

## Comments About the Programs Reviewed

During the review of each of the programs, reviewers were asked to make comments about perceived strengths and weaknesses of the programs and to elaborate on items that they felt were worthy of note. The following are the comments that reviewers made about the programs.

### *Math Connections*

**OVERALL RATING: 6 and 7.8**

#### **Strengths:**

The program has a strong problem solving focus and engages students in problem solving from the start.

Connections are made to science, economics, medicine and other real life situations.

There is evidence of the use of manipulatives and technology for problem solving.

There are strong GSE and NAEP connections.

The program is activity based.

A cooperative learning environment is fostered in this program.

There are available resources in a variety of formats.

#### **Weaknesses:**

We found limited differentiation for underperforming students - not easily represented.

Is the test bank available? Teacher materials reference its use but the 2000 copyright states test bank to be 'released.'

Parental support is not referenced

There was information on student achievement data from 1997-8 and 2000-01 from EDC, but nothing more recent.

There was no apparent evidence of work on conics.

### *Contemporary Mathematics in Context* (The Core Plus Project)

**OVERALL RATING: 8 and 9**

#### **Strengths:**

The first three courses are the common core to prepare students for success in college careers and daily life. Course 4 continues preparation for college math.

Strands include:

- Algebra and Functions

- Statistics and Probability
- Geometry and Trigonometry
- Discrete Mathematics

Each unit of each course is correlated to the NCTM standards.

We liked the way the authors clearly explain a progression of activities to follow.

**Weaknesses:**

It was unclear how to incorporate this series into the current system, where do things like AP Calculus fit in?

It's assumed that students have access to graphing calculators for in-class and out-of-class work.

The program requires two books for each course, which could make it difficult to review previous sections should the need arise.

**Glencoe/McGraw-Hill**

**OVERALL RATING: 6.33 and 7**

**Strengths:**

The program has numerous resources and connections were evident.

The program integrates technology, i.e. graphing calculator; spreadsheets, etc.

Students are provided test taking strategies and practice; e.g. SAT preparation.

**Weaknesses:**

Conceptual development could be enhanced; procedural knowledge was emphasized.

Not enough is done to actively engage students to express mathematical ideas by making conjectures and justifications.

Incorporation of the history of mathematics was lacking, and fostering mathematics as a 'human endeavor' is not readily evident.

Developing and encouraging students to become independent learners and mathematical thinkers is a weakness.

There was no evidence about student achievement with program materials from norm referenced and criterion referenced tests.

Professional development components were not readily evident.

**SIMMS Integrated Mathematics**

**OVERALL RATING: 8 and 9**

**Strengths:**

This program does reflect all of the high mathematics standards that the NH GSE's have.

We believe that a student who successfully goes through this entire program in high school should have little difficulty succeeding in college level mathematics.

The curriculum requires students to take responsibility for their own learning, more so than traditional curricula do. As a result, students probably would find this curriculum more interesting and relevant to their lives than traditional curricula.

The curriculum demands that students learn how to use higher-level thinking skills in order to solve the problems. It doesn't ignore basic skills, but uses basic skills as tools for solving problems.

We like the module structure; the curriculum seems to be adaptable to any type of school scheduling (i.e., traditional, block, modified block, etc.).

The program emphasizes cooperative learning, problem solving, and student engagement.

The mathematics is presented through contextual problems and applications relevant to real life.

Program assessment is strong.

Students are involved in hands-on learning, discovering and uncovering mathematical concepts.

Calculators are integrated throughout as are graphing utilities and spreadsheets.

Connections are made between and amongst mathematical concepts and ideas.

Professional Development is available and can be sustained through Electronic Teacher Community (ETC).

**Weaknesses:**

We believe it might be too challenging for some of the lower-level 9<sup>th</sup> graders; perhaps this would depend upon their prior "training" in elementary/middle school, and perhaps it would depend more on their emotional maturity than mathematical ability, as this program does require students to take responsibility for their own learning.

The curriculum is intense; without proper teacher training (professional development), we believe the implementation of this curriculum could be troublesome.

The use of technology in this curriculum is a very important component. If teachers attempt to use this curriculum without knowing how to properly use the technology, the curriculum will not be effective. Districts/Schools that wish to use this curriculum must be prepared to provide their teachers with proper training in the use of the technology, and provide funding to ensure all students have access to the technology.

There appear to be limited teacher resources.

Implementation may be difficult due to a lack of teacher support resources and the need for professional development with an emphasis on content knowledge.

Parental support seems to be lacking.

An end of year assessment is lacking.

There were no suggested rubrics for scoring open responses/ reviewing portfolios, etc.

Differentiation and suggestions to help students with potential misconceptions were lacking, we would suggest including helper links on where to get additional information.

### **College Preparatory Mathematics**

**OVERALL RATING: 8 and 8**

#### **Strengths:**

Schools could have initial training program provided on use of the program.

There is a good Parental Guide and CD Resource.

The program is well organized and provides good examples of questioning, including higher level questions.

The program has high expectations of students and provides acceleration.

The problems that were included in these program materials were very good.

The mathematics content is standards based with a focus on problem solving, reasoning, and connections made through integrating the content.

Assessments are informed by IMP, SAT, and CPM programs.

The materials support team building and reinforce writing and reading components, i.e. strong connections to communication.

Students are encouraged to become independent, reflective, and active learners.

#### **Weaknesses:**

The program does not consistently engage students with investigative tasks.

The reading level may be a challenge for underachievers.

It appears as though class size could be a factor for effective implementation; larger class sizes generally are not conducive to large group discussions, etc.

It may be a challenge for a teacher to respond to an IEP; an additional study guide is needed.

We were concerned with having to follow the recommended pacing and flexibility of day to day expectations.

### **Mathematical Modeling in Our World**

**OVERALL RATING: 6.67 and 8.3**

#### **Strengths:**

The Data and Statistics sections are very good.

Students are active learners engaged in their mathematical learning.

Students are asked open-ended questions.

Technology integration is a major strength with multiple platforms: graphing calculators, sketchpad, videos, software programs, and the Internet.  
There are many meaningful application problems and activities.  
The purpose and structure of the lesson are clearly articulated.  
Resources and content background information is provided for teachers.  
Thematic units are interesting, relevant, and help tie concepts together.  
The activities are very creative.

**Weaknesses:**

The readability level is targeted for higher ability students.  
Support for teachers to differentiate instruction is not readily available.  
Familiarity with numbers and operations and elementary Algebra is assumed.  
It does not have friendly format for parents.  
The data is outdated, some is older than the students.  
The video quality is dated for current generation.  
Field test data and program review reports were not available for review.  
There was no work with formal proofs.  
There was no work with conic sections and the sections on trigonometry were weak.  
There was a lack of teacher resource materials.

***McDougal Littell***

**OVERALL RATING: 5 and 7**

**Strengths:**

There are many re-teaching resources, parent support materials, and support for less able students.  
The authors provide multiple assessment items.  
Program is well-structured; experience (mathematics) is not a pre-requisite.

**Weaknesses:**

The students are not typically engaged in activities that lead to understanding mathematics.  
Drill and practice appear to be the focus of the program.  
We did not find the material challenging, particularly for upper level students.  
The assessments are not multi-dimensional.  
Technology is not an integral part of the program.

***Key Curriculum Discovering Series***

**OVERALL RATING: 9 and 8.5**

**Strengths of Program:**

- Mathematical content adheres to the NCTM Principles and Standards (PSSM) and the NH GSE's.
- Mathematical Communication, Reasoning and Representation are strong throughout the program.
- Strength – cohesive units, includes worthwhile tasks and use of technology: e.g. incorporates Geometer's Sketchpad, graphing calculators, and internet use.
- Teacher support materials are extensive and worthwhile.
- There are investigations included in a consistent manner and expectations for working in cooperative groups.
- Materials are flexible to allow for varied teaching styles.
- Assessment materials are extensive and allow for varied formats to get at students' understanding.
- Program offers initial training and on-going web support.

**Weaknesses of Program:**

- In regards to meeting needs for all students – the program provides prompts and resources that will be worthwhile to the extent that an experienced teacher will need to make decisions related to differentiation for students. The program materials do not identify specific work tasks for varied ability levels.
- Wrestled with the estimation standard since the philosophy of the program and teacher suggestions are not explicitly stated – generally experienced teachers will emphasize estimation strategies and how to have students approach problem solving as part of an established classroom culture.

**Interactive Mathematics Program****OVERALL RATING: 7.5 and 8****Strengths:**

The program uses an integrative mathematics approach.  
Mathematical reasoning was emphasized throughout.  
The program has an excellent Teacher's Guide and is easy to read and is not intimidating.  
There was a strong emphasis on calculator use.  
Students are encouraged and able to communicate thoughts and ideas.  
The units were nicely broken down and organized.  
The program was built upon a strong research component.  
Students are active learners, and engaged in activities and in solving creative problems.  
Topics are connected across subject areas.

**Weaknesses:**

There appears to be a weak connection to the GSE's, for grades 9-10 especially in Geometry.

There was an apparent lack of formal assessments or rubrics for assessments.

We did not see a Test Bank, Answer Guide, or other support materials.

There was not a strong emphasis on calculator use.

We felt students who struggle would have a hard time with this program. It would be a challenge for students with reading comprehension problems or ELL or LEP students.

Schools using block scheduling may be challenged to complete the courses in the time frame needed.

Students coming into the program later in the year or in subsequent years without IMP background may have difficulty.

The program reflects NCTM connections to 1989 Standards, not the 2000 Standards.

We would like to see an updated list of colleges that would accept the IMP student