

# CHAPTER ONE

## Introduction

### 1.0.0 INTRODUCTION: -

Mathematics is considered as one of the important subject in primary school curriculum. It is more closely related to our daily life as compared to other subjects. It is a science of space numbers; magnitude and measurement .It helps in the development of the habit of self-confidence and sense of appreciations among children.

Arithmetic, Algebra and Geometry are branches of mathematics at elementary level. Though every branch of mathematics has its utility. Arithmetic has practical value in life. We cannot know utility of calculation unless we have the knowledge of arithmetic. In our day-to-day life every person, whether he/she is a collie or tailor, a vegetable vender or a scientist has to apply arithmetic for his\her livelihood as well as for coming out to exact results and conclusions.

### 1.1.0 WHY DO WE TEACH ARITHMETIC?

Arithmetic teaching at elementary level is necessary. There are certain reasons behind teaching of arithmetic are as follows.

- ❖ Arithmetic helps in understanding of many natural phenomenon of the world.
- ❖ Arithmetic helps to develop a healthy attitude towards learning.
- ❖ Arithmetic is necessary in study of science.

Not only this arithmetic is related with our daily life activities.

It is true that in each and every sphere of our daily life arithmetic provides us its help and patronage without which we can not do anything. The knowledge of a arithmetic is very versatile and required in all the day to day life activities beginning from dawn to dust. Thus It can be said that in our daily social life arithmetic is as important as oxygen for physiological life. Every dealing of our daily life beings and ends with the arithmetical thinking and reasoning.

For example, daily household problems, food, clothing, idea of quantity and quality, daily account of income and expenditure etc. Such type of day-to-day problems cannot be solved without the knowledge of Arithmetic.

Great Mathematician Habsch has also emphasized that , " Arithmetic is like a wheat stone and by its study one learns to think distinctly, consecutively and carefully”.

Hence, without proper knowledge of arithmetic, literate as well as illiterate people cannot solve their daily life problems. To conclude we can say that knowledge of arithmetic is closely related to our day to day life activities . Each and every individual needs the knowledge of arithmetic at every moment. So Teaching of arithmetic should be organized in such a way that it can fulfill the aims.

### **1.2.0 AIMS OF TEACHING ARITHMETIC:-**

NCFSE informs that," One of the basic aims of teaching mathematics in schools is inculcate the skill of quantification of experiences around the learners. Mathematics helps in the process of decision making through its application to real life situations in familiar as well as non- familiar situations. It contributes in the development of precision, rational and analytical thinking, reasoning, positive attitude and aesthetic sense”.

1. To develop in the learner, the learning ability to perform the various number operations skillfully and with understanding.
2. To provide a rich variety of experiences which will assure the ability of the pupil to apply quantitative procedure effectively in social situations in life outside the school.

### **1.3.0 OBJECTIVES OF THE TEACHING ARITHMETIC:-**

Why a particular course is being done or what should be the expression of strategy, these all can be regarded as aims or goals.

1. To teach the learner the mathematical type of thought to understand statements, to analyze them and to arrive at right conclusions.
2. To arouse child's interest in the qualitative side of the world around him and it's used as a simple tool in business.
3. To give accuracy and facility in simple computations of the fundamental processes.

4. To impart a working knowledge of practical arithmetical applications which are useful.
5. To prepare the way for higher mathematics.

#### **1.4.0 AROUSE AND MAINTAIN INTEREST IN ARITHMETIC:-**

To achieve the aims and objectives of teaching arithmetic, it is indeed necessary to make arithmetic learning joyful and interesting, child's attitude to learning is important in his\ her education. When children dislike any subject they do not want to learn it, thus they cannot progress. Teacher should teach in such a way that children could enjoy and also arouse interest for a particular subject.

Now a day, all educationists and education policy makers are more concerned regarding the qualitative development of education. To achieve this goal National Policy on Education (1986) clearly states.

"A warm, welcoming and encouraging approach in which all concerned share a solicitude for the need of the child, is the best motivation for the child to attend schools and learn, a child centered and activity based processes of learning should be adopted at the primary stage, which are concerned with various teaching learning strategies, which makes learning environment interesting and joyful".

To arouse and maintain the student's interest in arithmetic is a major problem for the teacher. He/She knows that loss of interest is one of the major causes of students failure. Different students have different ideas and their interest varies from subject to subject some show more interest in learning arithmetic while others are fearful of arithmetic considering as if it is very difficult subject teacher should try to provide the situation and the contents of the subject matter according to their interest. If the teacher is successful in locating and arouse interest of the child depending upon his mental level he can help the child to a greater extent in gaining more and more knowledge effectively.

In order to maintain and arouse interest in Arithmetic following points should be kept in mind.

1. Teaching should be child centeric.
2. New knowledge and experiences should be given according to the needs and mental level of the students.
3. Use of adequate material aids while teaching.
4. Praising and appreciating students from time to time.
5. To arouse competitive feelings among the students.
6. Providing opportunities for constructive & creative work in Arithmetic.
7. Dealing the students with affection, sympathy and helping them.
8. While teaching innovative and child centered methods should be used.
9. The teacher should keep an eye on the pace of the lesson.
10. Lessons should flow smoothly so that students remain interested.
11. Teacher must encourage students for active participation.

In short it can be concluded that children will enjoy arithmetic in comparison to other subjects if brain storming, games puzzles activities and different alternative instructional material are used.

#### **1.5.0 USE OF ALTERNATIVE INSTRUCTIONAL MATERIAL IN ARITHMETIC :**

The role of mathematics teacher is very crucial particularly when teaching arithmetic with for because he / she has to create environment for learning which would assist the learners to acquire arithmetic in a natural way That conducive environment for learning can be created using various number games, activities puzzles and alternative method. Use of this material in classroom teaching, results in effective learning. So this material benefited many students who have some difficulties in understanding and learning certain concepts and re-establishing the student's confidence in himself and his ability to succeed in the subject.

NCFSE informs that, "The quality of teaching / learning process of mathematics at the elementary stage should enable students to attain the mastery level. Remediation

and proper evaluation should constitute an integral component of teaching learning of mathematics at this stage.

Mathematics learning should be imparted through activities from the very beginning of the school education. These activities may involved the use of concrete materials, models, patterns, charts, pictures, posters, games, puzzles and experiments. The importance of using learning aids needs to be stressed".

These materials used in the elementary school classroom have undergone radical changes yet, regardless of the types of material that are developed for basis curriculum instruction, enrichment aids are necessary as supplemental and motivational learning devices for children. If arithmetic teaching is to be socially vital and practical for all children, then many forms of material must be used as frequently as possible. Teachers must recognize that utilization of material assists the child to visualize the relationship involved in a particular problem situation a child who learns the " laws of arithmetic" by making manipulating making and discovering how these laws are related and how theirs relationship change on a learning device, is far richer in experience than the child who has been subjected solely to the formal introduction of the laws on the chalk board.

This material constitutes a basic attempt at presenting a variety of enrichment activities that can be used with children in all phases of arithmetical understanding. This material is not a solution for arithmetical problems but rather alternative method of showing how arithmetic is functional and related to our daily life activities. Their specific purpose is not only to make arithmetic more interesting, but to allow children to engage in experiences which stimulate curiosity and understanding.

Four specific goals of the material in the teaching of arithmetic.

1. They build fundamental concepts of arithmetic.
2. They assist to reintroduce the fundamental processes and operations.

3. They make arithmetic teaching more interesting and stimulating.
4. They tend to motivate intensive study of number operations.

Material may be in the form of

- Games
- Activities
- Puzzles

### **1.5.1 IMPORTANCE OF GAMES AND ACTIVITIES:**

Learning of arithmetic is not very difficult but when teaching is improper then it becomes very difficult. To learn arithmetic effectively, effort is required at every moment and must be maintained over a long period of time. Games and activities help and encourage many learners to sustain their interest and work.

Games help the teachers to create contexts in which the arithmetic is useful and meaningful in games all the students take part with their interest. Their understanding and interest about the concept increases. The contribution of drilling is very much important in arithmetic learning and many games provide practice and drill about concept.

Teacher should always remember that games are not a substitute for an operational process, but rather a reinforcement or enrichment process for that particular arithmetic exercise. It is important to remember, however that games should involve as many students as possible. The students' enthusiasm and the practicality of the game itself will determine how successful you have been in its application in the class room.

NCFSE informs that, "At the primary stage, all the learning occurs through play, mathematical games, puzzles and stories help in developing a positive attitude and in making connections between mathematics and everyday thinking. The treatment of topics must have an objectives, that is, the communication of

mathematical insights and concepts, which naturally arouse the interest and curiosity of students”.

Learning through games and activities.

- ❖ Provides active pupil participation
- ❖ Provides opportunity for inter personal relationship between the pupils.
- ❖ Provides opportunities for meeting individual differences.
- ❖ Judges the quality of teaching by the efficiency of pupil learning.

### **1.5.2 IMPORTANCE OF PUZZLES:**

A mathematics teacher should start the class with a puzzle continuing with other content and he should end also with a puzzle. He may not have done anything ‘concrete’ with his class in the traditional sense of the word but he has to achieve something, which is more important. He has raised the enthusiasm of students for the subject and the topic.

Puzzles in Arithmetic help in:

- ❖ Developing many abstract relationship and characteristics which may otherwise remain vague.
- ❖ Appreciation of the power and beauty of arithmetic.
- ❖ In calculating interest in arithmetic.
- ❖ Preparing students for leisure.

### **1.6.0 NEED OF THE STUDY:-**

Article 45 of Indian constitution, it is the obligation of state to provide free and compulsory education for the children of age between 6-14 years. Universalization of elementary education is the aim of present education



system. Universalization of elementary education includes universal access, universal retention and universal success. The first two can be achieved to desire extent by providing certain basic physical facilities but the problem of universal success is very difficult to achieve. Success percentage of the students at different level of schooling exhibits dismal picture. Wastage due to stagnation has been the virus of Indian school education. Stagnation in mathematics has been at the top among other school subjects. Various findings suggested that one of the reasons for stagnation has been faulty pedagogy that has been practiced in our schools. There fore, need for alternative pedagogical practices and material is largely felt.

For the systematic learning of Arithmetic there is always need of some sort of assistance in the form of educational material. Hence, in teaching learning arithmetic text books are used as powerful tool. Nowadays, the material which is being produced helps in learning arithmetic. Some of the shortcomings of the past text books have been overcome. The material present today is more interesting, relevant and the contexts is closer to the learners but in spite of above improvement present text book though take care of average and above learner's needs but because of certain limitations , the needs of poor learners are not taken care of.

In spite of qualities and appropriateness of the text book, there are certain limitations of the text book. They can not fulfill the needs of every individual. Keeping this view in mind the need of material is being felt to create congenial environment for learning and to provide greater exposure to the target