# 2013-2015 Released Test 

Aligned to the Standards CONTENT BUILDER FOR THE PLC

Math
Grade 3

## 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.
3.2(A) compose and decompose numbers up to 100,000 as a sum of so many ten thousands, so many thousands, so many hundreds, so many tens, and so many ones using objects, pictorial models, and numbers, including expanded notation as appropriate


## 2015 - Sample Q1

1 The expanded notation of a number is shown.

$$
(3 \times 10,000)+(8 \times 100)+(2 \times 10)+(6 \times 1)
$$

What is this number written in standard form?
A 38,026
B 38,260
C 3,826
D 30,826

Analysis of Assessed Standards

| Multi Coding | Content | Readiness |
| :--- | :--- | :--- |
|  | Process | $3.1(B), 3.1(F)$ |

## Stimulus

Thinking
Related SEs

| Data Analysis |  |  |  |
| :---: | :---: | :---: | :---: |
| Item | State | Local | Error Analysis <br> $\square$ Guessing <br> $\square$ Careless Error <br> $\square$ Stopped too Early <br> $\square$ Mixed Up Concepts |
| A | NA |  |  |
| B |  |  |  |
| C |  |  |  |
| D* |  |  |  |

Implic ations for Instruction/ Notes

* Correct answer (D)
3.2(B) describe the mathematical relationships found in the base-10 place value system through the hundred thousands place


## Analysis of Assessed Standards

| Multi Coding | Content | Supporting |
| :--- | :--- | :--- |
|  | Process | $3.1(\mathrm{~B}), 3.1(\mathrm{G})$ |


| Stimulus |  |
| :--- | :--- |
| Thinking |  |
| Related SEs |  |


| Data Analysis |  |  |  |
| :---: | :---: | :---: | :---: |
| Item | State | Local | Error Analysis <br> $\square$ Guessing |
| A* | NA |  |  |
| B |  |  | $\square$ Careless Error |
| C |  |  | $\square$ Stopped too Early |
| D |  |  | $\square$ Mixed Up Concepts |

Implic ations for Instruction/ Notes

* Correct answer (A)
3.2(C) represent a number on a number line as being between two consecutive multiples of $10 ; 100 ; 1,000$; or 10,000 and use words to describe relative size of numbers in order to round whole numbers


## Analysis of Assessed Standards

| Multi Coding |  | Content | Supporting |
| :---: | :---: | :---: | :---: |
|  |  | Process | $\begin{aligned} & 3.1(A), 3.1(B), 3.1(C), \\ & 3.1(E), 3.1(G), \end{aligned}$ |
| Stimulus |  |  |  |
| Thinking |  |  |  |
| Related SEs |  |  |  |
| Data Analysis |  |  |  |
| Item | State | Local | Error Analysis <br> $\square$ Guessing <br> $\square$ Careless Error <br> $\square$ Stopped too Early <br> $\square$ Mixed Up Concepts |
| A | NA |  |  |
| B |  |  |  |
| C |  |  |  |
| D* |  |  |  |

Implic ations for Instruction/ Notes

* Correct answer (D)
3.2(D) compare and order whole numbers up to 100,000 and represent comparisons using the symbols $>,<$, or $=$

Analysis of Assessed Standards

2015 - Sample Q4
4 In which empty square would the number 1,677 make the comparison true?
A

B


C


D 1,650

$<1,675$

* Correct answer (B)
3.2(D) (New) compare and order whole numbers up to 100,000 and represent comparisons using the symbols $>$, $<$, or $=$
3.1(B) (Old) use place value to compare and order whole numbers through 9,999

2014-Q36
A group of numbers is shown below.

| 7,408 | 7,395 | 7,492 |
| :--- | :--- | :--- |

Which statement about two of these numbers is true?
F 7,408 $=7,492$, because $74=74$
G $7,316>7,408$, because $16>8$
H $7,492<7,395$, because $92<95$
J $7,316<7,395$, because $316<395$

## Analysis of Assessed Standards

| Dual Coding | Content | Readiness |
| :--- | :--- | :--- |
|  | Process | $3.1(\mathrm{G})$ |


| Stimulus |  |
| :--- | :--- |
| Thinking |  |
| Related SEs |  |


|  | Data Analysis |  |  |
| :---: | :---: | :---: | :---: |
| Item | State | Local |  |
| F | $\mathbf{1 0}$ |  |  |
| Error Analysis |  |  |  |
| G | $\mathbf{1 0}$ |  |  |
| H | $\mathbf{1 1}$ |  |  |
| Guessing |  |  |  |
| Careless E rror |  |  |  |
|  | $\square$ Stopped too Early |  |  |
|  | $\mathbf{6 9}$ |  |  |
| $\square$ Mixed Up Concepts |  |  |  |

Implic ations for Instruction/ Notes

## * Correct answer (J)

3.3(A) (New) represent fractions greater than zero and less than or equal to one with denominators of $2,3,4,6$, and 8 using concrete objects and pictorial models, including strip diagrams and number lines
3.2(B) (Old) use fraction names and symbols to describe fractional parts of whole objects or sets of objects

2014 - Q 9
Amelia shaded $\frac{2}{8}$ of a rectangle. Which rectangle shows $\frac{2}{8}$ shaded?
A

C

B

D


Implic ations for Instruction/ Notes

* Correct answer (C)
3.3(A) (New) represent fractions greater than zero and less than or equal to one with denominators of $2,3,4,6$, and 8 using concrete objects and pictorial models, including strip diagrams and number lines
3.2(B) (Old) use fraction names and symbols to describe fractional parts of whole objects or sets of objects

2013-Q14

Indira shaded part of a figure, as shown below.


What fraction of the figure is shaded?

F $\frac{2}{6}$

G $\frac{2}{8}$

H $\frac{6}{8}$

J $\frac{1}{6}$

* Correct answer (H)

Analysis of Assessed Standards

| Dual Coding |  | Content | Supporting |
| :---: | :---: | :---: | :---: |
|  |  | Process |  |
| Stimulus |  |  |  |
| Thinking |  |  |  |
| Related SEs |  |  |  |
| Data Analysis |  |  |  |
| Item | State | Local | Error AnalysisGuessingCareless ErrorStopped too EarlyMixed Up Concepts |
| F | 5 |  |  |
| G | 15 |  |  |
| H* | 79 |  |  |
| J | 0 |  |  |

Implic ations for Instruction/ Notes
3.3(B) determine the corresponding fraction greater than zero and less than or equal to Units: one with denominators of $2,3,4,6$, and 8 given a specified point on a number line

No test questions 2013-2015

| IQ Analysis\| Investigating the Question | SE 3.3(C) | RC: 1 |
| :--- | :--- | :--- |

3.3(C) explain that the unit fraction $1 / b$ represents the quantity formed by one part of a Units: whole that has been partitioned into $b$ equal parts where $b$ is a non-zero whole number

No test questions 2013-2015

IQ Analysis | Investigating the Question
SE 3.3(D)
RC: 1
3.3(D) compose and decompose a fraction $a / b$ with a numerator greater than zero and Units: less than or equal to $b$ as a sum of parts $1 / b$
3.3(D) compose and decompose a fraction $\mathrm{a} / \mathrm{b}$ with a numerator greater than zero and less than or equal to $b$ as a sum of parts $1 / b$

2015 - Sample Q5
5 A farmer gave $\frac{1}{4}$ of a bale of hay to a horse each day on Monday, Tuesday, and Wednesday. Which equation can be used to find the fraction of a bale of hay the farmer gave the horse on these three days?

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

B $\frac{1}{4}+\frac{1}{4}+\frac{1}{4}=\frac{3}{12}$

C $\frac{1}{7}+\frac{1}{7}+\frac{1}{7}=\frac{3}{7}$

D $\frac{1}{7}+\frac{1}{7}+\frac{1}{7}=\frac{3}{21}$

Analysis of Assessed Standards

| Multi Coding | Content | Supporting |
| :--- | :--- | :--- |
|  | Process | $3.1(\mathrm{~A}), 3.1(\mathrm{~B}), 3.1(\mathrm{D})$, <br> $3.1(\mathrm{~F})$ |


| Stimulus |  |  |  |
| :---: | :---: | :---: | :---: |
| Thinking |  |  |  |
| Related SEs |  |  |  |
| Data Analysis |  |  |  |
| Item | State | Local | Error AnalysisGuessingCareless ErrorStopped too EarlyMixed Up Concepts |
| A* | NA |  |  |
| B |  |  |  |
| C |  |  |  |
| D |  |  |  |

Implic ations for Instruction/ Notes

* Correct answer (A)

IQ Analysis | Investigating the Question
3.3(E) solve problems involving partitioning an object or a set of objects among two or Units: more recipients using pictorial representations of fractions with denominators of 2, 3, 4, 6 , and 8

No test questions 2013-2015
3.3(F) represent equivalent fractions with denominators of $2,3,4,6$, and 8 using a variety of objects and pictorial models, including number lines

## 2015 - Sample Q6

6 Alyssa used fraction strips like the ones shown in the diagram in order to find equivalent fractions.

## Fraction Strips



## Analysis of Assessed Standards

| Multi Coding | Content | Readiness |
| :--- | :--- | :--- |
|  | Process | $3.1(\mathrm{~A}), 3.1(\mathrm{~B}), 3.1(\mathrm{E})$, <br> $3.1(\mathrm{~F})$ |


| Stimulus |  |
| :--- | :--- |
| Thinking |  |
| Related SEs |  |


| Data Analysis |  |  |  |
| :---: | :---: | :---: | :---: |
| Item | State | Local | Error Analysis $\square$ Guessing |
| A* | NA |  |  |
| B |  |  | $\square$ Careless Error |
| C |  |  | $\square$ Stopped too Early |
| D |  |  | $\square$ Mixed Up Concepts |

Implications for Instruction/ Notes Which list shows only fractions that are equivalent to $\frac{1}{2}$ ?

A $\frac{2}{4}, \frac{3}{6}, \frac{4}{8}$
B $\frac{2}{4}, \frac{4}{6}, \frac{6}{8}$
C $\frac{1}{4}, \frac{1}{6}, \frac{1}{8}$
D $\frac{2}{3}, \frac{3}{4}, \frac{5}{6}$

## * Correct answer (A)

3.3(G) explain that two fractions are equivalent if and only if they are both represented by the same point on the number line or represent the same portion of a same size whole for an area model

## Analysis of Assessed Standards

## 2015 - Sample Q7

7 Point $Y$ is labeled on the number line.


| Stimulus |  |
| :--- | :--- |
| Thinking |  |
| Related SEs |  |
|  |  |

Which statement is true?

A Point $Y$ represents $\frac{3}{6}$ and $\frac{3}{4}$, because both fractions represent 3 equal parts of a whole.

B Point $Y$ represents $\frac{3}{6}$ and $\frac{1}{2}$, because both fractions are exactly halfway between 0 and 1 on the number line.

C Point $Y$ represents $\frac{4}{6}$ and $\frac{3}{6}$, because both fractions represent 6 equal parts of a whole.

D Point $Y$ represents $\frac{4}{6}$ and $\frac{1}{2}$, because both fractions are exactly halfway between 0 and 1 on the number line.

## * Correct answer (B)

3.3(H) compare two fractions having the same numerator or denominator in problems by reasoning about their sizes and justifying the conclusion using symbols, words, objects, and pictorial models

## Analysis of Assessed Standards

2015 - Sample Q8
8 Daniel shaded these two number lines to model two different fractions.


| Stimulus |  |
| :--- | :--- |
| Thinking |  |
| Related SEs |  |



Based on the number lines, which comparison is true?

|  | Data Analysis |  |  |
| :---: | :---: | :---: | :---: |
| Item | State | Local | Error Analysis |
| A |  |  | $\square$ Guessing |$)$

Implic ations for Instruction/ Notes
A $\frac{1}{3}>\frac{1}{2}$

B $\frac{1}{3}=\frac{1}{2}$

C $\frac{1}{3}<\frac{1}{2}$

D $\frac{2}{3}<\frac{1}{2}$

## * Correct answer (C)

3.4(A) solve with fluency one-step and two-step problems involving addition and subtraction within 1,000 using strategies based on place value, properties of operations, and the relationship between addition and subtraction

## 2015 - Sample Q9

9 Ms. Elizondo shipped yogurt cups to stores on Monday.

- She shipped 648 cups of strawberry yogurt.
- She shipped 216 cups of peach yogurt.
- She shipped 264 cups of vanilla yogurt.

How many more cups of strawberry yogurt did Ms. Elizondo ship than cups of peach and vanilla yogurt combined?

A 168
B 480
C 248
D 178

* Correct answer (A)
3.4(A) (New) solve with fluency one-step and two-step problems involving addition and subtraction within 1,000 using strategies based on place value, properties of operations, and the relationship between addition and subtraction
3.3(B) (Old) select addition or subtraction and use the operation to solve problems involving whole numbers through 999

2014-Q4

Ramón has a total of 815 sheep in two fields. He has 348 sheep in one of the fields. How many sheep does Ramón have in the other field?

F 533
G 577
H 377
J 467

* Correct answer (J)


## Analysis of Assessed Standards

| Dual Coding | Content | Readiness |
| :--- | :--- | :--- |
|  | Process | $3.1(\mathrm{~A})$ |


| Stimulus |  |
| :--- | :--- |
| Thinking |  |
| Related SEs |  |


| Data Analysis |  |  |  |
| :---: | :---: | :---: | :---: |
| Item | State | Local | Error Analysis <br> $\square$ Guessing <br> $\square$ Careless Error <br> $\square$ Stopped too Early <br> $\square$ Mixed Up Concepts |
| F | 10 |  |  |
| G | 7 |  |  |
| H | 4 |  |  |
| J* | 80 |  |  |

Implic ations for Instruction/ Notes
3.4(A) (New) solve with fluency one-step and two-step problems involving addition and subtraction within 1,000 using strategies based on place value, properties of operations, and the relationship between addition and subtraction
5.3(A) (Old) use addition and subtraction to solve problems involving whole numbers and decimals

## 2014 - Q 6

Frances used small, medium, and large cups to serve punch.

- She used 243 medium cups.
- She used 79 more medium cups than large cups.
- She used 56 more small cups than large cups.

How many small cups did Frances use to serve punch?
F 220

| Dual Coding |  | Content | Readiness |
| :---: | :---: | :---: | :---: |
|  |  | Process | 3.1(B) |
| Stimulus |  |  |  |
| Thinking |  |  |  |
| Related SEs |  |  |  |
| Data Analysis |  |  |  |
| Item | State | Local | Error Analysis <br> $\square$ Guessing <br> $\square$ Careless Error <br> $\square$ Stopped too Early <br> $\square$ Mixed Up Concepts |
| F* | 49 |  |  |
| G | 12 |  |  |
| H | 6 |  |  |
| J | 32 |  |  |

G 108
Implic ations for Instruction/ Notes
H 266

## J Not here

* Correct answer (F)
3.4(A) (New) solve with fluency one-step and two-step problems involving addition and subtraction within 1,000 using strategies based on place value, properties of operations, and the relationship between addition and subtraction

Analysis of Assessed Standards 5.11(A) (Old) solve problems involving changes in temperature

2014-Q13

13 A five-day weather forecast is shown below.

| Monday | Tuesday | Wednesday |
| :---: | :---: | :---: | :---: | :---: |

Based on this forecast, on which days will there be a difference of $18^{\circ} \mathrm{F}$ between the high and low temperatures?

A Wednesday, Thursday, and Friday
B Thursday only
C Wednesday and Thursday only
D Monday only

* Correct answer (C)

| Dual Coding |  | Content | Readiness |
| :---: | :---: | :---: | :---: |
|  |  |  | Process |
| Stimulus |  |  |  |
| Thinking |  |  |  |
| Related SEs |  |  |  |
| Data Analysis |  |  |  |
| Item | State | Local | Error Analysis <br> $\square$ Guessing <br> $\square$ Careless Error <br> $\square$ Stopped too Early <br> $\square$ Mixed Up Concepts |
| A | 7 |  |  |
| B | 8 |  |  |
| C* | 80 |  |  |
| D | 5 |  |  |

Implic ations for Instruction/ Notes
3.4(A) (New) solve with fluency one-step and two-step problems involving addition and subtraction within 1,000 using strategies based on place value, properties of operations, and the relationship between addition and subtraction

Analysis of Assessed Standards
3.3(B) (Old) select addition or subtraction and use the operation to solve problems involving whole numbers through 999

2014-Q43

The table below shows the number of textbooks for five subjects at a school.

| Textbooks |  |
| :--- | :---: |
| Subject | Number of <br> Textbooks |
| Math | 214 |
| Reading | 187 |
| Science | 226 |
| Language | 208 |
| History | 193 |

What is the total number of math, reading, and language textbooks at this

| Dual Coding |  | Content | Readiness |
| :---: | :---: | :---: | :---: |
|  |  | Process | 3.1(A) |
| Stimulus |  |  |  |
| Thinking |  |  |  |
| Related SEs |  |  |  |
| Data Analysis |  |  |  |
| Item | State | Local |  |
| A* | 75 |  | $\square$ Guessing |
| B | 12 |  | $\square$ Careless Error |
| C | 5 |  | $\square$ Stopped too Early |
| D | 6 |  | $\square$ Mixed Up Concepts |

Implic ations for Instruction/ Notes school?

A 609
B 1,028
C 699
D 599

* Correct answer (A)
3.4(A) (New) solve with fluency one-step and two-step problems involving addition and subtraction within 1,000 using strategies based on place value, properties of operations, and the relationship between addition and subtraction
3.3(B) (Old) select addition or subtraction and use the operation to solve problems involving whole numbers through 999


## 2013-Q11

Gilbert had a total of 85 CDs to put in stacks. He put 27 CDs in one stack and 39 CDs in a second stack. How many CDs did Gilbert have left to put in stacks?

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 | Readiness |
| :--- | :--- | :--- |
|  | Process | $3.1(\mathrm{~B})$ |


| Stimulus |  |
| :--- | :--- |
| Thinking |  |
| Related SEs |  |

## Data Analysis

| Data Analysis |  |  |  |
| :---: | :---: | :---: | :---: |
| Item | State | Local | Error Analysis |
| 19 | 54 |  |  |
|  | 46 |  | $\square$ Careless Error |
|  | 0 |  | $\square$ Stopped too Early |
|  | 0 |  | $\square$ Mixed Up Concepts |

Implic ations for Instruction/ Notes

* C orrect answer (19)
3.4(A) (New) solve with fluency one-step and two-step problems involving addition and subtraction within 1,000 using strategies based on place value, properties of operations, and the relationship between addition and subtraction

Analysis of Assessed Standards 5.11(A) (Old) solve problems involving changes in temperature

2013-Q12
Gavin started hiking at 8:00 A.M. when the temperature was $64^{\circ} \mathrm{F}$.

- The temperature rose $17^{\circ} \mathrm{F}$ by noon.
- The temperature then fell $25^{\circ} \mathrm{F}$ by the time Gavin finished hiking.

What was the temperature when Gavin finished hiking?
Record your answer and fill in the bubbles on your answer document. Be sure to use the correct place value.

| Dual Coding | Content | Readiness |
| :--- | :--- | :--- |
|  | Process | $3.1(\mathrm{~A})$ |


| Stimulus |  |
| :--- | :--- |
| Thinking |  |
| Related SEs |  |


| Data Analysis |  |  |  |
| :---: | :---: | :---: | :---: |
| Item | State | Local | Error Analysis <br> $\square$ Guessing |
| 56 | 75 |  |  |
|  | 25 |  | $\square$ Careless Error |
|  | 0 |  | $\square$ Stopped too Early |
|  | 0 |  | Mixed Up Concepts |

Implic ations for Instruction/ Notes

* Correct answer (56)
3.4(A) (New) solve with fluency one-step and two-step problems involving addition and subtraction within 1,000 using strategies based on place value, properties of operations, and the relationship between addition and subtraction
3.3(B) (Old) select addition or subtraction and use the operation to solve problems involving whole numbers through 999

2013-Q24
A company received 492 phone calls from customers in June and 267 phone calls from customers in July. What is the difference between the numbers of phone calls received in these two months?

F 225
G 759
H 235
J 135

## Analysis of Assessed Standards

| Dual Coding | Content | Readiness |
| :--- | :--- | :--- |
|  | Process | $3.1(\mathrm{~A})$ |


| Stimulus |  |  |  |
| :---: | :---: | :---: | :---: |
| Thinking |  |  |  |
| Related SEs |  |  |  |
| Data Analysis |  |  |  |
| Item | State | Local |  |
| F* | 66 |  | $\begin{aligned} & \text { Error Analys } \\ & \square \text { Guessing } \end{aligned}$ |
| G | 21 |  | $\square$ Careless Error |
| H | 9 |  | Stopped too Early |
| J | 4 |  | oncepts |

Implic ations for Instruction/ Notes

* Correct answer (F)
3.4(A) (New) solve with fluency one-step and two-step problems involving addition and subtraction within 1,000 using strategies based on place value, properties of operations, and the relationship between addition and subtraction
5.3(A) (Old) use addition and subtraction to solve problems involving whole numbers and decimals


## 2013-Q27

Alex used blue, red, and green pieces of plastic to make a design.

- He used 84 green pieces of plastic.
- He used 20 more green pieces of plastic than blue pieces of plastic.
- He used 15 more red pieces of plastic than blue pieces of plastic.

What is the number of red pieces of plastic Alex used?
A 79
B 89
C 49
D 119

[^0]Analysis of Assessed Standards

| Dual Coding | Content | Readiness |
| :--- | :--- | :--- |
|  | Process | $3.1(\mathrm{~A})$ |

Stimulus $\quad \square$

Thinking
Related SEs

| Data Analysis |  |  |  |
| :---: | :---: | :---: | :---: |
| Item | State | Local | Error Analysis <br> $\square$ Guessing |
| A* | 51 |  |  |
| B | 6 |  | $\square$ Careless Error |
| C | 13 |  | $\square$ Stopped too Early |
| D | 30 |  | $\square$ Mixed Up Concepts |

Implic ations for Instruction/ Notes
3.4(B) (New) round to the nearest 10 or 100 or use compatible numbers to estimate solutions to addition and subtraction problems
3.5(A) (Old) round whole numbers to the nearest ten or hundred to approximate reasonable results in problem situations

## 2013-Q18

Mr. Neufeld grew a vegetable garden last year. The list below shows the number of three vegetables he grew.

- 718 onions
- 374 potatoes
- 187 cucumbers

Which expression shows the best way to estimate the difference between the number of potatoes and the number of cucumbers Mr. Neufeld grew in his garden?

F $370+190$
G $400+100$
H $400-100$
J $370-190$

## * Correct answer (J)

3.4(B) (New) round to the nearest 10 or 100 or use compatible numbers to estimate solutions to addition and subtraction problems
3.5(B) (Old) use strategies including rounding and compatible numbers to estimate solutions to addition and subtraction problems

Analysis of Assessed Standards

| Dual Coding |  | Content | Supporting |
| :---: | :---: | :---: | :---: |
|  |  | Process | 3.1(B) |
| Stimulus |  |  |  |
| Thinking |  |  |  |
| Related SEs |  |  |  |
| Data Analysis |  |  |  |
| Item | State | Local |  |
| A | 7 |  | $\square \mathrm{Gu}$ 的sing |
| B* | 72 |  | $\square$ Careless Error |
| C | 12 |  | $\square$ Stopped too Early |
| D | 8 |  | $\square$ Mixed Up Concepts |

Implications for Instruction/ Notes

A 300
B 160
C 140
D 170

* Correct answer (B)
3.4(C) (New) determine the value of a collection of coins and bills 3.1(C) (Old) determine the value of a collection of coins and bills


## 2014-Q17

Payton has 9 coins that total exactly $\$ 1.27$. Which set of coins could be Payton's coin5?


C

D


* Correct answer (B)

B

*

## Analysis of Assessed Standards

| Dual Coding | Content | Supporting |
| :--- | :--- | :--- |
|  | Process | $3.1(\mathrm{~A})$ |


|  |  |
| :--- | :--- |
| Stimulus |  |
| Thinking |  |
| Related SEs |  |


| Data Analysis |  |  |  |
| :---: | :---: | :---: | :---: |
| Item | State | Local | Error Analysis <br> $\square$ Guessing |
| A | 5 |  |  |
| B* | 72 |  | $\square$ Careless Error |
| C | 16 |  | $\square$ Stopped too Early |
| D | 6 |  | Mixed Up Concepts |

Implic ations for Instruction/ Notes
3.4(D) (New) determine the total number of objects when equally sized groups of objects are combined or arranged in arrays up to 10 by 10
3.4(A) (Old) learn and apply multiplication facts through 12 by 12 using concrete models and objects

2013-Q9

Emery drew 3 rows of stick figures. Each row has the same number of stick figures. One of the rows is shown below.


How many stick figures are in 3 rows?
A 12
B 24
C 9
D Not here

* Correct answer (D)


## Analysis of Assessed Standards

| Dual Coding | Content | Supporting |
| :--- | :--- | :--- |
|  | Process | $3.1(\mathrm{C})$ |


| Stimulus |  |
| :--- | :--- |
| Thinking |  |
| Related SEs |  |


|  | Data Analysis |  |  |
| :---: | :---: | :---: | :---: |
| Item | State | Local | Error Analysis |
| A | $\mathbf{1}$ |  | Guessing |
| B | $\mathbf{2}$ |  | ■Careless Error |
| C | $\mathbf{2 3}$ |  | $\square$ Stopped too Early |
| D* | $\mathbf{7 3}$ |  | $\square$ Mixed Up Concepts |

Implic ations for Instruction/ Notes
3.4(E) (New) represent multiplication facts by using a variety of approaches such as repeated addition, equal-sized groups, arrays, area models, equal jumps on a number line, and skip counting
3.6(B) (Old) identify patterns in multiplication facts using concrete objects, pictorial models, or technology

2013-Q43
Janie collected 10 sea stars at the beach. Each sea star had 5 arms, as shown below.


## Analysis of Assessed Standards

| Dual Coding | Content | Supporting |
| :--- | :--- | :--- |
|  | Process | $3.1(\mathrm{E})$ |


| Stimulus |  |
| :--- | :--- |
| Thinking |  |
| Related SEs |  |


|  | Data Analysis |  |  |
| :---: | :---: | :---: | :--- |
| Item | State | Local | Error Analysis |
| A | $\mathbf{1 9}$ |  | Guessing |
| B | $\mathbf{2}$ |  | Gareless E rror |
| C | $\mathbf{5}$ |  | Copped too Early |
| D* | $\mathbf{7 3}$ |  | $\square$ Mixed Up Concepts |

Implic ations for Instruction/ Notes

Which expression can be used to find the total number of arms on 10 sea stars?
A $10 \div 5$
B $10-5$
C $10+5$
D $10 \times 5$

* Correct answer (D)
3.4(F) recall facts to multiply up to 10 by 10 with automaticity and recall the corresponding division facts


## Analysis of Assessed Standards

| Multi Coding | Content | Supporting |
| :--- | :--- | :--- |
|  | Process | $3.1(\mathrm{~A}), 3.1(\mathrm{~B}), 3.1(\mathrm{~F})$ |


| Stimulus |  |
| :--- | :--- |
| Thinking |  |
| Related SE |  |

Related SE


Implic ations for Instruction/ Notes

* Correct answer (7)
3.4(F) (New) recall facts to multiply up to 10 by 10 with automaticity and recall the corresponding division facts
3.4(B) (Old) solve and record multiplication problems (up to two digits times one digit)

2014-Q31

In the equations below, each
 represents the same number.

$\triangle \times \triangle=9$

What is the value of


A 3
B 2
C 8
D 9

* Correct answer (C)
3.4(G) use strategies and algorithms, including the standard algorithm, to multiply a Units: two-digit number by a one digit number. Strategies may include mental math, partial products, and the commutative, associative, and distributive properties

No test questions 2013-2015

IQ Analysis| Investigating the Question

## Units:

3.4(H) (New) determine the number of objects in each group when a set of objects is partitioned into equal shares or a set of objects is shared equally
3.4(C) (Old) use models to solve division problems and use number sentences to record the solutions

## 2014-Q1

Sofia will arrange 42 feathers into 7 glass cases for her collection.


Analysis of Assessed Standards

| Dual Coding |  | Content | Supporting |
| :---: | :---: | :---: | :---: |
|  |  | Process | 3.1(C) |
| Stimulus |  |  |  |
| Thinking |  |  |  |
| Related SEs |  |  |  |
| Data Analysis |  |  |  |
| Item | State | Local | Error AnalysisGuessingCareless ErrorStopped too EarlyMixed Up Concepts |
| A* | 91 |  |  |
| B | 3 |  |  |
| C | 5 |  |  |
| D | 1 |  |  |

Implic ations for Instruction/ Notes

There will be an equal number of feathers in each glass case. Which number sentence can be used to find the number of feathers in each glass case?

A $42 \div 7=6$
B $42+7=49$
C $42 \times 7=294$
D $42-7=35$

* Correct answer (A)
3.4(H) (New) determine the number of objects in each group when a set of objects is partitioned into equal shares or a set of objects is shared equally
3.4(C) (Old) use models to solve division problems and use number sentences to record the solutions

2014-Q25

The picture below shows the number of wagons at a toy store.


The wagons will be arranged in 2 equal rows. How many wagons will be in each row?

A 6 , because $24 \div 4=6$
B 2, because $24 \div 12=2$
C 12 , because $24 \div 2=12$
D 8 , because $24 \div 3=8$

* Correct answer (C)
3.4(H) (New) determine the number of objects in each group when a set of objects is partitioned into equal shares or a set of objects is shared equally
3.4(C) (Old) use models to solve division problems and use number sentences to record the solutions


## 2014-Q41

There are 18 trumpets in a music room.


These trumpets will be placed in 3 equal rows. Which number sentence can be used to find the number of trumpets in each row?

Analysis of Assessed Standards

| Dual Coding |  | Content | Supporting |
| :---: | :---: | :---: | :---: |
|  |  | Process | 3.1(C) |
| Stimulus |  |  |  |
| Thinking |  |  |  |
| Related SEs |  |  |  |
| Data Analysis |  |  |  |
| Item | State | Local | Error Analysis <br> $\square$ Guessing <br> $\square$ Careless Error <br> $\square$ Stopped too Early <br> $\square$ Mixed Up Concepts |
| A | 7 |  |  |
| B | 4 |  |  |
| C | 14 |  |  |
| D* | 75 |  |  |

Implic ations for Instruction/ Notes

A $18 \times 3=54$
B $18 \times 2=36$
C $18 \div 2=9$
D $18 \div 3=6$

* Correct answer (D)
3.4(H) (New) determine the number of objects in each group when a set of objects is partitioned into equal shares or a set of objects is shared equally
3.4(C) (Old) use models to solve division problems and use number sentences to record the solutions

2013-Q12
The picture below shows the number of fish Mrs. Gonzales wants to put into fish tanks.


She will put 7 fish into each tank. Which number sentence shows the number of fish tanks Mrs. Gonzales needs for her fish?

F $56 \div 7=9$
G $56 \div 7=8$
H $56 \div 7=6$
J $56 \div 7=7$

## * Correct answer (G)

Analysis of Assessed Standards

| Dual Coding |  | Content | Supporting |
| :---: | :---: | :---: | :---: |
|  |  | Process | 3.1(C) |
| Stimulus |  |  |  |
| Thinking |  |  |  |
| Related SEs |  |  |  |
| Data Analysis |  |  |  |
| Item | State | Local |  |
| F | 17 |  | $\square$ Guessing |
| G* | 71 |  | $\square$ Careless Error |
| H | 4 |  | $\square$ Stopped too Early |
| J | 7 |  | $\square$ Mixed Up Concepts |

Implic ations for Instruction/ Notes
3.4(H) (New) determine the number of objects in each group when a set of objects is partitioned into equal shares or a set of objects is shared equally
3.4(C) (Old) use models to solve division problems and use number sentences to record the solutions

## 2013-Q29

The barrels shown below will be placed in 3 rows at a park. There will be an equal number of barrels in each row.


Analysis of Assessed Standards

| Dual Coding | Content | Supporting |
| :--- | :--- | :--- |
|  | Process | $3.1(\mathrm{C})$ |


| Stimulus |  |  |  |
| :---: | :---: | :---: | :---: |
| Thinking |  |  |  |
| Related SEs |  |  |  |
| Data Analysis |  |  |  |
| Item | State | Local | Error Analysis <br> $\square$ Guessing <br> $\square$ Careless Error <br> $\square$ Stopped too Early <br> $\square$ Mixed Up Concepts |
| A | 30 |  |  |
| B | 4 |  |  |
| C* | 59 |  |  |
| D | 5 |  |  |

Implic ations for Instruction/ Notes

Which number sentence shows the number of barrels that will be in each row?
A $30 \div 6=5$
B $36 \div 3=12$
C $30 \div 3=10$
D $36 \div 6=6$

* Correct answer (C)
3.4(H) (New) determine the number of objects in each group when a set of objects is partitioned into equal shares or a set of objects is shared equally
3.4(C) (Old) use models to solve division problems and use number sentences to record the solutions


## 2013-Q45

Nelli will arrange 22 mirrors on 2 shelves in a store. There will be an equal number of mirrors on each of the shelves.




Analysis of Assessed Standards

| Dual Coding | Content | Supporting |
| :--- | :--- | :--- |
|  | Process | $3.1(\mathrm{C})$ |

## Stimulus

| Thinking |  |  |  |
| :---: | :---: | :---: | :---: |
| Related SEs |  |  |  |
| Data Analysis |  |  |  |
| Item | State | Local | Error Analysis <br> $\square$ Guessing <br> $\square$ Careless Error <br> $\square$ Stopped too Early <br> $\square$ Mixed Up Concepts |
| A* | 79 |  |  |
| B | 6 |  |  |
| C | 10 |  |  |
| D | 4 |  |  |

Implic ations for Instruction/ Notes

How many mirrors will be on each of the shelves?
A 11 , because $22 \div 2=11$
B 24 , because $22+2=24$
C 44 , because $22 \times 2=44$
D 20, because $22-2=20$

* Correct answer (A)
3.4(I) determine if a number is even or odd using divisibility rules Units:

No test questions 2013-2015
3.4(J) (New) determine a quotient using the relationship between multiplication and division
4.6(A) (Old) use patterns and relationships to develop strategies to remember basic multiplication and division facts (such as the patterns in related multiplication and division number sentences (fact families) such as $9 \times 9=81$ and $81 \div 9=9$ )

2014-Q1

In the equation below, the $\qquad$ and the $\square$ represent different numbers.


Which equation is in the same fact family?
A $72 \times$


B


C $72 \div \triangle=\square$
D
 $=72$

## Analysis of Assessed Standards

| Dual Coding | Content | Supporting |
| :--- | :--- | :--- |
|  | Process |  |
| Stimulus |  |  |
| Thinking |  |  |
| Related SEs |  |  |



Implic ations for Instruction/ Notes

## * Correct answer (C)

3.4(J) (New) determine a quotient using the relationship between multiplication and division
3.6(C) (Old) identify patterns in related multiplication and division sentences (fact families) such as $2 \times 3=6,3 \times 2=6,6 \div 2=3,6 \div 3=2$

## 2013 - Q2

Belinda made 5 gallons of fruit punch for a party. There are 8 pints in each gallon of punch. Which expression is in the same fact family as $8 \times 5=40$ ?

$$
\text { F } 5 \times 40
$$

G $8+5$
H $40 \div 8$
J $40-8$

## Analysis of Assessed Standards

| Dual Coding | Content | Supporting |
| :--- | :--- | :--- |
|  | Process |  |



Implications for Instruction/ Notes

* Correct answer (H)
3.4(K) solve one-step and two-step problems involving multiplication and division within 100 using strategies based on objects; pictorial models, including arrays, area models, and equal groups; properties of operations; or recall of facts


## 2015 - Sample Q11

11 A music teacher had 4 boxes of recorders. There were 9 recorders in each box. The music teacher gave an equal number of recorders to each of 6 classes. How many recorders did each class receive?

A 7
B 6
C 30
D 36

## Analysis of Assessed Standards

| Multi Coding | Content | Readiness |
| :--- | :--- | :--- |
|  | Process | $3.1(\mathrm{~A}), 3.1(\mathrm{~B}), 3.1(\mathrm{~F})$ |


| Stimulus |  |
| :--- | :--- |
| Thinking |  |
| Related SEs |  |


| Data Analysis |  |  |  |
| :---: | :---: | :---: | :---: |
| Item | State | Local | Error Analysis <br> $\square$ Guessing <br> $\square$ Careless Error <br> $\square$ Stopped too Early <br> $\square$ Mixed Up Concepts |
| A | NA |  |  |
| B* |  |  |  |
| C |  |  |  |
| D |  |  |  |

Implic ations for Instruction/ Notes

## * Correct answer (B)

3.4(K) (New) solve one-step and two-step problems involving multiplication and division within 100 using strategies based on objects; pictorial models, including arrays, area models, and equal groups; properties of operations; or recall of facts 4.4(C) (Old) recall and apply multiplication facts through $12 \times 12$

## 2014-Q26

Zenobia put 3 large pictures and 4 small pictures on each page of a photo album. What is the total number of large pictures and small pictures on 9 pages of the album?

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 | Readiness |
| :--- | :--- | :--- |
|  | Process | $3.1(\mathrm{~B})$ |


| Stimulus |  |
| :--- | :--- |
| Thinking |  |
| Related SEs |  |


| Data Analysis |  |  |  |
| :---: | :---: | :---: | :---: |
| Item | State | Local | Error Analysis |
| 63 | 51 |  |  |
|  | 48 |  | $\square$ Careless Error |
|  | 0 |  | $\square$ Stopped too Early |
|  | 0 |  | Mixed Up Concepts |

Implic ations for Instruction/ Notes

* Correct answer (63)
3.4(K) (New) solve one-step and two-step problems involving multiplication and division within 100 using strategies based on objects; pictorial models, including arrays, area models, and equal groups; properties of operations; or recall of facts

Analysis of Assessed Standards 3.4(B) (Old) solve and record multiplication problems (up to two digits times one digit)

2013-Q5
Andy has trumpet practice 4 times every month. Each practice lasts 2 hours. What is the total number of hours that Andy will practice in 9 months?

A 72
B 156
C 36
D 104

* Correct answer (A)
3.4(K) (New) solve one-step and two-step problems involving multiplication and division within 100 using strategies based on objects; pictorial models, including arrays, area models, and equal groups; properties of operations; or recall of facts 5.3(B) (Old) use multiplication to solve problems involving whole numbers (no more than three digits times two digits without technology)

2013 - Q 24

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 this farm?

F 9 cows, 36 horses, and 18 pigs
G 48 cows, 12 horses, and 24 pigs
H 32 cows, 16 horses, and 8 pigs
J 72 cows, 18 horses, and 9 pigs

## Analysis of Assessed Standards

| Dual Coding |  | Content | Readiness |
| :---: | :---: | :---: | :---: |
|  |  | Process | 3.1(B) |
| Stimulus |  |  |  |
| Thinking |  |  |  |
| Related SEs |  |  |  |
| Data Analysis |  |  |  |
| Item | State | Local |  |
| F | 15 |  | $\square$ Guessing |
| G | 20 |  | $\square$ Careless Error |
| H | 17 |  | $\square$ Stopped too Early |
| J* | 47 |  | Mixed Up Concepts |

## Implic ations for Instruction/ Notes

[^1]3.4(K) (New) solve one-step and two-step problems involving multiplication and division within 100 using strategies based on objects; pictorial models, including arrays, area models, and equal groups; properties of operations; or recall of facts 4.4(C) (OId) recall and apply multiplication facts through $12 \times 12$

2013-Q45
Ms. López bought 5 packages of crackers at a store. Each package had 8 crackers. What was the total number of crackers in these 5 packages?

A 25
B 13
C 35
D Not here

## Analysis of Assessed Standards

| Dual Coding | Content | Readiness |
| :--- | :--- | :--- |
|  | Process | $3.1(\mathrm{~A})$ |


| Stimulus |  |
| :--- | :--- |
| Thinking |  |
| Related SEs |  |


|  | Data Analysis |  |  |
| :---: | :---: | :---: | :--- |
| Item | State | Local | Error Analysis |
| A | $\mathbf{4}$ |  | Guessing |
| B | $\mathbf{6}$ |  | Gareless Error |
| C | $\mathbf{3}$ |  | Stopped too Early |
| D* | $\mathbf{8 6}$ |  | $\square$ Mixed Up Concepts |

Implic ations for Instruction/ Notes

* Correct answer (D)
3.5(A) represent one- and two-step problems involving addition and subtraction of whole numbers to 1,000 using pictorial models, number lines, and equations

2015 - Sample Q12
12 There were 35 pretzels at a bakery. A baker made 20 more pretzels. The baker then sold 11 pretzels. Which equation shows how to find the number of pretzels there are now?

A $35+20+11=$ $\square$

B $35-20+11=$ $\square$

C $35-20-11=$


D $35+20-11=$
$\square$

## Analysis of Assessed Standards

| Multi Coding | Content | Readiness |
| :--- | :--- | :--- |
|  | Process | $3.1(\mathrm{~A}), 3.1(\mathrm{~B}), 3.1(\mathrm{D})$, <br> $3.1(\mathrm{~F})$ |

## Stimulus

## Thinking

## Related SEs

| Data Analysis |  |  |  |
| :---: | :---: | :---: | :---: |
| Item | State | Local | Error Analysis <br> $\square$ Guessing <br> $\square$ Careless Error <br> $\square$ Stopped too Early <br> $\square$ Mixed Up Concepts |
| A | NA |  |  |
| B |  |  |  |
| C |  |  |  |
| D* |  |  |  |

Implic ations for Instruc tion/ Notes

* C orrect answer (D)
3.5(A) (New) represent one- and two-step problems involving addition and subtraction of whole numbers to 1,000 using pictorial models, number lines, and equations
3.3(A) (OId) model addition and subtraction using pictures, words, and numbers

2014-Q22
Mrs. Lanier saved $\$ 617$ in January. In February she spent $\$ 249$ of the money she had saved. She saved $\$ 291$ more in March. Which number sentence can be used to find the amount of money Mrs. Lanier had at the end of March?

F $617+249-291=\square$

G $617+249+291=\square$

H $617-249-291=\square$

J $617-249+291=\square$

* Correct answer (J)

Analysis of Assessed Standards

| Dual Coding |  | Content | Readiness |
| :---: | :---: | :---: | :---: |
|  |  | Process | 3.1(E) |
| Stimulus |  |  |  |
| Thinking |  |  |  |
| Related SEs |  |  |  |
| Data Analysis |  |  |  |
| Item | State | Local | Error Analysis <br> $\square$ Guessing <br> $\square$ Careless Error <br> $\square$ Stopped too Early <br> $\square$ Mixed Up Concepts |
| F | 11 |  |  |
| G | 13 |  |  |
| H | 8 |  |  |
| J* | 68 |  |  |

## Implic ations for Instruction/ Notes

3.5(A) (New) represent one- and two-step problems involving addition and subtraction of whole numbers to 1,000 using pictorial models, number lines, and equations
4.12(A) (Old) use a thermometer to measure temperature and changes in temperature

2014-Q39

The thermometer below shows the high temperature on a summer day.


Analysis of Assessed Standards

| Dual Coding | Content | Readiness |
| :--- | :--- | :--- |
|  | Process | $4.1(\mathrm{~A})$ |

## Stimulus

Thinking
Related SEs

|  | Data Analysis |  |  |
| :---: | :---: | :---: | :--- |
| Item | State | Local | Error Analysis |
| A | $\mathbf{1 3}$ |  | Guessing |
| B | $\mathbf{4}$ |  | Qareless Error |
| C | $\mathbf{1 1}$ |  | Stopped too Early |
| D* | $\mathbf{7 1}$ |  | $\square$ Mixed Up Concepts |

Implic ations for Instruction/ Notes

The low temperature on the same day was $24^{\circ} \mathrm{F}$ cooler. Which temperature is closest to the low temperature on that day?

A $76^{\circ} \mathrm{F}$
B $52^{\circ} \mathrm{F}$
C $51^{\circ} \mathrm{F}$
D $75^{\circ} \mathrm{F}$

* Correct answer (D)
3.5(A) (New) represent one- and two-step problems involving addition and subtraction of whole numbers to 1,000 using pictorial models, number lines, and equations

Analysis of Assessed Standards
3.3(A) (OId) model addition and subtraction using pictures, words, and numbers

2013-Q16
Rob had 345 concert tickets to sell. He sold 127 of these tickets on Monday. Which model represents the number of tickets Rob had left to sell?

F


| Dual Coding | Content | Readiness |
| :--- | :--- | :--- |
|  | Process | $3.14(\mathrm{D})$ |


| Stimulus |  |  |  |
| :---: | :---: | :---: | :---: |
| Thinking |  |  |  |
| Related SEs |  |  |  |
| Data Analysis |  |  |  |
| Item | State | Local | Error Analysis |
| F | 12 |  | $\square$ Guessing |
| G | 8 |  | $\square$ Careless Error |
| H* | 75 |  | $\square$ Stopped too Early |
| J | 5 |  | $\square$ Mixed Up Concepts |

Implic ations for Instruction/ Notes
3.5(B) represent and solve one- and two-step multiplication and division problems within 100 using arrays, strip diagrams, and equations

## Analysis of Assessed Standards

| Multi Coding | Content | Readiness |
| :--- | :--- | :--- |
|  | Process | $3.1(\mathrm{~A}), 3.1(\mathrm{~B}), 3.1(\mathrm{D})$, <br> $3.1(\mathrm{~F})$ |


| Stimulus |  |
| :--- | :--- |
| Thinking |  |
| Related SEs |  |


| Data Analysis |  |  |  |
| :---: | :---: | :---: | :---: |
| Item | State | Local | Error Analysis $\square$ Guessing |
| A* | NA |  |  |
| B |  |  | $\square$ Careless Error |
| C |  |  | $\square$ Stopped too Early |
| D |  |  | $\square$ Mixed Up Concepts |

Implic ations for Instruction/ Notes

## * Correct answer (A)

3.5(B) (New) represent and solve one- and two-step multiplication and division problems within 100 using arrays, strip diagrams, and equations 3.4(B) (Old) solve and record multiplication problems (up to two digits times one digit)

2013-Q32

Willis has 5 bags of marbles that have 18 marbles each. He also has 3 bags of marbles that have 13 marbles each. What is the total number of marbles in these 8 bags?

F 194
G 47
H 129
J 90

| Stimulus |  |  |  |
| :---: | :---: | :---: | :---: |
| Thinking |  |  |  |
| Related SEs |  |  |  |
| Data Analysis |  |  |  |
| Item | State | Local | Error Analysis |
| F | 7 |  | $\square \text { Guessing }$ |
| G | 22 |  | $\square$ Careless Error |
| H* | 56 |  | $\square$ Stopped too Early |
| J | 14 |  | $\square$ Mixed Up Concepts |

Implic ations for Instruction/ Notes

[^2]3.5(B) (New) represent and solve one- and two-step multiplication and division problems within 100 using arrays, strip diagrams, and equations
4.4(B) (Old) represent multiplication and division situations in picture, word, and number form

2013-Q35
Which model represents the expression $24 \div 3$ ?


* Correct answer (B)


## IQ Analysis| Investigating the Question

3.5(C) describe a multiplication expression as a comparison such as $3 \times 24$ represents 3 times as much as 24

Analysis of Assessed Standards

| Multi Coding | Content | Supporting |
| :--- | :--- | :--- |
|  | Process | $3.1(\mathrm{~A}), 3.1(\mathrm{~B}), 3.1(\mathrm{G})$ |


| Stimulus |  |
| :--- | :--- |
| Thinking |  |
| Related SEs |  |


| Data Analysis |  |  |  |
| :---: | :---: | :---: | :---: |
| Item | State | Local | Error Analysis |
| A | NA |  |  |
| B |  |  | $\square$ Careless Error |
| C |  |  | $\square$ Stopped too Early |
| D* |  |  | $\square$ Mixed Up Concepts |

Implic ations for Instruction/ Notes

$$
4 \times 10
$$

Which statement is true?
A Tyler read 10 times the number of books Eli read.
B Eli read 10 times the number of books Tyler read.
C Tyler read 4 times the number of books Eli read.
D Eli read 4 times the number of books Tyler read.
2015-Sample Q14
14 Tyler read 10 books. The number of books Eli read can be represented by this expression.

* Correct answer (D)

Analysis of Assessed Standards

| Dual Coding |  | Content | Readiness |
| :---: | :---: | :---: | :---: |
|  |  | Process | 3.1(C) |
| Stimulus |  |  |  |
| Thinking |  |  |  |
| Related SEs |  |  |  |
| Data Analysis |  |  |  |
| Item | State | Local | Error Analysis <br> $\square$ Guessing <br> $\square$ Careless Error <br> $\square$ Stopped too Early <br> $\square$ Mixed Up Concepts |
| A | 20 |  |  |
| B* | 70 |  |  |
| C | 4 |  |  |
| D | 6 |  |  |

Implic ations for Instruction/ Notes

Corectansw
3.5(D) determine the unknown whole number in a multiplication or division equation relating three whole numbers when the unknown is either a missing factor or product

## 2015 - Sample Q15

15 What number belongs in the $\square$ to make the equation true?

$$
13=\square \div 3
$$

A 10
B 39
C 16
D 3

## Analysis of Assessed Standards

| Multi Coding | Content | Supporting |
| :--- | :--- | :--- |
|  | Process | $3.1(\mathrm{~B}), 3.1(\mathrm{~F})$ |


| Stimulus |  |
| :--- | :--- |
| Thinking |  |
| Related SEs |  |
|  |  |


| Data Analysis |  |  |  |
| :---: | :---: | :---: | :---: |
| Item | State | Local | Error Analysis |
| A | NA |  | $\square \mathrm{Guessing}$ |
| B* |  |  | $\square$ Careless Error |
| C |  |  | $\square$ Stopped too Early <br> $\square$ Mixed Up Concepts |
| D |  |  |  |

Implic ations for Instruction/ Notes

* Correct answer (B)
3.5(E) represent real-world relationships using number pairs in a table and verbal descriptions


## 2015 - Sample Q16

16 There are 10 sunglasses in each display case at a store. Which table shows the number of sunglasses in different numbers of these display cases?

> Sunglasses

A

| Number of Display Cases | 2 | 6 | 11 | 12 |
| :--- | :---: | :---: | :---: | :---: |
| Number of Sunglasses | 20 | 30 | 40 | 50 |

Sunglasses
B

| Number of Display Cases | 2 | 6 | 11 | 12 |
| :--- | :---: | :---: | :---: | :---: |
| Number of Sunglasses | 20 | 60 | 110 | 120 |

Sunglasses
C

| Number of Display Cases | 2 | 6 | 11 | 12 |
| :--- | :---: | :---: | :---: | :---: |
| Number of Sunglasses | 20 | 60 | 100 | 140 |

Sunglasses
D

| Number of Display Cases | 2 | 6 | 11 | 12 |
| :--- | :---: | :---: | :---: | :---: |
| Number of Sunglasses | 10 | 20 | 30 | 40 |

## Analysis of Assessed Standards

| Multi Coding | Content | Readiness |
| :--- | :--- | :--- |
|  | Process | $3.1(\mathrm{~A}), 3.1(\mathrm{~B}), 3.1(\mathrm{D})$, <br> $3.1(\mathrm{~F})$ |


| Stimulus |  |
| :--- | :--- |
| Thinking |  |
| Related SEs |  |


| Data Analysis |  |  |  |
| :---: | :---: | :---: | :---: |
| Item | State | Local | Error Analysis $\square$ Guessing |
| A | NA |  |  |
| B* |  |  | $\square$ Careless Error |
| C |  |  | $\square$ Stopped too Early |
| D |  |  | $\square$ Mixed Up Concepts |

Implic ations for Instruction/ Notes

## * Correct answer (B)

3.5(E) (New) represent real-world relationships using number pairs in a table and verbal descriptions
5.5(A) (OId) describe the relationship between sets of data in graphic organizers such as

Analysis of Assessed Standards lists, tables, charts, and diagrams

## 2014-Q14

The table below shows Ted's age at the end of different grade levels.
Ted's Age

| Grade <br> Level | Age <br> (years) |
| :---: | :---: |
| 3 | 9 |
| 4 | 10 |
| 7 | 13 |
| 11 | 17 |

Which statement describes the relationship between Ted's grade level and his age?
F Ted's age is equal to his grade level times 3.
G Ted's age is equal to his grade level divided by 3.
H Ted's age is equal to 6 less than his grade level.
J Ted's age is equal to 6 more than his grade level.

## * Correct answer (J)

3.5(E) (New) represent real-world relationships using number pairs in a table and verbal descriptions
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?

Analysis of Assessed Standards

| Dual Coding |  | Content | Readiness |
| :---: | :---: | :---: | :---: |
|  |  | Process | 3.1(F) |
| Stimulus |  |  |  |
| Thinking |  |  |  |
| Related SEs |  |  |  |
| Data Analysis |  |  |  |
| Item | State | Local | Error Analysis <br> $\square$ Guessing <br> $\square$ Careless Error <br> $\square$ Stopped too Early <br> $\square$ Mixed Up Concepts |
| F | 4 |  |  |
| G | 4 |  |  |
| H | 28 |  |  |
| J* | 65 |  |  |

## Implic ations for Instruction/ Notes

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)
3.5(E) (New) represent real-world relationships using number pairs in a table and verbal descriptions
3.7(A) (Old) generate a table of paired numbers based on a real-life situation such as

Analysis of Assessed Standards insects and legs

| Dual Coding | Content | Readiness |
| :--- | :--- | :--- |
|  | Process | $3.1(\mathrm{~B})$ |

Mr. Watkins takes 4 trips every year. Which table shows the total number of trips Mr. Watkins takes in 5, 7, and 12 years?
Trips
F
Trips
H

| Number of <br> Years | Total Number <br> of Trips |
| :---: | :---: |
| 5 | 4 |
| 7 | 8 |
| 12 | 12 |

Trips
G

| Number of <br> Years | Total Number <br> of Trips |
| :---: | :---: |
| 5 | 9 |
| 7 | 11 |
| 12 | 16 |

Trips

J \begin{tabular}{|c|c|}

\hline | Number of |
| :---: |
| Years | \& | Total Number |
| :---: |
| of Trips | <br>

\hline 5 \& 20 <br>
\hline 7 \& 28 <br>
\hline 12 \& 48 <br>
\hline
\end{tabular}

## * Correct answer (J )

3.5(E) (New) represent real-world relationships using number pairs in a table and verbal descriptions
4.7(A) (Old) describe the relationship between two sets of related data such as ordered pairs in a table

$$
2014 \text { - Q } 47
$$

The table below shows the number of fluid ounces in different numbers of tablespoons.

## Fluid Ounces

| Number of <br> Tablespoons | Number of <br> Fluid Ounces |
| :---: | :---: |
| 32 | 16 |
| 24 | 12 |
| 14 | 7 |
| 10 | 5 |

Which statement describes the relationship between the number of tablespoons

Analysis of Assessed Standards

| Dual Coding |  | Content | Readiness |
| :---: | :---: | :---: | :---: |
|  |  | Process | 3.1(F) |
| Stimulus |  |  |  |
| Thinking |  |  |  |
| Related SEs |  |  |  |
| Data Analysis |  |  |  |
| Item | State | Local | Error AnalysisGuessingCareless ErrorStopped too EarlyMixed Up Concepts |
| A | 5 |  |  |
| B | 15 |  |  |
| C | 5 |  |  |
| D* | 74 |  |  |

Implic ations for Instruction/ Notes and the number of fluid ounces?

A The number of tablespoons $-8=$ the number of fluid ounces
B The number of tablespoons $\times 2=$ the number of fluid ounces
C The number of tablespoons $+16=$ the number of fluid ounces
D The number of tablespoons $\div 2=$ the number of fluid ounces

* Correct answer (D)
3.6(A) classify and sort two- and three-dimensional figures, including cones, cylinders, spheres, triangular and rectangular prisms, and cubes, based on attributes using formal geometric language


## 2015 - Sample Q17

17 The figures shown can be sorted into groups.


Which of these shows a correct way to group these figures?
A 3 rectangles and 3 hexagons
B 2 hexagons and 4 quadrilaterals
C 2 hexagons, 2 pentagons, and 2 rectangles
D 1 pentagon, 2 hexagons, and 3 quadrilaterals

* Correct answer (D)
3.6(A) (New) classify and sort two- and three-dimensional figures, including cones, cylinders, spheres, triangular and rectangular prisms, and cubes, based on attributes using formal geometric language
3.8(A) (Old) identify, classify, and describe two- and three-dimensional geometric figures by their attributes. The student compares two-dimensional figures, three-dimensional figures, or both by their attributes using formal geometry vocabulary

2014-Q2

Which of these figures is NOT an octagon?

G

J


Analysis of Assessed Standards

| Multi Coding | Content | Readiness |
| :--- | :--- | :--- |
|  | Process | $3.1(\mathrm{~B}), 3.1(\mathrm{E}), 3.1(\mathrm{~F})$ |


| Stimulus |  |  |  |
| :---: | :---: | :---: | :---: |
| Thinking |  |  |  |
| Related SEs |  |  |  |
| Data Analysis |  |  |  |
| Item | State | Local | Error AnalysisGuessingCareless ErrorStopped too EarlyMixed Up Concepts |
| A | NA |  |  |
| B |  |  |  |
| C |  |  |  |
| D* |  |  |  |

Implic ations for Instruction/ Notes

Analysis of Assessed Standards

| Dual Coding |  | Content | Readiness |
| :---: | :---: | :---: | :---: |
|  |  | Process | 3.1(C) |
| Stimulus |  |  |  |
| Thinking |  |  |  |
| Related SEs |  |  |  |
| Data Analysis |  |  |  |
| Item | State | Local | Error Analysis <br> $\square$ Guessing <br> $\square$ Careless Error <br> $\square$ Stopped too Early <br> $\square$ Mixed Up Concepts |
| F | 2 |  |  |
| G | 3 |  |  |
| H* | 87 |  |  |
| J | 8 |  |  |

Implications for Instruction/ Notes

## * Correct answer (H)

3.6(A) (New) classify and sort two- and three-dimensional figures, including cones, cylinders, spheres, triangular and rectangular prisms, and cubes, based on attributes using formal geometric language
3.8(A) (OId) identify, classify, and describe two- and three-dimensional geometric figures by their attributes. The student compares two-dimensional figures, three-dimensional figures, or both by their attributes using formal geometry vocabulary

2014-Q37

The figures in Set Q share a characteristic.


These figures do not share the characteristic.


Which statement best describes the characteristic shared by the figures in Set Q ?
A The figures are all polygons.
B The figures are all quadrilaterals.
C The figures are all pentagons.
D The figures are all hexagons.

* Correct answer (A)

IQ Analysis | Investigating the Question
3.6(B ) use attributes to recognize rhombuses, parallelograms, trapezoids, rectangles, Units: and squares as examples of quadrilaterals and draw examples of quadrilaterals that do not belong to any of these subcategories

No test questions 2013-2015
3.6(C) determine the area of rectangles with whole number side lengths in problems using multiplication related to the number

## Analysis of Assessed Standards

| Multi Coding | Content | Readiness |
| :--- | :--- | :--- |
|  | Process | $3.1(\mathrm{~A}), 3.1(\mathrm{~B}), 3.1(\mathrm{~F})$ |


| Stimulus |  |
| :--- | :--- |
| Thinking |  |
| Related SEs |  |


| Data Analysis |  |  |  |
| :---: | :---: | :---: | :---: |
| Item | State | Local | Error Analysis <br> $\square$ Guessing <br> $\square$ Careless Error <br> $\square$ Stopped too Early <br> $\square$ Mixed Up Concepts |
| A* | NA |  |  |
| B |  |  |  |
| C |  |  |  |
| D |  |  |  |

## Implications for Instruction/ Notes

* Correct answer (A)
3.6(D) decompose composite figures formed by rectangles into non-overlapping rectangles to determine the area of the original figure using the additive property of area


## 2015 - Sample Q19

19 The diagram represents the floor of a storage building. The floor is composed of two rectangles.


$$
\square=1 \text { square yard }
$$

What is the area of the floor in square yards?
Record your answer and fill in the bubbles on your answer document. Be sure to use the correct place value.

## Analysis of Assessed Standards

| Multi Coding | Content | Supporting |
| :--- | :--- | :--- |
|  | Process | 3.1(A), 3.1(B), 3.1(E), <br> $3.1(\mathrm{~F})$ |


| Stimulus |  |
| :--- | :--- |
| Thinking |  |
| Related SEs |  |


| Data Analysis |  |  |  |
| :---: | :---: | :---: | :---: |
| Item | State | Local |  |
| 42 | NA |  | $\square$ Guessing <br> $\square$ Careless Error <br> $\square$ Stopped too Early <br> $\square$ Mixed Up Concepts |

Implic ations for Instruction/ Notes

* C orrect answer (42)
3.6(E) decompose two congruent two-dimensional figures into parts with equal areas and express the area of each part as a unit fraction of the whole and recognize that equal shares of identical wholes need not have the same shape


## Analysis of Assessed Standards

2015 - Sample Q20

20 The two figures shown are congruent, and one-fourth of each figure is shaded.


Figure M


Figure N

Which statement about the shaded parts of these figures is true?
A The area of the shaded part of Figure $M$ is greater than the area of the shaded part of Figure N .

B The area of the shaded part of Figure $\mathbf{M}$ is less than the area of the shaded part of Figure N .

C The area of the shaded part of Figure $M$ is equal to the area of the shaded part of Figure N .

D None of the above

* Correct answer (C)
3.7(A) (New) represent fractions of halves, fourths, and eighths as distances from zero on a number line
3.10(A) (Old) locate and name points on a number line using whole numbers and fractions, including halves and fourths

2014-Q46

What number does point $N$ represent on the ruler below?


F $10 \frac{3}{4}$

G $11 \frac{1}{4}$

H 11

J $11 \frac{3}{4}$

* Correct answer (F)


## Analysis of Assessed Standards

Dual Coding | Content | Supporting |  |
| :--- | :--- | :--- |
|  | Process | $3.1(\mathrm{C})$ |

| Stimulus |  |
| :--- | :--- |
| Thinking |  |
| Related SEs |  |
|  |  |


| Data Analysis |  |  |  |
| :---: | :---: | :---: | :---: |
| Item | State | Local | Error Analysis <br> $\square$ Guessing <br> $\square$ Careless Error <br> $\square$ Stopped too Early <br> $\square$ Mixed Up Concepts |
| F* | 86 |  |  |
| G | 6 |  |  |
| H | 1 |  |  |
| J | 5 |  |  |

Implic ations for Instruc tion/ Notes
3.7(A) (New) represent fractions of halves, fourths, and eighths as distances from zero on a number line
3.10(A) (Old) locate and name points on a number line using whole numbers and fractions, including halves and fourths

## 2013 - Q 1

1 Which point best represents 13 on the number line below?


A Point $W$
B Point $X$
C Point $Y$
D Point $Z$

Analysis of Assessed Standards

| Dual Coding |  | Content | Supporting |
| :---: | :---: | :---: | :---: |
|  |  | Process | 3.1(B) |
| Stimulus |  |  |  |
| Thinking |  |  |  |
| Related SEs |  |  |  |
| Data Analysis |  |  |  |
| Item | State | Local | Error Analysis <br> $\square$ Guessing <br> $\square$ Careless Error <br> $\square$ Stopped too Early <br> $\square$ Mixed Up Concepts |
| A | 1 |  |  |
| B | 6 |  |  |
| C | 3 |  |  |
| D* | 90 |  |  |

Implic ations for Instruction/ Notes

## * Correct answer (D)

3.7(A) (New) represent fractions of halves, fourths, and eighths as distances from zero on a number line
3.10(A) (Old) locate and name points on a number line using whole numbers and fractions, including halves and fourths

## 2013-Q37

37 What number does point $L$ best represent on the number line below?


## Analysis of Assessed Standards

| Dual Coding | Content | Supporting |
| :--- | :--- | :--- |
|  | Process | $3.1(\mathrm{~B})$ |


| Stimulus |  |  |  |
| :---: | :---: | :---: | :---: |
| Thinking |  |  |  |
| Related SEs |  |  |  |
| Data Analysis |  |  |  |
| Item | State | Local |  |
| A | 11 |  | $\square$ Guessing |
| B | 20 |  | $\square$ Careless Error |
| C* | 59 |  | $\square$ Stopped too Early |
| D | 10 |  | $\square$ Mixed Up Concepts |

Implic ations for Instruction/ Notes

* Correct answer (C)
3.7(B) determine the perimeter of a polygon or a missing length when given perimeter and remaining side lengths in problems

2015 - Sample Q21

21 The lengths of four sides of a polygon are shown in the diagram.


The perimeter of the polygon is 40 units. What is the missing length in units?
A 8 units
B 15 units
C 10 units
D 30 units

* Correct answer (C)
3.7(B) (New) determine the perimeter of a polygon or a missing length when given
perimeter and remaining side lengths in problems
5.10(C) (OId) select and use appropriate units and formulas to measure length, perimeter, area, and volume

Analysis of Assessed Standards

2014 - Q 2

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 plate to the nearest centimeter.


| Dual Coding |  | Content | Readiness |
| :---: | :---: | :---: | :---: |
|  |  | Process | 3.1(F) |
| Stimulus |  |  |  |
| Thinking |  |  |  |
| Related SEs |  |  |  |
| Data Analysis |  |  |  |
| Item | State | Local | Error Analysis <br> $\square$ Guessing <br> $\square$ Careless Error <br> $\square$ Stopped too Early <br> $\square$ Mixed Up Concepts |
| F | 3 |  |  |
| G | 5 |  |  |
| H* | 88 |  |  |
| J | 4 |  |  |

Implic ations for Instruction/ 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)
3.7(B) (New) determine the perimeter of a polygon or a missing length when given perimeter and remaining side lengths in problems
4.11(A) (Old) estimate and use measurement tools to determine length (including

Analysis of Assessed Standards perimeter), area, capacity and weight/mass using standard units SI (metric) and customary

## 2014 - Q4

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 nearest inch.


This figure could be a -
F square with a perimeter of 6 inches
G triangle with a perimeter of 6 inches
H square with a perimeter of 12 inches
J triangle with a perimeter of 12 inches

Content Readiness
Dual Coding

Process 3.1(B)

## Stimulus

Thinking

## Related SEs

|  | Data Analysis |  |  |
| :---: | :---: | :---: | :--- |
| Item | State | Local | Error Analysis |
| F | $\mathbf{1 8}$ |  | Guessing <br> G |
| $\mathbf{1 1}$ |  | $\square$ Careless Error |  |
| $\mathbf{H}^{*}$ | $\mathbf{6 8}$ |  | $\square$ Stopped too Early |
| $\mathbf{J}$ | $\mathbf{3}$ |  | $\square$ Mixed Up Concepts |

Implic ations for Instruction/ Notes

* Correct answer (H)
3.7(B) (New) determine the perimeter of a polygon or a missing length when given perimeter and remaining side lengths in problems
3.11(B) (OId) use standard units to find the perimeter of a shape

2014-Q28

Steven has a wall decoration with a perimeter of 54 inches. Which figure could NOT represent Steven's wall decoration?

18 in.

F 9 in.


G 6 in.


30 in.
H 9 in.


J


Analysis of Assessed Standards

| Dual Coding | Content | Readiness |
| :--- | :--- | :--- |
|  | Process | $3.1(\mathrm{~B})$ |

## Stimulus

Thinking
Related SEs

|  | Data Analysis |  |  |
| :---: | :---: | :---: | :---: |
| Item | State | Local | $\begin{array}{l}\text { Error Analysis } \\ \text { Er } \\ \text { F }\end{array}$ |
| $\mathbf{1 2}$ |  | $\square$ Guessing |  |$)$

## Implic ations for Instruction/ Notes

* Correct answer (H)
3.7(B) (New) determine the perimeter of a polygon or a missing length when given perimeter and remaining side lengths in problems
3.11(B) (OId) use standard units to find the perimeter of a shape


## 2014-Q34

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 shown below.

## 19 in.



Analysis of Assessed Standards

| Dual Coding | Content | Readiness |
| :--- | :--- | :--- |
|  | Process | $3.1(\mathrm{G})$ |


| Stimulus |  |
| :--- | :--- |
| Thinking |  |
| Related SEs |  |

## Data Analysis

| Item | State | Local | Error Analysis |
| :---: | :---: | :---: | :--- |
| F* | $\mathbf{7 5}$ |  | $\square$ Guessing |
| G | $\mathbf{1 3}$ |  | $\square$ Careless E rror |
| H | $\mathbf{3}$ |  | $\square$ Stopped too Early |
| J | $\mathbf{8}$ |  | $\square$ Mixed Up Concepts |

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)
3.7(B) (New) determine the perimeter of a polygon or a missing length when given perimeter and remaining side lengths in problems
3.11(B) (OId) use standard units to find the perimeter of a shape


## 2014-Q44

Melinda drew the figure shown below. Use the ruler provided to measure the length of each side of the figure to the nearest centimeter.


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)

Analysis of Assessed Standards

| Dual Coding | Content | Readiness |
| :--- | :--- | :--- |
|  | Process | $3.1(\mathrm{C})$ |

## Stimulus

Thinking
Related SEs

|  | Data Analysis |  |  |
| :---: | :---: | :---: | :---: |
| Item | State | Local | $\begin{array}{l}\text { Error Analysis } \\ \text { E }\end{array}$ |
| F | $\mathbf{5}$ |  | $\square$ Guessing |$)$

## Implications for Instruction/ Notes

3.7(B) (New) determine the perimeter of a polygon or a missing length when given perimeter and remaining side lengths in problems
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

Analysis of Assessed Standards

| Dual Coding |  | Content | Readiness |
| :---: | :---: | :---: | :---: |
|  |  | Process | 3.1(C) |
| Stimulus |  |  |  |
| Thinking |  |  |  |
| Related SEs |  |  |  |
| Data Analysis |  |  |  |
| Item | State | Local | Error Analysis <br> $\square$ Guessing <br> $\square$ Careless Error <br> $\square$ Stopped too Early <br> $\square$ Mixed Up Concepts |
| F | 7 |  |  |
| G | 5 |  |  |
| H | 15 |  |  |
| J* | 74 |  |  |

## Implications for Instruction/ Notes

F 2 cm
G 9 cm
H 29 cm
J 5 cm

* Correct answer (J)
3.7(B) (New) determine the perimeter of a polygon or a missing length when given perimeter and remaining side lengths in problems

Analysis of Assessed Standards
3.11(B) (OId) use standard units to find the perimeter of a shape

| Dual Coding | Content | Readiness |
| :--- | :--- | :--- |
|  | Process | $3.1(\mathrm{~B})$ |

The dimensions of two rectangles are shown below.


Which statement about these rectangles is true?
A The perimeter of Rectangle Q is 19 millimeters less than the perimeter of Rectangle R.

B The perimeter of Rectangle Q is 38 millimeters less than the perimeter of Rectangle R.

C The perimeter of Rectangle Q is 14 millimeters less than the perimeter of Rectangle R .

D The perimeter of Rectangle Q is 42 millimeters less than the perimeter of Rectangle R.

## * Correct answer (B)

3.7(B) (New) determine the perimeter of a polygon or a missing length when given perimeter and remaining side lengths in problems
3.11(B) (OId) use standard units to find the perimeter of a shape

Analysis of Assessed Standards

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?

| Dual Coding |  | Content | Readiness |
| :---: | :---: | :---: | :---: |
|  |  | Process | 3.1(G) |
| Stimulus |  |  |  |
| Thinking |  |  |  |
| Related SEs |  |  |  |
| Data Analysis |  |  |  |
| Item | State | Local | Error Analysis <br> $\square$ Guessing <br> $\square$ Careless Error <br> $\square$ Stopped too Early <br> $\square$ Mixed Up Concepts |
| A | 6 |  |  |
| B | 9 |  |  |
| C | 8 |  |  |
| D* | 77 |  |  |

Implic ations for Instruction/ Notes
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)
3.7(B) (New) determine the perimeter of a polygon or a missing length when given perimeter and remaining side lengths in problems
3.11(B) (Old) use standard units to find the perimeter of a shape

2013-Q35

The side lengths of a figure are shown below.


What is the perimeter of the figure in centimeters?
Record your answer and fill in the bubbles on your answer document. Be sure to use the correct place value.

* Correct answer (23)


## Analysis of Assessed Standards

| Dual Coding | Content | Readiness |
| :--- | :--- | :--- |
|  | Process | $3.1(\mathrm{~B})$ |


| Stimulus |  |  |  |
| :---: | :---: | :---: | :---: |
| Thinking |  |  |  |
| Related SEs |  |  |  |
| Data Analysis |  |  |  |
| Item | State | Local |  |
| 23 | 84 |  | $\square$ Guessing |
|  | 16 |  | $\square$ Careless Error |
|  | 0 |  | Stopped too Early |
|  | 0 |  | $\square$ Mixed Up Concepts |

Implic ations for Instruction/ Notes
3.7(C) determine the solutions to problems involving addition and subtraction of time Units: intervals in minutes using pictorial models or tools such as a 15-minute event plus a 30 -minute event equals 45 minutes

No test questions 2013-2015


No test questions 2013-2015
3.8(A) summarize a data set with multiple categories using a frequency table, dot plot, pictograph, or bar graph with scaled intervals

2015 - Sample Q 23
23 The graph shows the number of rolls of wrapping paper sold by four students.


Which table represents the information in the graph?
A

| Wrapping Paper |  |
| :--- | :---: |
| Student | Number Sold |
| Ari | 80 |
| Evan | 60 |
| Quinn | 50 |
| Tori | 70 |

C

| Wrapping Paper |  |
| :--- | :---: |
| Student | Number Sold |
| Ari | 80 |
| Evan | 60 |
| Quinn | 45 |
| Tori | 65 |

B

| Wrapping Paper |  |
| :--- | :---: |
| Student | Number Sold |
| Ari | 80 |
| Evan | 60 |
| Quinn | 40 |
| Tori | 60 |

D

| Wrapping Paper |
| :--- |
| Student Number Sold <br> Ari 80 <br> Evan 60 <br> Quinn 60 <br> Tori 80 |

[^3]3.8(A) (New) summarize a data set with multiple categories using a frequency table, dot plot, pictograph, or bar graph with scaled intervals
5.13(C) (OId) graph a given set of data using an appropriate graphical representation such as a picture or line graph.

Analysis of Assessed Standards

2014-Q18

Isaiah bought three kinds of fruit at the store.

- He bought 4 apples.
- He bought 3 times as many oranges as apples.
- He bought 4 more peaches than apples.

Which graph represents the fruit Isaiah bought?


H
Shopping for Fruit


Each $\bigcirc$ represents 2 pieces of fruit.

G


Content Readiness
Dual Coding

Process

## Stimulus

Thinking

## Related SEs

| Data Analysis |  |  |  |
| :---: | :---: | :---: | :---: |
| Item | State | Local | Error Analysis |
| F | 5 |  |  |
| G | 29 |  | $\square$ Careless Error |
| H | 1 |  | $\square$ Stopped too Early |
| J* | 64 |  | $\square$ Mixed Up Concepts |

Implic ations for Instruction/ Notes

## * Correct answer (J)

3.8(A) (New) summarize a data set with multiple categories using a frequency table, dot plot, pictograph, or bar graph with scaled intervals
3.13(A) (Old) collect, organize, record, and display data in pictographs and bar graphs where each picture or cell might represent more than one piece of data

Analysis of Assessed Standards

2014-Q29

The table below shows the number of each kind of tree at a school.

| Trees at School |  |
| :---: | :---: |
| Kind of Tree | Number of <br> Trees |
| Pine | 16 |
| Oak | 6 |
| Maple | 18 |
| Willow | 4 |
| Elm | 22 |

Which graph best represents the information in the table?

Trees at School
A

C

Each means 4 trees.


Each means 4 trees.


Each means 4 trees.

* Correct answer (D)
3.8(A) (New) summarize a data set with multiple categories using a frequency table, dot plot, pictograph, or bar graph with scaled intervals
3.13(A) (Old) collect, organize, record, and display data in pictographs and bar graphs where each picture or cell might represent more than one piece of data

Analysis of Assessed Standards

2014-Q40

Wakiko ran laps around her school on five days last week. The graph below shows the number of laps Wakiko ran on some of those days. The bar for the number of laps she ran on Wednesday is missing.


| Dual Coding |  | Content | Readiness |
| :---: | :---: | :---: | :---: |
|  |  | Process | 3.1(B) |
| Stimulus |  |  |  |
| Thinking |  |  |  |
| Related SEs |  |  |  |
| Data Analysis |  |  |  |
| Item | State | Local | Error Analysis <br> $\square$ Guessing <br> $\square$ Careless Error <br> $\square$ Stopped too Early <br> $\square$ Mixed Up Concepts |
| F | 10 |  |  |
| G | 11 |  |  |
| H* | 66 |  |  |
| J | 12 |  |  |

## Implic ations for Instruction/ Notes

Wakiko ran a total of 50 laps on these five days. Which bar completes the graph?
F

H


J


## * Correct answer (H)

3.8(A) (New) summarize a data set with multiple categories using a frequency table, dot plot, pictograph, or bar graph with scaled intervals
5.13(C) (Old) graph a given set of data using an appropriate graphical representation such as a picture or line graph.

## 2013-Q2

The table below shows the number of people who went to a movie each night on four nights.
People at a Movie

| Night | 1 | 2 | 3 | 4 |
| :--- | :---: | :---: | :---: | :---: |
| Number of <br> People | 75 | 200 | 125 | 175 |

Which graph represents the data in the table?
F


| People at a Movie |  |
| :--- | :--- |
| Night 1 | 옷옷옷 |
| Hight 2 | 웃웃옷웃 |
| Night 3 | 옷ํㅅ옷웃옷 |
| Night 4 | 옷웃옷웃옷옷옷옷 |

Each ㅇํㅅ represents 25 people.


G

Analysis of Assessed Standards

| Dual Coding | Content | Readiness |
| :--- | :--- | :--- |
|  | Process | $3.1(\mathrm{E})$ |


| Stimulus |  |  |  |
| :---: | :---: | :---: | :---: |
| Thinking |  |  |  |
| Related SEs |  |  |  |
| Data Analysis |  |  |  |
| Item | State | Local | Error Analysis |
| F* | 95 |  | $\square$ Guessing |
| G | 1 |  | $\square$ Careless Error |
| H | 2 |  | $\square$ Stopped too Early |
| J | 2 |  | $\square$ Mixed Up Concepts |

Implic ations for Instruction/ Notes

## * Correct answer (F)

3.8(A) (New) summarize a data set with multiple categories using a frequency table, dot plot, pictograph, or bar graph with scaled intervals
3.13(A) (OId) collect, organize, record, and display data in pictographs and bar graphs where each picture or cell might represent more than one piece of data

Analysis of Assessed Standards

2013-Q4

The graph below shows the number of packages Blanca delivered on five days.


| Dual Coding | Content | Readiness |
| :--- | :--- | :--- |
|  | Process | $3.1(\mathrm{~A})$ |

## Stimulus

## Thinking

Related SEs

| Data Analysis |  |  |  |
| :---: | :---: | :---: | :---: |
| Item | State | Local | Error Analysis |
| F | 5 |  |  |
| G | 6 |  | $\square$ Careless Error |
| H* | 86 |  | $\square$ Stopped too Early |
| J | 3 |  | $\square$ Mixed Up Concepts |

Implic ations for Instruction/ Notes
Which table best represents the information in the graph?

| Packages Delivered |  |  |  |  |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| Day Monday Tuesday Wednesday Thursday Friday <br> Number of <br> Packages 48 30 66 54 42 |  |  |  |  |  |  |

G

| Day | Monday | Tuesday | Wednesday | Thursday | Friday |
| :--- | :---: | :---: | :---: | :---: | :---: |
| Number of <br> Packages | 48 | 36 | 72 | 48 | 60 |

H

| Day | Monday | Tuesday | Wednesday | Thursday | Friday |
| :--- | :---: | :---: | :---: | :---: | :---: |
| Number of <br> Packages | 48 | 30 | 66 | 42 | 54 |

Packages Delivered

J

| Day | Monday | Tuesday | Wednesday | Thursday | Friday |
| :--- | :---: | :---: | :---: | :---: | :---: |
| Number of <br> Packages | 48 | 30 | 42 | 66 | 54 |

* Correct answer (H)
3.8(B) (New) solve one- and two-step problems using categorical data represented with a frequency table, dot plot, pictograph, or bar graph with scaled intervals 4.13(B) (Old) interpret bar graphs

2014-Q9
Evan tries to burn 500 calories each time he exercises. The graph below shows the number of minutes that each type of exercise must be done in order to burn 500 calories.

Exercising


Based on the graph, how many more minutes of walking than aerobics must Evan do in order to burn 500 calories?

A 75 min , because $120-45=75$
B 165 min , because $120+45=165$
C 80 min , because $120-40=80$
D 170 min , because $120+50=170$

* Correct answer (A)


## Analysis of Assessed Standards

| Dual Coding | Content | Supporting |
| :--- | :--- | :--- |
|  | Process | $3.1(\mathrm{G})$ |

## Stimulus

Thinking
Related SEs

| Data Analysis |  |  |  |
| :---: | :---: | :---: | :---: |
| Item | State | Local | Error AnalysisGuessingCareless Error |
| A* | 73 |  |  |
| B | 12 |  |  |
| C | 7 |  | $\square$ Stopped too Early |
| D | 8 |  | Mixed Up Concepts |

Implic ations for Instruction/ Notes
3.8(B) (New) solve one- and two-step problems using categorical data represented with a frequency table, dot plot, pictograph, or bar graph with scaled intervals 3.13(B) (OId) interpret information from pictographs and bar graphs

2014-Q23
The graph below shows the number of minutes Ryan spent doing homework during four nights.


How many minutes did Ryan spend doing homework on Tuesday and Thursday combined?

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

* C orrect answer (85)

Analysis of Assessed Standards

| Dual Coding | Content | Supporting |
| :--- | :--- | :--- |
|  | Process | $3.1(\mathrm{~A})$ |

## Stimulus

Thinking
Related SEs

| Data Analysis |  |  |  |
| :---: | :---: | :---: | :---: |
| Item | State | Local | Error Analysis |
| 85 | 67 |  |  |
|  | 32 |  | Guessing <br> $\square$ Careless Error |
|  | 0 |  | $\square$ Stopped too Early |
|  | 0 |  | $\square$ Mixed Up Concepts |

Implic ations for Instruction/ Notes
3.8(B) (New) solve one- and two-step problems using categorical data represented with a frequency table, dot plot, pictograph, or bar graph with scaled intervals
4.13(B) (Old) interpret bar graphs

Analysis of Assessed Standards

2014 - Q 25
The graph below shows the numbers of 4th-grade and 5th-grade students who participated in different Earth Day activities at a school. Each student participated in only one activity.


Based on the graph, which statement is true?
A There were 12 more 4th-grade students than 5th-grade students who participated in Earth Day activities.

B A total of 84 of these students sorted recycling.
C There were 24 more 4th-grade and 5th-grade students who planted trees than who made banners.

D A total of 36 students participated in Earth Day activities.

* Correct answer (A)
3.8(B) (New) solve one- and two-step problems using categorical data represented with a frequency table, dot plot, pictograph, or bar graph with scaled intervals 3.13(B) (OId) interpret information from pictographs and bar graphs


## 2014-Q32

The graph below shows the number of students at different grade levels who brought projects for a science fair.

## Science Fair Projects



Analysis of Assessed Standards

| Dual Coding | Content | Supporting |
| :--- | :--- | :--- |
|  | Process | $3.1(\mathrm{~A})$ |

## Stimulus

Thinking
Related SEs

|  | Data Analysis |  |  |
| :---: | :---: | :---: | :--- |
| Item | State | Local | Error Analysis |
| F | $\mathbf{1 5}$ |  | Guessing |
| $\mathbf{G}^{*}$ | $\mathbf{4 3}$ |  | Careless Error |
| $\mathbf{H}$ | $\mathbf{1 8}$ |  | Stopped too Early |
| $\mathbf{J}$ | $\mathbf{2 3}$ |  | $\square$ Mixed Up Concepts |

## Implic ations for Instruction/ Notes

Based on the graph, which statement is true?
F A total of 110 students in second grade and fourth grade brought a project.
G Exactly 40 fewer fourth-grade students brought a project than third-grade and fifth-grade students combined.

H A total of 220 students in these grades brought a project.
J Exactly 90 fewer third-grade students brought a project than fourth-grade and fifth-grade students combined.

* Correct answer (G)
3.8(B) (New) solve one- and two-step problems using categorical data represented with a frequency table, dot plot, pictograph, or bar graph with scaled intervals
3.13(B) (OId) interpret information from pictographs and bar graphs


## 2013-Q28

The graph below shows the number of goals four players scored during a soccer season.


Based on the graph, what is the difference between the number of goals Vance scored and the number of goals Elizabeth scored?

F 15
G 3
H 20
J 10

* Correct answer (F)
3.8(B) (New) solve one- and two-step problems using categorical data represented with a frequency table, dot plot, pictograph, or bar graph with scaled intervals
4.13(B) (Old) interpret bar graphs


## 2013-Q28

The graph below shows the number of cans of different types of vegetables on a grocery store shelf.

Cans of Vegetables


Based on the graph, how many more cans of corn than cans of peas are on the shelf?

F 20, because $60-40=20$
G 16 , because $50-40=16$
H 28 , because $64-36=28$
J 22 , because $58-36=22$

* Correct answer (J)

Analysis of Assessed Standards

| Dual Coding | Content | Supporting |
| :--- | :--- | :--- |
|  | Process | $3.1(\mathrm{G})$ |


| Stimulus |  |
| :--- | :--- |
| Thinking |  |
| Related SEs |  |


|  | Data Analysis |  |  |
| :---: | :---: | :---: | :---: |
| Item | State | Local | $\begin{array}{l}\text { Error Analysis } \\ \text { E } \\ \text { F }\end{array}$ |
| $\mathbf{1 3}$ |  | $\square$ Guessing |  |$)$

Implications for Instruction/ Notes
3.8(B) (New) solve one- and two-step problems using categorical data represented with a frequency table, dot plot, pictograph, or bar graph with scaled intervals 3.13(A) (Old) collect, organize, record, and display data in pictographs and bar graphs where each picture or cell might represent more than one piece of data

Analysis of Assessed Standards

2013-Q38

The graph below shows the number of each kind of animal on a farm. The bar for the number of cows on the farm is missing.


| Dual Coding | Content | Supporting |
| :--- | :--- | :--- |
|  | Process | $3.1(B)$ |


| Stimulus |  |  |  |
| :---: | :---: | :---: | :---: |
| Thinking |  |  |  |
| Related SEs |  |  |  |
| Data Analysis |  |  |  |
| Item | State | Local |  |
| F | 19 |  | $\square \text { Guessing }$ |
| G* | 56 |  | $\square$ Careless Error |
| H | 16 |  | $\square$ Stopped too Early |
| J | 8 |  | $\square$ Mixed Up Concepts |

Implic ations for Instruction/ Notes
There is a total of 82 animals on the farm. Which bar completes the graph?

H


J


* Correct answer (G)
3.8(B) (New) solve one- and two-step problems using categorical data represented with a frequency table, dot plot, pictograph, or bar graph with scaled intervals 6.10(D) (OId) solve problems by collecting, organizing, displaying, and interpreting data


## 2013-Q39

The graph below shows the number of garbage cans that were emptied in five neighborhoods.


Analysis of Assessed Standards

| Dual Coding | Content | Supporting |
| :--- | :--- | :--- |
|  | Process | $3.1(\mathrm{E})$ |


| Stimulus |  |
| :--- | :--- |
| Thinking |  |
| Related SEs |  |
|  |  |


|  | Data Analysis |  |  |
| :---: | :---: | :---: | :--- |
| Item | State | Local | Error Analysis |
| A | $\mathbf{1 0}$ |  | (10 <br>  <br> Buessing |
| B | $\mathbf{6 2}$ |  | $\square$ Careless E rror |
| C | $\mathbf{1 1}$ |  | $\square$ Stopped too Early |
| D | $\mathbf{1 7}$ |  | $\square$ Mixed Up Concepts |

Implic ations for Instruction/ Notes

Which statement is best supported by the information in the graph?
A A total of 500 garbage cans were emptied in these 5 neighborhoods.
B The combined number of garbage cans emptied in Neighborhood M and Neighborhood N is 50 more than the number of garbage cans emptied in Neighborhood P.

C The difference between the greatest number of garbage cans emptied and the least number of garbage cans emptied is 110 .

D The combined number of garbage cans emptied in Neighborhood $\mathbf{P}$ and Neighborhood Q is 375 more than the number of garbage cans emptied in Neighborhood R.

* Correct answer B)
3.8(B) (New) solve one- and two-step problems using categorical data represented with a frequency table, dot plot, pictograph, or bar graph with scaled intervals
4.13(B) (Old) interpret bar graphs


## 2013-Q40

The graph below shows the number of math games two people played on a computer during four months.


Based on the graph, which statement is true?
F In September Micah played 5 fewer games than Isabel.
G In October Isabel played 4 times as many games as Micah.
H In November Isabel played 2 more games than Micah.
J In December Micah played 2 times as many games as Isabel.

## * Correct answer (J)

Analysis of Assessed Standards

| Dual Coding | Content | Supporting |
| :--- | :--- | :--- |
|  | Process | $3.1(\mathrm{~B})$ |

## Stimulus

Thinking
Related SEs

|  | Data Analysis |  |  |
| :---: | :---: | :---: | :---: |
| Item | State | Local | $\begin{array}{l}\text { Error Analysis } \\ \text { E } \\ \text { F }\end{array}$ |
| $\mathbf{2 0}$ |  | $\square$ Guessing |  |$)$

Implic ations for Instruction/ Notes
3.8(B) (New) solve one- and two-step problems using categorical data represented with a frequency table, dot plot, pictograph, or bar graph with scaled intervals
4.13(B) (Old) interpret bar graphs

2014-Q42

The graph below shows the number of students in four classes who wore tennis shoes on Friday. The data for Mrs. Shuffield's class is missing.


A total of 87 students wore tennis shoes on Friday. How many students in Mrs. Shuffield's class wore tennis shoes?

F 66
G 21
H 153
J 108

* Correct answer (G)

Analysis of Assessed Standards

| Dual Coding | Content | Readiness |
| :--- | :--- | :--- |
|  | Process | $3.1(\mathrm{~B})$ |

## Stimulus

Thinking
Related SEs

|  | Data Analysis |  |  |
| :---: | :---: | :---: | :---: |
| Item | State | Local | Error Analysis <br> Ery <br> F |
| $\mathbf{1 7}$ |  | Guessing |  |
| G* | $\mathbf{7 6}$ |  | Careless Error |
| $\mathbf{H}$ | $\mathbf{4}$ |  | Stopped too Early |
| $\mathbf{J}$ | $\mathbf{3}$ |  | $\square$ Mixed Up Concepts |

Implic ations for Instruction/ Notes
3.9(A) explain the connection between human capital/labor and income Units:

No test questions 2013-2015
3.9(B) describe the relationship between the availability or scarcity of resources and how that impacts cost

2015 - Sample Q24
24 Bad weather destroyed most of the peaches on the peach trees in an orchard. This will have an effect on the price of the remaining peaches. Which statement best describes the effect on the price?

A The price will likely increase, because there are more peaches available to buy.
B The price will likely decrease, because there are more peaches available to buy.

C The price will likely increase, because there are fewer peaches available to buy.

D The price will likely decrease, because there are fewer peaches available to buy.

## Analysis of Assessed Standards

| Multi Coding | Content | Supporting |
| :--- | :--- | :--- |
|  | Process | $3.1(\mathrm{~A}), 3.1(\mathrm{~B}), 3.1(\mathrm{G})$ |


| Stimulus |  |
| :--- | :--- |
| Thinking |  |
| Related SEs |  |


| Data Analysis |  |  |  |
| :---: | :---: | :---: | :---: |
| Item | State | Local | Error Analysis <br> $\square$ Guessing <br> $\square$ Careless Error <br> $\square$ Stopped too Early <br> $\square$ Mixed Up Concepts |
| A | NA |  |  |
| B |  |  |  |
| C* |  |  |  |
| D |  |  |  |

Implications for Instruction/ Notes

* Correct answer (C)
3.9(D) explain that credit is used when wants or needs exceed the ability to pay and that it is the borrower's responsibility to pay it back to the lender, usually with interest


## 2015 - Sample Q 25

25 Claire borrowed $\$ 20$ from her mom in order to buy game tokens at a festival. Her mom said Claire would have to pay the money back with interest. Which statement best explains what Claire's mom meant?

A She expected Claire to pay back only the money she borrowed.
B She expected Claire to pay back only part of the money she borrowed.
C She expected Claire to keep the money she borrowed and not pay any of it back.

D She expected Claire to pay back the money she borrowed plus an additional amount of money.

Analysis of Assessed Standards

| Multi Coding | Content | Supporting |
| :--- | :--- | :--- |
|  | Process | $3.1(\mathrm{~A}), 3.1(\mathrm{~B}), 3.1(\mathrm{G})$ |


| Stimulus |  |
| :--- | :--- |
| Thinking |  |
| Related SEs |  |


| Data Analysis |  |  |  |
| :---: | :---: | :---: | :---: |
| Item | State | Local | Error Analysis <br> $\square$ Guessing <br> $\square$ Careless Error <br> $\square$ Stopped too Early <br> $\square$ Mixed Up Concepts |
| A | NA |  |  |
| B |  |  |  |
| C |  |  |  |
| D* |  |  |  |

Implic ations for Instruction/ Notes

* Correct answer (D)

No test questions 2013-2015

## Units:




## Analysis of Assessed Standards

| So What? |  |
| :---: | :--- |
| Now What? |  |


[^0]:    * Correct answer (A)

[^1]:    * Correct answer (J )

[^2]:    * Correct answer (H)

[^3]:    * Correct answer (A)

