CMAG Lesson Planning Template

Contributed by Lisa Versaskas, Wabeno SD, Wabeno, WI

I. Content of Lesson/Topic: Relational Thinking / Algebraic Thinking

Grade level: 5

NCTM National Standards:
Using the equal sign (=) as a relational symbol meaning “the same as”.

Goal(s) of the Lesson:
The students will be able to balance equations by using knowledge of facts, basic properties, and relational thinking as opposed to computation.
The students will understand that the equal sign means “the same as”.

Assessment Targets and Methods:
The students will complete the equation 5 + 3 = ____ + 3. The students will answer True/False number sentences.

II. Pedagogical Considerations: Prior Knowledge, Differentiation, and Management

Prior Knowledge:
Ask the students to share what they know about the equal sign. Students often think that an answer comes after an equal sign. The students will learn that the equal sign means “the same as”.

Differentiation:
The students will work individually on answering the true/false number sentences. The students will create their own true/false number sentences.

Classroom Management:
Each student will obtain knowledge about the equal sign through the class discussion. Each student will be given their own paper.

III. Technology Components/Considerations

Set level and type of comparisons then use >, =, < to compare quantities.

http://nlvm.usu.edu/en/nav/frames_asid_201_g_4_t_2.html
Use the balance to balance the equations.

http://www.mathplayground.com/algebraic_reasoning.html
Find the value of the object.

What are the limitations of the tool? How will you compensate for these limitations?

These websites could be used in the computer lab or on a SMART board.
**LESSON DESCRIPTION**

| Preparation | Make one copy of the attached worksheets for each student. |

<table>
<thead>
<tr>
<th><strong>Lesson (steps of the lesson)</strong></th>
<th><strong>Questions for Learners</strong></th>
<th><strong>Notes / Reflections</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Introduction</strong></td>
<td>Ask the students to share what they know about the equal sign.</td>
<td>The students will work individually on the worksheet $5 + 3 = \ldots + 3$.</td>
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<tr>
<td><strong>Core Instruction</strong></td>
<td>Explain to the students that they are now going to look at some number sentences and answer true if the number sentence is true and false if the number sentence is false. Then they will get a chance to make some of their own number sentences.</td>
<td>The students will work individually on the worksheet with the true/false number sentences.</td>
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<tr>
<td><strong>Closure</strong></td>
<td>Have some student volunteers share one of their own number sentences and explain to the class why it is true or false.</td>
<td>Ask the students to create a word problem that would go along with one of their number sentences.</td>
</tr>
</tbody>
</table>
Name: ___________________________

What is the value of the □ in the following statement?

\[5 + 3 = \square + 3\]

a) the □ is 8
b) the □ is 5
c) the □ is 11

Explain your choice.

________________________________________________________________
________________________________________________________________
Name: ________________________________

Write true (T) or false (F) to the following number sentences:

1.  $50 \times 20 = 1,000$   ______  2. $50 \times 20 = 1,000 + 0$   ______
3.  $1,000 = 1,000$   ______  4. $50 \times 20 = 1,000 + 3$   ______
5.  $1,000 = 5 \times 20$   ______  6. $10 \times 10 \times 10 = 50 \times 20$   ______

Write five true or false number sentences of your own.

1.  

2.  

3.  

4.  

5.  

Select one of the five you have written above and explain why it is true or false.

________________________________________________________________   ________________________________________________________________