
Program Goals for Elementary Math

Comprehension

How Can We Make Math Easier to Understand?

The key to success in math is a strong foundation of number sense and comprehension of the concepts. Students must have a thorough understanding of the mathematical processes and know how to use the processes to determine an accurate answer. While memorization is a key element in math, a student who tries to survive on memorization alone will struggle as higher-level skills are introduced.

To excite students about learning math, we have designed a program that engages interest using age-appropriate, colorful themes and hands-on involvement for developing understanding and for enhancing mastery. Our math books use a format that focuses on a single-main concept in each chapter. Greater levels of difficulty are added as understanding increases. Our textbooks are filled with colorful photographs and illustrations that picture the problems students are solving as well as the themes.

A Sequential Approach

Teaching a new concept requires starting at the concrete level (the students use manipulatives), moving to the semiconcrete level (the student watches the teacher demonstrate or uses pictures from the book), and finally progressing to the abstract level (the student solves problems using numerals, signs, and symbols).

Each new concept presented at any grade level is presented implementing this three-stage process. Review of major concepts may also follow this format.



Manipulatives

The key to our approach is teaching understanding through the use of manipulatives, ensuring that the student is not just following a procedure that gives him the correct answer. This interactive, hands-on-learning approach is critical for math success. While the use of manipulatives is easily recognized as important for K5, the strategy is equally significant for new concepts taught through Grade 6. BJU Press provides packets of manipulatives for student use in Grades K5–6, making this instructional approach easy to implement.

Connections and Reviews

Understanding is further increased by connecting the learning from one concept to the next. Math skills build on one another. BJU Press Math materials lay a foundation of understanding and then incorporate frequent review along with the logical introduction of new topics. We use a chapter approach for effective development of concepts related to each topic.

Each chapter concludes with a chapter review that provides opportunity for formative assessment prior to testing. Practice of previously taught skills is also incorporated into the lessons to keep those skills fresh in the students' minds. Daily Practice segments and Cumulative Reviews provide written practice to help with concept retention.

Critical Thinking

Because Computing Alone Just Isn't Good Enough

The goal of the Elementary Math program is to help students become critical thinkers and lifelong problem solvers. Education is more than just getting good grades. It is learning to think for oneself and to find the correct answer as well as to explain and justify that answer. Students must not only comprehend facts and formulas but also know how to think mathematically in order to use the material they have learned. We teach students to dig deeper academically—to know multiplication and division, pre-algebra and geometry skills, and then to apply them to everyday situations.

Critical Thinking Through Problem Solving

BJU Press Elementary Math K5–Grade 6 provides a framework for critical thinking through instruction in problem solving. Problem solving is the process of confronting a problem and then using one's knowledge, reasoning abilities, and experiences to solve the problem.

Math concepts are introduced through real-life problems that are encountered at home, at school, and in the community. Word problems pose application questions that students must work through—both in class and on their own. These activities model the

skills necessary for becoming adept at problem solving. Furthermore, they enable students to see that math is more than just a subject in the classroom; it is found everywhere we go in life.

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Each Teacher’s Edition includes a “Teach for Understanding” section that guides the teacher in helping students work through particular problems, showing them how and why various procedures work.

Students do not all learn at the same pace or grasp concepts in the same way. The Teacher’s Editions present concepts more than one time and in more than one way to ensure that all students are given the opportunity to learn and grow. Our goal is to help all students become more proficient problem solvers.

Analysis

In math, there is often more than one way to formulate a correct answer. Three students may use three different methods to arrive at the same answer and all will be valid. That is why analysis plays an important part in problem solving. The student uses his critical-thinking skills to analyze the problem and formulate his solution.

Application

Students will be more excited about learning new skills when they are shown practical applications to their everyday lives. Therefore, concepts are reinforced in context with word problems. Students are shown how math skills are used in numerous careers, such as cooking, retail sales, carpentry, industry, finance, medicine, design, and many more.

Computation

Accuracy Really Counts

Although problem solving is the primary goal of math instruction, it is also essential to develop accurate computation. This, of course, requires practice of basic math facts and skills. Every lesson in the BJU Press Math Program has two Worktext pages on which students practice the new concepts and skills from the lesson. These pages also include practice of the basic facts.

There are ample practice opportunities available on pages provided on the *Teacher’s Toolkit* CD. Teachers may copy these pages and use them as often as necessary. The goal is accurate and quick recall of facts so that students may focus their time and energy on the main task of using math to solve problems in real life. Balance is the key.

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Biblical Worldview

How Can We Use Math to Glorify God?

God not only created the world but also created order that math seeks to define. Though creation has been tarnished by the Fall of man into sin, God’s original design and consistency can be found in mathematical details, such as the symmetry of the peacock, the spirals of the nautilus shell, and the orbit of the planets around a stars. The orderliness of math points to the Creator of order.

BJU Press Elementary Math program integrates biblical content to cultivate a Christian worldview that will help each student take his place in God’s world. Each Teacher’s Edition guides the teacher in explaining math concepts through a biblical worldview, identifying Christian principles, highlighting Christian character traits, and pointing out that math is an important tool for making wise use of God’s creation.

God’s world is a place that can be measured with numbers. And if we know how to use numbers, we can become very skilled at having the kind of dominion that helps others and glorifies God.

Love for Learning

How Can We Make Math Enjoyable?

BJU Press textbooks along with the teacher’s abilities can have a positive impact in the classroom to build a love for math. One of the goals of our Elementary Math program is to show students that math can be fun!

BJU Press provides you with the tools you need to help your students succeed in learning and in life. The goal of successful learning has been reached when students understand the material and when they enjoy exploring and discovering the disciplines that help them serve their Creator better.

Our Math books are filled with colorful photographs and illustrations. Each grade level includes a unique theme to motivate students. Relevant, action-packed stories introduce all chapters, making math enjoyable to even the most unenthusiastic math student. To engage the students in active learning, hands-on activities, such as using math manipulatives, group problem- solving, acting-out math problems, and making graphs help engage every student in the learning process.