

Conceptual Understanding & Procedural Knowledge Example Sort

By J. Reaves

Font: American Typewriter

Graphics from J. Reaves, Ink n Little Things (<http://inknlittlethings.blogspot.com>),

Graphics From the Pond (<http://frompond.blogspot.com>), & Teacher's Toolbox (www.teacherstoolbox-resources.blogspot.com).








Conceptual Examples

Procedural Examples

Chris was asked to examine the following problems and determine which problem was solved correctly:

$$\begin{array}{r} 0.82 \\ + 1.3 \\ \hline 0.95 \end{array} \quad \begin{array}{r} 0.82 \\ + 1.3 \\ \hline 2.12 \end{array}$$

Joey was asked to sort all of the pictures that equaled $\frac{1}{2}$ into one group separate from all of the other fractions.

Show $\frac{1}{2}$	Other
   	  

Tom was asked to add 398 and 261. After working the problem out on paper, he reported that his answer was 659.

Lauren was asked to add 4 and 7. She stated that the answer was 11.

Jessica added the following fractions together:

$$\frac{1}{4} \quad \frac{2}{3} \quad \frac{5}{6}$$

Her calculations gave her an answer of:

$$1 \frac{3}{4}$$

Lydia was asked to circle the problems that all equaled 9. She circled the following:

$4 + 5 =$

$0 + 9 =$

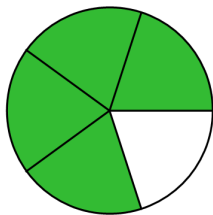
$6 + 3 =$

$7 + 1 =$

$2 + 8 =$

$5 + 4 =$

Ricky looked at this picture:



He said that the fraction represented was $\frac{4}{5}$.

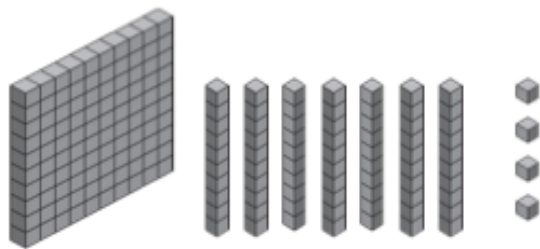
Mick determined that $35 \times 47 = 1,645$.

James began counting backwards from thirty. He successfully counted backwards all the way to zero.

Lucy listened to a friend count out six colored-tiles. "1... 2... 3... 4... 6." After her friend counted out the tiles, Lucy recognized that her friend had counted incorrectly. She told her friend she did it wrong.

Mario was asked to create the number 174 with Base-10 blocks.

This is what he made:



Gemma skip counted by 5s:

5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, 95, 100, 105, 110, 115, 120, 125, 130, 135...

Ferne was asked to multiply $\frac{2}{3}$ by $\frac{2}{5}$. She said that the answer was $\frac{4}{15}$.

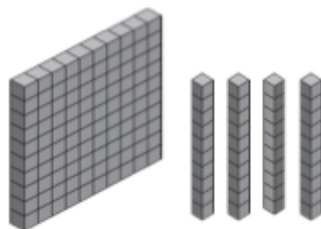
Jasmin argued with her friend that $4 + 8$ equals 12. She further explained that she saw it in her head as a 10-frame filled with 8 circles. She split the 4 up and filled in the last 2 circles in the 10-frame. She had 2 circles left over. One filled 10-frame plus 2 circles equals 12.

Bobby was asked to solve $3 + 4$. He was then quickly shown the following card

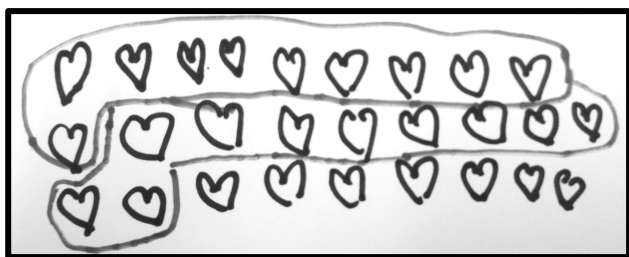
$$4 + 3 =$$

and was asked if it would have the same answer as the problem he had already completed. He immediately responded that it would be the same answer.

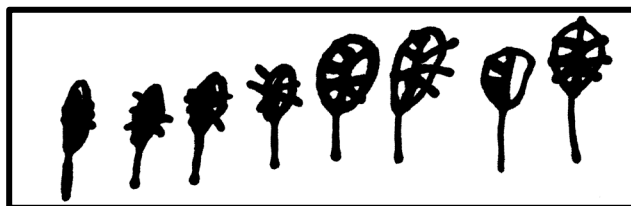
Chloe created the following out of Base-10 Blocks when asked to represent the number 140.



Sam was asked to draw twenty-seven hearts. She drew this:



Kirk's elbow partner showed him this picture that he drew. He told Kirk that he drew 10 leaves.



Kirk disagreed with him and counted out, "1, 2, 3, 4, 5, 6, 7, 8."

Dan was asked what the place value was of the 8 in the following number:

$$23,982$$

He responded that the 8 was in the tens place.

Cara's partner during math told her there were 12 hours in a day because that was how many hours were shown on the clock face. Cara disagreed with her and explained that the day was split into two sections that each had 12 hours in them. Together the two 12-hour sections equaled 24 hours.

Elliot's stomach grumbled. The clock in Elliot's classroom showed that it was 10:45. He knew that his class went to lunch at 11:50. He figured out that he had an hour and five minutes left in reading class before it was lunchtime.

Mark's mom needed 6 yards of fabric for each window along the front of his house in order to make new curtains. There are 14 windows along the front of his house. He determined that she would need 84 yards of fabric to make the curtains.

Amy taught her little sister how to add two-digit numbers.

Harry completed the following problem:

$$\begin{array}{r} 240 \\ 3,503 \\ - 783 \\ \hline 2,720 \end{array}$$

Debbie was asked multiply 24 by 5. She replied that she knew a quarter was worth 25 cents. When she added five quarters together it equaled 125 cents. She then said she had to take 1 away five times because the original number was 24 not 25.

Charlie was taking a test. He had answered 21 of 47 questions. He determined that he still had 26 questions to answer. This is a picture of how he figured out how many questions he had left to answer.

