EMPACTS PROJECT: Fun with Addition & Subtraction at Frank Tillery Elementary in Rogers

By:
Heather Gabriele
Carolina Salinas
Kelley Ward
Our purpose is to work with students on addition and subtraction at Frank Tillery Elementary. Our goal will be to encourage students in the learning process, and to make learning an enjoyable process. We will be working with small groups of students who are in need of supplemental help in adding and subtracting. Our project will benefit the community because we are working to make sure each child will be a productive member of society by ensuring that their basic math skills are at a proficient level.
COURSE CONTENT OBJECTIVES

- Become more aware of our selves as a learner and future teacher.
- Examine our beliefs and opinions about teaching and learning.
- Broaden our understanding of the role of schools in our community through service.
## Classification of Word Problems

From AR Math Framework Appendix)

<table>
<thead>
<tr>
<th>Problem Type</th>
<th>NO.2.2.5, NO.2.1.4, and NO.2.K.2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Join</strong></td>
<td></td>
</tr>
<tr>
<td><strong>A.</strong> (Result Unknown) Connie had 5 marbles. Juan gave her 8 more marbles. How many marbles does Connie have altogether?</td>
<td></td>
</tr>
</tbody>
</table>
|  \[
\begin{align*}
5 + 8 &= \square \\
\end{align*}
\]  |
| **E.** (Change Unknown) Connie has 5 marbles. How many more marbles does she need to have 13 marbles altogether? |
|  \[
\begin{align*}
5 + \square &= 13 \\
\end{align*}
\]  |
| **J.** (Start Unknown) Connie had some marbles. Juan gave her 5 more marbles. Now she has 13 marbles. How many marbles did Connie have to start with? |
|  \[
\begin{align*}
\square + 5 &= 13 \\
\end{align*}
\]  |
| **Separate** |                                  |
| **B.** (Result Unknown) Connie had 13 marbles. She gave 5 to Juan. How many marbles does Connie have left? |
|  \[
\begin{align*}
13 - 5 &= \square \\
\end{align*}
\]  |
| **F.** (Change Unknown) Connie had 13 marbles. She gave some to Juan. Now she has 5 marbles left. How many marbles did Connie give to Juan? |
|  \[
\begin{align*}
13 - \square &= 5 \\
\end{align*}
\]  |
| **K.** (Start Unknown) Connie had some marbles. She gave 5 to Juan. Now she has 8 marbles left. How many marbles did Connie have to start with? |
|  \[
\begin{align*}
\square - 5 &= 8 \\
\end{align*}
\]  |
| **Part-Part-Whole** |                                  |
| **C.** (Whole Unknown) Connie has 5 red marbles and 8 blue marbles. How many does she have? |
|  \[
\begin{align*}
5 + 8 &= \square \\
\end{align*}
\]  |
| **G.** (Part Unknown) Connie has 13 marbles. 5 are red and the rest are blue. How many blue marbles does Connie have? |
|  \[
\begin{align*}
5 + \square &= 13 \\
13 - 5 &= \square \\
\end{align*}
\]  |
| **Compare** |                                  |
| **D.** (Difference Unknown) Connie has 13 marbles. Juan has 5 marbles. How many more marbles does Connie have than Juan? |
|  \[
\begin{align*}
13 - 5 &= \square \\
8 + 5 &= \square \\
13 - 5 &= \square \\
\end{align*}
\]  |
PRE/ POST TEST AND RESULTS

Pre-Test

Post-Test

Carolina
Heather
Kelley

Name: ___________ Date: _________

4 + 5 = _____ 3 + 6 = ______

1) Scot has 4 bags. Tom has 6 bags. How many bags do they have altogether?

2) Sam has 8 pens. Sam gives his sister 4 pens. How many pens does Sam have left?

3) Tom has 3 cups. He gives his sister 2. How many cups are left?

4) Paul had 10 bags. He gave Sidd 6 bags. How many did Paul have left?

5) Alex has 8 blocks. He finds 2 more blocks. How many blocks does he have in all?

5 + _____ = 11 14 - 5 = ______

_____ - 2 = 5 10 - _____ = 5
**Addition and Subtraction Mat**

- This mat is used to show that the = sign means that the amounts on both sides are balanced.
- Students were not understanding how to move everything down to the equal box.
- For example: If we put 4 counters in the top box + 5 counters in the second box, then we move all the counters down so it shows the students that the first and second box = the last box.
**Base Ten Frame**

- This was used to help students understand that if they looked at this and saw that each column = 5 then they automatically know to start from 5 and count up depending on the number of squares filled in the other column.

- It also taught them to start from the larger number when adding and subtracting.
For example:
In the Snow

Add or subtract the numbers. Write the answers in the boxes.

\[
\begin{align*}
3 + 4 &= \_Z \\
7 + 3 &= \_O \\
8 - 3 &= \_T \\
9 - 8 &= \_E \\
5 + 4 &= \_M \\
1 + 1 &= \_A \\
10 - 7 &= \_W \\
9 - 5 &= \_N \\
6 + 2 &= \_S \\
5 + 1 &= \_Y
\end{align*}
\]

What are the kids building outside in the snow? Write the letters that go with the numbers in the boxes to find out!

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Name: ____________

1: orange
2: red
3: purple
4: yellow
5: any color
6: blue
7: brown
8: green
9: black
Manipulative Counters

Smart PALS and Dry Erase Markers
**GAMES**

- **BINGO**- This helped students’ add and subtract in a timely manner.
  - The group came up with this to expand the students’ understanding of addition and subtraction in a fun and creative way.

- **FLASHCARD GROUPS**- This also allowed students to think fast. We made this into a competition, so it would inspire them to push each others knowledge.
Pictures from Bingo
For the technology portion of this project, we used the school’s computers and software. More specifically, we used the Waterford computer program. The students’ focused solely on the math portion dealing with word problems. The program is beneficial because it is fun, and an interactive approach to learning.
EAST Lab Technology

Microsoft Office Suite:

- Word – Word Processing
- Power Point – Graphic Presentation
- Publisher – Graphic Design
- FrontPage – Web Design
Rewards

- Each week the students got stickers based on participation, good work, effort, and the game of the week.
- They also got a sticker for pre and post test
- On the last week each student got a reward bag with educational tools useful for addition and subtraction
WHAT WE LEARNED

- We learned how to interact with students’ effectively.
- We learned how to teach the students’ the schools curriculum through the use of manipulative, effective tools, and fun games. This all improved our understanding of being a future teacher and what the teaching profession requires. It showed us that Domain D from Pathwise - Professionalism is extremely important for being a successful teacher. Domain A- Planning was imperative for success in our EMPACTS project.
- We gained valuable experience with kids, the school districts, and our future career.
RESOURCES

- Joy Wolfe- Math Coordinator for Rogers Public Schools
  - joy@the-wolfe-web.com
  - jwolfe@rogers.k12.ar.us
- Waterford Computer System
- Frank Tillery Elementary
- Internet Resources
  - www.education.com/worksheets
  - www.softschools.com/math/worksheets
KIDS HARD AT WORK
ACKNOWLEDGEMENTS

- The 2nd and 3rd grade students at Frank Tillery Elementary School, Rogers
- Dr. Shirey, Intro to Ed Instructor
- Joy Wolfe, Math Coordinator for Rogers Public Schools
- Second and Third grade faculty at Frank Tillery Elementary School, Rogers
- Mrs. Wilbanks, Principal, Frank Tillery Elementary School, Rogers
- C. Dianne Phillips, EAST/EMPACTS Facilitator