Math Strategy #5 – Computational Strategies – Recognizing Relationships Between Operations

In addition to using your knowledge of the basic facts in the four operations to increase your ability to use them more efficiently and accurately, another way to improve your computational skills is by learning to recognize the relationships between the operations. This knowledge will help you commit more of the facts to memory, as well as to determine which operations you will need to solve problems, and whether the answers you arrive at make sense.

Recognizing Relationships Between Operations When Using Facts – Fact Families

You may recall learning about fact families in the younger grades. There are **addition** and **subtraction** fact families, as well as **multiplication** and **division** fact families.

**Examples: 5, 6, 11 5,6,30**

**5+6=11 5x6=30**

**6+5=11 6x5=30**

**11-5=6 30/5=6**

**11-6=5 30/6=5**

These relationships work because **addition** and **subtraction** are **inverse** operations, and **multiplication** and **division** are **inverse** operations. They are **opposites,** so they **undo** each other!

Recognizing Relationships Between Operations in Problem Solving

The examples of the fact families above show which operations are opposites, but it is also important to recognize which operations are similar. **Multiplication** can be thought of as **repeated addition,** while **division c**an be thought of as **repeated subtraction.**

**Examples: 2+2+2 =6 6-2=4-2=2-2=0**

 **2x3=6 6\2=3**

**Addition** and **multiplication** are related because their answers show an **increase. Subtraction** and **division** are related because their answers show a **decrease**. Recognizing whether you are seekinga **larger or smaller** quantity in your answer can help you figure out which operation you should use, as well as to check the reasonable ness of your answers.