Day to Day Mathematics

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Abstract: *Mathematics plays a predominant role in our everyday life and has become an indispensable factor for the progress of our present day world. Counting starts from day one of the birth of a person. Most students would like to know why they have to study various mathematical concepts. Teachers usually cannot think of a real-life application for most topics or the examples that they have are beyond the level of most students. Mathematics is generally regarded as the driest subject at school, made up of routine, difficult, boring, arcane and irrelevant calculations which have nothing to do with discovery and imagination. In this paper, I have discussed the purposes of mathematics, aims of mathematics education and the rationales for a broad-based school curriculum followed by some examples of applications of mathematics in the workplace that secondary school and junior college students can understand. Lastly, I will look at how mathematical processes, such as problem solving, investigation, and analytical and critical thinking, are important in the workplace. The truly outstanding work of this research paper is a collection of review papers / articles investigating the open problems. In this paper I have discussed recent advances, problems and their current status as well as historical background of the subjects. It will help the students in pursuing higher education in their respective fields.*

I. INTRODUCTION

1. Mathematics is a methodical application of matter. It is so said because the subject makes a man methodical or systematic. Mathematics makes our life orderly and prevents chaos. Certain qualities that are nurtured by mathematics are power of reasoning, creativity, abstract or spatial thinking, critical thinking, problem solving ability and even effective communication skills. ′ Mathematics is the cradle of all creations. Be it a cook or a farmer, a carpenter or a mechanic, a shopkeeper or a doctor, an engineer or a scientist, a musician or a magician, everyone needs mathematics in their day-to-day life. Even insects use mathematics in their everyday life for existence. ′Snails make their shells, spiders design their webs, and bees build hexagonal combs. There are countless examples of mathematical.

2. Patterns in nature's fabric. "Pure mathematics is, in its way, the poetry of logical ideas" It is a tool in our hands to make our life simpler and easier. The present age is one of skill-development and innovations. The more mathematical we are in our approach, the more successful we will be. ′Math has become an inseparable part of our lives and whether we work in an office or spend most of our time at home, each one of us uses math as a part of our everyday life. The most significant reason for studying math is that it helps in building problem-solving skills. Moreover, all citizens require to understand how to think analytically about a problem. With the habits of studying and thinking about mathematics, you can train your brains to explore solutions more logically. All developing countries the efforts are being made by the respective Government to promote higher education. Central Government and state Governments are trying to nurture talent through focusing on the number of Universities and Colleges for expansion of higher educations. In the Year 1950-51, there were 30 universities and 695 colleges. This number has increased to 634 Universities and 33023 colleges' up to December 2011. The following table reveals the growth of higher education in India. In the table 1 the number of institutions related to higher education upto 2011-12 is shown. It indicates that there is expansion of high

education In India. The Central and state Government have taken initiatives to promote higher education. In the year 2011-12, the number of Universities and Colleges was 690 and 35539 respectively in India.

Another well-known instance of mathematics in society is cryptography in its various guises. There exist numerous situations in which data must be encrypted such that it can be publicly transmitted without revealing the content. On the other hand, sometimes a party may find it vitally important to break a code that another party has devised for its protection. Some companies want to examine the data of our credit card purchases in order to have access to our shopping patterns. Some governments want to do the same with regard to what they deem less innocuous patterns of behaviour. Cryptography is a typical example of the mathematics of the digital world. Digital data has become important in almost all fields of learning, a natural consequence of advances in computer technology. This has undoubtedly influenced the way people look at fields of mathematics such as number theory, that were previously thought to be very pure and virtually devoid of applications, good or bad. Now suddenly everybody in the possession of big primes has someone looking over their shoulder.

II. AIMS OF THE STUDY

One cannot do without the use of fundamental process of the subject mathematics in daily life. Any person ignorant of mathematics will be at the mercy of others and will be easily cheated. A person from labour class, a businessman, an industrialist, a banker to the highest class of the society utilizes the knowledge of mathematics in one form or the other. Whoever earns and spends uses mathematics and there cannot be anybody who lives without earning and spending. Everyday life situations should thereby form a basis for the teaching of mathematics. 'Mathematics in everyday life' was added as a new topic throughout all ten years of compulsory education. Mathematics is applied in various fields and disciplines, i.e., mathematical concepts and procedures are used to solve problems in science, engineering, economics. (For example, the understanding of complex numbers is a prerequisite to learn many concepts in electronics.) The complexity of those problems often requires relatively sophisticated mathematical concepts and procedures when compared to the mathematical literacy aforementioned.

2.1 Purpose of Mathematics in Education

Counting, subtraction, multiplication, division, weighing, selling, buying etc., will have got an immense practical value in life. The knowledge and skill in these processes can be provided in an effective and systematic manner only by teaching mathematics in schools.

In many occupations like accountancy, banking, tailoring, carpentry, taxation, insurance etc., which fulfills the needs of man can be carried out by the use of mathematics. These agencies depend on mathematics for their successful functioning. It has become the basis for the world's entire business and commercial system. Ignorance of mathematics in the masses is a formidable obstacle in the way of country's progress. The following are the practical aims of teaching mathematics.

1. To enable the students to have clear ideas about number concept.
2. To give the individual an understanding of ideas and operations in number and quantity needed in daily life.
3. To enable the individual to have clear comprehension of the way the number is applied to all measures but most particularly to those frequently used concepts such as length, volume, area, weight, temperature, speed etc.
4. To enable the individual to become proficient in the four fundamental operations of addition, subtraction, multiplication and divisions.
5. To provide the basis of mathematical skills and processes which will be needed for vocational purposes.
6. To enable the learner to acquire and develop mathematical skills and attitude to meet the demands of (i) daily life (ii) future mathematical work and (iii) work in the related fields of knowledge.
7. To enable the students to make appropriate approximations.

8. To enable the learner to understand the concept of ratio and scale drawing, read and interpret graphs, diagrams and tables.
9. To enable the individual to apply his mathematics to a wide range of problems that occur in daily life.

III. MATHEMATICS IN NATURE

Mathematics exists in nature. The mathematical element, symmetry, exists in natural objects such as snowflakes, honeycombs, insects, leaves, flowers, butterflies, fish, crabs, and starfish (Figure 1), and also in man-made objects such as carvings on wood or ceramics, woven straw for food cover (Figure 2) and motifs in songket weaving (Figure 3).

The Laws Of Nature Are But The Mathematical Thoughts Of God Mathematics is everywhere in this universe. We seldom note it. We enjoy nature and are not interested in going deep about what mathematical idea is in it. Here are a very few properties of mathematics that are depicted in nature.

Symmetry
- Bilateral Symmetry
- Radial Symmetry

Shapes
- Sphere
- Hexagons
- Cones

Parallel Lines Fibonacci Spiral

Symmetry is everywhere you look in Nature Symmetry is when a figure has two sides that are mirror images of one another. It would then be possible to draw a line through a picture of the object and along either side the image would look exactly the same. This line would be called a line of symmetry. One is Bilateral Symmetry in which an object has two sides that are mirror images of each other. The other kind of symmetry is Radial Symmetry. This is where there is a center point and numerous lines of symmetry could be drawn. There are two kinds of Symmetries.

From rainbows, river meanders, and shadows to spider webs, honeycombs, and the markings on animal coats, the visible world is full of patterns that can be described.

Generously illustrated, written in an informal style, and replete with examples from everyday life, Mathematics in Nature is an excellent and undaunting introduction to the ideas and methods of mathematical modeling. It illustrates how mathematics can be used to formulate and solve puzzles observed in nature.

Patterns in nature are visible regularities of form found in the natural world. These patterns appear in different contexts and can sometimes be modelled mathematically. Natural patterns include symmetries fractals, tessellations, cracks and stripes.

IV. CONCLUSION

Mathematics is of practical value in many professions. It is not just the mathematical knowledge itself but the thinking processes acquired in genuine mathematical problem solving and investigation that can be applied to unfamiliar situations in other fields. Mathematical knowledge and processes are also useful outside the workplace in

everyday life to understand and interpret certain events and news reports so as not to be deceived or swayed by others' opinions without any reasonable basis, thus improving one's own quality of life when one is able to lead a meaningful and responsible life. Teachers should impress upon their students the usefulness of mathematics in their daily life, and they should prepare their students for the future by focusing on the essential skills and processes that are required in the workplace. The purpose of University Education is only to open the minds and enable one to perceive new problems and seek solutions. Education is only a ladder to gather fruits and not the fruits itself. It is up to the people to keep pace with advances in science and technology and adapt them to the constantly changing environment and to interpret the solutions. In the process, it teaches such topics as the art of estimation and the effects of scale, particularly what happens as things get bigger. Readers will develop an understanding of the symbiosis that exists between basic scientific principles and their mathematical expressions as well as a deeper appreciation for such natural phenomena as cloud formations, halos and glories, tree heights and leaf patterns, butterfly and moth wings, and even puddles and mud cracks.

REFERENCES

[1]. https://core.ac.uk/download/pdf/30895663.pdf
[2]. https://timesofindia.indiatimes.com