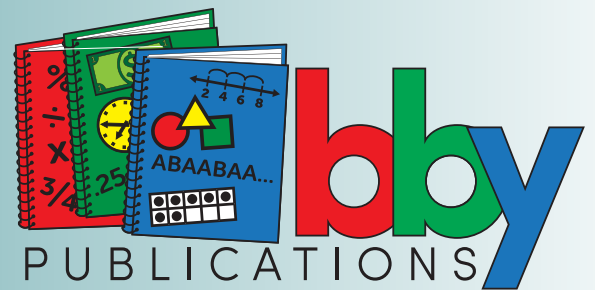




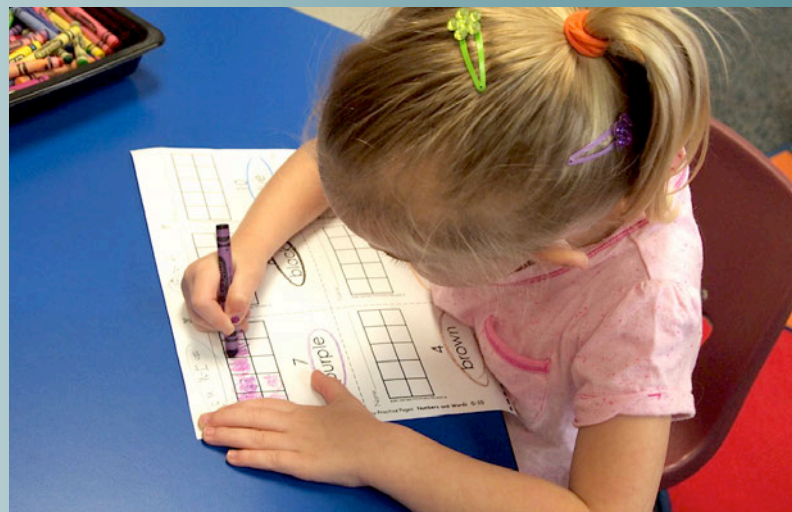
Discover how visual models can improve mathematical understanding and recall

CATALOG

- K thru 5 Math resources to supplement any curriculum
 - Online shopping
 - Professional Development



The **UNIVERSITY of
WEST ALABAMA**



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www.bbypublications.com

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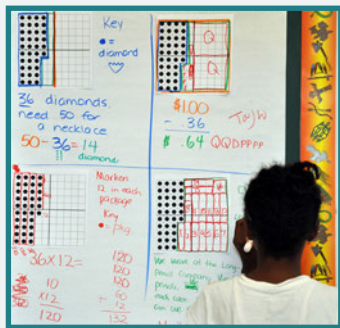
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All of bby at UWA's professional development opportunities can strengthen practical classroom application of individual state standards, district standards, and the Common Core State Standards for Mathematics, while offering intervention strategies and differentiated instruction ideas. In addition, time with the consultants helps in planning, assessing and developing powerful, meaningful classroom routines, while increasing personal depth of knowledge and engaging higher order thinking.

To schedule professional development for your school or to discuss customized professional development, contact us at **205-652-5406** or at **bbypublications@uwa.edu** For a complete description of the all PD including the ones below, please visit our website at **www.bbypublications.com**.

Reading and Writing the Language of Numbers®

In this PD, teachers will experience personal growth in number sense, number operations and algebraic thinking/reasoning. They will use ten, twenty, and hundred grids for developing number sense and creating connections among strands of mathematical content.



What's My Place? What's My Value?®

During this PD, teachers will explore the value of using two-dimensional visual models to develop a working comprehension and understanding of the base-ten place value system. They will also be coached in effective methods of communicating and proving solutions and strategies for illustrating, solving and proving word problems.

Number Sense for Pre-Kindergarten

This workshop can help teachers with strategies for developing number fluency and concepts for number operation in a play-based learning environment.

Through hands-on experience, teachers will practice strategies for effectively integrating grid-use into daily meeting activities.

Fraction Bait® & Fraction Boot Camp

This workshop can help teachers develop an understanding of the importance of identifying the whole and maintaining the same whole when operating with, ordering, and comparing fractions. Teachers will see how visual models, such as number lines, T-charts and rectangular arrays, can help students understand fractions.



Time Bait®

Teachers will be provided with opportunities for growth in their knowledge of concepts related to measurement, problem-solving, algebraic thinking, reasoning, estimation, geometry, data collection/analysis, and number/number operations.

Money Bait®

In this PD, teachers will develop strategies for connecting fractions, decimals and percents with the same model. They will learn strategies for successfully counting money including using a hundred-grid as a model.



Shape Bait®

In this workshop, teachers will develop the academic language of 2-D geometry, explore concepts of symmetry (line and rotational), compare and contrast attributes of 2-D shapes, and much more.

3-D Shape Bait®

During this PD, teachers will explore the relationships between 2-D and 3-D representations while practicing decomposing and recomposing.

Multiplication & Division Fact Bait®

During this PD, teachers will explore strategies for teaching basic multiplication and division facts through 100. Teachers will learn how to build understanding of

the relationship between multiplication and division facts using visual models as proofs to demonstrate thinking and understanding, therefore, increasing fact fluency.

Build your Own Professional Development

bby Publications recognizes the strength in developing professional development modules that best fit the needs of your district, school, and/or an individual teacher. Every district, school and/or individual teacher has a unique 'data story' that should be used in developing powerful professional development. Through our customized services, we will work with your team to target your specific needs.

bby SERVICES

Professional Development

bby Publications offers PD on specific topics, such as Multiplication/Division, Basic Facts, Fractions/Decimals/ Percents, Data Analysis and Probability, Money and Decimals, Algebraic Thinking, or we can design customized PD to fit your needs.

Classroom Demonstrations

bby Publications will come to your classroom and demonstrate effective strategies for teaching mathematics with any standards. Teachers love to watch their children in action with another teacher. They also appreciate seeing the mathematics and questioning techniques in action.

Consultations

bby Publications offers different types of consulting to fit your needs.

Combination School Workshop/Consultation combine Demonstration Lessons in classrooms during the school day, followed by a 2-3 hour seminar with the

teachers. This allows the teachers and our consultants the opportunity to develop a rapport and working relationship on which to build.

District Consultations involve a meeting between our consultants and a district representative group. This group would include several of your administrators and/or teacher representatives, such as a district math curriculum committee or 1-2 teachers from each of your schools. Beforehand, you will provide us with information about current adoptions, current practices, data (such as test scores), curriculum maps or guides, and any other helpful information. Based upon a review of this information, we will suggest a starting point for long-term systemic change in the way mathematics is taught and learned in your district.



Individual Teacher or Small Group Consultations can be provided in many formats. If teachers of some grade levels are experiencing more difficulties than others, we can work with individuals or single grade-levels, as needed. If your school is in the middle of systemic change, we can work with new staff members to start their journey.

Development of Internal Leadership is an option for customers. Our consultants recognize the appropriate time to develop internal leadership within a school or district and can help develop a successful model for using math coaches. The math coaches work in sessions with our consultants to develop their leadership skills. Then, our consultants work primarily through the math coaches.

Standards and Long-Range Planning

Our consultants come to your school/district and guide your staff through the process of aligning your existing curricula with your standards. As former classroom teachers, our consultants are attuned to the reality of improving test scores. As we work with your staff, we will continue to view the alignment both vertically across the grade levels and horizontally within the grade levels to ensure concepts and teaching strategies are linked in a spiraling effect. Because systemic change takes time, we will work together to create a unique plan that is reflective of your school and its goals.



Needs Assessment

If your district or school is looking for a new beginning in professional development, we can review your current materials and practices. Through this process, our consultants will guide you in the selection of curriculum pieces to fill the gaps and offer suggestions for future professional development to reach your long-range goals.

Coaching

During a Coaching session, your teachers present a lesson using tools and/or strategies explored in a bby Professional Development session. The lesson is followed by a debriefing session where the consultant shares celebrations and suggestions. The feedback remains private between the consultant and the teacher. In addition to verbal feedback, the teacher is provided with written notes. Coaching can be offered in both on-site and virtual formats.

Math Nights

Many of the schools schedule a Math Night for children, parents, and other interested people. We will work with you to choose a math topic that is a perfect match for your students and their guests.



bby CO-FOUNDERS

bby Publications at The University of West Alabama would like to thank our co-founders and authors, **Debby Head** and **Libby Pollett**, who have given of their time and talents to help cultivate the mathematical minds of educators and children through the development of a plethora of resources for teaching and learning mathematics.

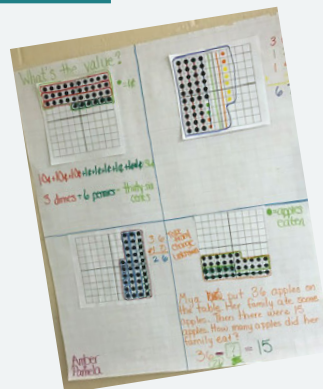
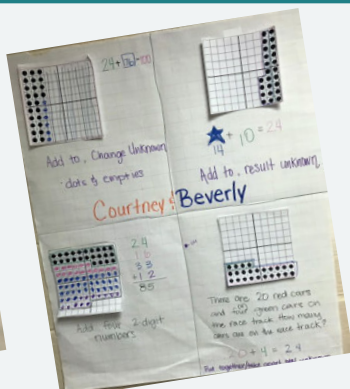
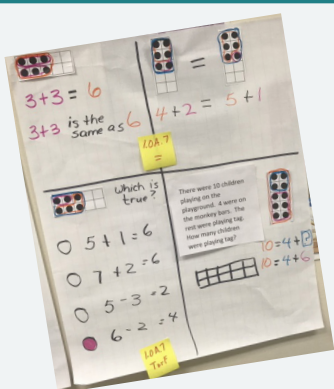
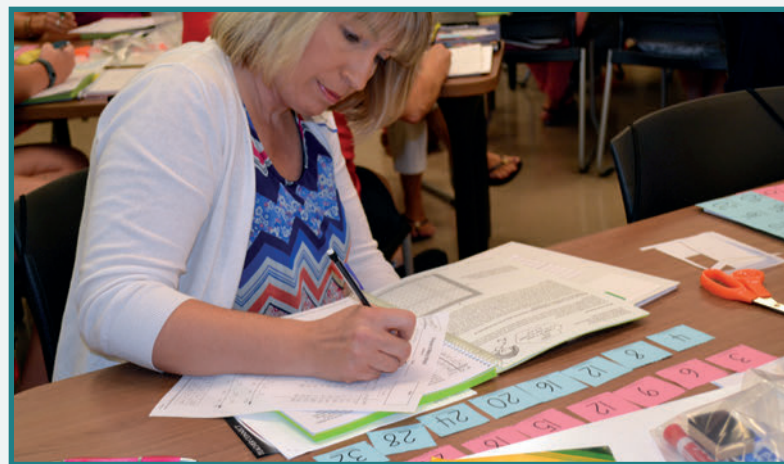
They are known for developing short, enticing routines that provide rich explorations in geometry, place value, time, money and numbers. Their high-quality work, time commitment, and dedication continue to be invaluable.

Because of their critical and creative thinking, bby Publications at UWA continues to develop quality resources for educators.



Libby Pollett

Debby Head



NUMBER LITERACY

What's My Place? What's My Value?®

What's My Place? What's My Value? is an interactive classroom display that uses visual models and numbers to help your children develop concepts related to place value. This 10-minute, large group routine provides repeated opportunities for your children to develop an understanding of the magnitude, flexibility and beauty of the base ten system. Each place value kit contains a teaching manual, blackline masters, and coated posters to cut apart for demonstration pieces.

Many bby Practice Pages are a wonderful addition for **What's My Place? What's My Value?** The same 100-grid is used when exploring word problems, making change from \$1.00, fraction/decimal/percent conversions and more.

A supplemental **What's My Place? What's My Value? Backdrop Display Kit** has been custom designed for use with both primary and intermediate sets. Each display kit contains black felt display fabric, self-sticking dots, and bright yellow digit-pouches.

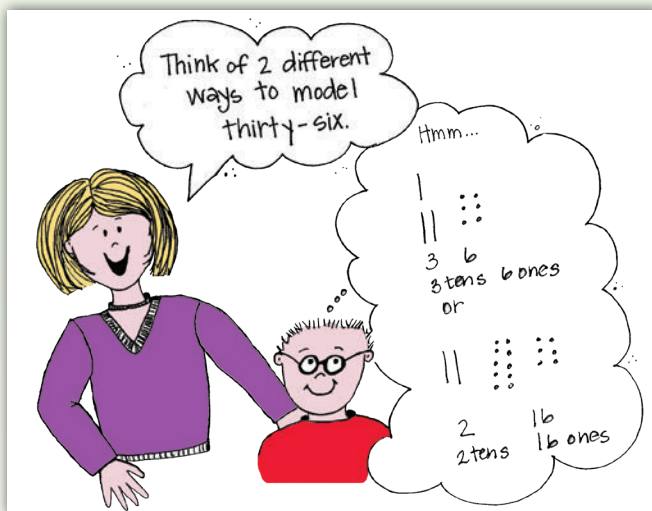


Primary #NLDL02P | \$36 | Grades K-6

Can be used by primary students to master:

- standard, expanded and word forms
- counting backwards by ones and in groups
- adding, subtracting, multiplying and dividing
- arranging numbers on a number line
- comparing values and showing relationship
- exploring the pattern of place value
- composing and decomposing numbers
- one to one correspondence
- subitizing

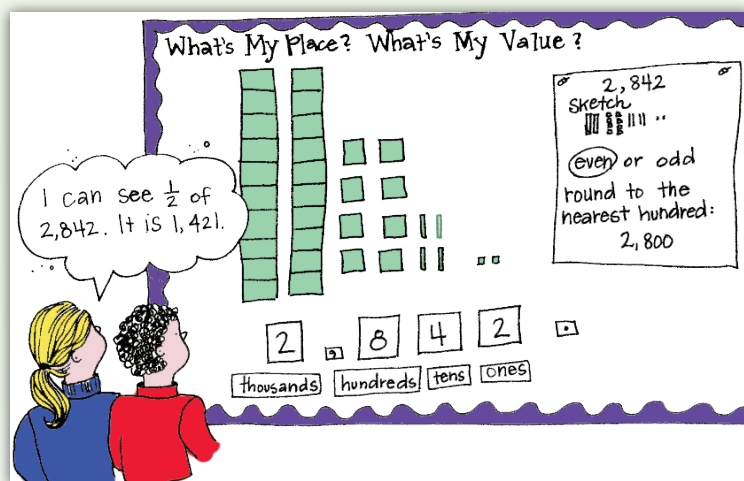
Primary Backdrop Display Kit #XMVIO1 | \$40



Intermediate #NLDL02I | \$41 | Grades 3 & up

Encourages intermediate students to demonstrate and master place value concepts using large and very small quantities. Because the decimal is mobile, using this system allows exploration of the versatility and importance of the place value system. Teachers will find it easy to model:

- addition, subtraction, multiplication and division of whole and decimal numbers
- multiplication and division of multi-digit numbers
- averaging, doubling and halving
- the relationship between fractions and decimals
- using numbers to describe scientific notation
- rounding
- comparing values
- composing and decomposing values



Intermediate Backdrop Display Kit #XMVIO2 | \$42

Reading and Writing The Language of Numbers®

#NLDL01 | \$60 | Grades K-6

Reading and Writing The Language of Numbers is a daily routine that draws upon the child's ability to think visually by using grids and dots to form visual images of mathematical concepts and processes. Appropriate for grades K and higher, this large group routine helps teachers model the correct use of the written language of mathematics in a constructive, visual context. This 10-minute routine is effective for use with primary and intermediate learners, English speakers and non-English speakers, and children with special learning problems needing visual support. This 320-page book contains:

- practical directions for implementation at all grade levels
- reproducible, demonstration blackline masters for large group displays
- teaching suggestions

- reproducible, demonstration blackline masters for individual work logs and journaling
- practical, teacher-tested methods for monitoring growth

Use this easy routine to:

- introduce new concepts
- reinforce basic concepts
- add meaning to traditional number sentences
- be a source of assessment possibilities
- add rigor for your advanced students
- make word problems more accessible to your children with the visual support given
- provide practice for those who need to "see" a concept
- individualize to meet the needs of your children
- make your standards come to life



I CAN SEE IT! Fact Fluency Flash Cards®

Fact Fluency Flash Cards use five-, ten-, and twenty grids to help students develop fluent recall of basic mathematical facts in addition, subtraction, multiplication, and division.

Traditional Card Decks | \$30 per package

- 2-sided with the fact on one side and the answer with grid on the other
- 2 decks per package

Item #	Grade	Description
FFC01	K-1	Fluency to Five
FFC02	K-2	Addition & Subtraction 6-10
FFC03	1-4	Addition & Subtraction 11-20
FFC04	3-4	Multiplication through 100
FFC05	3-4	Division through 100

Teacher Set | \$10 per set

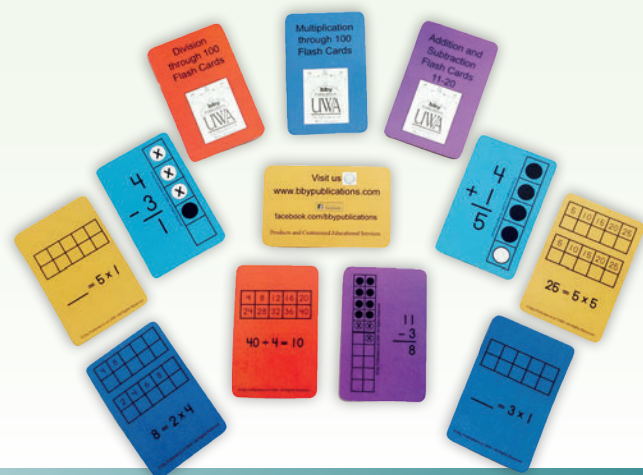
- 2-sided with the fact on one side and the answer with grid on the other
- Printed on cardstock
- Large enough for use in whole group settings (8" x 5.5")

Item #	Grade	Description
FFCTS01	K-1	Fluency to Five
FFCTS02	K-2	Addition & Subtraction 6-10
FFCTS03	1-4	Addition & Subtraction 11-20
FFCTS04	3-4	Multiplication through 100
FFCTS05	3-4	Division through 100

Classroom Sets | \$10 per package

- 1 sided with fact for student practice
- Printed on cardstock with cut lines
- Great for use in small groups and/or centers

Item #	Grade	Description
FFCCS01	K-1	Fluency to Five
FFCCS02	K-2	Addition & Subtraction 6-10
FFCCS03	1-4	Addition & Subtraction 11-20
FFCCS04	3-4	Multiplication through 100
FFCCS05	3-4	Division through 100



CURIOSITY BAIT



Curiosity Bait makes learning exciting for students and teachers. It promotes higher-level thinking and increases general knowledge with minimal teacher preparation.

With the **Curiosity Bait Card Holder**, a mystery pattern is “dangled,” revealing one clue each day for a month. Children will team together as a community of learners to “unlock” the mystery before the month’s end, perhaps prompting research

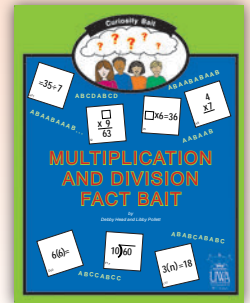
on their parts. Different patterns keep the learning lively.

Each book contains ready-to-laminate pattern cards, pattern suggestions, blackline masters, and suggestions for journaling and other extensions. The **Curiosity Bait Card Holder** is sold separately.

Multiplication & Division Fact Bait® #CBDLO8 | \$50 | Grades 3 & up

In this 10-minute daily routine, students will confidently and competently:

- explore the basic multiplication and division facts through 100
- understand the relationship between multiplication and division facts
- increase their fact fluency

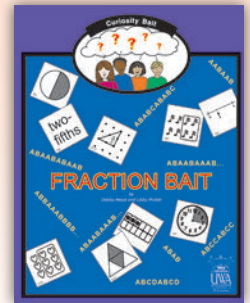
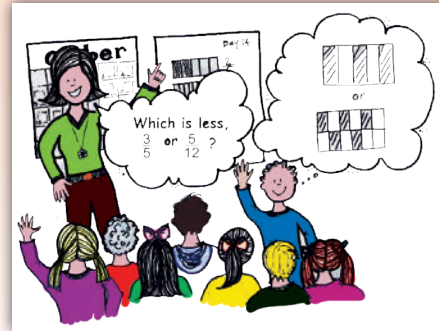


- experience visual models as proofs to demonstrate their thinking and understanding

Fraction Bait® #CBDLO7 | \$50 | Grades 1 & up

Will challenge students to:

- develop fraction intuitions and estimation skills
- think about fractions as parts and wholes
- model fractions using 2-D and 3-D shapes and lines
- locate and place fractions on a number line
- rename fractions as equivalents
- compare fractions
- decompose fractions
- add, subtract, multiply, and divide fractions
- solve for unknowns in all positions

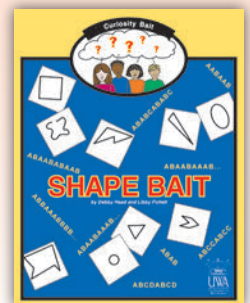
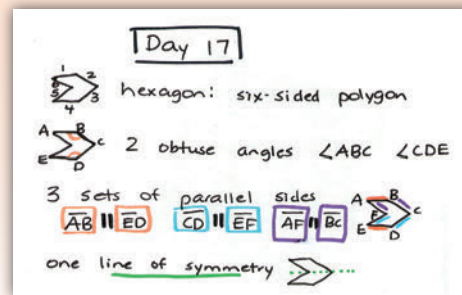


- recognize and generalize algebraic patterns
- work with improper fractions and mixed numbers

Shape Bait® #CBDLO2 | \$50 | Grades K-6

This book consists of 72 pattern cards, each with a different plane, geometric figure on it. The 24 patterns range from simple to complex, making **Shape Bait** applicable to all grades. Your children will investigate:

- reflective and rotational symmetry
- parallel and perpendicular line segments
- measurement of line segments and angles
- congruency and area
- various kinds of polygons



- open and closed figures
- concave and convex polygons

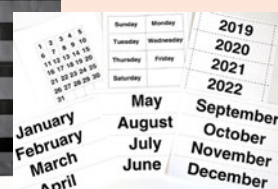
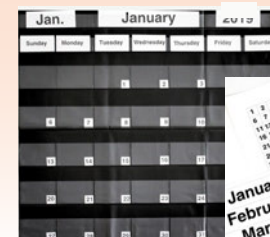
Curiosity Bait Card Holder®

#XMPE01 | \$25

This black vinyl holder displays the “mystery of the month”. Designed to work with all sets of **Curiosity Bait**.

It measures 30.5” x 25.5” and includes ready-to-laminate year,

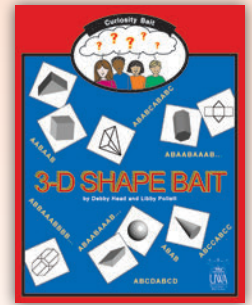
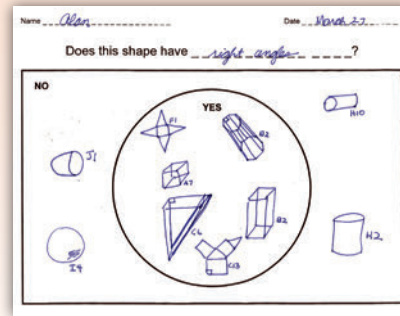
month and date cards. This holder keeps daily Curiosity Bait activities organized and displayed.



3-D Shape Bait® #CBDLO6 | \$50 | Grades K-6

This book contains 96 pattern cards and has representation of 3-D figures. The representation might look 3-D (solid or wire frame) or 2-D (net). Blacklines are provided so children can construct their own models to match the illustration on the Pattern Card. An additional benefit is that **3-D Shape Bait** has been designed to match The Math Learning Center's geoblocks (optional). Here are a few of the concepts children will be encouraged to explore:

- faces, edges and vertices
- patterns, relationships, and algebraic thinking
- surface area and volume
- comparing and contrasting attributes
- 2-D representations of 3-D shapes



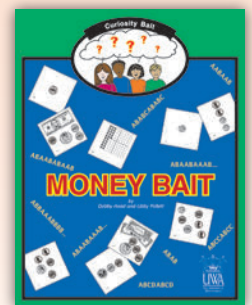
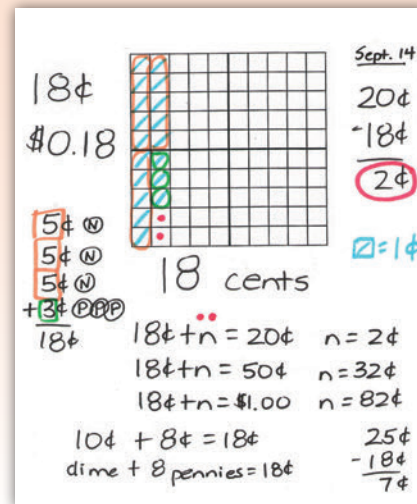
- planes of symmetry, centers of rotation, and more
- cylinders, cones, pyramids, spheres, hemispheres, triangular, rectangular, hexagonal, and octagonal prisms

Money Bait® #CBDLO3 | \$50 | Grades K-5

Money Bait includes a collection of 175 pattern cards that feature pennies, nickels, dimes, quarters, and half-dollars. It also includes one, five and ten dollar bills. The coins and bills are arranged in a variety of combinations and orientations. The Total Daily Value Grid encourages the use of the 100-grid as a dollar-grid, visually showing five squares to represent a nickel, ten to represent a dime, etc. The forty suggested patterns will challenge learners of all ages.

Children will grow in their understanding of:

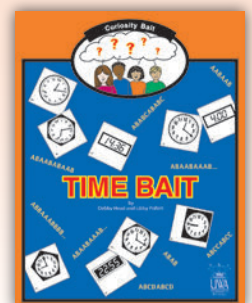
- coin recognition and value
- making change
- different combinations for the same value



Time Bait® #CBDLO5 | \$50 | Grades K-6

Time Bait includes a set of 72 pattern cards that helps children understand ways to measure and keep track of time. Using Time Bait will result in rich conversations with children of all ages about such topics as:

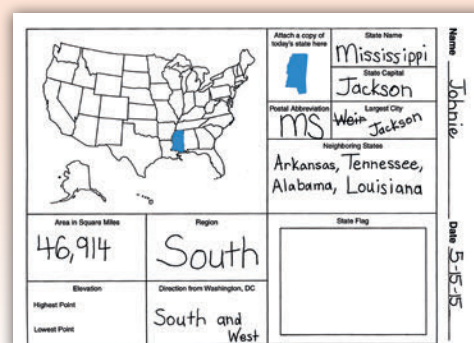
- digital and analog clocks
- AM and PM
- military time, elapsed time and time zones
- times to the hour, half hour, quarter hour and minute



State Bait® #CBDLO1 | \$30 | Grades 2 & up

State Bait boasts a set of 50 pattern cards, each showing the outline of a different state boundary. It brings to life a variety of topics as patterns explore:

- geographical location
- US history
- time zones
- alphabetical order
- abbreviations
- syllabication



Practice Pages are designed to make math easy and meaningful for students of all ages. This collection of blackline masters and teaching suggestions increases children's math skills and bolsters test scores. The exercises challenge children to think critically as they prepare for standardized testing. Most exercises are accompanied by a 10-grid, 20-grid or 100-grid to serve as a graphic organizer upon which students can show their thinking.

Each book has four sections of varying difficulty, a letter to parents in both English and Spanish, answer keys, teaching tips, 80 reproducible pages of practice, and student work

samples. Teachers have found them to be versatile tools for:

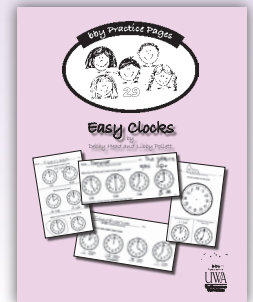
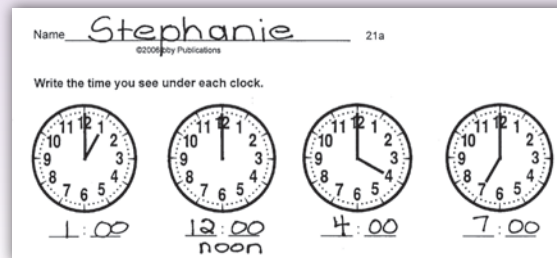
- interventions
- quizzes and assessments
- daily practice exercises
- differentiated instruction
- seatwork
- tutoring aids
- test preparation
- writing topics
- complementing existing math programs

TELLING TIME

Easy Clocks®

#PPDL29 | \$37 | Grades K-2

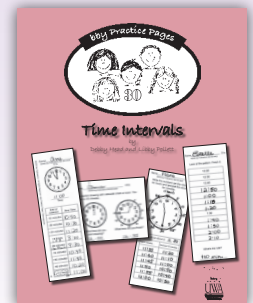
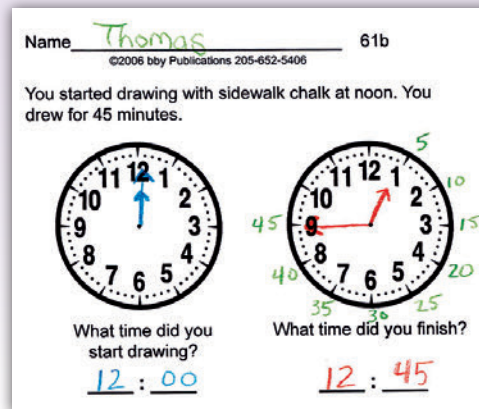
- drawing clock hands
- placing numbers on a clock face
- clock reading to the hour, half-hour and quarter-hour
- patterning and algebraic reasoning



Time Intervals®

#PPDL30 | \$37 | Grades 2-4

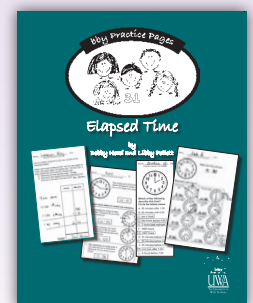
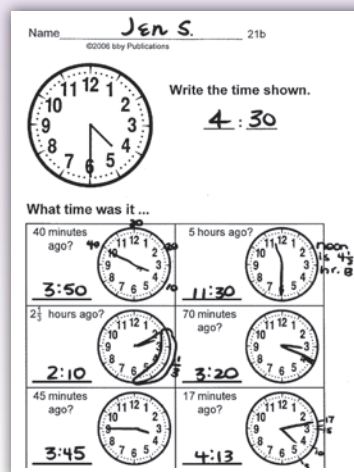
- easy intervals of time to add or subtract
- developing fluency with time intervals
- single-step word problems which encourage different strategies
- building confidence in clock reading



Elapsed Time®

#PPDL31 | \$37 | Grades 4-6

- giving purpose (with multi-step word problems) and structure (by providing a graphic organizer to encourage step-by-step thinking)
- developing fluency in naming times more than one way

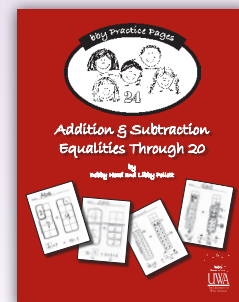
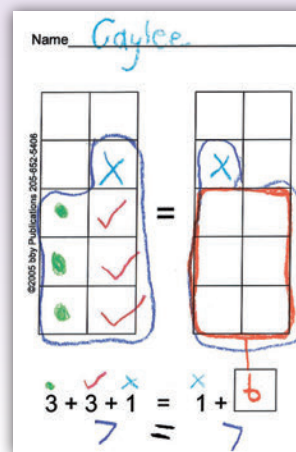


EQUIVALENTS

Addition and Subtraction Equalities Through 20[©]

#PPDL24 | \$37 | Grades 1-3

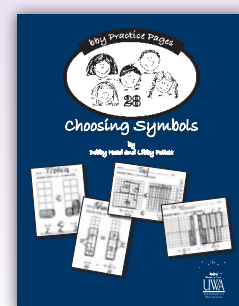
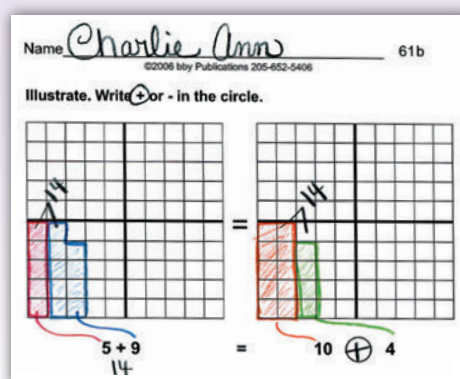
- grids for balancing an equation containing two expressions
- estimation & reasoning practice with pictures for proof
- representations that lead to understanding how a child is thinking
- algebraic thinking on every page



Choosing Symbols[©]

#PPDL28 | \$37 | Grades 1-6

- facts to 10 to simple multiplication and division
- making comparing quantities easy to see
- promoting algebraic reasoning
- interventions and differentiated instruction

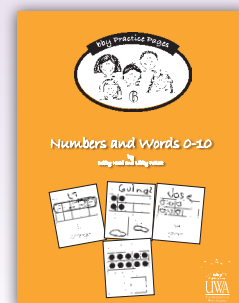
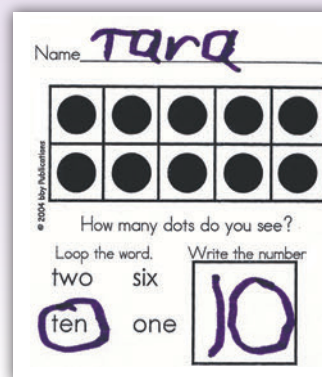


NUMBER RECOGNITION & NUMBER SENSE

Numbers & Words 0-10[©]

#PPDL06 | \$37 | Grades K-1

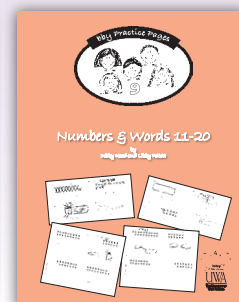
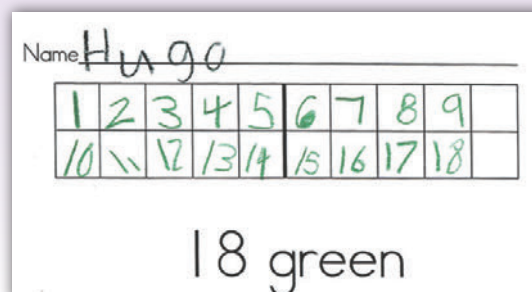
- number and color words
- reasoning and proof
- one-to-one correspondence
- numeral recognition



Numbers & Words 11-20[©]

#PPDL09 | \$37 | Grades K-1

- number and color words
- representing "teen" numbers
- connecting the meaning of the number to quantity
- numeral recognition



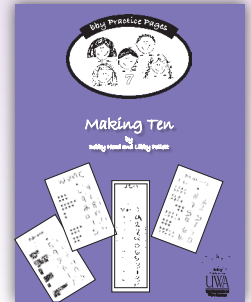
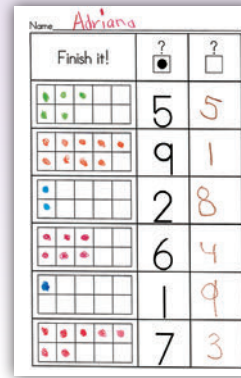
EASY-TO-USE • EASY-TO-ORDER • NO MINIMUM ORDER

NUMBER RECOGNITION & NUMBER SENSE

Making Ten®

#PPDL07 | \$37 | Grades K-1

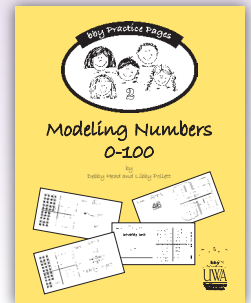
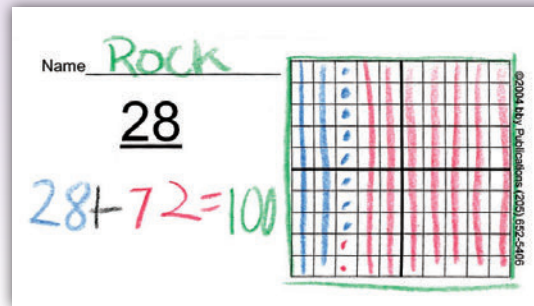
- building and then recalling combinations for ten on a 10-grid
- memorizing easily fact families for 10 by visualizing how many squares on a “pretend” grid are full/empty



Modeling Numbers 0-100®

#PPDL02 | \$37 | Grades 1-3

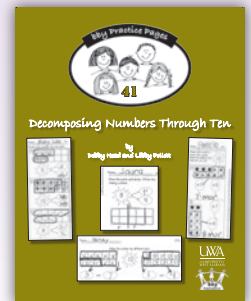
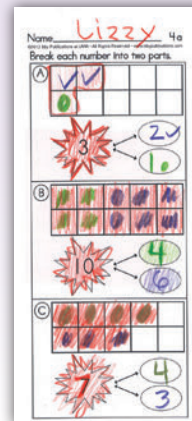
- challenging children to find compatible numbers totaling 100, such as 62 and 38
- developing mental images to strengthen each student's ability to perform mental math



Decomposing Numbers Through Ten®

#PPDL41 | \$37 | Grades K-1

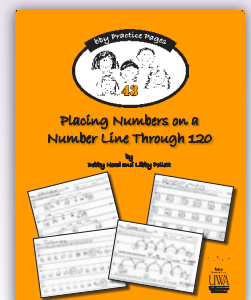
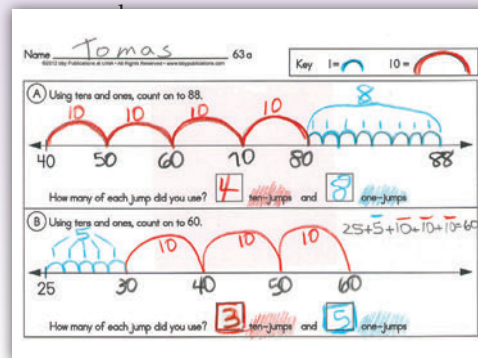
- understanding driven by algebraic reasoning
- showing relationships with models to prove models
- modeling quantities within an organized structure
- repeated experiences to foster mental math



Placing Numbers on a Number Line Through 120®

#PPDL43 | \$37 | Grades 1-2

- using a number line as an effective math tool
- mental math skills
- number relationships, relative positions, quantities
- counting forward and backward by tens



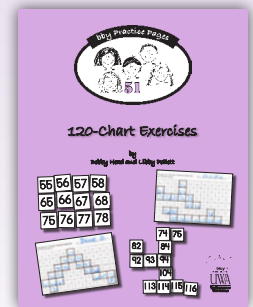
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NUMBER RECOGNITION & NUMBER SENSE

120-Chart Exercises[®] #PPDL51 | \$37 | Grades K-1

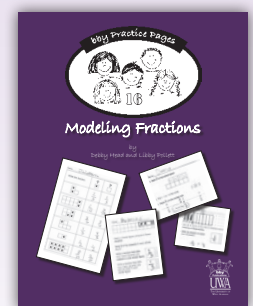
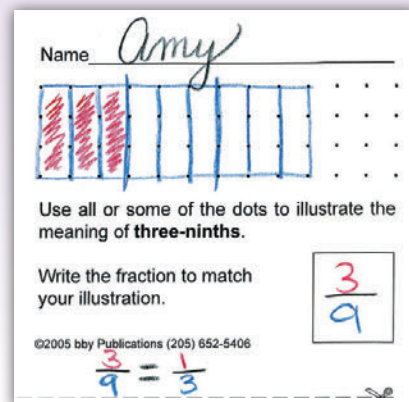
- provides opportunities for children to strengthen their number sense by using the structure of the 120-chart in a problem-solving setting
- relationships such as greater than, less than, ten more, ten less, one more and one less become evident using the 120-chart
- develops the ability to use the clues of given numbers to determine the placement of other numbers
- number sense flourishes as children develop and use shortcuts based on understanding of counting patterns



FRACTIONS, DECIMALS & PERCENTS

Modeling Fractions[®] #PPDL16 | \$37 | Grades 3-5

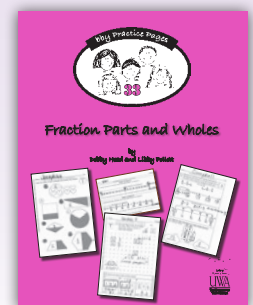
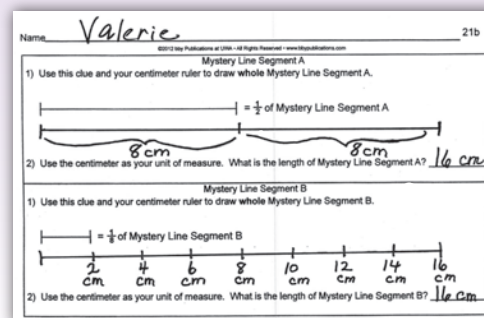
- justifying placement of fractions on a numberline
- exploring relationships between wholes and parts of the same whole
- providing experiences with fractional parts of different wholes
- using models & images to compare parts of the same whole
- providing a foundation for the development of advanced fraction intuitions



Fraction Parts and Wholes[®]

#PPDL33 | \$37 | Grades 3-5

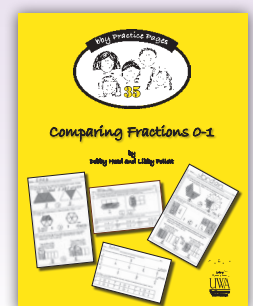
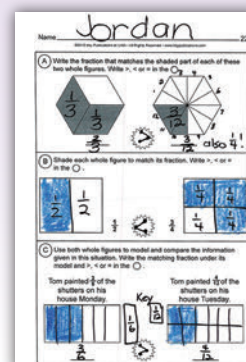
- changing the value of the whole
- attaching graphic meaning to the numerator and denominator
- connecting meaning to the importance of the whole
- modeling and representing part to whole relationships
- using what they know to figure out what they do not know



Comparing Fractions 0-1[®]

#PPDL35 | \$37 | Grades 3-5

- using visual models and spatial skills
- using common benchmarks
- reasoning, communicating, and proving their thoughts
- recalling mental images



PRODUCT GRADE ALIGNMENT

COMMON CORE ALIGNMENT – DOMAINS

FOR REFERENCE IF NOT USING COMMON
CORE ALIGNMENT FOR MATHEMATICS

CC Counting and Cardinality
NBT Number and Operations in Base Ten
MD Measurement and Data

OA Operations and Algebraic Thinking
NF Number and Operations – Fractions
G Geometry

PRODUCT NUMBER	PRODUCT DESCRIPTION	PAGE	PRODUCT GRADE ALIGNMENT							COMMON CORE ALIGNMENT						
			K	1	2	3	4	5	6+	CC	OA	NBT	NF	MD	G	
CURSIVITY BAITS	CBDL01	State Bait	10			X	X	X	X	X		3				
	CBDL02	Shape Bait	9	X	X	X	X	X	X	X		3		K-4	K-5	
	CBDL03	Money Bait	10	X	X	X	X	X	X	X		3	5	4	2	
	CBDL05	Time Bait	10	X	X	X	X	X	X	X		3			1-3	2
	CBDL06	3-D Shape Bait	10	X	X	X	X	X	X	X		3			K,3,5	K-2
	CBDL07	Fraction Bait	9		X	X	X	X	X	X		3		3-5		1-3
	CBDL08	Multiplication & Division Fact Bait	9				X	X	X	X		3-5	3-5		3-5	
NUMBER LITERACY	NLDL01	Reading and Writing the Language of Numbers	8	X	X	X	X	X	X	X		K	K-5	K-5	3-5	
	NLDL02P	What's My Place? What's My Value? Primary (poster with pieces & book)	7	X	X	X						3-5	3-5	3-5		
AGES	NLDL02I	What's My Place? What's My Value? Intermediate (poster with pieces & book)	7				X	X	X	X				2	2	
	XMVI01	What's My Place? What's My Value? Primary (backdrop display kit)	7	X	X	X						K		1		
	XMVI02	What's My Place? What's My Value? Intermediate (backdrop display kit)	7				X	X	X	X				2	2	
	PPDL01	Counting Mixed Coins	26		X	X	X						K-1			
	PPDL02	Modeling Numbers 0-100	13		X	X	X						K-1			
	PPDL03	Choosing Coins	26			X	X					K		K		
	PPDL04	Addition Facts 0-10	20	X	X	X							K-1			
	PPDL05	Subtraction Facts 0-10	21	X	X	X							K			
	PPDL06	Numbers & Words 0-10	12	X	X							K	K-1			
	PPDL07	Making Ten	13	X	X	X							1-2	1		
PPDL08	Beginning Addition 0-10	20	X	X								1-2	1			
PPDL09	Numbers and Words 11-20	12	X										2		2	
PPDL10	Addition Facts 11-20	21		X	X	X	X	X				K				
PPDL11	Subtraction Facts 11-20	21		X	X	X	X	X					2-5			
PPDL12	Making Change Through \$1.00	26			X	X							2-5			
PPDL13	Beginning Subtraction 0-10	20	X	X										3		
PPDL14	2-Digit Addition through 100	22			X	X	X	X	X					4-5		
PPDL15	2-Digit Subtraction through 100	22			X	X	X	X	X					4		
PPDL16	Modeling Fractions	14				X	X	X	X			K-1				
PPDL17	Modeling Mixed Numbers and Improper Fractions	17					X	X	X	X		1-2				
PPDL18	Beginning Decimals, Fractions & Percents	19					X	X	X	X		2-3				
PPDL19	Addition & Subtraction Word Problems Through 10	24		X	X	X								4		
PPDL20	Addition & Subtraction Word Problems Through 20	24		X	X	X	X	X				K-2				
PPDL21	Addition & Subtraction Word Problems Through 100	24			X	X	X	X				1				
PPDL22	Estimating Fraction, Decimal & Percent Conversions	19							X	X			5			
PPDL23	Multiple Addends Through 20	22	X	X	X								5			
PPDL24	Addition and Subtraction Equalities Through 20	12		X	X	X							5			
PPDL25	Decimal Addition 0-1	19				X	X	X	X	X		1-3				
PPDL 26	Decimal Subtraction 0-1	19				X	X	X	X	X					1	

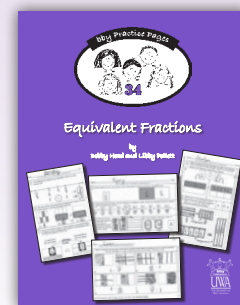
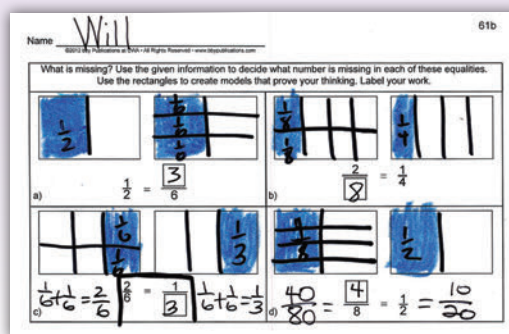
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FRACTIONS, DECIMALS & PERCENTS

Equivalent Fractions[©]

#PPDL34 | \$37 | Grades 3-5

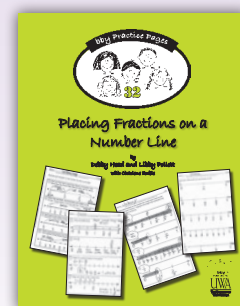
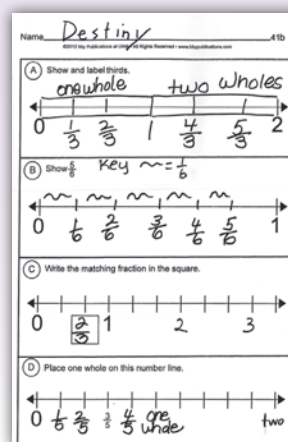
- exploring the big ideas of equivalent fractions
- using visual and numerical patterns
- using algebraic reasoning to generalize patterns
- using knowledge of multiplication by 10 and 100 to determine equivalencies
- making reasoning a lifelong skill



Placing Fractions on a Number Line[©]

#PPDL32 | \$37 | Grades 3-4

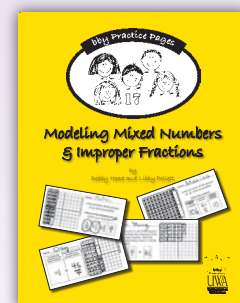
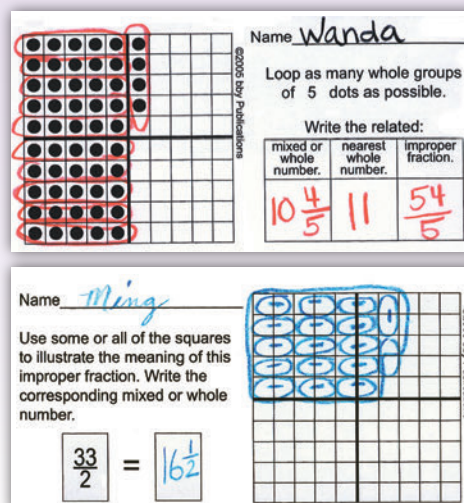
- understanding the meaning of the whole
- proving and communicating their ideas efficiently
- recalling number line from long term memory
- modeling and representing part to whole relationships



Modeling Mixed Numbers & Improper Fractions[©]

#PPDL17 | \$37 | Grades 4-6

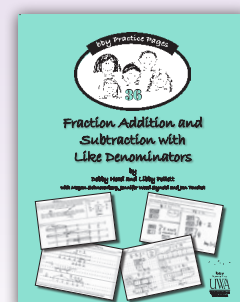
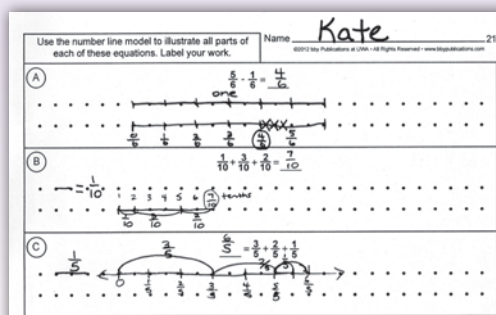
- develop number sense about differing views of fractions
- connect the operations of multiplication and division
- use representations on the 100-grid and a great story line to model conversions between improper fractions and mixed numbers
- round to the nearest whole number
- make conversions easy to see



Fraction Addition and Subtraction with Like Denominators[©]

#PPDL36 | \$37 | Grade 4

- finding the unknown in a variety of positions
- sharpening understanding of addition, subtraction, relationships and algebra
- recalling visual images



- using different models

FRACTIONS, DECIMALS & PERCENTS

Fraction Multiplication and Division with Like Denominators[©]

#PPDL37 | \$37 | Grades 4-5

- using area and linear models
- solving unknowns in a variety of positions
- recalling visual images to improve confidence
- using a timeless model that applies all levels of mathematics
- making keys to support solutions

Name: Mason Ray 1a

(A) Solve and illustrate the following two equations using the area model. Label your work.

a) $2(\frac{1}{3}) = \frac{2}{3}$

b) $\frac{1}{3} = 2 \cdot \frac{1}{6}$

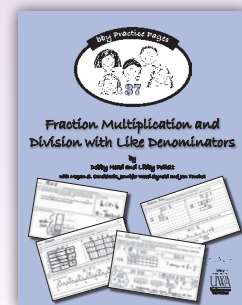
(B) Solve and illustrate the following equation using the number line model. Label your work.

$4 \times \frac{1}{3} = \frac{4}{3}$

$\frac{1}{3}$ of my whole

ONE whole

not third



Fraction Addition and Subtraction with Unlike Denominators[©]

#PPDL38 | \$37 | Grade 5

- exploring relationships between fraction addition and subtraction in a problem-solving setting
- using versatile models that are easily drawn
- recalling visual images based on understanding and experiences
- allowing higher-level thinking to occur naturally

Name: THAD 2b

(A) Draw an area model or a number line model to illustrate and prove the solution to this equation. Label your work.

$\frac{1}{5} = \frac{3}{15}$

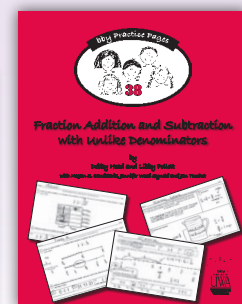
$\frac{8}{15} = \frac{1}{3} + \frac{1}{3}$

$\frac{1}{5} + \frac{1}{3} = \frac{8}{15}$

(B) Without creating an additional model, use your work from above to choose the following equations that are false, if any.

a) $\frac{1}{5} - \frac{1}{3} = \frac{1}{3}$ b) $\frac{1}{3} + \frac{2}{3} = \frac{13}{15}$ c) $\frac{1}{5} + \frac{1}{3} = \frac{2}{3}$ d) $\frac{2}{3} + \frac{1}{3} = \frac{11}{15}$

no way



Fraction Multiplication and Division with Unlike Denominators[©]

#PPDL39 | \$37 | Grades 5-6

- fostering higher-level thinking
- exploring relationships between fraction multiplication and division
- drawing uncomplicated rectangle and number line models showing accuracy

Name: Kate 52a

(A) Without solving, quickly choose which of these two expressions is between $\frac{1}{2}$ and $\frac{3}{4}$.

a) $\frac{3}{4} + \frac{1}{2}$ b) $\frac{1}{2} \div \frac{3}{4}$

(B) Illustrate and label your choice using a number line model or an area model. Write an equation to match.

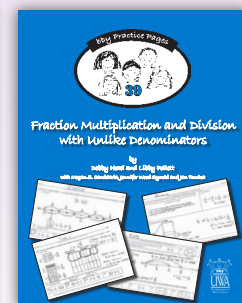
$\frac{1}{4} = \text{key}$

$\frac{1}{2}$ is only $\frac{2}{3}$ of the $\frac{3}{4}$ I need!

$\frac{1}{2} \div \frac{3}{4} = \frac{2}{3}$ of a group of $\frac{3}{4}$

(C) Which of the following expressions have the same value as the expression you chose to model?

a) $\frac{3}{2} \div \frac{1}{4}$ b) $\frac{3}{4} \div \frac{3}{2}$ c) $\frac{1}{4} \div \frac{3}{8}$ d) $\frac{1}{8} \div \frac{1}{4}$



- Justifying solutions to their reasoning

Fractions of a Set[©]

#PPDL27 | \$37 | Grades 3-6

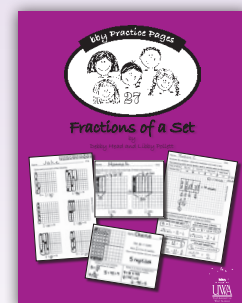
- explore how to determine $\frac{1}{2}$ of a group, such as $\frac{1}{2}$ of 46
- include multi-step word problems which provide real-life connections
- “solving for the unknown” make sense
- connect to the operations of multiplication/division
- use algebraic reasoning to work from part to whole
- develop reasoning skills through their personal representations

Name: Hannah 51b

Illustrate and compare the meanings of these expressions. Write $<$, $>$ or $=$ in each circle.

$\frac{5}{7}$ (35) $\frac{3}{4}$ (30)

$\frac{5}{8}$ (36) $\frac{3}{4}$ (30)



- encourage representing parts of a set with grid-illustrations

FRACTIONS, DECIMALS & PERCENTS

Decimal Addition 0-1[©]

#PPDL25 | \$37 | Grades 3-6

- horizontal and vertical equations, missing addends, tables and more
- solidifying personal understanding of decimal place value by changing the value of the grid from 100 to 1
- making connections to money
- practicing the use of a variable in decimal equations

Name Chip

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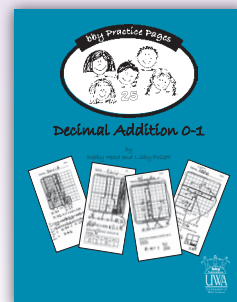
Key: The hundred-grid equals 100 pennies

$\$0.36 + \$0.28 + \$0.15 = \0.79

change from a dollar 0.21

Show the 3 coin(s) received as change.

quarter	dime	nickel	penny
0	2	0	1



Decimal Subtraction 0-1[©]

#PPDL26 | \$37 | Grades 3-6

- connect decimal subtraction with spending money
- solve for unknown (n)
- compare, remove or show the difference when subtracting
- provide solutions by illustrating values on a 100-grid with an assigned value of one

Name Deven

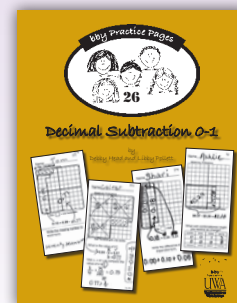
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Key: The hundred-grid equals 1

$0.71 - 0.53 = 0.18$

Write the missing number as a fraction.

$\frac{53}{100}$



Beginning Decimals, Fractions & Percents[©]

#PPDL18 | \$37 | Grades 4-6

- become fluent and flexible in the use of fraction, decimal and percent notations
- Use a 100-grid as a consistent image to demonstrate fractions, decimals and percents

Name Belle

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Key: The hundred-grid equals 1.

a. Illustrate 12% of the hundred-grid.

b. Write a matching decimal: 0.12

c. Place the decimal on this number line.

0.12 almost half of $\frac{1}{4}$

Name Mary Beth

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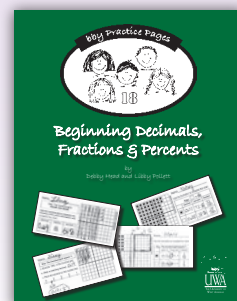
Use the illustration to complete this chart.

Key: The hundred-grid equals 1.

write % loop one fraction

$45\% > \frac{3}{4} = \frac{46}{100}$

$55\% > \frac{3}{4} = \frac{3}{4}$



Estimating Fraction, Decimal & Percent Conversions[©]

#PPDL22 | \$37 | Grades 5-8

- use the 100-grid to provide a consistent image that makes seeing fraction/decimal/percent relationships more accessible
- deepen the understanding of equalities
- students estimate with amazing accuracy
- strengthen the ability to convert mentally
- prove conversions through illustrations

Name Senaida S.

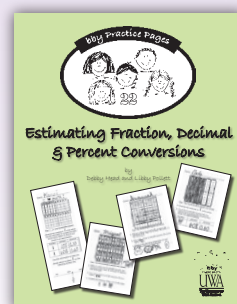
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Key: The hundred-grid equals one whole.

a. Illustrate the meaning of $\frac{1}{3}$ of the whole.

b. Count the hundredth-squares that you marked and complete the following chart using \approx for approximations.

percent	decimal	fraction
$\approx 33\%$	≈ 0.33	$\approx \frac{33}{100}$

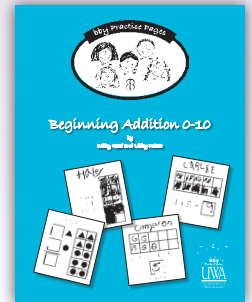
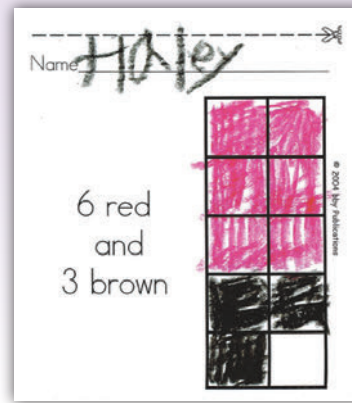


ADDITION & SUBTRACTION FLUENCY

Beginning Addition 0–10[®]

#PPDL08 | \$37 | Grades K–1

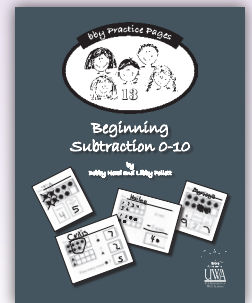
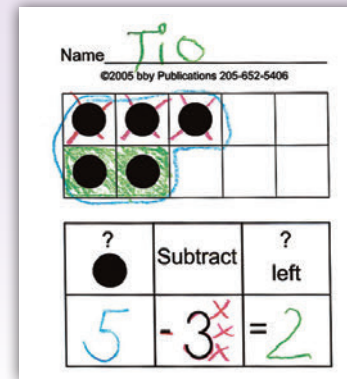
- developing personal strategies for finding sums
- using consistent models to help children make sense of numbers and symbols
- providing practice for both decoding and encoding



Beginning Subtraction 0–10[®]

#PPDL13 | \$37 | Grades K–1

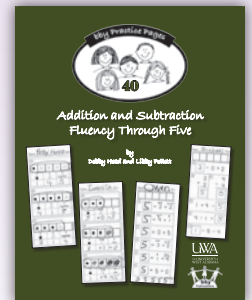
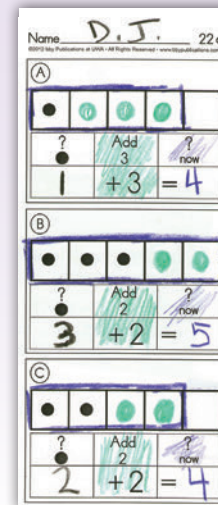
- encourage children to compare values as well as remove collections
- provide opportunities for young learners to develop personal understanding of the operation of subtraction by illustrating on a 10-grid
- promote number sense



Addition and Subtraction Fluency Through Five[®]

#PPDL40 | \$37 | Grade K

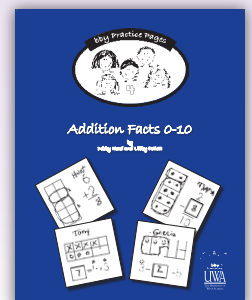
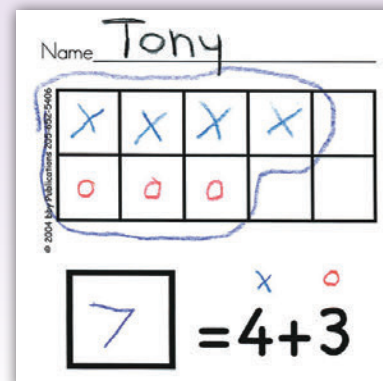
- decoding and encoding using grids
- recall from memory
- counting in sequence with meaning
- understanding relationships between counting numbers and quantities
- recognizing +, -, =



Addition Facts 0–10[®]

#PPDL04 | \$37 | Grades K–2

- children memorize basic addition facts to 10
- encourage students to communicate solutions through representations on 10-grids
- explore part/whole relationships
- make differentiating instruction easy

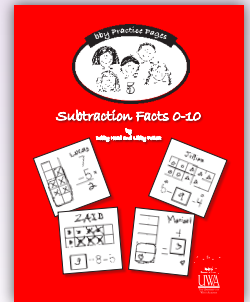
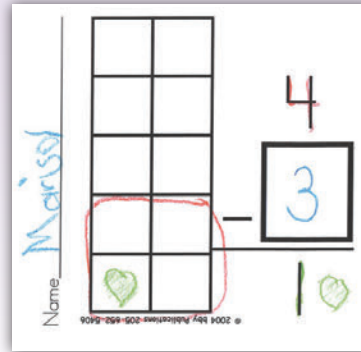


ADDITION & SUBTRACTION FLUENCY

Subtraction Facts 0–10[®]

#PPDL05 | \$37 | Grades K-2

- help develop fluency with basic subtraction facts to 10
- help make sense of subtraction by representing solutions on a 10-grid
- broaden understanding when children see several illustrations and have discussions about the same solution in a different way
- include advanced sections for algebraic reasoning

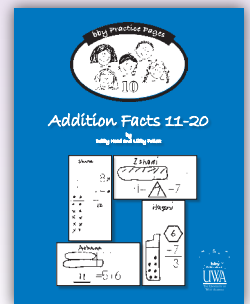
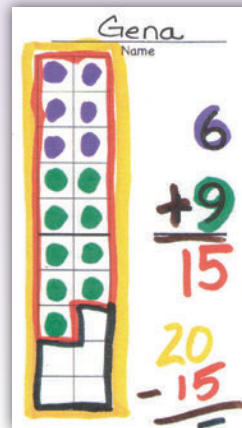


- relate the operation of addition to subtraction

Addition Facts 11–20[®]

#PPDL10 | \$37 | Grades 1-4

- understand addition facts 11-20 and commit them to memory as the grid-model representation proves the solution
- understand addition facts to 20
- use a 20-grid for illustrations to understand and prove equivalence
- think algebraically as they explore solutions using grids

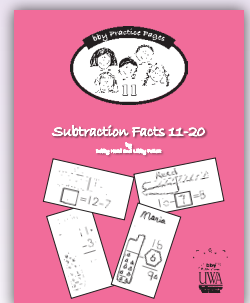
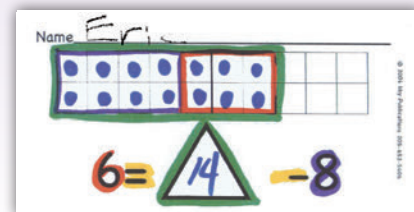
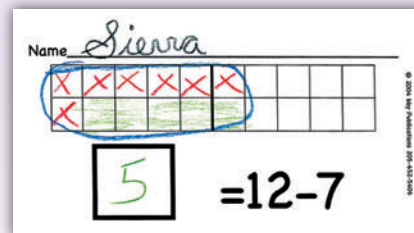


Subtraction Facts 11–20[®]

#PPDL11 | \$37 | Grades 1-4

Children's confidence will grow as they:

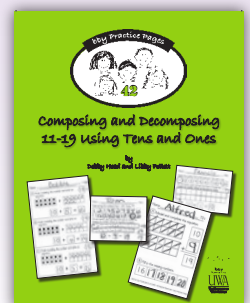
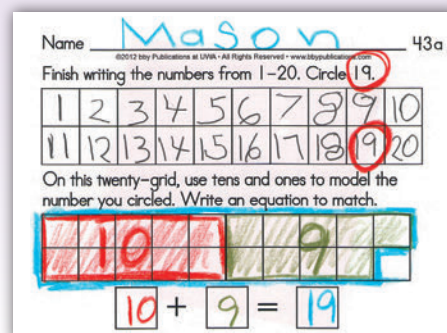
- use the accompanying 20-grid to represent all parts of the equation in a personal way
- make fewer mistakes because they see a proof in the picture
- find recalling subtraction facts to 20 easier than ever
- develop a keen understanding of balancing equations
- prove solutions on a 20-grid



Composing and Decomposing Using 11–19 Tens and Ones[®]

#PPDL42 | \$37 | Grades K-2

- exploring relationships between parts and wholes
- using one ten and some ones
- modeling quantities within an organized structure
- composing and decomposing numbers

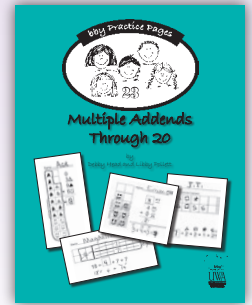
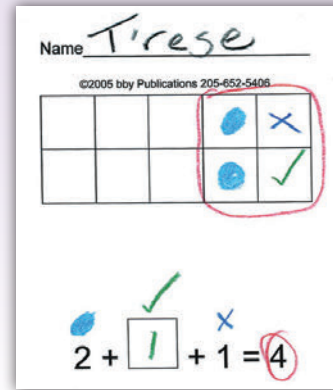


ADDITION & SUBTRACTION FLUENCY

Multiple Addends Through 20[©]

#PPDL23 | \$37 | Grades K-2

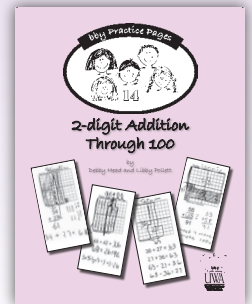
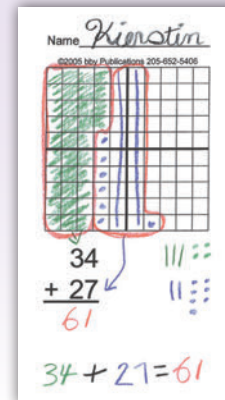
- students communicate solutions with symbols and/or color
- students make connections between their grid-models and types of equations through 10-grids and 20-grids are placed horizontally and vertically
- challenge students to practice thinking algebraically



2-digit Addition Through 100[©]

#PPDL14 | \$37 | Grades 2-5

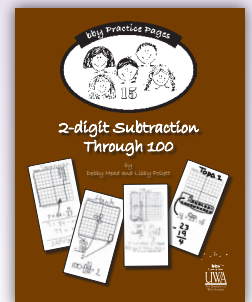
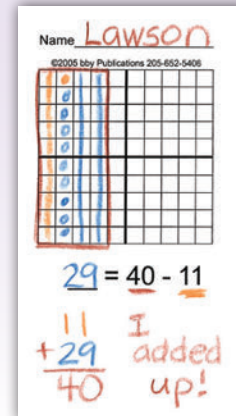
- 100-grids for illustrating algebraic reasoning and comparing addition methods
- opportunities with and without regrouping
- both vertical and horizontal equations included



2-digit Subtraction Through 100[©]

#PPDL15 | \$37 | Grades 2-5

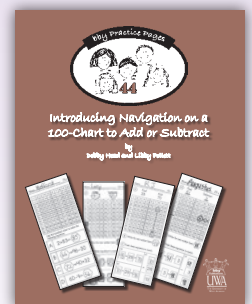
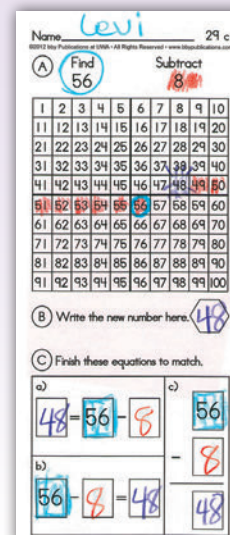
- the space provided for checking solutions with free-hand sketches and/or alternate strategies
- estimation skills sharpened through repeated explorations
- connections encouraged by writing word problems to match the given equation
- students developing strong algebraic reasoning skills



Introducing Navigation on a 100-Chart to Add or Subtract[©]

#PPDL44 | \$37 | Grades 1-3

- number sense as they discover patterns
- discovering the power of the structure and the numbers
- mental math skills as they navigate with the imagined 100-chart
- uses 100-chart with numbers as a thinking map for computations

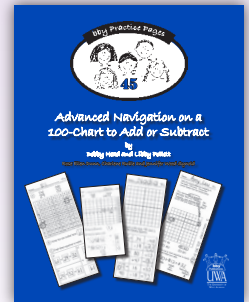
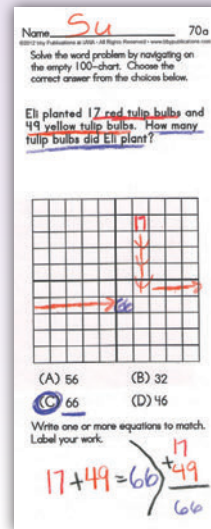


ADDITION & SUBTRACTION FLUENCY

Advanced Navigation on a 100-Chart to Add or Subtract[©]

#PPDL45 | \$37 | Grades 1-3

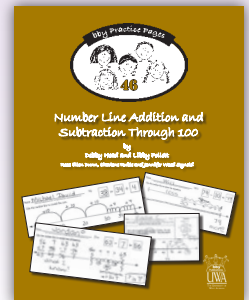
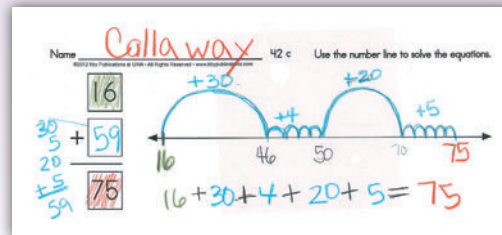
- discovering the power of the 100-chart as a computation tool
- using more complex numbers
- mental math skills as they navigate within the imagined 100-chart
- proving observations and computations
- solving word problems, proving with a model



Number Line Addition and Subtraction Through 100[©]

#PPDL46 | \$37 | Grades 1-5

- organizing thinking in a personal way
- evolving mental math skills by imagining number lines to think in intervals
- developing computation strategies that are driven algebraically

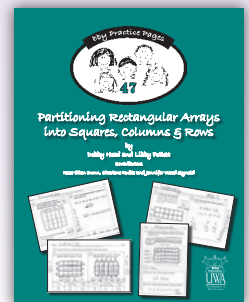
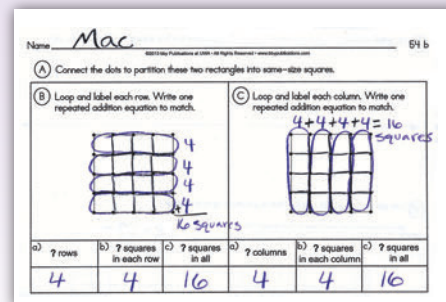


- solving unknowns placed in varying positions

Partitioning Rectangular Arrays into Squares, Columns & Rows[©]

#PPDL47 | \$37 | Grade 2

- efficiently counting the number of squares within a rectangular array
- learning an organized way to model multiples with pictures & numbers
- practicing visual skip counting

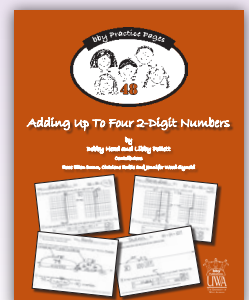
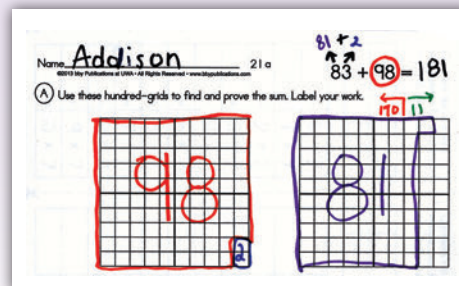


- connecting multiples counting patterns with repeated addition

Adding Up to Four 2-Digit Numbers[©]

#PPDL48 | \$37 | Grades 1-2

- efficiently adding up to four addends
- solving word problems with up to 4 addends with number lines or 100-grids to organize, illustrate and prove solutions to word problems
- using number sense and knowledge of properties to identify same value expressions



- using number lines and 100-grids to consolidate thinking about number relationships

ADDITION & SUBTRACTION WORD PROBLEMS

Exercises vary in difficulty and challenge students to think critically while preparing them for standardized tests.

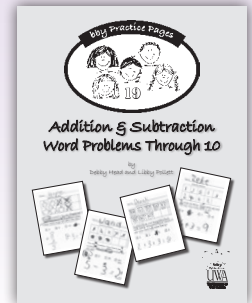
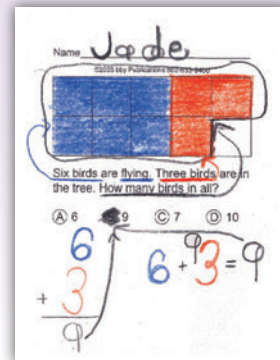
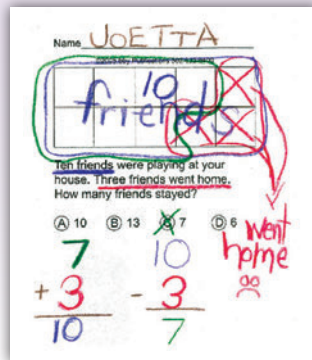
These Practice Pages expose children to:

- simple addition word problems
- simple subtraction word problems

- multi-step word problems
- word problems containing insignificant information
- multiple choice practice
- showing work with pictures, numbers and words

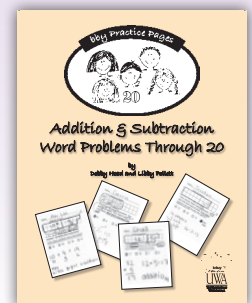
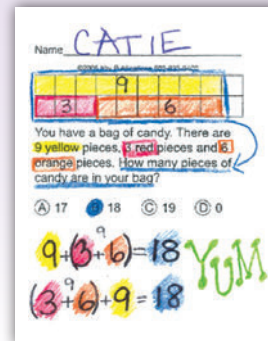
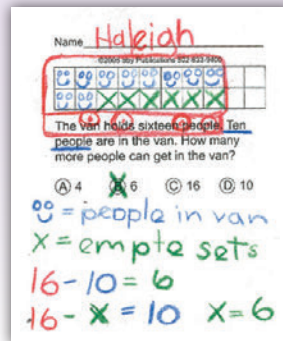
Addition & Subtraction Word Problems Through 10[©]

#PPDL19 | \$37 | Grade 1-3



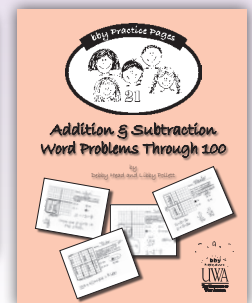
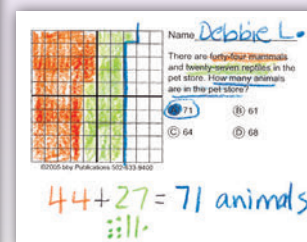
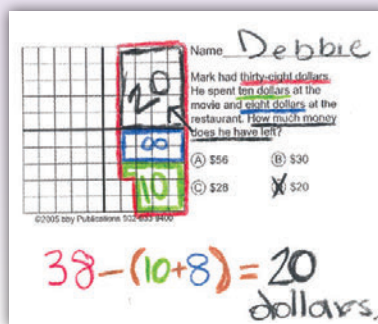
Addition & Subtraction Word Problems Through 20[©]

#PPDL20 | \$37 | Grades 1-4



Addition & Subtraction Word Problems Through 100[©]

#PPDL21 | \$37 | Grades 2-4



Wow! I can see ways to accommodate the needs of all my students with these materials - the models make the difference.

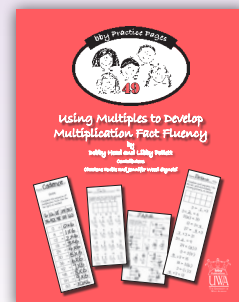


MULTIPLICATION & DIVISION FLUENCY

Using Multiples to Develop Multiplication Fact Fluency®

#PPDL49 | \$37 | Grade 3

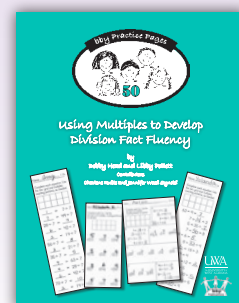
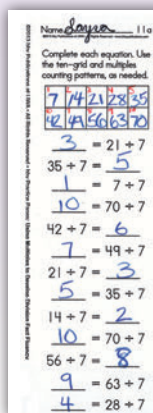
- develop fluent recall of multiplication facts within 100
- use a ten-grid to organize student's thinking
- concentration placed on a given multiple family as a growing pattern
- develop reasoning skills through their personal representations & benchmarks



Using Multiples to Develop Division Fact Fluency®

#PPDL50 | \$37 | Grade 3

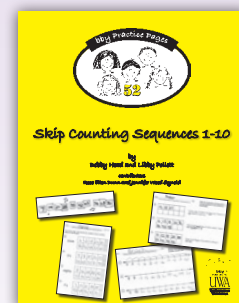
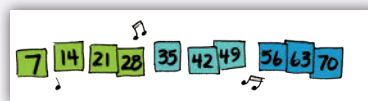
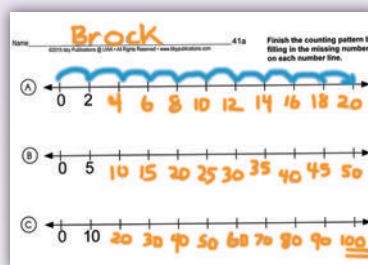
- develop fluent recall of the division facts within 100
- provide a consistent image that help students visually organize thinking
- use multiples to develop efficient and effective division fact fluency
- solving for the "unknown" make sense



Skip Counting Sequences 1-10®

#PPDL52 | \$37 | Grades K-1

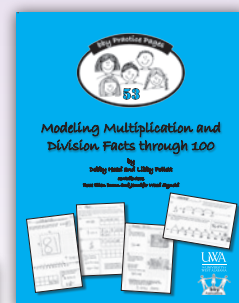
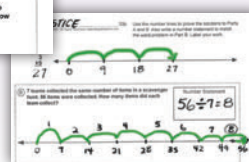
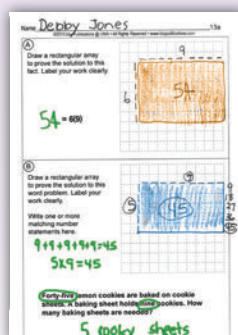
- provides practice in matching counting pattern sequences with authentic, real-life situations
- develops the foundation for discovering and ascertaining an understanding of multiplication and division facts, fractions, rates, ratios, proportions, and much more
- uses number lines and ten-grids to establish counting pattern sequences
- works in conjunction with multi-sensory counting pattern songs on our *Musical Arrayngements* CD



Modeling Multiplication and Division Facts through 100®

#PPDL53 | \$37 | Grades 2-4

- provides word problem challenges for students using the number line, ten-grid, and rectangular array models
- includes a variety of arrangements of number/symbol representations
- allows student personalization of strategies
- is recommended for use with Curiosity Bait: Multiplication & Division Fact Bait

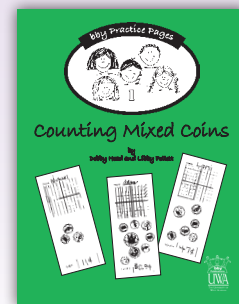
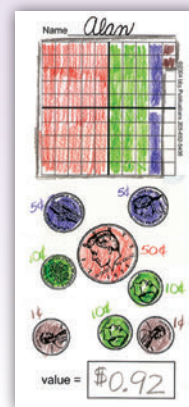


COUNTING MONEY & MAKING CHANGE

Counting Mixed Coins[®]

#PPDL01 | \$37 | Grades 1-3

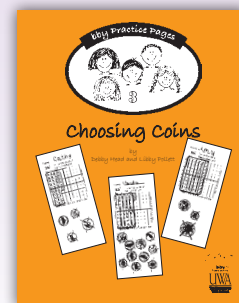
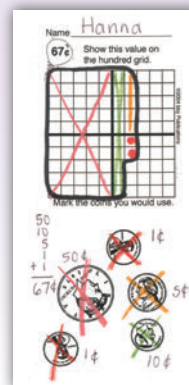
- connecting coin recognition and coin values
- 100-grid representing a dollar
- coin variety: heads & tails, pennies & nickels only, or pennies/nickels/dimes/quarters and/or half-dollars



Choosing Coins[®]

#PPDL03 | \$37 | Grades 2-3

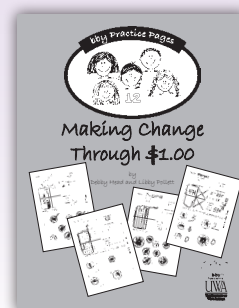
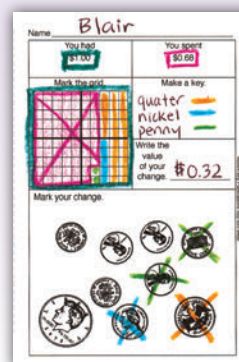
- combine collections of coins for a pre-determined value
- encourage flexibility and fluency with multiple representations
- require reasoning and justification by matching coins to the amount marked on the 100-grid



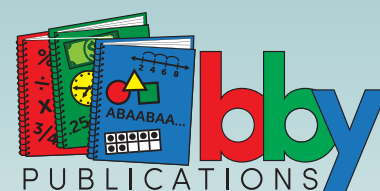
Making Change Through \$1.00[®]

#PPDL12 | \$37 | Grades 2-3

- provide practice as children become change-making cash clerks
- couple the concept of coin value with student-drawn representations on a 100-grid



We are always ready to help you with your professional development needs. bby Publications at UWA can help you and your students explore mathematics in a way that builds positive learning strategies that last a lifetime!



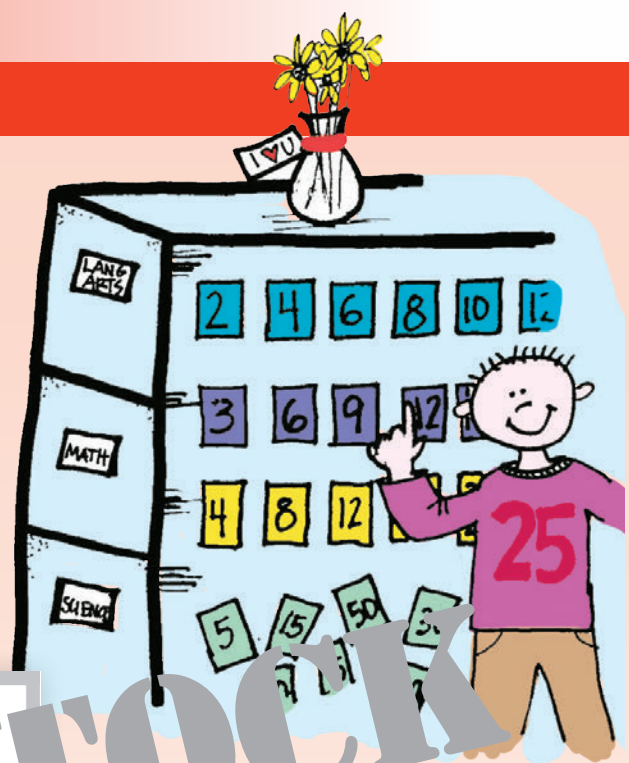
The UNIVERSITY of
WEST ALABAMA

MULTIPLES MAGNETS

Multiples Magnets®

#XMIW10 | \$35 | Grades K-6

Your set of **Multiples Magnets** contains one magnet for each of the first ten numbers in the one, two, three, four, five, six, seven, eight, nine, ten and twenty-five multiples patterns. Your children will use these magnets to master building these sequences. Before long, counting by sevens will be as easy as counting by twos. Children who master their patterns of multiples experience more success with concepts related to multiplication, division, fractions and algebra, to name a few. Using them is easy. Just tear apart and attach to any surface conducive for use with magnets such as a magnetic wipe-off board, filing cabinet, storage cabinet or refrigerator.



Multiplication Facts

Use the multiples patterns to learn the multiplication facts. In this example, 42 is the *seventh* number in the 6 multiples pattern and the *sixth* number in the 7.

1	2	3	4	5	6	7
6	12	18	24	30	36	42
1	2	3	4	5	6	7
14	28	42	56	70	84	98

com
multiplication

Division Facts

Use the multiples patterns to divide. In this example, it helps to think about counting by sixes until you reach 42.

$$42 \div 6 = ?$$

2	3	4	5	6	7
2	18	24	30	36	42

Because 42 is the seventh number in the 6 multiples pattern, the answer is 7.

$$42 \div 6 = 7$$

Multiplication and Division Word Problem

Tell and write multiplication and division word problems. Use the multiples patterns.

Multiplication
How many days are in 3 weeks?

7	14	21
---	----	----

Division

I have 18 cookies. If I put 6 cookies in each baggie, how many full baggies of cookies will I have?

1	2	3
6	12	18

$$18 \div 6 = 3$$

Distributive Law

Your multiples patterns can work together to make other patterns. For example, the 17 multiple-pattern can be created by combining the tens and the sevens.

10	7	17
20	14	34
30	21	51
40	28	68

$$4(17) = 4(10) + 4(7)$$

$$40 + 28 = 68$$

distributive law of multiplication over addition

Related Patterns

Multiples patterns are versatile. The following examples show how the 8 pattern is helpful in thinking about the pattern of 80, 800, 8,000, etc.

8	80	800
16	160	1600
24	240	2400
32	320	3200
40	400	4000
48	480	4800
56	560	5600
64	640	6400
72	720	7200
80	800	8000

To figure out how many days are in 23 weeks, I will use the 7 pattern.
 $7(23) = 7(10 + 10 + 3) =$
 $70 + 70 + 21 = 161$
 That makes 161 days



OBSERVATION CARDS

Observation Cards®

#XMPE02 | \$20 | Grades K-6

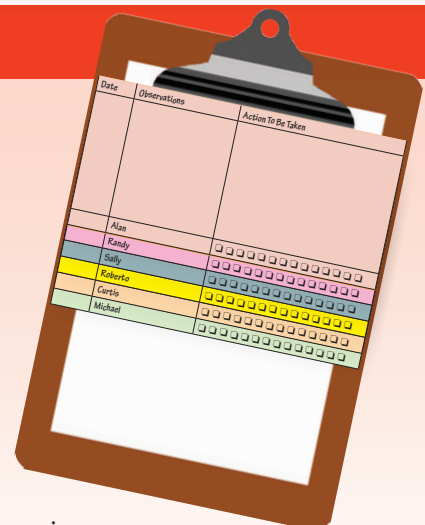
Make documentation of authentic assessment easy and cut your record keeping to a minimum. Suggestions for use are included in packet. Includes 180 cards, 6 colors, 30 cards each color. These cards are perfect for:

- documenting individualized instruction
- making anecdotal records manageable
- student-led or parent-teacher conferences

What should you record on observation cards?

- differentiated instruction & response to intervention

- plans for future instruction
- sketches/notes of a child's thinking



Musical *Array*ngements® CD

#CDDL01 | \$20 | Grades K-5

This collection of songs includes remixes of select favorites from the original *Musical Arrayngements* CD along with several new selections. These catchy, peppy, skip counting songs help children learn the counting pattern sequences from 1-10 and 25. Easily-recalled, the fun tunes set the foundation for many math concepts such as:

- multiplication and division facts
- rates, ratios, and proportions
- common denominators and equivalent fractions
- counting collections of coins
- algebraic reasoning

These songs will fill the heart with joy and the mind with number patterns...resulting in happy, successful, young mathematicians!

The following teaching materials, available from bby Publications at UWA, compliment this collection of songs:

- **Curiosity Bait: Multiplication & Division Fact Bait**
- **Multiples Magnets**
- **I Can See It! Multiplication & Division Fact Fluency Flash Cards**



- **PPDL47** Partitioning Rectangular Arrays into Squares, Columns & Rows
- **PPDL49** Using Multiples to Develop Multiplication Fact Fluency
- **PPDL52** Skip Counting Sequences 1-10
- **PPDL53** Modeling Multiplication and Division Facts through 100

ORDERING INFORMATION

3 WAYS TO ORDER

- **Mail** bby Publications at UWA • UWA Station 60 • Livingston, AL 35470
- **Website** www.bbypublications.com
- **Purchase Order** will accept P.O. from schools and agencies, with authorized signature; P.O. may be mailed, uploaded to website or emailed to tpartridge@uwa.edu

PAYMENT METHODS

- **Check**

- **Credit Card**



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Shipping

Orders are shipped via UPS Ground, so a **PHYSICAL ADDRESS** is required. UPS cannot deliver to a P.O. Box. Shipping is \$10 on orders under \$200 and free for orders above \$200 within the continental U. S. If outside the continental U.S., please contact for shipping estimate.