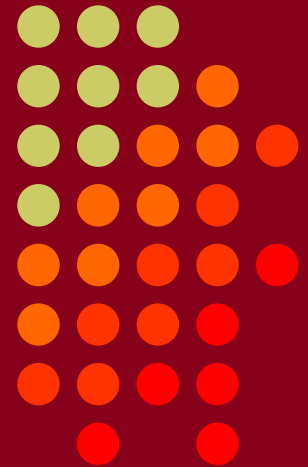
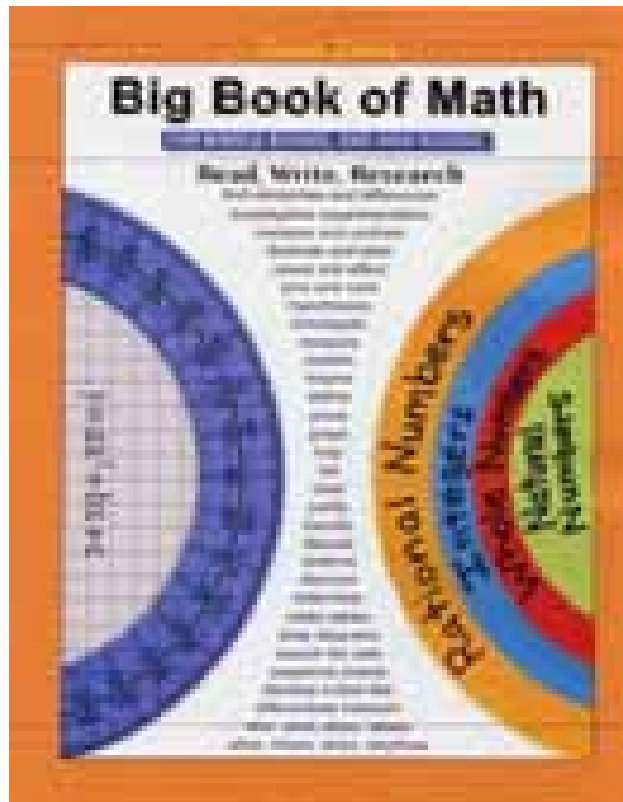


# Paper, English Language Learners, and Math

Paul R. Province, Ph. D.  
Sul Ross State University  
Alpine, Tx



# Big Book of Math for Middle School and High School



- Written by Dinah Zike
- Dinah-Might Adventures, LP  
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# Why use foldables in mathematics?

- Foldables can quickly organize, display, and arrange information to help students understand the concepts and master skills.
- Foldables help students to create their own study guides while listening for main ideas.
- Foldables provide creative formats for students to present projects and their research instead of just the traditional poster board.

# Why use foldables in mathematics?

- Replace the worksheet with student print
- Develop higher order thinking:
  - Compare and contrast
  - Recognize cause and effect
- Immerse students in vocabulary and concepts already learned giving them a foundation on which to build new learning (scaffolding)

# Why use foldables in mathematics?

- Assist in communicating data through graphs, tables, charts, models, and diagrams
- Integrate language arts, science, and social studies into math study
- Ownership/buy-in to the math curriculum
- Foldables divide the information presented and make it visible to students.

## Dividing math concepts into parts

- To select the correct Foldable, decide how many parts you want to divide the information into, then decide which of the Foldables will best demonstrate or illustrate what is to be learned.



# Examples

| Algebra |                             | Geometry |  | Statistics and Probability |                               |
|---------|-----------------------------|----------|--|----------------------------|-------------------------------|
| Parts   | Concept                     | Parts    | Concept                                | Parts                      | Concept                       |
| 5       | Fundamental Laws            | 2        | Complimentary and supplementary angles | 3                          | mean, median, mode            |
| 2       | Equalities and inequalities | 2        | Convex and concave                     | 2                          | permutations and combinations |
| 2       | LCM and LCD                 | 2        | Two types of right triangles           |                            | odds in favor, odds against   |
|         |                             |          |  |                            |                               |

# THE BASIC FOLDS

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☐ TACO FOLD

☐ HAMBURGER FOLD

☐ HOT DOG FOLD

☐ SHUTTER FOLD

(CONT.)

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# THE BASIC FOLDS

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HAMBURGER FOLD

BURRITO FOLD

VALLEY FOLD

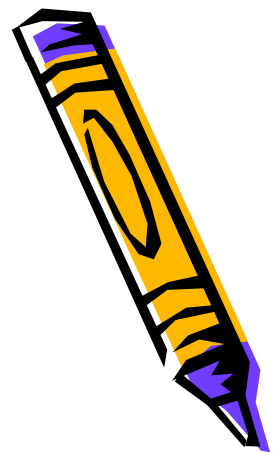
MOUNTAIN FOLD

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# HALF BOOK

1. FOLD A SHEET OF PAPER IN HALF LIKE A HOT DOG OR..
2. HORIZONTALLY LIKE A HAMBURGER

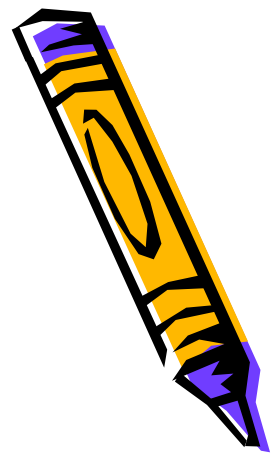
USE THE HALFBOOK FOR DESCRIPTIVE, EXPOSITORY, PERSUASIVE, OR NARRATIVE WRITING AS WELL AS GRAPHS, DIAGRAMS, OR CHARTS.



# FOLDED BOOK

1. MAKE A HALF BOOK
2. FOLD IT IN HALF AGAIN LIKE A HAMBURGER. THIS WILL MAKE A COVER WITH TWO PAGES ON THE INSIDE FOR INFORMATION

USE WORKSHEETS, INTERNET PRINTOUTS, DIAGRAMS OR MAPS. ONE SHEET OF PAPER CAN NOW BECOME TWO ACTIVITIES AND TWO GRADES!



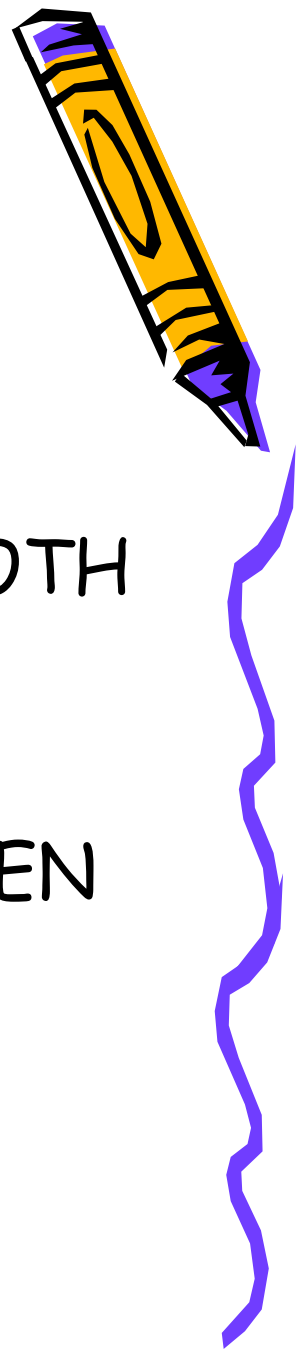
# BOUND BOOK

1. HAMBURGER FOLD TWO SHEETS OF PAPER. PLACE ONE SHEET ON TOP OF THE OTHER WITH  $1/16^{\text{TH}}$  OF AN INCH SEPARATING THE MOUNTAIN TOPS.
2. MARK BOTH FOLDS ONE INCH FROM THE OUTER EDGES.

(CONT.)



# BOUND BOOK



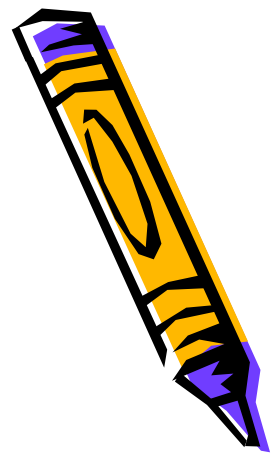
3. ON ONE OF THE FOLDED SHEETS, CUT FROM THE TOP AND BOTTOM EDGE TO THE MARKED SPOT ON BOTH SIDES.
4. ON THE SECOND FOLDED SHEET, START AT ONE OF THE MARKED SPOTS AND CUT THE FOLD BETWEEN THE TWO MARKS.

(CONT.)



# BOUND BOOK

5. TAKE THE CUT SHEET FROM STEP 3 AND FOLD IT LIKE A BURRITO. PLACE THE BURRITO THROUGH THE OTHER SHEET AND THEN OPEN THE BURRITO. FOLD THE BOUND PAGES IN HALF TO FORM AN EIGHT PAGE BOOK.



# TWO-TAB BOOK

1. HAMBURGER FOLD A PAPER AND CUT UP THE VALLEY FOLD TOWARD THE MOUNTAIN TOP. THIS CUT FORMS TWO LARGE TABS THAT CAN BE USED FRONT AND BACK FOR WRITING AND ILLUSTRATIONS.
2. THE BOOK CAN BE EXPANDED BY MAKING SEVERAL OF THESE FOLDS AND GLUING THEM SIDE BY SIDE.

USE THIS BOOK FOR DATA THAT OCCURS IN TWOS.

# MATCHBOOK

- 1 FOLD A SHEET OF PAPER LIKE A HAMBURGER, BUT FOLD SO THAT ONE SIDE IS LONGER THAN THE OTHER.
- 2 FOLD THE ONE INCH TAB OVER THE SHORT SIDE FORMING AN EVELOPE-LIKE FOLD
- 3 CUT THE FRONT FLAP IN HALF TOWARD THE MOUNTAIN TOP TO CREATE TWO FLAPS.

THIS IS USED TO REPORT ON ONE OR TWO VOCABULARY WORDS, QUESTIONS, OR CONCEPTS. COLLECTIONS OF THESE MAKE STUDENT MADE BULLETIN BOARDS.



# POCKET BOOK

1. HAMBURGER FOLD A PIECE OF PAPER
2. OPEN THE FOLDED PAPER AND FOLD ONE OF THE LONG SIDES UP TWO INCHES TO FORM A POCKET. FOLD SO THAT THE POCKETS ARE ON THE INSIDE.
3. GLUE OR STAPLE ALONG THE OUTSIDE EDGES OF THE POCKET

(CONT.)

# USES OF THE POCKET BOOK

- Use 3"x5" index cards or quarter sheets of notebook paper inside the pockets. Store student made books such as two-tab books and folded books in the pockets.



# SHUTTER FOLD

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1. START OUT AS THOUGH MAKING A HAMBURGER FOLD, BUT DON'T CREASE THE PAPER. PINCH THE PAPER TO SHOW THE MIDPOINT
2. FOLD THE OUTER EDGES OF THE PAPER TO MEET AT THE MIDDLE.

This book is used for data occurring in twos.



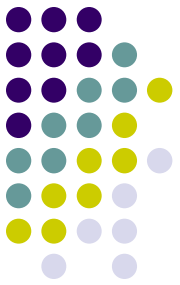
# TRIFOLD BOOK

---

1. FOLD A SHEET OF PAPER IN THIRDS.
2. USE THIS BOOK AS IT IS.

*USE THIS BOOK TO MAKE CHARTS WITH THREE COLUMNS OR ROWS, LARGE VENN DIAGRAMS, OR REPORTS ON DATA OCCURRING IN THREES.*

# THREE TAB BOOK



1. HOT DOG FOLD A PAPER
2. WITH THE PAPER HORIZONTAL, AND THE FOLDS OF THE HOT DOG UP, FOLD THE RIGHT SIDE TOWARD THE CENTER, TRYING TO COVER UP ONE HALF THE PAPER.
3. FOLD THE LEFT SIDE OVER THE RIGHT SIDE TO MAKE A BOOK WITH THREE FOLDS.

(CONT.)

# THREE TAB BOOK



4 OPEN THE FOLDED BOOK. PLACE YOUR HANDS BETWEEN THE TWO THICKNESSES OF PAPER AND CUT UP THE TWO VALLEYS ON ONE SIDE ONLY. THIS WILL FORM THREE TABS.

*USE THIS BOOK FOR DATA OCCURRING IN THREES AND FOR TWO-PART VENN DIAGRAMS.*

# LAYERED LOOK BOOK

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- ❑ STACK TWO SHEETS OF PAPER SO THAT THE BACK SHEET IS ONE INCH HIGHER THAN THE FRONT SHEET.
- ❑ BRING THE BOTTOM OF BOTH SHEETS UPWARD SO THAT ALL OF THE LAYERS OR TABS ARE THE SAME DISTANCE APART.
- ❑ WHEN ALL TABS ARE AN EQUAL DISTANCE APART, FOLD THE PAPERS AND CREASE WELL.
- ❑ OPEN THE PAPERS AND GLUE THEM TOGETHER ALONG THE VALLEY OR INNER CENTER FOLD. STAPLES WORK WELL, TOO.



# PYRAMID FOLD

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- TACO FOLD ONE SHEET OF PAPER. CUT OFF THE EXCESS TAB.
- OPEN THE TACO AND REFOLD IT THE OPPOSITE WAY FORMING ANOTHER TACO AND AN X-FOLD PATTERN.
- CUT ONE OF THE FOLDS TO THE CENTER OF THE X, OR THE MIDPOINT AND STOP. THIS WILL FORM TWO TRIANGULAR SHAPED FLAPS.

(CONT.)





# PYRAMID FOLD

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- GLUE ONE OF THE FLAPS UNDER THE OTHER, THIS WILL FORM A PYRAMID.
- LABEL THE FRONT SECTION AND WRITE INFORMATION, NOTES, THOUGHTS, AND QUESTIONS INSIDE THE PYRAMID ON THE BACK OF THE APPROPRIATE TAB.

*USE TO MAKE MOBILES AND DIORAMAS.*  
USE WITH DATA OCCURRING IN THREES.