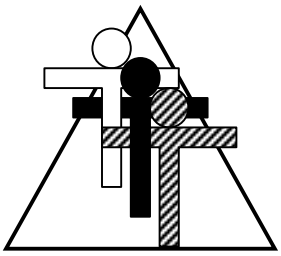
ALGEBRA FOR EVERYONE:
MONEY FROM MARS

RESOURCE HANDBOOK

By
Brad Fulton and Bill Lombard



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Brad Fulton and Bill Lombard

Teacher to Teacher Press

"*Building Mathematical Skill on a Foundation of Understanding*"

Brad Fulton

- **Consultants**
- **Educators**
- **Authors**
- **Seminar leaders**
- **Teacher trainers**
- **Conference speakers**

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Known throughout the country for motivating and engaging teachers and students, Brad and Bill have authored over ten books that provide easy-to-teach yet mathematically-rich activities for busy teachers. In addition, they have co-authored six teacher training manuals full of activities and ideas that help teachers who believe mathematics must be both meaningful and powerful.

Seminar leaders and trainers of mathematics teachers

- California Math Council and NCTM presenters
- Lead trainers for summer teacher training institutes
- Trainers/consultants for district, county, regional, and national workshops

Authors and co-authors of mathematics curriculum

- *Simply Great Math Activities* series: five books covering all major strands
- *Math Discoveries* series: bringing math alive for students in middle schools
- Teacher training seminar materials handbooks for elementary, middle, and secondary school

Available for workshops, keynote addresses, and conference sessions.

All workshops provide participants with complete and ready-to-use activities. These activities require minimal preparation, use materials commonly found in classrooms, and give clear and specific directions and format. Participants will also receive journal prompts, homework suggestions, and ideas for extensions and assessment.

Brad and Bill's math activities are the best I've seen in 30 years of teaching!
Wayne Dequer, 7th grade math teacher

"The high-energy, easy-to-follow handouts were clear. The instructors were great!"
DeLinda Van Dyke, middle school teacher

References available upon request.

Money From Mars

- ☑ Allows students to work with two variables painlessly
- ☑ Helps students solve for two unknowns
- ☑ Adaptable for grades 2 through 10!
- ☑ Demonstrates dependent and independent variables
- ☑ Incorporates multiple representations
- ☑ Leads students into the Ax+By=C form
- ☑ Makes a seamless transition to simultaneous equations
- ☑ Shows the interconnections between graphs, t-tables, and data charts
- ☑ Easy and fun!

Name _____

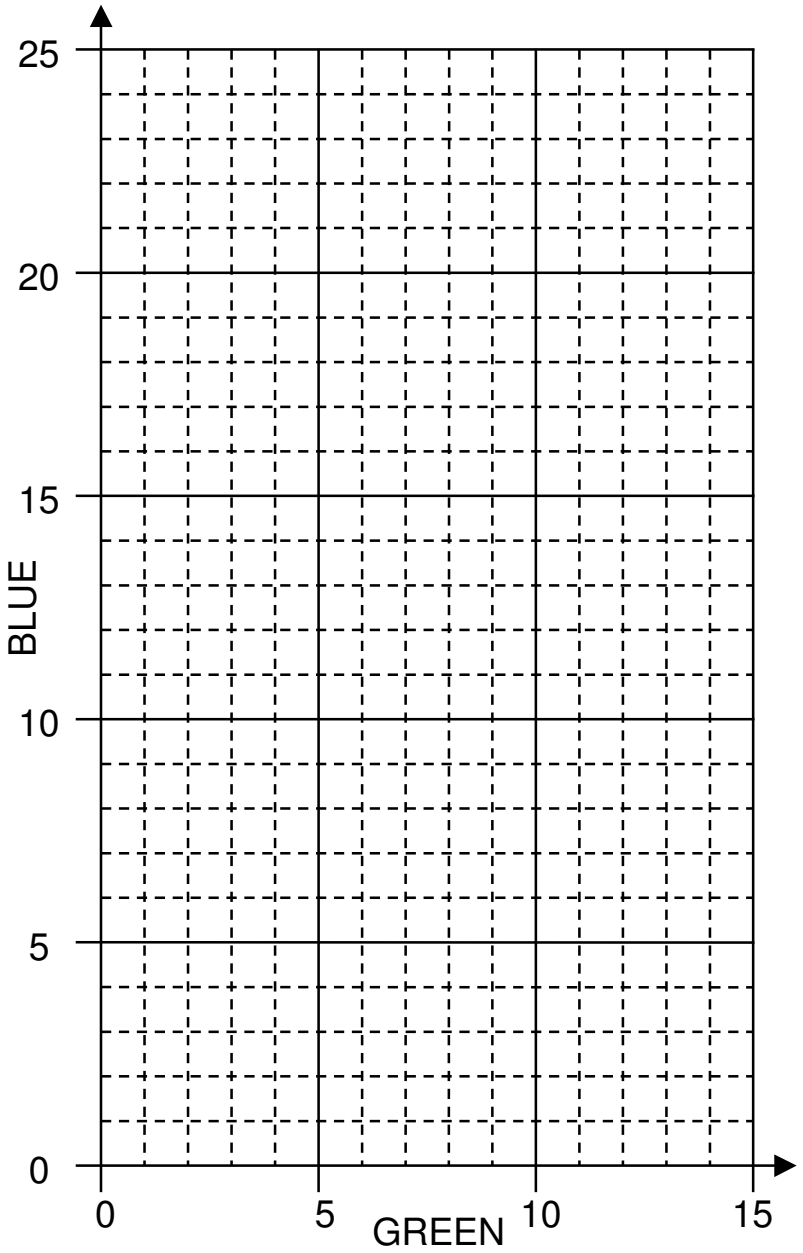
Money from Mars 1

G G G B B = 24

G B B = 16

G	B

G	B



Money from Mars
An Algebraic Solution (problem 1)

$3g + 2b = 24$
$1g + 2b = 16$

$3g + 2b = 24$
$-\ (1g + 2b = 16)$ Subtract

$\frac{2g}{2} = \frac{8}{2}$ Divide by the coefficient.

$g = 4$

$3(4) + 2b = 24$ Substitute.
$12 + 2b = 24$ Multiply
$12 + 2b = 24$
$-12 \quad -12$ Subtract.
$\frac{2b}{2} = \frac{12}{2}$ Divide by the coefficient

$b = 6$

Name _____

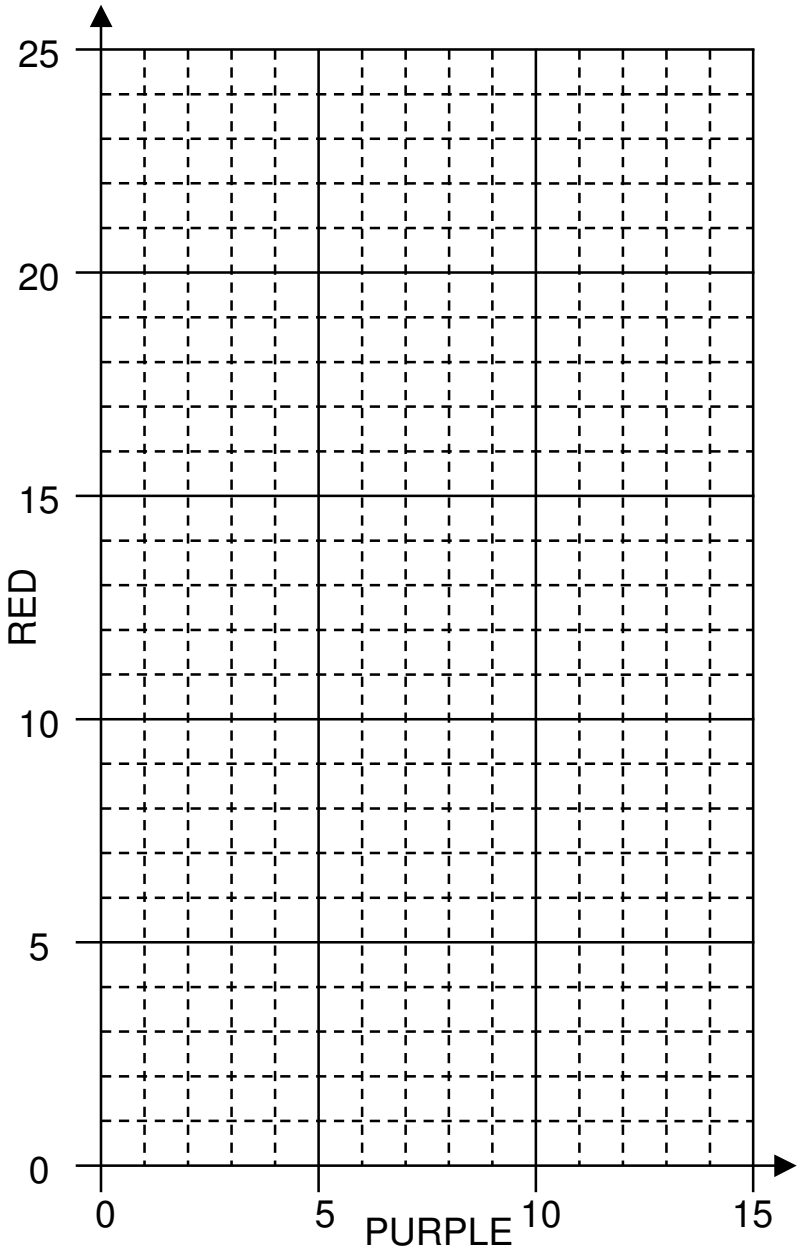
Money from Mars 2

P	R

P	R

P P P P R R R = 48

P P R R R = 30



Name _____

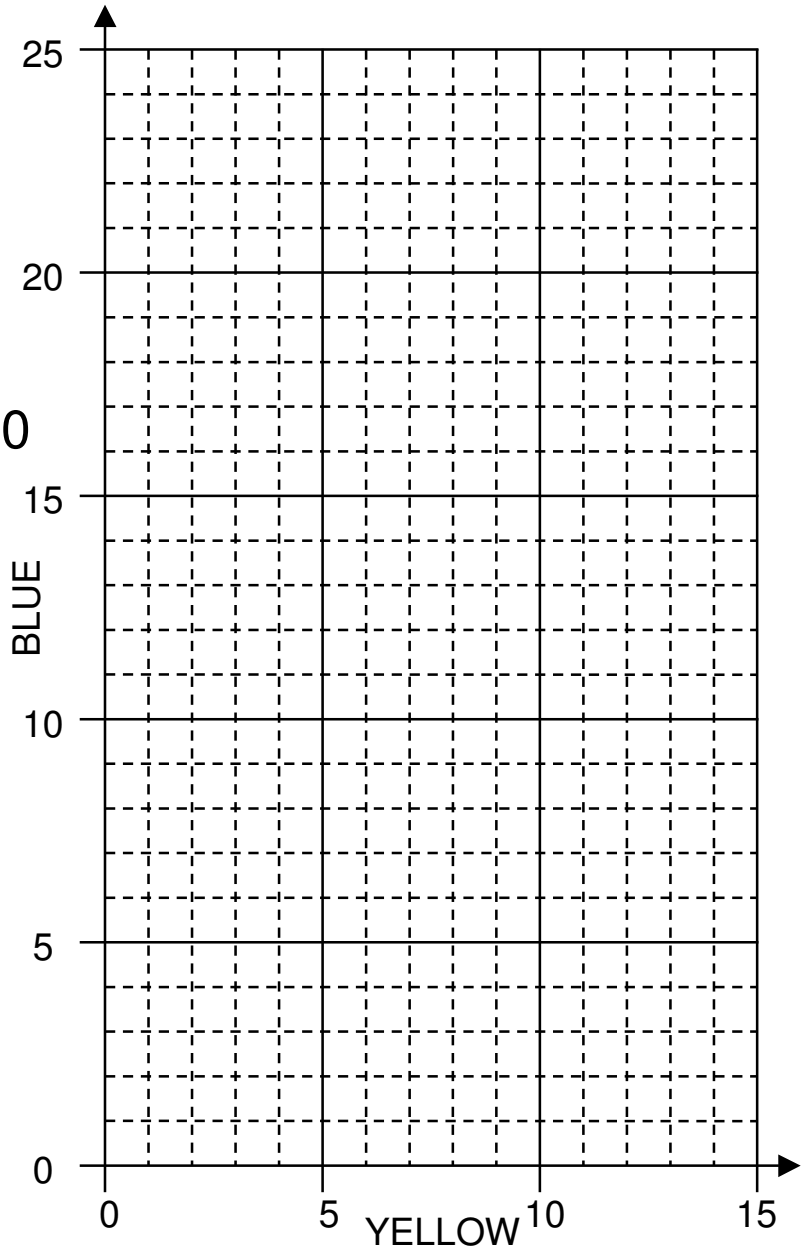
Money from Mars 3

Y	B

Y	B

Y Y B = 14

Y Y B B B B B = 30



Name _____

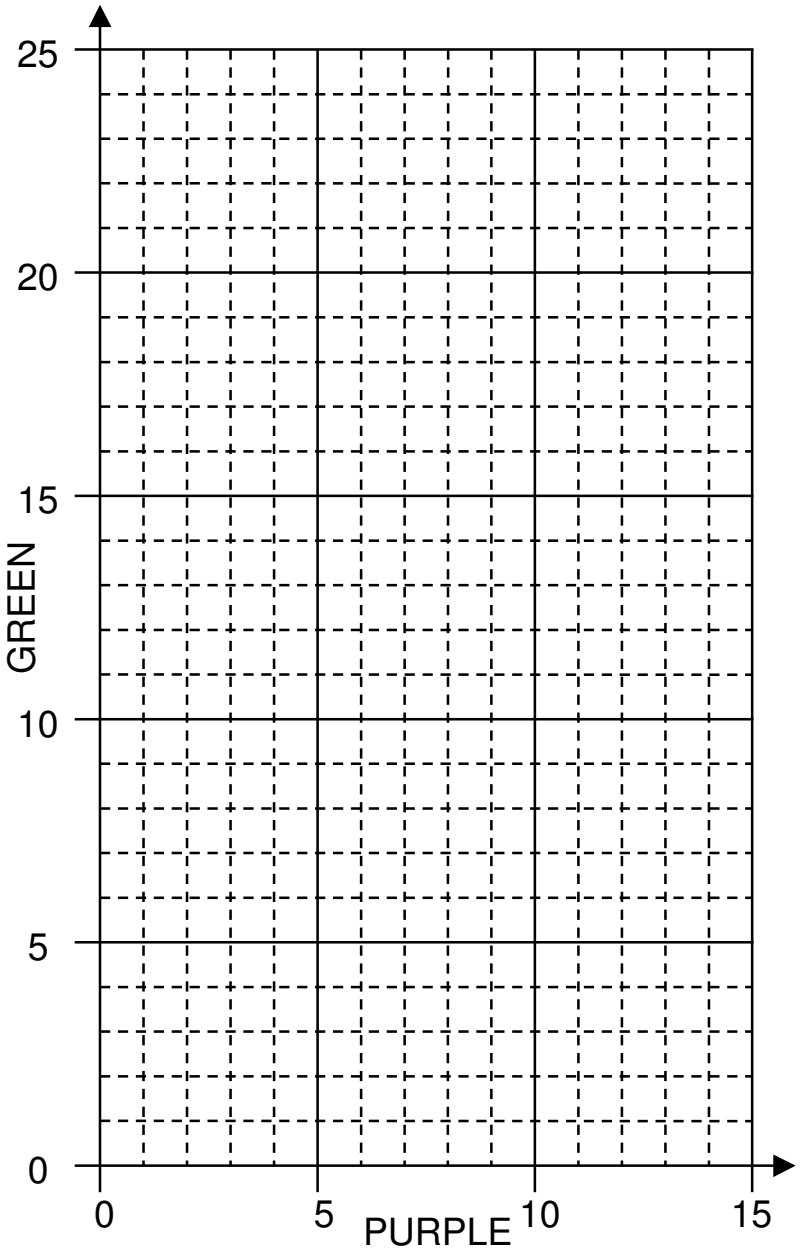
Money from Mars 4

P	G

P	G

P P P G = 15

P P G G G = 24



Name _____

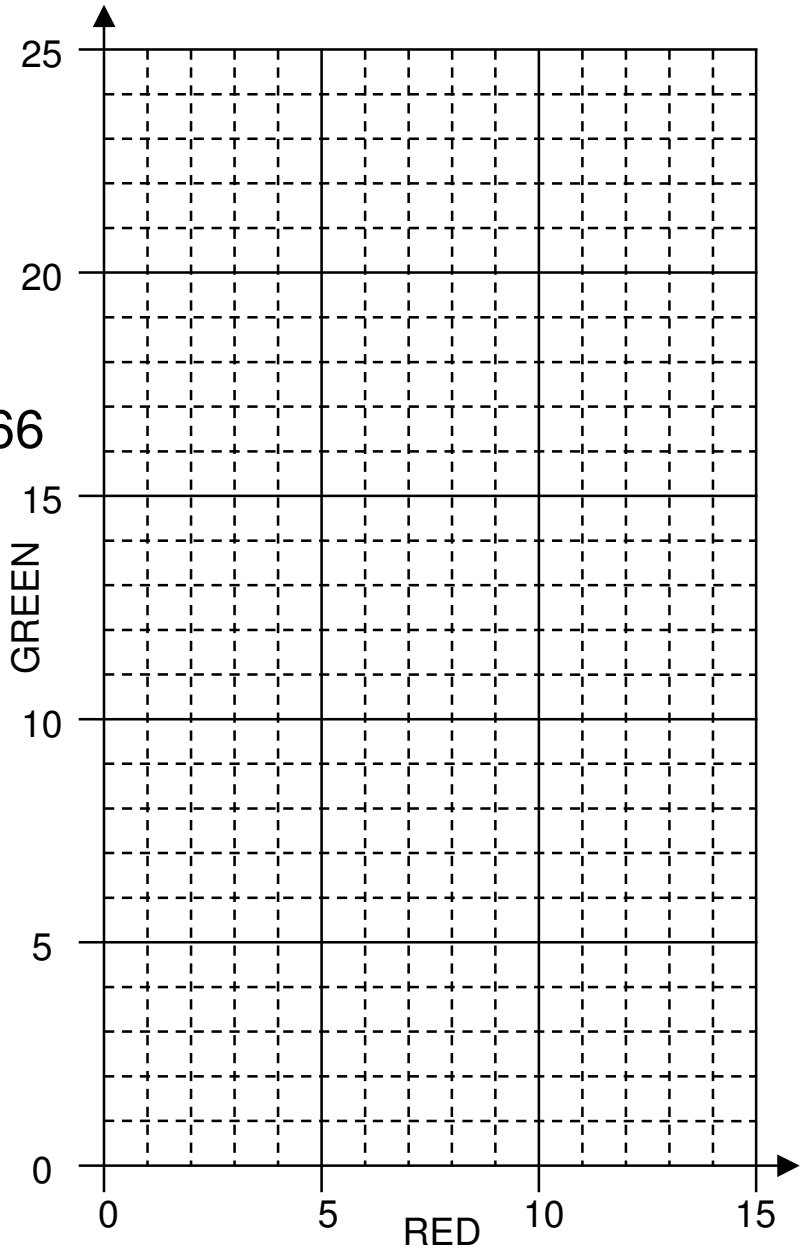
Money from Mars 5

R	G

R	G

R R R R G G G = 48

R R G G G G G = 66



Money from Mars
An Algebraic Solution (problem 5)

$4r + 3g = 48$

$2r + 5g = 66$ Multiply the second equation by 2.

$4r + 10g = 132$

$4r + 3g = 48$ Subtract the first equation.

$7g = 84$

$\frac{7g}{7} = \frac{84}{7}$ Divide by the coefficient.

$g = 12$

$4r + 3(12) = 48$ Substitute.

$4r + 36 = 48$ Multiply

$4r + 36 = 48$

$-36 \quad -36$ Subtract.

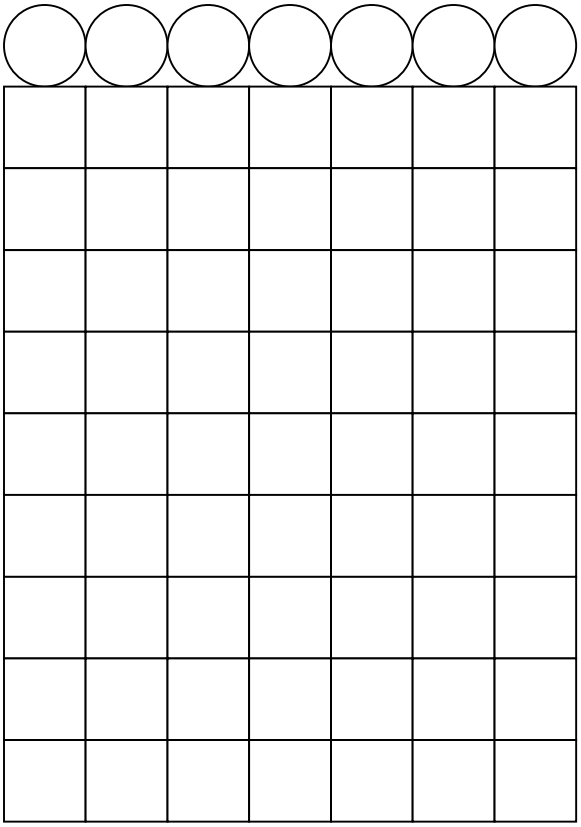
$4r = 12$

$\frac{4r}{4} = \frac{12}{4}$ Divide by the coefficient

$r = 3$

Money from Mars

Name_____



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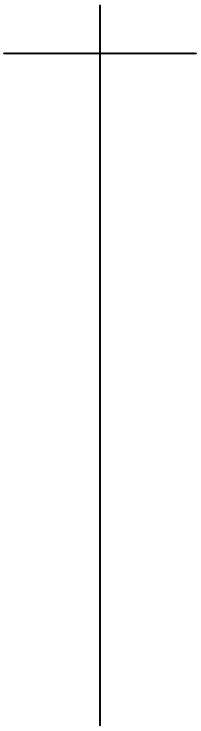

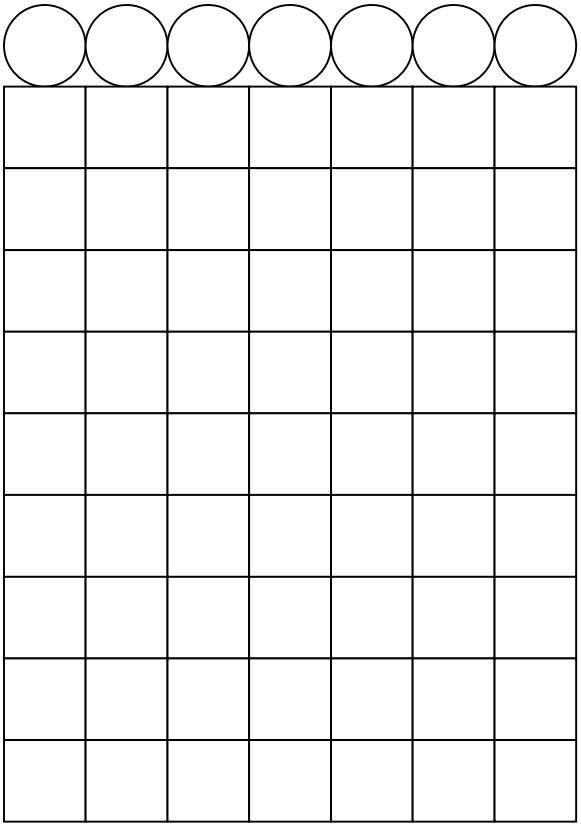

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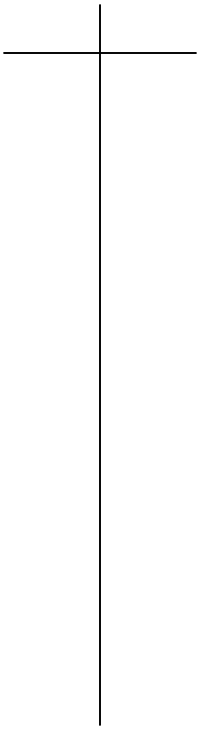

Money from Mars

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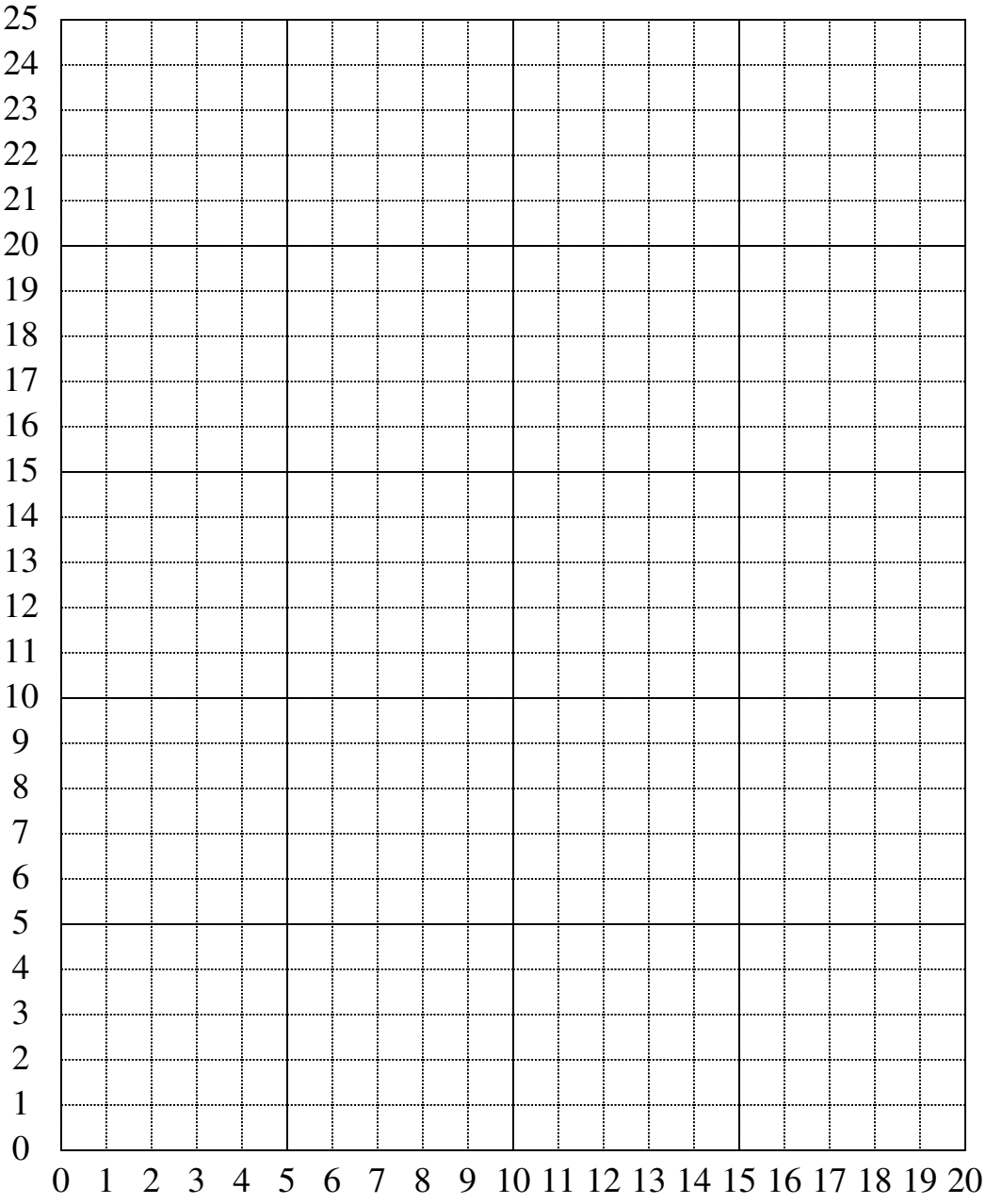

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Soluitons

Problem 1:
$3g + 2b = 24$
$g + 2b = 16$ $g = 4, b = 6$

Problem 2
$4p + 3r = 48$
$2p + 3r = 30$ $p = 9, r = 4$

Problem 3
$2y + 1b = 14$
$2y + 5b = 30$ $y = 5, b = 4$

Problem 4
$3p + 1g = 15$
$2p + 3g = 24$ $p = 3, g = 6$

Problem 5
$4r + 3g = 48$
$2r + 5g = 66$ $r = 3, g = 12$

Name_____

Money from Mars Journal Prompt

Write a letter to a Martian explaining how you found the value of the coins.

Standards That May Be Taught Using Money from Mars

Grade	Standard	Description
2	Num. 5.1	Solve problems using combinations of coins and bills.
3	Alg. 2.1	Solve simple problems involving a functional relationship between two variables
4	Alg. 1.1	Use letters to stand for any number in simple expressions or equations.
5	Alg. 1.1	Use information taken from a graph or equation to answer questions about a problem situation
5	Alg. 1.1	Use a letter to represent an unknown number
5	Alg. 1.4	Identify and graph ordered pairs
5	Alg. 1.5	Solve problems involving linear functions
6	Alg. 1.3	Apply algebraic order of operations
6	Alg. 2.0	Students analyze tables, graphs, and rules to solve problems involving rates and proportions
7	Alg. 1.1	Use variables and appropriate operations to write an equation
7	Alg. 1.4	Use algebraic terminology
7	Alg. 1.5	Represent quantitative relationships graphically and interpret the meaning of a specific part of a graph
7	Alg. 3.3	Graph linear functions, noting that the vertical change per unit of horizontal change is called the slope
8	6.0	Graph a linear equation and compute the x- and y-intercepts
8	9.0	Students solve a system of linear equations in two variables algebraically and are able to interpret the answer graphically

MORE! MORE! MORE!

Visit the Teacher to Teacher Press website at…

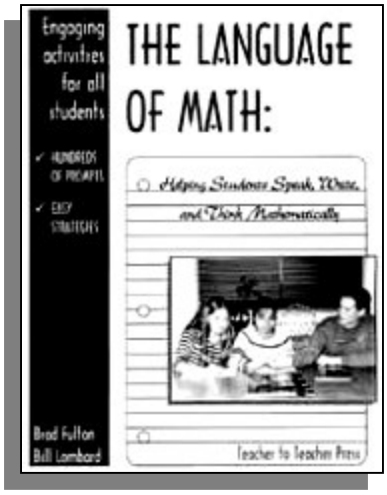
www.tttpress.com

…for many other great math activities. On our website you will find:

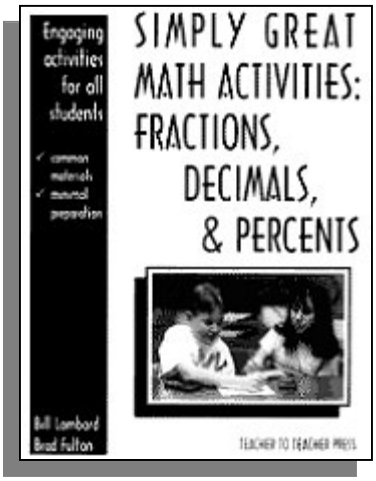
- A complete catalog of our materials
- Free sample chapters from our books
- Downloadable handouts from our workshops
- Quotes for motivating students
- Links to other valuable resource websites
- Order forms for our materials
- A bibliography of great mathematical reading
- Calendars showing where and when you can hear Bill and Brad present

Happy surfing!

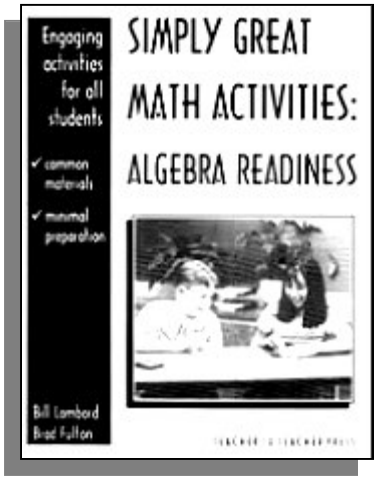
Books by Brad and Bill



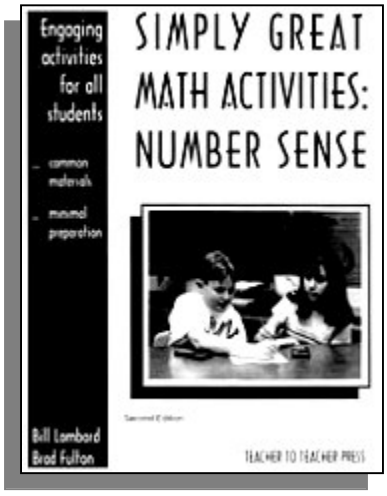
The Language of Math helps teachers create a classroom environment rich in mathematical thinking by showing them how to easily incorporate oral and written language into their math classes. Over 100 journal and discussion starters are included along with extensive instructions for making the most of your math time.



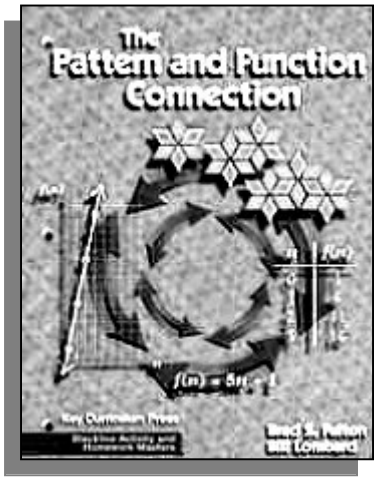
Here are a dozen unique and conceptual activities that will help your students add, subtract, multiply and divide fractions as well as connect them to decimal and percent representations. Both you and your students will love the novel and creative approach.



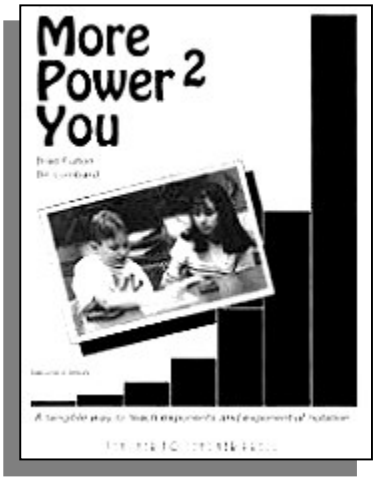
Teachers are raving about how effective these activities have been in their classrooms. Children as young as fourth grade and college students alike say that algebra is easy and makes sense because of this incredible approach.



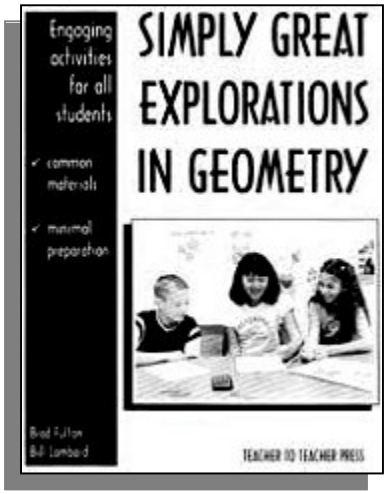
Students don't even think they are doing math sometimes because these activities are so fun and engaging, but they are developing rich and valuable number sense as they explore these eleven creative activities.



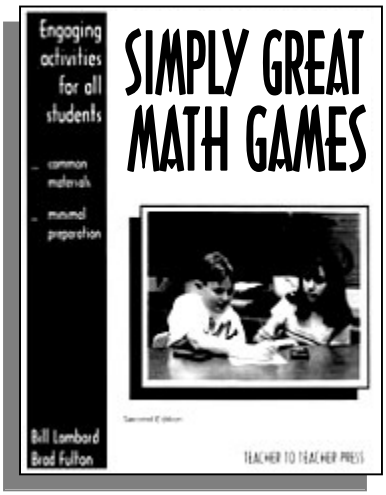
Our first book is still one of our most popular. Every teacher we talk to who has tried this approach to functions has been amazed at what their students have learned and accomplished. Over 150 pages of multiple representations of functions cover such concepts as slope, intercept, and function notation. Even elementary students have developed an understanding of functions with this book.



Exponents will finally make sense to your students after they participate in the unique activities found in this book. Both positive and negative exponents are demonstrated conceptually. Your students will even be able to explain *why* $n^0 = 1$.



Over one dozen geometry activities will excite your students as they discover the connections between geometry and fractions, decimals, percents, and even algebra. Area formulas, angle measurement, polygon attributes, vocabulary, and construction are covered.



A dozen engaging and educational games await you and your students in this creative and highly adaptable book. You'll find games that reinforce basic operations with whole numbers, fractions, decimals, and integers as well as algebraic skills. Game masters will serve a spectrum of grade levels and skill levels. Your students will beg for more!

Download *free* sample chapters at our website:

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