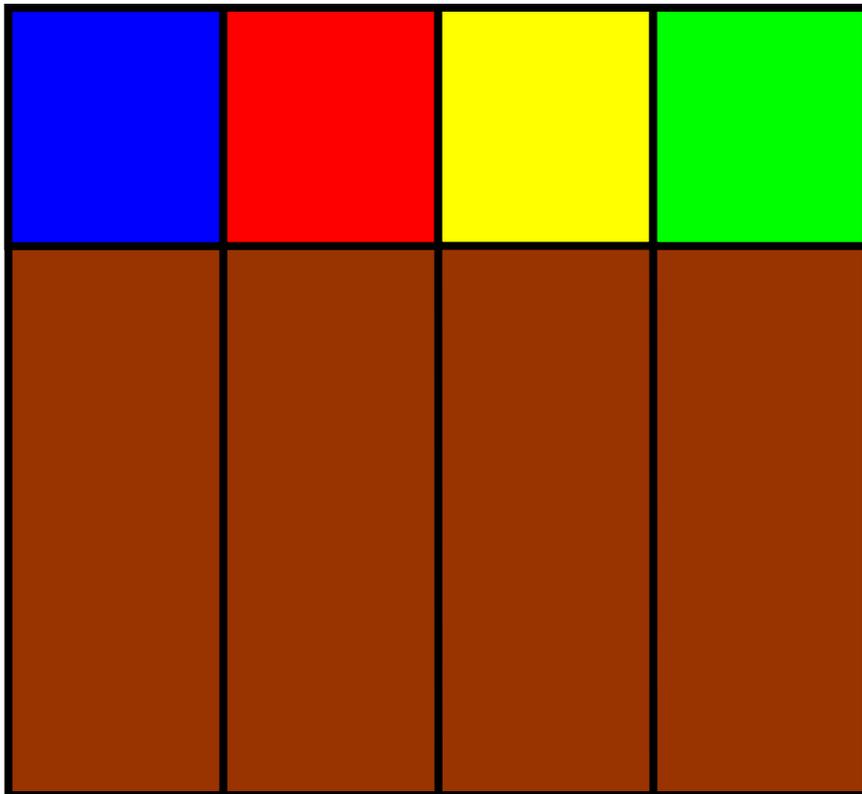


Multi-use Math Activity Boards

Modern classrooms have limited space and contemporary teachers are not paid adequately, both of which require creativity for developing teaching tools that have multiple purposes to save storage room and personal budgets of teachers. To this end, I have developed a low-cost activity board used primarily for mathematics instruction, but can also be cross-curricular, which increases their use, and reduces time in storage.

I brainstormed a tool that I could use in an elementary math class, I priced my idea with some area printing specialists and on the Internet and was shocked to find the cost of a classroom set of dry-erase boards alone ranges from \$85 to \$280. Leveraging household items or those easily, and cheaply, attainable, I spent substantially less money and created a set with more than one function. Using a stock piece of plain white tileboard from the local home improvement warehouse, I cut thirty $11 \frac{3}{4}$ " squares. (Though I had the tools to cut these myself, the store will cut them for free, especially if you tell them you're a teacher.) The white side of the tileboard functions as a dry-erase board using either permanent or dry-erase markers, though I recommend dry-erase to save students' clothes. On the reverse side, I drew a grid to be used for regrouping lessons and games, pictured below, and painted it with paint I had left over from household projects.



I enhanced this set with a few decks of cards that I had around the house and some scrap lumber, cut specifically to be cardholders. With a relatively inexpensive plastic tub as a carrier, I now have an environmentally-friendly classroom set of a tool that I can use to teach math, and other subjects, and to engage students by “rewarding” them with a fun math game.

Materials List

Material	Maximum Cost (if you don't have these things around already)
8'x4' Tileboard	\$10.00
30 Dry Erase Markers	\$19.00
Pint of paint (4 colors)	\$12.00 (\$4 each)
Regrouping Objects (4 colors, at least 100 of each)	\$30.00
Decks of Cards (4)	\$4.00 (.99 each)
12x14x14 Plastic Tub	\$10.00
Cardholder (1"x 3"x 2'board) (optional)	\$ 2.00
Total Investment	\$87.00
<i>Return on Investment</i>	<i>PRICELESS</i>

Some Dry-Erase Board Uses

- **Quick-Draw** – Teacher rapid fires math problems, spelling words, or any other content trivia and each student writes their response then holds up the board. This can be competitive or collaborative.
- **Problem Solving** – Many times the planning stage of problem solving in math can take multiple attempts. To avoid wasting paper, students can scribble their thoughts on the board, erasing and re-trying as necessary. With group work, one board can be saved to capture “keep” ideas for reference, while others are re-used until a plan is created.
- **Practice Work** – Students need good examples of their work in notebooks for reference, but they don't need all of their practice problems documented and taking up paper. Dry-erase boards can be a great way for students to work through many problems to attain or ingrain a concept, without wasting unnecessary paper.
- **Cooperative Learning** – To engage students *physically* in math, each child can write part of an equation or math statement on his/her board, then arrange themselves in the appropriate order to show the rest of the class. (ie. Addend, +, Addend, =, Sum OR Minuend, -, Subtrahend, =, Difference OR $23 - 5 = 18$)
- **Concept Mapping** – This activity can be handy in many subjects and students can create individual concept maps or join together to physically represent concept maps with separate elements on each board.

Grouping Grid

By painting each of the four grids a different color with matching grouping objects (flat stones, plastic/foam pieces, base-10 blocks, etc.) a natural regrouping pattern is created that can be referenced in teaching place value in different bases or base ten. This grid can also be used for teaching algorithms of addition and subtraction, but if the students have a hard time without actual place value labels, they can flip the board and

create their own grid with labels on the whiteboard, returning to the label-free side as their abstract skills in this concept improve.

Base Basics Game

First as a lesson, then as a reward or for free time, a deck of cards makes for a fun and educational math game using these boards.

1. Students can play in groups of 2 or more.
2. Place deck of cards face down between the players.
3. The first player draws a card and places it face up, to one side of the deck. The number on this card sets the “base” in which the round will be played. (3=base 3, 5=base 5, Jack=base 11, Queen=base 12, and so forth)
4. The next player draws a card and places it face-up on the other side of the deck. This player must use the grouping objects to represent the number on that card in the appropriate columns of the grid. Play continues around the group with each player regrouping their objects based upon the card number he or she draws each time.

Card Values:

Number Cards = Face Value; Jack = 11; Queen = 12; King = 13; Ace = 14; Joker = 15

5. The first player to regroup all the way to the left column wins the round and gets one point or hash mark (which can be tracked on the dry-erase board). Shuffle the deck, then the winner picks a new “base” card and a new round begins.
6. To make the game more challenging, red cards can require subtraction and black cards can require addition.