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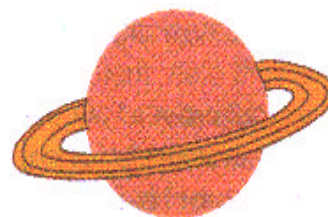
CHAPTER ONE

SCIENCE

STUDY 1

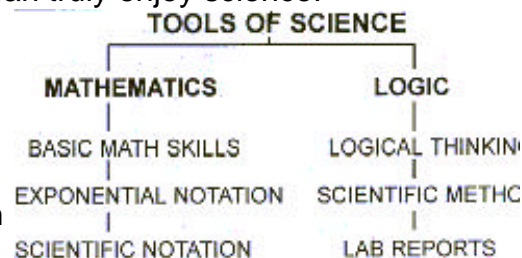


THE TOOLS OF SCIENCE



Science is the orderly study of anything in our Heavenly Father's universe that is interesting to man. There are many interesting scientific things to learn about. To study science, each student must develop a set of mathematical and thinking tools, as well as how to use them. Once these tools are mastered, a student can truly enjoy science!

In **Figure 1**, the tools of science are divided into two branches: **MATHEMATICS** and **LOGIC**. Under the Mathematics branch, the first tool of science involves the learning and mastering of basic math skills. These **basic math skills** include addition, subtraction, multiplication, and division. These skills you mastered in the elementary grades.



But in science more advanced math skills are required. This is because a scientist often works with mathematical problems with long strings of a letter or number multiplied by itself, as in: $b \times b \times b \times b \times b \times b \times b$ or $10 \times 10 \times 10 \times 10 \times 10 \times 10 \times 10 \times 10 \times 10 \times 10 \times 10 \times 10$. If one had to write these long strings each time a mathematical problem needed to be solved, the work of the scientist would be very long, tiring, and laborious. For this reason, a second tool, that scientist use, was invented and named: **exponential notation**. Exponential notation is a mathematical method of dealing with very large strings of letters and numbers that makes them manageable.

In science, there are also many very large numbers and very small numbers that a scientist often has to work with. For instance, consider the very large weight of the sun: 2,200,000,000,000,000,000,000,000 tons! Or consider the very small size of the atom: there are about 100,000,000,000,000,000,000,000 atoms in about half a teaspoon of water. In order to work with these kinds of numbers, a third tool of science was invented which includes exponential notation. Thus once exponential notation is mastered, the third tool of science can be learned. This tool is the next math skill named: **scientific notation**.

By this grade you should have the tool of basic math skills already mastered. Thus in this chapter, you will learn how to use the more advanced tools of exponential notation and scientific notation. Explanations of how to use these tools are provided in the following study sections and ample problem solving exercises are included in the workbook. Once you have mastered these first three tools of science you will move on to **CHAPTER TWO** which will deal with the three tools of the branch named: **LOGIC**.

Logic is important to science and it is also an important trait of our Heavenly Father.