	Analysi	s of Asses	ssed Standards
multiplication and division, including interpreting remainders 4.4(E) (Old) use division to solve problems (no more than one-digit divisors and three-digit dividends without technology	Dual Co		s of Asses	ssed Standards Readiness
multiplication and division, including interpreting remainders 4.4(E) (Old) use division to solve problems (no more than one-digit divisors and three-digit				Readiness
multiplication and division, including interpreting remainders 4.4(E) (Old) use division to solve problems (no more than one-digit divisors and three-digit dividends without technology 2013 – Q41 Oscar used a total of 315 blocks to make 5 towers. He used an equal number of	Dual Co	oding	Content	Readiness
multiplication and division, including interpreting remainders 4.4(E) (Old) use division to solve problems (no more than one-digit divisors and three-digit dividends without technology 2013 – Q41 Oscar used a total of 315 blocks to make 5 towers. He used an equal number of blocks to make each tower. How many blocks did Oscar use to make each tower?	Dual Co	oding	Content	Readiness
multiplication and division, including interpreting remainders 4.4(E) (Old) use division to solve problems (no more than one-digit divisors and three-digit dividends without technology 2013 – Q41 Oscar used a total of 315 blocks to make 5 towers. He used an equal number of blocks to make each tower. How many blocks did Oscar use to make each tower? A 65	Dual Co	oding us	Content	Readiness
multiplication and division, including interpreting remainders 4.4(E) (Old) use division to solve problems (no more than one-digit divisors and three-digit dividends without technology 2013 – Q41 Oscar used a total of 315 blocks to make 5 towers. He used an equal number of blocks to make each tower. How many blocks did Oscar use to make each tower?	Dual Co Stimulu	oding us	Content	Readiness
multiplication and division, including interpreting remainders 4.4(E) (Old) use division to solve problems (no more than one-digit divisors and three-digit dividends without technology 2013 – Q41 Oscar used a total of 315 blocks to make 5 towers. He used an equal number of blocks to make each tower. How many blocks did Oscar use to make each tower? A 65	Dual Co Stimulu Thinkin Related	oding us	Content Process	Readiness 4.1(A)
multiplication and division, including interpreting remainders 4.4(E) (Old) use division to solve problems (no more than one-digit divisors and three-digit dividends without technology 2013 – Q41 Oscar used a total of 315 blocks to make 5 towers. He used an equal number of blocks to make each tower. How many blocks did Oscar use to make each tower? A 65 B 63	Dual Co Stimulu Thinkin Related	oding us us us us State	Content Process	Readiness 4.1(A) nalysis Error Analysis
multiplication and division, including interpreting remainders 4.4(E) (Old) use division to solve problems (no more than one-digit divisors and three-digit dividends without technology 2013 – Q41 Oscar used a total of 315 blocks to make 5 towers. He used an equal number of blocks to make each tower. How many blocks did Oscar use to make each tower? A 65 B 63 C 61	Stimulu Thinkin Related Item	oding us us us us State 10	Content Process	Readiness 4.1(A) nalysis Error Analysis Guessing
multiplication and division, including interpreting remainders 4.4(E) (Old) use division to solve problems (no more than one-digit divisors and three-digit dividends without technology 2013 – Q41 Oscar used a total of 315 blocks to make 5 towers. He used an equal number of blocks to make each tower. How many blocks did Oscar use to make each tower? A 65 B 63 C 61	Dual Co Stimulu Thinkin Related	oding us us us us State	Content Process	Readiness 4.1(A) halysis Error Analysis Guessing Careless Error Stopped too Early
multiplication and division, including interpreting remainders 4.4(E) (Old) use division to solve problems (no more than one-digit divisors and three-digit dividends without technology 2013 – Q41 Oscar used a total of 315 blocks to make 5 towers. He used an equal number of blocks to make each tower. How many blocks did Oscar use to make each tower? A 65 B 63 C 61	Stimulu Thinkin Related Item A B*	oding us	Content Process	Readiness 4.1(A) nalysis Error Analysis Guessing Careless Error
multiplication and division, including interpreting remainders 4.4(E) (Old) use division to solve problems (no more than one-digit divisors and three-digit dividends without technology 2013 – Q41 Oscar used a total of 315 blocks to make 5 towers. He used an equal number of blocks to make each tower. How many blocks did Oscar use to make each tower? A 65 B 63 C 61	Stimulu Thinkin Related Item A B* C D	oding us	Process Data Ar Local	Readiness 4.1(A) halysis Error Analysis Guessing Careless Error Stopped too Early Mixed Up Concepts
multiplication and division, including interpreting remainders 4.4(E) (Old) use division to solve problems (no more than one-digit divisors and three-digit dividends without technology 2013 – Q41 Oscar used a total of 315 blocks to make 5 towers. He used an equal number of blocks to make each tower. How many blocks did Oscar use to make each tower? A 65 B 63 C 61	Stimulu Thinkin Related Item A B* C D	oding us	Process Data Ar Local	Readiness 4.1(A) halysis Error Analysis Guessing Careless Error Stopped too Early



4.5(A) Units:

4.5(A) represent multi-step problems involving the four operations with whole numbers using strip diagrams and equations with a letter standing for the unknown **Analysis of Assessed Standards** quantity Content Readiness 2015 - Sample Q12 **Multi Coding** 4.1(A), 4.1(B), 4.1(D), **Process** 4.1(F) 12 Madeline has 4 rolls of tape. Each roll contains 63 inches of tape. Madeline used 42 inches of tape for a project. Which diagram shows a way to find n, the number **Stimulus** of inches of tape that Madeline has left? **Thinking Related SEs** 63 63 63 63 **Data Analysis** State Item Local **Error Analysis** Guessing
Careless Error
Stopped too Early Α В* 63 63 63 63 NA С ☐Mixed Up Concepts D -42 Implications for Instruction/Notes 42 63 63 42

* Correct answer (B)

Units:

4.5(B) represent problems using an input-output table and numerical expressions to generate a number pattern that follows a given rule representing the relationship of the values in the resulting sequence and their position in the sequence

2015 - Sample Q13

13 The table shows a relationship between the input numbers and the output numbers generated by a number machine.

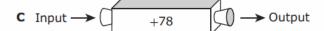
Number Machine

Input	Output
1	79
2	80
3	81
4	82

Which number machine shows the same relationship as the one shown in the table?









* Correct answer (C)

Analysis of Assessed Standards

Multi Coding	Content	Readiness
main county	Process	4.1(B), 4.1(D), 4.1(F)
Stimulus		
Thinking		
Related SEs		

	Data Analysis							
Item	State	Local	Error Analysis					
Α			Guessing					
В	NA		NA	☐Careless Error				
C*	INA		Stopped too Early					
D			☐Mixed Up Concepts					



4.7(A) (Old) describe the relationship between two sets of related data such as ordered pairs in a table

2014 - Q7

Adam puts the same number of cherry tomatoes on each salad he makes in his restaurant. The table below shows the number of cherry tomatoes in different numbers of salads.

Salads

Number of Salads	25	35	50	100
Number of Cherry Tomatoes	125	175	250	500

Which statement describes the relationship between the number of salads and the number of cherry tomatoes?

- **A** The number of salads $\times 4$ = the number of cherry tomatoes
- **B** The number of salads +10 = the number of cherry tomatoes
- **C** The number of salads \times 5 = the number of cherry tomatoes
- **D** The number of salads +100 = the number of cherry tomatoes
- * Correct answer (C)

Analysis of Assessed Standards

Dual Coding	Content	Readiness
	Process	4.1(F)
Stimulus		
Thinking		
Related SEs		

Data Arialysis			
Item	State	Local	Error Analysis
Α	3		Guessing
В	2		Careless Error
C*	89		Stopped too Early
D	6		☐Mixed Up Concepts

Data Analysis



3.7(B) (Old) identify and describe patterns in a table of related number pairs based on a meaningful problem and extend the table

Analysis of Assessed Standards

2014 - Q8

The table below shows the relationship between the number of red stars and the number of white stars Adyssen drew on different posters.

Posters

Number of White Stars	7	10		19
Number of Red Stars	28	31	35	40

Based on the pattern in the table, which number sentence can be used to find the number of white stars Adyssen drew if she drew 35 red stars on a poster?

$$\mathbf{F} \ 19 - 10 = 9$$

G
$$35 - 21 = 14$$

$$H 7 + 10 = 17$$

$$\mathbf{J} \quad 10 + 3 = 13$$

*	Correct	answer	(G)
---	---------	--------	-----

Dual Coding	Content	Readiness
	Process	4.1(E)
	1	
Stimulus		
Thinking		
Related SEs		
	Data A	nalysis

Content Bandings

Item	State	Local	Error Analysis
F	6		☐Guessing
G*	52		Careless Error
Н	18		Stopped too Early
J	24		☐Mixed Up Concepts



4.7(A) (Old) describe the relationship between two sets of related data such as ordered pairs in a table

2014 - Q21

The table below shows the relationship between the number of cars and the number of trucks at a car dealership on different days.

Car Dealership

Number of Trucks	Number of Cars
78	110
95	127
83	115
72	104
91	123

Which statement describes the relationship between the number of cars and the number of trucks at the dealership?

- A The number of cars +17 = the number of trucks
- **B** The number of cars -32 = the number of trucks
- **C** The number of cars -17 = the number of trucks
- **D** The number of cars +32 = the number of trucks
- * Correct answer (B)

Analysis of Assessed Standards

Dual Coding	Content	Readiness
	Process	4.1(F)
Stimulus		
Thinking		
Related SEs		
	Data Aı	nalysis

Data Analysis			
Item	State	Local	Error Analysis
Α	4		Guessing
В*	51		Careless Error
С	4		Stopped too Early
D	41		☐Mixed Up Concepts



Analysis of Assessed Standards

3.7(B) (Old) identify and describe patterns in a table of related number pairs based on a	
meaningful problem and extend the table	

201	4 –	Q45
-----	-----	-----

The table below shows the number of airplanes that landed in different numbers of hours at an airport.

Airport

Number of Hours	Number of Airplanes
2	20
5	50
9	
10	100

The same number of airplanes landed each hour. How many airplanes landed in 9 hours at the airport?

- **A** 80, because 50 + 30 = 80
- **B** 45, because $9 \times 5 = 45$
- **C** 90, because $9 \times 10 = 90$
- **D** 50, because 100 50 = 50
- * Correct answer (C)

Dual Coding	Content	Readiness
	Process	4.1(G)
Stimulus		
Thinking		
Related SEs		

	Data Analysis			
Item	State	Local	Error Analysis	
Α	19		Guessing	
В	4		Careless Error	
C*	74		Stopped too Early	
D	2		☐Mixed Up Concepts	



 4.5(B) (New) represent problems using an input-output table and numerical expressions to generate a number pattern that follows a given rule representing the relationship of the values in the resulting sequence and their position in the sequence 4.7(A) (Old) describe the relationship between two sets of related data such as ordered pairs in a table 				Analysis of Assessed Standards				
2013 – Q6						Dual Coding	Content	Readiness
A	i h	- hala					Process	
A number sente	nce is snowi					Stimulus		
		× 25 =				Thinking		
Which table sho	ws numbers	that correctly comp	lete the number ser	ntence'	?	Related SEs		
							Data A	nalysis
3	5 7	9	3 5	7	9	Item State 8	Local	Error Analysis ☐Guessing
75	125 175	200 H	75 100	125	150	G 12		☐Careless Error
						H 5 J* 76		☐Stopped too Early ☐Mixed Up Concepts
	F 7			7	0			I.
G 3	5 7	9	3 5	7	9	Implicat	ions for I	nstruction/Notes
25	50 75	100	75 125	175	225			
* Correct answer	(J)							
expressions to g the relationship sequence	enerate a not of the values	ellems using an input- umber pattern that for s in the resulting seq onship between two se	ollows a given rule rule rule rule rule rule rule rule	eprese sition i	enting n the	Analysi	s of Asse	ssed Standards
2013 – 20						Dual Coding	Content	Readiness
2013 – 20						Buai Counig	Process	4.1(F)
		he amount of money	Hector earned and	spent o	during			
each of four	months.					Stimulus		
		Hector's Mon	ev			Thinking		
ı	Month	Amount Earned	Amount Spent	1		Related SEs		
			·	1			D-1- A	
	May	\$27	\$12	-		Item State	Data A	
	June	\$39	\$24	1		F 6	Local	Error Analysis ☐Guessing
	July	\$46	\$31	1		G 5		☐Careless Error
l	August	\$43	\$28	J		H* 48		☐Stopped too Early ☐Mixed Up Concepts
Which of the	following de	escribes the relations	hin in the table?			J 41		
	_		mp in the table:			Implicat	ions for I	nstruction/Notes
		= amount earned						
G Amount s	spent \times 2 =	amount earned						
H Amount s	spent + 15	= amount earned						
J Amount s	spent – 15	= amount earned						
* Correct answer	(H)							

4.5(B) (New) represent problems using an input-output table and numerical expressions to generate a number pattern that follows a given rule representing the relationship of the values in the resulting sequence and their position in the 4.7(A) (Old) describe the relationship between two sets of related data such as ordered

Analysis of Assessed Standards

pairs in a table

2013 - Q33

The table below shows the total number of computers in different numbers of classrooms in a school.

School Computers

Total Number of Computers	Number of Classrooms
105	15
84	12
42	6
21	3

Which of the following describes the relationship in the table?

- **A** Total number of computers -19 = number of classrooms
- **B** Total number of computers \div 3 = number of classrooms
- **C** Total number of computers -90 = number of classrooms
- **D** Total number of computers \div 7 = number of classrooms
- * Correct answer (D)

Dual Coding	Content	Readiness
	Process	4.1(F)
Stimulus		
Thinking		
Related SEs		

	Data Analysis			
Item	State	Local	Error Analysis	
Α	4		Guessing	
В	10		Careless Error	
С	17		Stopped too Early	
D*	67		☐Mixed Up Concepts	

4.7(A) (Old) describe the relationship between two sets of related data such as ordered pairs in a table

The table below shows two related sets of numbers.

\triangle	
60	20
45	15
33	11
9	3

Which of the following describes the relationship in the table?

* Correct answer (G)

Analysis of Assessed Standards

Dual Coding	Content	Readiness
	Process	4.1(F)
Stimulus		
Thinking		
Related SEs		
Related OES		

		Data A	naiysis
Item	State	Local	Error Analysis
F	4		Guessing
G*	69		Careless Error
Н	19		Stopped too Early
J	7		☐Mixed Up Concepts

Data Analysis

IQ Analysis Investigating the Question	SE 4.5(D)	RC: 3
4.5(D)	Units:	

4.5(D) solve problems related to perimeter and area of rectangles where dimensions are whole numbers			Analysis of Assessed Standards			
2015 - Sample Q14			Content	Readiness		
			Process	4.1(A), 4.1(B), 4.1(C), 4.1(E), 4.1(F)		
14 The model shows a rectangular field with a length of 150 m. The perimeter of the				, , ,		
field is 400 m.	Stimulu	ıs				
150 m	Thinkin	g				
	Related	I SEs				
			Data A	nalysis		
	Item A	State	Local	Error Analysis		
	В			☐Guessing ☐Careless Error		
	С	NA		Stopped too Early		
What is the width of the field in meters?	D*			☐Mixed Up Concepts		
A 250 m	In	nplicati	ons for li	nstruction/Notes		
B 100 m						
B 100 m C 125 m						



4.5(D) (New) solve problems related to perimeter and area of rectangles where dimensions are whole numbers5.10(C) (Old) select and use appropriate units and formulas to measure length, perimeter, area, and volume			Analysis of Assessed Standards				
·	Dual Co		Content	Readiness			
2014 – Q2			Process	4.1(F)			
Kacey bought a rectangular wall plate for an electrical outlet. A picture of the wall							
plate is shown below. Use the ruler provided to measure the dimensions of the wall	Stimulu	IS					
plate to the nearest centimeter.	Thinkin	g					
	Related	SEs					
			Data Ar	a alveic			
	Item	State	Local				
	F	3		Error Analysis ☐Guessing			
	G	5		☐Careless Error			
	H*	88		☐Stopped too Early ☐Mixed Up Concepts			
	J	4					
	In	nplicat	ions for Ir	nstruction/Notes			
Which measurement is closest to the perimeter, in centimeters, of the wall plate?							
F 44 cm							
G 96 cm							
H 40 cm							

J 20 cm

* Correct answer (H)

4.5(D) (New) solve problems related to perimeter and area of rectangles where dimensions are whole numbers		Analysis of Assessed Standards				
5.10(C) (Old) select and use appropriate units and formulas to measure length, perimeter, area, and volume		-inarysi.	5 OI A33C.	ssed standards		
2014 – Q17	Dual C	odina	Content	Readiness		
2017 Q17			Process	4.1(C)		
A rectangular parking lot is represented by the scale drawing below. Use the ruler provided to measure the length and width of the rectangle to the nearest inch.	Stimulu	ıs				
	Thinkin	ıg				
	Related	I SEs				
			Data Ar	nalysis		
	Item	State	Local	Error Analysis		
	A B	3 6		☐Guessing ☐Careless Error		
	C*	50		☐Stopped too Early		
	D	41		☐Mixed Up Concepts		
	In	nplicati	ons for Ir	nstruction/Notes		
SCALE 1 inch represents 20 feet.						
Which measurement is closest to the area, in square feet, of the actual parking lot?						
A 8,000 square feet						
B 360 square feet						
C 4,800 square feet						
D 280 square feet						
* Correct answer (C)						



4.5(D) (New) solve problems related to perimeter and area of rectangles where dimensions are whole numbers					
5.10(C) (Old) select and use appropriate units and formulas to measure length, perimeter, area, and volume	Analysis of Assessed Standards				
2014 – Q33	Dual Coding	Content			
The side length of a square is 20 millimeters. Which statement about this square is		Process	4.1(G)		
true?	Stimulus				
A The perimeter of the square is 400 millimeters, because $20 \times 20 = 400$.	Thinking				
B The perimeter of the square is 80 millimeters, because $20 \times 4 = 80$.	Related SEs				
${f c}$ The area of the square is 40 square millimeters, because 20 \times 2 $=$ 40.		Data Aı	nalysis		
${f D}$ The area of the square is 80 square millimeters, because 20 $ imes$ 4 $=$ 80.	Item State A 12 B* 62 C 12	Local	Error Analysis ☐ Guessing ☐ Careless Error ☐ Stopped too Early		
	D 13		☐Mixed Up Concepts		
	Implica	tions for Ir	nstruction/Notes		
* Correct answer (B)					
4.5(D) (New) solve problems related to perimeter and area of rectangles where					
dimensions are whole numbers 4.11(A) (Old) estimate and use measurement tools to determine length (including perimeter), area, capacity and weight/mass using standard units SI (metric) and customary	Analys	is of Asse	ssed Standards		
2013 – Q3	Dual Coding	Content	Readiness		
		Process	4.1(C)		
The model below represents the length and width of a rectangular exercise mat.	Stimulus				
	Thinking				
	Related SEs				
		Data Aı	nalvsis		
	Item State	Local	Error Analysis		
	A 8 B 6		☐Guessing ☐Careless Error		
	C* 80		☐Stopped too Early ☐Mixed Up Concepts		
	D 6				
	Implica	tions for Ir	nstruction/Notes		
= 1 square meter					
What is the area of this mat in square meters?					
A 15 square meters					
B 45 square meters					
C 54 square meters					
D 30 square meters					
* Correct answer (C)					

4.5(D) (New) solve problems related to perimeter and area of rectangles where dimensions are whole numbers5.10(C) (Old) select and use appropriate units and formulas to measure length, perimeter, area, and volume			- Analysis of Assessed Standards						
								Content	Readiness
2013 – Q16						Dual C	oding	Process	
		a rectangular wall. H	le has already paint	ed th	e rectangular				
shaded section, as shown below.					Stimul	ıs			
			10 ft			Thinkir	ng		
			1010	Π-	Т	Related	l SEs		
								ı	
								Data Aı	nalysis
						Item	State	Local	Error Analysis
						F*	58 14		☐Guessing ☐Careless Error
				14	1 1 ft	Н	16		☐Stopped too Early
	Т		I			J	12		☐Mixed Up Concepts
	6 ft					Ir	nplicati	ions for Ir	nstruction/Notes
							•		
	_	20) ft	\dashv	_				
Wh	nat is the area o	f the shaded section H	Harman has already	paint	ted?				
F	80 square feet								
G	140 square fee	t							
н	56 square feet								
J	280 square fee	t							
* Co	rrect answer (F)								

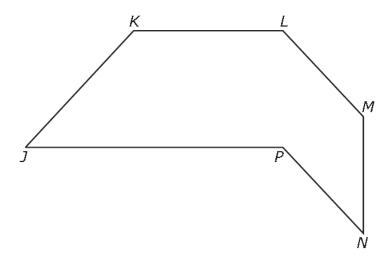


4.6(A) (New) identify points, lines, line segments, rays, angles, and perpendicular and parallel lines

4.8(B) (Old) identify and describe parallel and intersecting (including perpendicular) lines using concrete objects and pictorial models

2014 - Q15

A figure is shown below.



Analysis of Assessed Standards

Dual Coding	Content	Supporting
Duai Goding	Process	
Stimulus		
Thinking		
Related SEs		

Data Analysis							
Item	State	Local	Error Analysis				
A*	71		Guessing				
В	10		Careless Error				
С	11		Stopped too Early				
D	8		☐Mixed Up Concepts				

Implications for Instruction/Notes

Which two line segments appear to be parallel?

- A Line segments LM and NP
- **B** Line segments MN and NP
- **C** Line segments *JK* and *JP*
- **D** Line segments *KL* and *LM*

* Correct answer (A)

4.6(A) (New) identify points, lines, line segments, rays, angles, and perpendicular and parallel lines **Analysis of Assessed Standards** 4.8(A) (Old) identify and describe right, acute, and obtuse angles Content Supporting **Dual Coding** 2014 - Q38 **Process** Five angles are labeled on the figure shown below. **Stimulus** W **Thinking Related SEs Data Analysis** Item State Local Х **Error Analysis** Guessing ☐Careless Error G 9 Stopped too Early 74 Н* Mixed Up Concepts J 5 Implications for Instruction/Notes The labeled angles appear to be — **F** 1 acute angle, 1 right angle, and 3 obtuse angles **G** 2 acute angles, 2 right angles, and 1 obtuse angle **H** 1 acute angle, 2 right angles, and 2 obtuse angles **J** 2 acute angles, 1 right angle, and 2 obtuse angles * Correct answer (H)

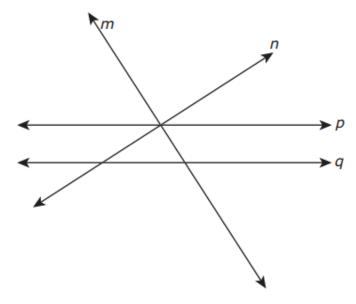


4.6(A) (New) identify points, lines, line segments, rays, angles, and perpendicular and parallel lines

4.8(B) (Old) identify and describe parallel and intersecting (including perpendicular) lines using concrete objects and pictorial models

2013 - Q12

12 A group of lines is shown below.



Analysis of Assessed Standards	

Dual Coding	Content	Supporting
Duai County	Process	
Stimulus		
Thinking		
Related SEs		

Data Analysis							
Item	State	Local	Error Analysis				
F	7		Guessing				
G	16		☐Careless Error				
H*	72		Stopped too Early				
J	4		☐Mixed Up Concepts				

Implications for Instruction/Notes

Which two lines appear to be perpendicular?

- **F** Lines *m* and *p*
- **G** Lines p and q
- **H** Lines *m* and *n*
- **J** Lines n and q
- * Correct answer (H)

 4.6(A) (New) identify points, lines, line segments, rays, angles, and perpendicular and parallel lines 5.7(A) (Old) identify essential attributes including parallel, perpendicular, and congruent parts of two- and three-dimensional geometric figures 		Analysi	s of Asses	ssed Standards
2013 – Q38	Dual C	odina	Content	Supporting
2013 – Q36	Duai C	oung	Process	5.1(C)
38 Two figures are shown below.	Stimuli	us		
Two figures are shown below.	Thinkir	ng		
	Related	d SEs		
			Data Ar	nalvsis
	Item	State	Local	
	F	6		Error Analysis ☐Guessing
	G*	62		☐Careless Error
	Н	19		☐Stopped too Early
	J	12		☐Mixed Up Concepts
	lr	nplicat	ions for Ir	nstruction/Notes
		•		
Which statement about these two figures appears to be true?				
F There are a total of 5 acute angles.				
G There are a total of 5 obtuse angles.				

* Correct answer (G)

H There are a total of 2 acute angles.

J There are a total of 2 obtuse angles.

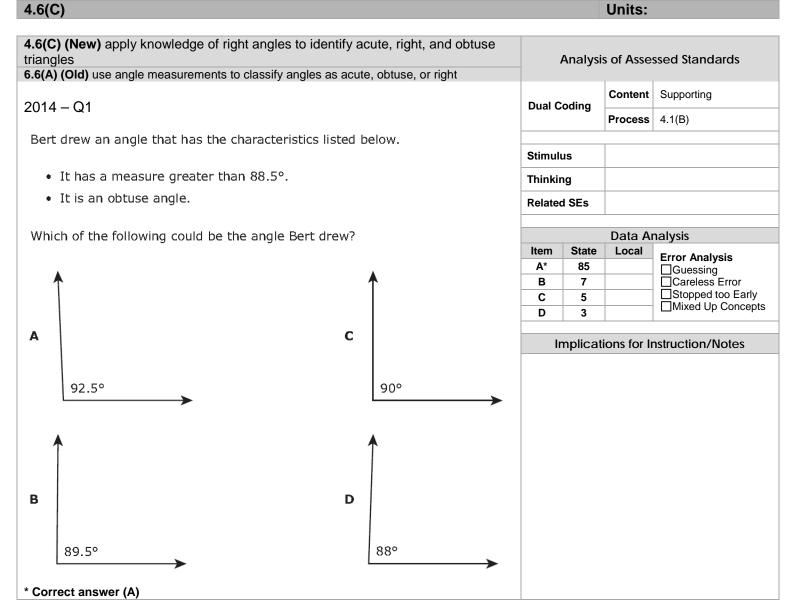
4.6(A) (New) identify points, lines, line segments, rays, angles, and perpendicular and parallel lines			s of Asse	ssed Standards
4.8(A) (Old) identify and describe right, acute, and obtuse angles				
2013 – Q42	Dual Co	ndina	Content	Supporting
2013 – Q42			Process	
The figure below has 6 labeled angles.				
The figure below has a factoral arranges.	Stimulu	ıs		
M N	Thinkin	g		
	Related	I SEs		
L/P				
-			Data Aı	nalysis
	Item	State	Local	Error Analysis
	F	6		Guessing
	G	18		☐Careless Error
R \bigcirc O	H*	74		☐Stopped too Early
$R \longrightarrow Q$	J	2		☐Mixed Up Concepts
Which list shows only the angles that appear to be right angles?	In	nplicat	ions for Ir	nstruction/Notes
F Angle L , angle M , angle N , and angle P				
G Angle L , angle P , angle Q , and angle R				
f H Angle Q and angle R				
J Angle M and angle N				
* Correct answer (H)				

4.6(B)

Units:

4.6(B) (New) identify and draw one or more lines of symmetry, if they exist, for a two-dimensional figure4.9(C) (Old) use reflections to verify that a shape has symmetry	Analysis of Assessed Standards			
2014 – Q46	Dual Coding	Content	Supporting	
2014 – Q46	Dual County	Process		
Which figure appears to have exactly 2 lines of symmetry?				
	Stimulus			
	Thinking			
	Related SEs			
		Data Aı	achesis	
	Item State	Local		
F H	F* 69		Error Analysis ☐Guessing	
	G 21		☐Careless Error	
	H 5		☐Stopped too Early ☐Mixed Up Concepts	
	-			
	Implicat	ions for Ir	nstruction/Notes	
G J				
* Correct answer (F)				

Units:





4.6(C) (New) apply knowledge of right angles to it triangles6.6(A) (Old) use angle measurements to classify angle		Analysis of Assessed Standards			
6.6(A) (Old) use angle measurements to classify angle	s as acute, obtuse, or right			I _	
2012 051		Dual C	odina	Content	Supporting
2013 – Q51		Dual Coding		Process	4.1(B)
Danica drew an angle that has the characteristics	listed below.				
		Stimul	us		
Its measure is less than 108.5°.		Thinkin	ng		
It is an acute angle.		Related	d SEs		
Which of the following could be the angle Danica	drew?				
Which of the following could be the angle ballica drew:		Data Analysis			
		Item	State	Local	Error Analysis
_ 1	K	Α	8		☐Guessing
/		В*	83		☐Careless Error
A 103°	c /	С	7		Stopped too Early
	90°	D	2		☐Mixed Up Concepts
	·	lr	mplicat	ions for lı	nstruction/Notes
В 76°	D 171°				
* Correct answer (B)					

4 6(D)	Unite	
IQ Analysis Investigating the Question	SE 4.6(D)	RC: 3

4.6(D) classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines or the presence or absence of angles of a specified size	Analysi	s of Asse	ssed Standards
2015 – Sample Q15	Multi Coding	Content	Readiness
2013 – Sample Q13	- India Coding	Process	4.1(B), 4.1(F)
15 Which figure cannot have parallel line segments?	Stimulus		
A Square	Thinking		
	Related SEs		
B Pentagon		Data Aı	nalysis
C Triangle	Item State	Local	Error Analysis ☐Guessing
D Trapezoid	B C* NA		☐Careless Error ☐Stopped too Early
D Trapezoid	D		☐Mixed Up Concepts
	Implicati	ions for Ir	nstruction/Notes
* Correct answer (C)			
4.6(D) (New) classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines or the presence or absence of angles of a specified size 4.8(C) (Old) use essential attributes to define two- and three-dimensional geometric figures	Analysi	s of Asse	ssed Standards
2014 – Q12	Dual Coding	Content	Readiness
2014 – Q12	Dual County	Process	
Which statement about a pentagon is true?	Stimulus		
F It must have parallel sides.	Thinking		
G It must have more vertices than sides.	Related SEs		
H It must have no right angles.		Data Aı	nalysis
J It must have 5 sides.	Item State F 13	Local	Error Analysis ☐Guessing
J It must have 3 sides.	G 5 H 10		☐Careless Error ☐Stopped too Early
	J* 71		Mixed Up Concepts
	Implicati	ions for Ir	nstruction/Notes
* Correct answer (J)			



SE 4.7(C)

Units:

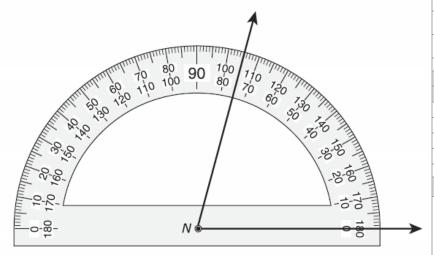
RC: 3

4.7(C)

4.7(C) determine the approximate measures of angles in degrees to the nearest whole number using a protractor

2015 – Sample Q16

16 Angle *N* is shown on this protractor.



What is the measure of angle N to the nearest degree?

- **A** 75°
- **B** 105°
- **C** 80°
- **D** 180°

* Correct answer (A)

Analysis of Assessed Standards					
Multi Coding	Content	Readiness			
main county	Process	4.1(B), 4.1(C), 4.1(F)			
Stimulus					
Thinking					
Related SEs					

Data Analysis						
Item	State	Local	Error Analysis			
A*			Guessing			
В	NA		Careless Error			
С	INA		Stopped too Early			
D			Mixed Up Concepts			



4.7(C) (New) determine the approximate measures of angles in degrees to the nearest whole number using a protractor 6.8(C) (Old) measure angles	_	Analysis of Assessed Standards		
			Content	Readiness
2014 – Q52	Dual Coding		Process	4.1(C)
In the diagram below, what is the measure of angle P to the nearest degree?	Stimuli	us		
	Thinkir			
90 30 70 60 130 mm	Related	d SEs		
			Data Ar	nalvsis
	Item	State	Local	
8.8	F*	76		Error Analysis ☐Guessing
	G	12		□Careless Frror
0.02	Н	4		Stopped too Early Mixed Up Concepts
8-8-	J	8		
D 021	Ir	mplicat	ions for Ir	nstruction/Notes
F 21°				
G 159°				
H 39°				
J 161°				
* Correct answer (F)				



4.7(C) (New) determine the approximate measures of angles in degrees to the nearest whole number using a protractor **Analysis of Assessed Standards** 6.8(C) (Old) measure angles Content Readiness **Dual Coding** 2013 - Q14 **Process** 4.1(C) Angle NJP and angle KJL are shown below. **Stimulus Thinking Related SEs** 90 100 **Data Analysis** State Item Local **Error Analysis** 10 ☐Guessing ☐Careless Error ☐Stopped too Early G* 60 10 Н ☐Mixed Up Concepts J 20 Implications for Instruction/Notes What is the difference between the measures of angle NJP and angle KJL to the nearest degree? F 107° G 67° H 102° 35° J * Correct answer (G)

4.7(C) (New) determine the approximate measures of angles in degrees to the nearest whole number using a protractor6.8(C) (Old) measure angles	Analys	s of Asse	ssed Standards	
		Content	Readiness	
2013 – Q35	Dual Coding	Process	4.1(C)	
Which angle does NOT appear to have a measure of 160°?				
Which drigte does NOT appear to have a measure of 100 ?	Stimulus			
80 QO 100	Thinking			
100 90 100 100 100 100 100 100 100 100 1	Related SEs			
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				
1 Po 1		Data Analysis		
W ESS X	Item State	Local	Error Analysis	
	A 30		☐Guessing	
	B 9		Careless Error	
100	C* 51		☐Stopped too Early ☐Mixed Up Concepts	
	D 8			
U Z				
•	Implica	ions for li	nstruction/Notes	
A ∠VTY				
B ∠WTZ				
C ∠WTY				
D ZUTX				
2017				
* Correct answer (C)				

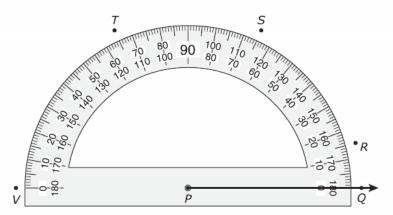
4.7(D) draw an angle with a given measure

-- ... (-

4.7(D) Units:

2015 - Sample Q17

17 Frank is using a protractor to construct an angle that measures 65°. First he draws ray *PQ*, as shown on the protractor.



To complete the 65° angle, Frank should draw another ray that starts at point ${\it P}$ and passes through —

- A point R
- B point S
- C point T
- **D** point V

* Correct answer (B)

Analysis of Assessed Standards						
Content Supporting						
Multi Coding	Process	ocess 4.1(A), 4.1(B), 4.1(C), 4.1(F)				
Stimulus						
Thinking						
Related SEs						

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



4.7(E) determine the measure of an unknown angle formed by two non-overlapping adjacent angles given one or both angle measures		Analysi	s of Asse	ssed Standards
2015 - Sample Q18		Multi Coding		Supporting
		oaing	Process	4.1(B), 4.1(E), 4.1(F)
18 Angle 1 and angle 2 form a right angle.				
To Angle I and angle 2 form a right angle.	Stimul	ıs		
A A	Thinkir	ng		
	Related	d SEs		
		ı	nalysis	
	Item	State	Local	Error Analysis
	A	NA NA		Guessing Careless Error Stopped too Early Mixed Up Concepts
1	B			
1/_	C*			
V 2				
	Ir	nplicati	ions for Ir	nstruction/Notes
The measure of angle 1 is 32°. What is the measure of angle 2?				
A 32°				
B 90°				
C 58°				
D 62°				
* Correct answer (C)				

RC: 3

Units:

4.8(A) (New) identify relative sizes of measurement units within the customary and	
metric systems	

4.11(A) (Old) estimate and use measurement tools to determine length (including perimeter), area, capacity and weight/mass using standard units SI (metric) and customary

2014 - Q41

Which of these is closest to the width of a student's chair?

- A 15 feet
- B 15 yards
- C 15 miles
- **D** 15 inches

Analysis of Assessed Standards

Dual Coding	Content	Supporting
Dual County	Process	4.1(A)
Stimulus		
Thinking		
Related SEs		

	Data Analysis					
Item	State	Local	Error Analysis			
Α	18		Guessing			
В	3		☐Careless Error			
С	1		Stopped too Early			
D*	77		☐Mixed Up Concepts			

Implications for Instruction/Notes

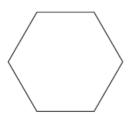
* Correct answer (D)

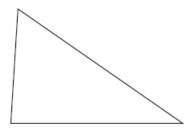
4.8(A) (New) identify relative sizes of measurement units within the customary and metric systems

4.11(A) (Old) estimate and use measurement tools to determine length (including perimeter), area, capacity and weight/mass using standard units SI (metric) and customary

2013 - Q10

Use the ruler provided to measure the side lengths of the figures below to the nearest centimeter.





What is the difference between the perimeters of these figures?

- F 2 cm
- **G** 9 cm
- H 29 cm
- **J** 5 cm
- * Correct answer (J)

Analysis of Assessed Standards

Dual Coding	Content	Readiness
Dual County	Process	4.1(C)
Stimulus		
Thinking		
Related SEs		

	Data Analysis					
Item	State	Local	Error Analysis			
F	7		Guessing			
G	5		Careless Error			
Н	15		Stopped too Early			
J*	74		☐Mixed Up Concepts			

IQ Analysis | Investigating the Question 4.8(B) convert measurements within the same measurement system, customary or metric, from a smaller unit into a larger unit or a larger unit into a smaller unit when given other equivalent measures represented in a table RC: 3 Units:

No test questions 2013 – 2015

IQ Analysis Investigating the Question			SE 4.8	(C)	RC: 3
4.8(C)			Units:		
4.8(C) solve problems that deal with measurements of length, intervals of time, liquid volumes, mass, and money using addition, subtraction, multiplication, or division as appropriate		Analysi	s of Asses	ssed St	andards
2015 – Sample Q19	Multi C	odina	Content	Readir	ness
2010 Gampie Q 10		· · · · · · · · ·	Process	4.1(A),	4.1(B), 4.1(F)
19 Vivian had a \$5 bill, 3 quarters, 2 dimes, and 5 nickels. She paid for a poster that					
cost \$5.36. How much money does she have left?	Stimul	us			
A \$1.16	Thinkir	ng			
B \$0.84	Related	d SEs			
C \$6.20					
			Data Ar	nalysis	
D +0.04	ltom				Analysis
D \$0.04	Item	State	Local		
D \$0.04	Α		Local	□Gue	ssing
D \$0.04		State	Local	□Gue □Care	
D \$0.04	A B*		Local	□Gue □Care □Stop	ssing eless Error
D \$0.04	A B* C D	NA		□Gue □Care □Stop □Mixe	ssing eless Error oped too Early ed Up Concepts
D \$0.04	A B* C D	NA		□Gue □Care □Stop □Mixe	ssing eless Error oped too Early
D \$0.04	A B* C D	NA		□Gue □Care □Stop □Mixe	ssing eless Error oped too Early ed Up Concepts
D \$0.04	A B* C D	NA		□Gue □Care □Stop □Mixe	ssing eless Error oped too Early ed Up Concepts
D \$0.04	A B* C D	NA		□Gue □Care □Stop □Mixe	ssing eless Error oped too Early ed Up Concepts
* Correct answer (B)	A B* C D	NA		□Gue □Care □Stop □Mixe	ssing eless Error oped too Early ed Up Concepts



4.8(C) (New) solve problems that deal with measurements of length, intervals of time, liquid volumes, mass, and money using addition, subtraction, multiplication, or division as appropriate **Analysis of Assessed Standards** 4.11(A) (Old) estimate and use measurement tools to determine length (including perimeter), area, capacity and weight/mass using standard units SI (metric) and customary Readiness Content **Dual Coding** 2014 - Q4Process 4.1(B) Terrence drew a figure. Each side of the figure is the same length as the line segment below. Use the ruler provided to measure the line segment to the Stimulus nearest inch. **Thinking Related SEs** This figure could be a — Data Analysis State Item Local **Error Analysis F** square with a perimeter of 6 inches 18 ☐Guessing G 11 ☐Careless Error **G** triangle with a perimeter of 6 inches ☐Stopped too Early H* 68 ☐Mixed Up Concepts 3 **H** square with a perimeter of 12 inches J triangle with a perimeter of 12 inches Implications for Instruction/Notes * Correct answer (H)

4.8(C) (New) solve problems that deal with measurements of length, intervals of time, liquid volumes, mass, and money using addition, subtraction, multiplication, or division as appropriate

4.12(B) (Old) use tools such as a clock with gears or a stopwatch to solve problems involving elapsed time

2014 - Q5

The watch below shows the time Edward finished a hike on Saturday afternoon.



Edward began the hike on Saturday at 10:15 A.M. How long did he hike?

- A 5 hours 20 minutes
- B 6 hours 20 minutes
- C 5 hours 40 minutes
- D 7 hours 40 minutes
- * Correct answer (A)

Analysis of Assessed Standards

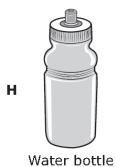
Dual Coding	Content	Readiness
Dadi Coding	Process	4.1(C)
Stimulus		
Thinking		
Related SEs		

Data Analysis					
Item	State	Local	Error Analysis		
A *	55		Guessing		
В	19		☐Careless Error		
С	12		Stopped too Early		
D	14		☐Mixed Up Concepts		

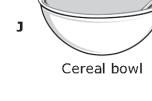
4.8(C) (New) solve problems that deal with measurements of length, intervals of time, liquid volumes, mass, and money using addition, subtraction, multiplication, or division as appropriate
4.11(A) (Old) estimate and use measurement tools to determine length (including perimeter), area, capacity and weight/mass using standard units SI (metric) and customary
2014 – Q28
Which object has a capacity closest to 30 cups?



* Correct answer (G)







Analysis of Assessed Standards

Content	Readiness		
Process	4.1(A)		
Thinking			
	Process		

	Data Analysis					
Item	State	Local	Error Analysis			
F	1		Guessing			
G*	73		☐Careless Error			
Н	12		☐Stopped too Early ☐Mixed Up Concepts			
J	13		Livilxed up Concepts			

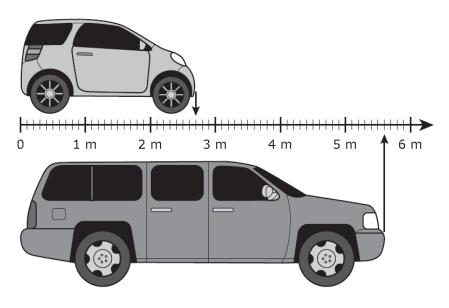


4.8(C) (New) solve problems that deal with measurements of length, intervals of time, liquid volumes, mass, and money using addition, subtraction, multiplication, **Analysis of Assessed Standards** or division as appropriate 5.11(B) (Old) solve problems involving elapsed time Content Readiness **Dual Coding** 2014 - Q29 Process 4.1(C) An airplane flight lasted 5 hours 22 minutes. Which pair of clocks could show the time the flight started and the time it finished? **Stimulus Thinking** Started Finished Started Finished **Related SEs Data Analysis** State Local Item **Error Analysis** Guessing
Careless Error
Stopped too Early
Mixed Up Concepts Α 22 В* 55 С 13 D 9 Started Finished Started Finished Implications for Instruction/Notes * Correct answer (B)

4.3(B) (Old) add and subtract decimals to the hundredths place using concrete objects and pictorial models

2014 - Q30

The model below represents the lengths of two automobiles in meters.



What is the difference between the lengths of these automobiles in meters?

- **F** 8.3 m
- **G** 3.9 m
- **H** 3.1 m
- **J** 2.9 m
- * Correct answer (J)

Analysis of Assessed Standards

Dual Coding	Content	Readiness
Duai Coung	Process	4.1(C)
Stimulus		
Thinking		
Related SEs		

Item State Local F 10 Guessing G 12 Careless Error H 16 Stopped too Early J* 62	Data Analysis					
F 10 ☐Guessing G 12 ☐Careless Error H 16 ☐Stopped too Early ☐Mixed Up Concepts	Item	State	Local	Frror Analysis		
H 16 Stopped too Early	F	10				
Mixed Up Concepts	G	12				
J* 62 Livilized Up Concepts	Н	16				
	J*	62		Livilxed Up Concepts		

Data Analysis



4.8(C) (New) solve problems that deal with measurements of length, intervals of time, liquid volumes, mass, and money using addition, subtraction, multiplication, or division as appropriate **Analysis of Assessed Standards** 4.11(A) (Old) estimate and use measurement tools to determine length (including perimeter), area, capacity and weight/mass using standard units SI (metric) and customary Content Readiness **Dual Coding** 2014 – Q32 Process 4.1(B) The actual size of Sam's name tag is shown below. **Stimulus Thinking Related SEs** Sam Data Analysis Item State Local **Error Analysis** ☐Guessing Careless Error
Stopped too Early
Mixed Up Concepts G 16 Н 21 J* 58 Use the ruler provided to measure the length and width of this name tag to the Implications for Instruction/Notes nearest centimeter. What is the difference between the length and the width of Sam's name tag in centimeters? **F** 5 cm

G 14 cm

H 9 cm

J 4 cm

* Correct answer (J)



4.8(C) (New) solve problems that deal with measurements of length, intervals of time, liquid volumes, mass, and money using addition, subtraction, multiplication, **Analysis of Assessed Standards** or division as appropriate 3.11(B) (Old) use standard units to find the perimeter of a shape Content Readiness **Dual Coding** 2014 - Q34 Process 4.1(G) Adam has 60 inches of ribbon. He wants to use the ribbon to make a border around the perimeter of a rectangular picture. The dimensions of the picture are **Stimulus** shown below. **Thinking** 19 in. **Related SEs Data Analysis** Item State Local **Error Analysis** 75 ☐ Guessing Careless Error
Stopped too Early
Mixed Up Concepts G 13 Н 3 15 in. 8 Implications for Instruction/Notes Does Adam have enough ribbon to make a border around this picture? **F** No, because 19 + 19 + 15 + 15 = 68, and 68 > 60**G** Yes, because 19 + 15 = 34, and 60 > 34**H** No, because 19 + 19 + 19 + 19 = 76, and 76 > 60**J** Yes, because 15 + 15 + 15 + 15 = 60, and 60 = 60

* Correct answer (F)

4.8(C) (New) solve problems that deal with measurements of length, intervals of time, liquid volumes, mass, and money using addition, subtraction, multiplication, **Analysis of Assessed Standards** or division as appropriate 3.11(B) (Old) use standard units to find the perimeter of a shape Content Readiness **Dual Coding** 2014 - Q44 Process 4.1(C) Melinda drew the figure shown below. Use the ruler provided to measure the length of each side of the figure to the nearest centimeter. **Stimulus Thinking Related SEs Data Analysis** State Item Local **Error Analysis** 5 Guessing Careless Error
Stopped too Early
Mixed Up Concepts G* 78 Н 6 9 Implications for Instruction/Notes What is the perimeter in centimeters of the figure Melinda drew?

- **F** 45 cm
- **G** 31 cm
- **H** 36 cm
- **J** 26 cm
- * Correct answer (G)



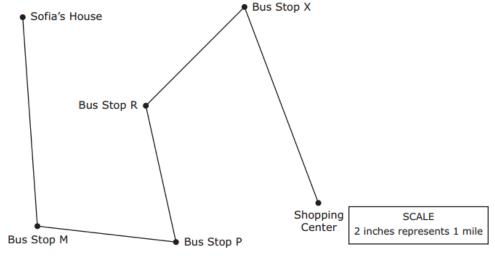
tim or 0	4.8(C) (New) solve problems that deal with measurements of length, intervals of ime, liquid volumes, mass, and money using addition, subtraction, multiplication, or division as appropriate 6.8(B) (Old) select and use appropriate units, tools, or formulas to measure and to solve problems involving length (including perimeter), area, time, temperature, volume, and weight						Analysi	s of Asses	ssed Standards
20.	013 – Q8				Dual Coding		Content	Readiness	
20	013 – Q0						Process	6.11(A)	
8		utes. Tamar	a finished the race		Stephanie finished the race in utes after Stephanie did. At	Stimul	us		
	F 2:00 p.m.					Thinkir	ng		
	G 12:45 P.M.					Related	d SEs		
	H 1:00 P.M.							Data Ar	nalysis
						Item	State	Local	Error Analysis
	J Not here					F*	61		□Guessing
						G	5		☐Careless Error ☐Stopped too Early
						H J	10 24		☐Mixed Up Concepts
						Ir	nplicat	ions for Ir	nstruction/Notes
* C	orrect answer	(F)							
tim or o	è, Íiquid volur division as ap	nes, mass, propriate		ng addition, su	s of length, intervals of btraction, multiplication,		Analysi	s of Asses	ssed Standards
								Content	Readiness
20 ⁻	13 – Q15					Dual Coding Process 3.1(3.1(B)	
Th	e dimensions	s of two re	ctangles are sh	own below.					
						Stimul	us		
		14 mm		28 mm	1	Thinkir	ng		
		14 11111	12 mm		17 mm	Related	d SEs		
			12					Data Ar	nalysis
		Rectangle	e Q	Rectangle R		Item	State	Local	Error Analysis
						Α	16		☐Guessing
W	nich stateme	nt about t	hese rectangles	is true?		B*	47 17		☐Careless Error ☐Stopped too Early
A	The perimet Rectangle R		angle Q is 19 m	nillimeters less	s than the perimeter of	D	20		Mixed Up Concepts
	_					lr	nplicat	ions for Ir	nstruction/Notes
В	The perimet Rectangle R		angle Q is 38 m	illimeters less	s than the perimeter of				
С	The perimet Rectangle R		angle Q is 14 m	illimeters less	s than the perimeter of				
D	The perimet Rectangle R		angle Q is 42 m	illimeters less	s than the perimeter of				
* C	orrect answer	(B)							



5.10(C) (Old) select and use appropriate units and formulas to measure length, perimeter, area, and volume

2013 - Q21

21 The diagram below models the bus route Sofia takes to get from her house to a shopping center. Use the ruler provided to measure Sofia's route to the nearest inch.



If 2 inches in the drawing represents 1 mile, which distance is closest to the length of the actual bus route Sofia takes to get from her house to the shopping center?

- A 24 mi
- **B** 6 mi
- **C** 5 mi
- **D** 12 mi
- * Correct answer (B)

Analysis of Assessed Standards

Dual Coding	Content	Readiness
Duai Coung	Process	5.1(C)
Stimulus		
Thinking		
Related SEs		

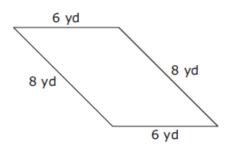
	Data Analysis					
Item	State	Local	Error Analysis			
Α	6		Guessing			
В*	60		Careless Error			
С	17		Stopped too Early			
D	17		☐Mixed Up Concepts			



3.11(B) (Old) use standard units to find the perimeter of a shape

2013 - Q27

The side lengths of Terry's sandbox are shown below.



Terry buys 30 yards of fence. Does he have enough fence to go completely around his sandbox?

- **A** No, because $8 \times 4 = 32$ and 32 > 30
- **B** Yes, because 8 + 6 = 14 and 14 < 30
- **C** No, because $8 \times 6 = 48$ and 48 > 30
- **D** Yes, because 8 + 6 + 8 + 6 = 28 and 28 < 30
- * Correct answer (D)

Analysis of Assessed Standards

Dual Coding	Content	Readiness
Dual Coding	Process	3.1(G)
	I	
Stimulus		
Thinking		
Related SEs		

	Data Analysis					
Item	State	Local	Error Analysis			
Α	6		Guessing			
В	9		Careless Error			
С	8		Stopped too Early			
D*	77		☐Mixed Up Concepts			

Implications for Instruction/Notes

4.8(C) (New) solve problems th	at de	eal	with	mea	sure	ments	ot le	ength, interval	is of
time, liquid volumes, mass, and	l mor	пеу	usir usir	ng ad	dditio	n, subt	ract	ion, multiplica	ation
or division as appropriate									
		-			-		-		

6.8(A) (Old) estimate measurements (including circumference) and evaluate reasonableness of results

2013 - Q32

- 32 At 7:26 A.M., Dante started delivering packages.
 - At 10:34 A.M., he delivered the last package.
 - He delivered a total of 18 packages.
 - · He spent about the same amount of time delivering each package.

Which of the following is the best estimate of the number of minutes Dante spent delivering each package?

- F 10 min
- G 180 min
- **H** 60 min
- **J** 20 min

Analysis of Assessed Standards

Dual Coding	Content	Readiness
Dual Coding	Process	6.11(B)
Stimulus		
Thinking		
Related SEs		

	Data Analysis					
Item	State	Local	Error Analysis			
F*	47		Guessing			
G	19		Careless Error			
Н	8		Stopped too Early			
J	25		☐Mixed Up Concepts			

Implications for Instruction/Notes

* Correct answer (F)

4.8(C) (New) solve problems that deal with measurements of length, intervals of time, liquid volumes, mass, and money using addition, subtraction, multiplication, or division as appropriate **Analysis of Assessed Standards 5.10(C) (Old)** select and use appropriate units and formulas to measure length, perimeter, area, and volume Content Readiness **Dual Coding** 2013 - Q33 **Process** 33 The side lengths of a field are shown below. **Stimulus** 0.6 mile **Thinking Related SEs** 0.81 mile Data Analysis Item State Local **Error Analysis** 0.39 mile 5 Α ☐Guessing Careless Error
Stopped too Early
Mixed Up Concepts В 12 C* 75 D 8 1.2 miles Implications for Instruction/Notes What is the perimeter of the field? A 1.41 mi **B** 3.18 mi **C** 3 mi **D** 2 mi * Correct answer (C)

5.11(B) (Old) solve problems involving elapsed time

2013 - Q39

39 The sign below shows the starting time of a music concert.



Evander plans to leave his house 1 hour 40 minutes before the concert starts. At what time should Evander leave his house?

- A 5:45 P.M.
- B 6:45 P.M.
- C 5:35 P.M.
- **D** 9:05 P.M.
- * Correct answer (A)

Analysis of Assessed Standards

Dual Coding	Content	Readiness
Duai Coung	Process	4.1(A)
Stimulus		
Thinking		
Related SEs		

	Dala Allalysis					
Item	State	Local	Error Analysis			
A*	54		Guessing			
В	29		Careless Error			
С	12		Stopped too Early			
D	5		☐Mixed Up Concepts			



4.12(B) (Old) use tools such as a clock with gears or a stopwatch to solve problems involving elapsed time

2013 - Q43

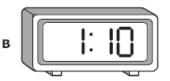
The clock below shows the time Vicente's football practice began.



Football practice lasted 1 hour 15 minutes. Which digital clock shows the time football practice ended?







* Correct answer (A)



Analysis of Assessed Standards

Dual Coding	Content	Readiness
Duai Coung	Process	4.1(C)
Stimulus		
Thinking		
Related SEs		

	Data Analysis					
Item	State	Local	Error Analysis			
A*	83		Guessing			
В	4		☐Careless Error			
С	5		Stopped too Early			
D	7		☐Mixed Up Concepts			



4.9(A) Units:

4.9(A) represent data on a frequency table, dot plot, or stem-and-leaf plot marked **Analysis of Assessed Standards** with whole numbers and fractions Readiness Content 2015 - Sample Q20 **Multi Coding** 4.1(A), 4.1(B), 4.1(D), **Process** 4.1(F) 20 The table shows the number of pets that each student in Mrs. Morris's class owns. **Stimulus** Students' Pets **Thinking** Number of Frequency **Related SEs** Pets 0 1111 **Data Analysis** Ш 1 State Local Item **Error Analysis** 2 1HL III Α Guessing
Careless Error В 3 Ш NA ☐Stopped too Early С 4 ☐Mixed Up Concepts I D* 5 Ш Implications for Instruction/Notes Which dot plot represents the data in the table? Students' Pets Students' Pets C 2 3 2 1 1 3 Number of Pets Number of Pets Students' Pets Students' Pets 2 3 4 0 2 3 4 5 1 1 Number of Pets Number of Pets

* Correct answer (D)

4.9(B)

Units:

4.9(B) solve one- and two-step problems using data in whole number, decimal,
and fraction form in a frequency table, dot plot, or stem-and-leaf plot

2015 - Sample Q21

21 Karnika recorded the number of minutes she practiced volleyball each week for several weeks. She used a stem and leaf plot to organize the data.

Volleyball Practice Time

Stem	Leaf
14	0 2 2
15	5 5
16	0

14 2 means 142 minutes.

Based on the data, what is the amount of time in minutes Karnika practiced volleyball?

- **A** 894 min
- **B** 597 min
- C 594 min
- **D** 1,224 min

* Correct answer (A)

Analysis of Assessed Standards

Multi Coding	Content	Supporting
Walti Couling	Process	4.1(A), 4.1(B), 4.1(E), 4.1(F)

Stimulus

Thinking

Related SEs

	Data Analysis								
Item	State	Local	Error Analysis						
A *			Guessing						
В	NA		☐Careless Error						
С	INA		Stopped too Early						
D	1		☐Mixed Up Concepts						

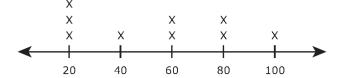
Implications for Instruction/Notes

4.9(B) (New) solve one- and two-step problems using data in whole number, decimal, and fraction form in a frequency table, dot plot, or stem-and-leaf plot **6.10(D) (Old)** solve problems by collecting, organizing, displaying, and interpreting data

2014 - Q16

The 10 members of an art club collected a total of \$520 during a fund-raiser. The amounts collected by 9 of the members are represented on the line plot below.

Amounts Collected (dollars)



How many dollars were collected by the tenth member of the art club?

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

Analysis of Assessed Standards

Dual Coding	Content	Supporting
Duai Coung	Process	3.1(D)
Stimulus		
Thinking		

Related SEs

		Data A	nalysis						
Item	Item State Local Error Analysis								
	51		Guessing						
49			☐Careless Error						
40	0		Stopped too Early						
	0		☐Mixed Up Concepts						

Implications for Instruction/Notes

* Correct answer (40)

IQ Analysis Investigating the Question	SE 4.10(A)	RC: 4
4.10(A) distinguish between fixed and variable expenses	Units:	

No test questions 2013 – 2015

IQ Analysis Investigating the Question		SE 4.1	SE 4.10(B) RC: 4	
4.10(B)		Units:		
4.10(B) calculate profit in a given situation	Anal	ysis of Asse	ssed St	andards
2015 - Sample Q22	Multi Codin	Content	Suppo	rting
		Process	4.1(A),	4.1(B), 4.1(F)
22 Raina sold pens decorated with fancy ta	pe.			
	Stimulus			
Raina's expenses were \$11.57 for seconds.	Innlies			
	Related SEs	;		
 Raina sold 12 pens for \$2 each. 				
		Data A	nalysis	
What was Raina's profit?	Item Sta	te Local		Analysis
What was Rama's profit:	В			☐Guessing ☐Careless Error
A #34.00	C* N	,		oped too Early ed Up Concepts
A \$24.00	D		Піліхє	ed Op Concepts
B \$35.57	Impli	cations for I	netructi	on/Notes
B \$35.57	ППрис		isuucu	OII/ NOICS
C \$12.43				
912.13				
D \$2.43				
* Correct answer (C)				
	<u>'</u>			



IQ Analysis Investigating the Question	SE 4.10(E)	RC: 4
4.10 (E)	Units:	

	D(E) describe the basic purpose of financial institutions, including eping money safe, borrowing money, and lending		Analysi	s of Asses	ssed Standards
201	I.S. Sample 022	Multi C	odina	Content	Supporting
20	2015 – Sample Q23		Multi Coding		4.1(A), 4.1(B), 4.1(G)
23	Which of these services is not provided by a financial institution such as a bank				
	or credit union?	Stimul	ıs		
	A Informing customers of the amount of money in their accounts	Thinkin	ng		
	B Informing customers of how the money in their accounts must be spent	Related	d SEs		
	C Providing cash when customers make withdrawals from their accounts				
	C Providing cash when customers make withdrawals from their accounts			Data Ar	nalysis
	D Providing loans to customers that can be paid back over time with interest	Item	State	Local	Error Analysis
	·	Α			☐Guessing
		B*	NA		☐Careless Error
		С	INA		Stopped too Early
		D			☐Mixed Up Concepts
		Ir	nplicat	ions for Ir	nstruction/Notes
* Cc	orrect answer (B)				



IQ Analysis	Investigating the Question				SE		RC:
					Units:		
				Analysi	s of Asses	sed Stan	dards
				-	Content		
		[Dual C	oding	D		
					Process		
			PLC fo	or PLC	Stimulus		
			Anal		Thinking		
					Tillikilig		
		<u> </u>	Related	d SEs			
					Data An		
		S	SE Lev	el Data		State	Local
		_					
			Item	State	Local	Error Typ	ре
			A/F			Proced	lural
			B/G			☐Applica☐Conce	ation ofual
			C/H D/J			☐Guessi	ng
			2/0	In	structiona	l Analysis	
			Eviden				les (taught)
			Eviueii Transfe		□Simila	r to examplication	tion (learned)
* Correct answer	•	[Depth o	of odge	Level	1] Level 3] Level 4
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		1	Dual C	oding	Content		
				_	Process		
			PLC fo	r DI C	Stimulus		
			Anal		The installation on		
					Thinking		
		F	Related	l SEs			
					Data An	alysis	
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			OL LEV	ei Dala			
			Item	State	Local	Error Typ	ре
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			B/G			☐Applica☐Conce	
			C/H D/J			☐Guessi	ng
			<i>D</i> 3	In	structiona	l Analysis	
			Eviden				les (taught)
			Evideii Transfe		Requi	res applica	tion (learned)
					· ·		
* Correct answer	•	[Depth o	of odgo	Level	1] Level 3] Level 4
		<u> </u>	KIIOWIE	-uy c	L Level	_ _	LEVEL4
		0	Conce	ot			
		I			1		
				Analysi	s of Asses	sed Stan	dards
						- Ju Olain	
So What?							
Now What?							