

5/2/07 Don W. Collins proposal for Pre-Algebra

June 10, 2000

Alan C. Vincent  
Vice President  
Product Acquisitions  
4050 Westmark Drive  
PO Box 1840  
Dubuque, IA 52004-1840

Dear Alan:

RE: Proposal for Pre-Algebra

As was discussed in our conversation of June 5<sup>th</sup>, 2000, I'm proposing to utilize the material already written for the 8<sup>th</sup> grade of the (Publisher Name Omitted) Mathematics Program and restructure that material for a Pre-Algebra text.

Enclosed you will find:

1. An analysis of the market
2. A brief description of the product
3. A list of how the proposed product differs from the mainstream market

Please do not hesitate to contact me if you desire further elaboration.

Sincerely,

Don W. Collins

PROPOSAL FOR PRE-ALGEBRA  
BY DON W. COLLINS  
JUNE 10, 2000

**THE MARKET:**

Teachers of junior high school have always had a goal to prepare students for algebra. However, it was not until the 1970's that texts were produced to specifically prepare students for algebra. The first text to prepare students for algebra was produced by Houghton-Mifflin, sales leader at that time with the legendary Dolciani Algebra series. Complaints had been received about the difficulty of the text for the student. Instead of watering down the existing algebra, Houghton Mifflin chose to work on preparation. The resulting product, called Pre-Algebra was an instant success. In fact, it opened up a whole new market.

Laidlaw Brothers, a contemporary successful publisher of K-8 mathematics materials with limited presence in the 9-12 mathematics market, decided to extend their K-8 line by venturing into the new Pre-Algebra market.

Laidlaw's product became the market leader, a status held for more than a decade. At first, there were no state guidelines for Pre-Algebra. These began to slowly emerge. In 1982, Merrill Publishing Company, building on the success of an existing algebra series that was slowly replacing the Dolciani series published a first edition of Pre-Algebra. This series replaced the Laidlaw series as the market leader. It is now in the 7<sup>th</sup> edition and by far outsells the rest of the market. Key to the success of this pre-algebra was that the product met the emerging state guidelines and resulting changes.

The future market for Pre-Algebra will be larger and will be different.

5/2/07 Don W. Collins proposal for Pre-Algebra

There are several reasons for the increase. The 1989 NCTM standards which called for increased attention to algebra have been replaced by the NCTM standards for 2000 called PMSS (Pinciples and Standards for School Mathematics). PMSS has encompassed the “Algebra for Everyone” movement. “All students should study algebra” (PMSS, page 37). Graduation requirements of most states now include 1 to 3 years of *academic* mathematics. That means courses from the Algebra 1-Geometry-Algebra 2 sequence or perhaps the integrated sequence. More students will be taking algebra courses than ever before and will need to be prepared for such. Many districts will be looking for such preparatory materials for the first time. Many will be reluctant to go with the mainstream pre-algebra texts assuming that selection for junior high usage will dictate selection of a particular high school algebra series. The obvious solution for this problem will be a *generic* Pre-Algebra.

A different type of student will exist in this new market thus making the market different. The more advanced students will take algebra in the 8<sup>th</sup> grade. Others will take pre-algebra in the 8<sup>th</sup> grade and still others will take the traditional 8<sup>th</sup> grade math and pre-algebra as 9<sup>th</sup> graders. Some schools that offer algebra in the 8<sup>th</sup> grade may choose to present pre-algebra for gifted 7<sup>th</sup> graders. Thus, pre-algebra can be a 7<sup>th</sup>, 8<sup>th</sup>, or 9<sup>th</sup> grade course. However the market now is clustered about the 8<sup>th</sup> grade.

### **THE PRODUCT:**

This product will follow a **MAP**.

It will be **M**athematically accurate. Fully licensed junior high school mathematics teachers must have at least a minor in collegiate mathematics while high school mathematics teachers must have a major in collegiate mathematics. Both are highly

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critical of poorly developed or inaccurate materials. Only those who are equipped will have input into selection of texts.

Because of the expectations of high school teachers, the product must Articulate well. Not only must the product meet grade guidelines but also it must fit with the prior and subsequent grade levels. This can be accomplished by adhering to the Frameworks of the three greatest influences of our national mathematics curriculum—The NCTM standards, TIMMS, and the NAEP. The NCTM standards are not replaced by PSSM are still in effect being updated and enhanced by PSSM. While the scores of US students obtained on TIMSS (Third International Mathematics and Science Study) did not meet expectations, teachers believe (and rightly so) that US students will improve scores if teachers know exactly what students are expected to know. The TIMSS guidelines provide this information. The NAEP (National Assessment of Educational Progress) are tests based upon state guidelines and close comparison can target areas of weakness. Copies of guidelines of the 3 influences are attached. Following them will result in a sound program.

The product must be Pedagogically sound. There is a certain order in which topics should be presented. For example, students may not obtain a proper understanding of decimals if they do not have a proper understanding of place value and powers of the base number 10. Proper attention to detail here is critical because the influx of pre-algebra students will not be from the mathematically talented.

**HOW THIS PRODUCT WILL DIFFER FROM THE MAINSTREAM MARKET  
FOR PRE ALGEBRA:**

- Most Pre-Algebra texts do not include a sequential development of Problem Solving. This one will.
- Most Pre-Algebra texts do not include a cumulative review of basic skills pertinent to Pre-Algebra. This one will.
- Most Pre-Algebra texts include some technology but do not teach how to use it. This product will.
- Most Pre-Algebra texts do not integrate mathematical topics. This product will.
- Most Pre-Algebra texts show little integration of mathematics and science. This product will.
- There will be many teachers inexperienced in teaching Pre-Algebra. Many Pre-Algebra texts do not provide adequate help for this type of teacher. This product will.
- Most of the current Pre-Algebra texts are not geared for the upcoming generation of algebra students. This product will.
- Many of the current Pre-Algebra texts do not utilize manipulatives such as MIRAS, Algeblocks, Base ten blocks, etc. This product will.
- Many of the current Pre-Algebra texts do not adequately utilize technology, that is the fraction calculator, scientific calculator, graphing calculator or computer software. This product will.
- Many mathematics programs fail to include problems which are relevant, arouse student interest and apply to everyday living. This product will.
- Most of the current Pre-Algebra texts are tied to existing algebra series. Because of adherence to the National Framework and state guidelines, this product will be generic.