

Subject Area: Math

Grade Level(s): Junior/ High School

Title of Instructional Method: Math Manipulative

Description of Instructional Method:

Teaching with math manipulative involves using several physical materials to help students learn place value, word problems, fractions, geometry, and several other areas of math. Some manipulatives may include Base 10 blocks, Geo-Boards, and measuring tools. Using manipulatives help make abstract ideas become concrete. Math manipulatives also build student confidence in math because they are able to see and test their ideas. Utilizing math manipulatives will help keep math enjoyable and interesting.

References:

- Cass, M., Cates, D., Jackson, C., & Smith, M. (2003). Effects of manipulative instruction on solving area and perimeter problems by students with learning disabilities. *Learning Disabilities Research & Practice, 18*(2), 112-120.
-Library
- Burns, M. (1996-2007) How to make the most of math manipulatives. *Scholastic*.
<<http://content.scholastic.com/browse/article.jsp?id=4003>>
- Internet
- (1994-2007) Math Forum: T2T FAQ: Using Manipulatives. *Drexel School of Education*.
<<http://mathforum.org/t2t/faq/faq.manipulatives.html>>
-Internet

“How-To” Information:

Teachers along with their students should set ground rules for the use of the manipulatives. Use charts and a storing system to teach students the names of the manipulative. Teachers should then allow the students to explore the manipulative they are using with each lesson before the lesson will begin. Allowing time for the students to explore will keep them from being distracted when it is time for them to complete the

necessary work. Teach students to not interfere with others when using the manipulative. Have students record problems they are making when using manipulative and record their findings. Produce group discussions about how the students used their manipulative, and what their findings were. Have them discuss how they can use the information found from using the manipulative in future math lessons.

Implications for Practice/Other Considerations:

- Teachers need to attempt a creative transfer from manipulative ideas to pencil/paper problems.
- Long term use is more effective than short term usage.

Additional Links:

Virtual Manipulatives

<http://www.ct4me.net/math_manipulatives.htm>

Handmade Manipulatives

<<http://mason.gmu.edu/~mmankus/Handson/manipulatives.htm>>

Experiential Learning of Mathematics: Using Manipulatives. ERIC Digest.

<<http://www.ericdigests.org/pre-9217/math.htm>>

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