

IT IS SCIENCE ALL AROUND

SRI ATMANANDA MEMORIAL SCHOOL, MALAKKARA

Sri Atmananda Memorial School was begun by Atma Vidya Educational Foundation in 1987. The school has about 200 students, from kindergarten through standard 12. It is non-sectarian, co-educational, and its students come from various socioeconomic backgrounds and religions. There is no entrance examination. The only qualification for admission is that the child's parents be open to the teaching approach; the family must support and be in harmony with the aims of the school. The school uses English as the medium of instruction. Buses serve the school's three campuses, located within 1.5 kilometers of each other. The Lower Primary Section encompasses the kindergarten and standards 1-4; the Upper Primary Section has standards 5-7; and the High School Section has standards 8-10, as well as the Higher Secondary (pre-college) standards 11-12. The school follows a nationally-recognised syllabus, and prepares students for examinations in the tenth and twelfth standard. In the Lower and Upper Primary campuses, the environment is saturated with opportunities to learn; classroom activities, veranda activities, outdoor games, posters, decorations, projects, all support the curriculum. The whole syllabus in standards 1-4 is presented each year, with many activities gauged to appeal to groups of children at different skill and developmental levels. Academic goals are matched by non-academic goals, such as the child's regard for the feelings of others, love of knowledge, ability to make decisions and solve problems and self-confidence. Starting in the eighth standard, students begin preparation for the matriculation examination in English, a second language (Malayalam, Hindi or French), civics, history and geography, mathematics, physics, chemistry, and biology, and an elective in environmental science or computer sciences. In the eleventh and twelfth standards, students prepare for the pre-degree examination in English and up to five elective subjects of their choice.

A group of young children with fishing poles bobbing up and down are squealing with glee every time their pole connects with a "fish." A closer look reveals that each pole has a magnet tied to the end of the string and each cardboard "fish" has a paper clip attached to it. When magnet and clip connect, the child catches a fish.

A party game? No, this is a science activity in the Lower Primary Section of Sri Atmananda Memorial School, Malakkara, Kerala, where a child's natural scientific curiosity is fed and developed through play.

Science is introduced through both spontaneous and planned activities that centre around the child's own individual interests. The school follows the KPM Approach to Children, which emphasises the relationship between the teacher and the child and the careful following of a child's thoughts and feelings. "We focus mainly on the interests of the

child,” explained one of the LP science teachers. “If a child is interested in water and you are talking about light and air, it won’t reach him.”

Further, she explains, any child has something that interests him--whether it is cars and lorries, cricket or cooking. Through any of these interests, science can be introduced.

“There is science in everything they do, even when they mix flour and water while ‘playing house,’” a teacher explains. “One of the LP boys’ favourite activities is plucking leaves from the shrubs and trees on the playground. They like to pluck the leaves and make different sounds by flattening them. While doing this, they have learned all about leaves. They say this is a thick one, this is a soft and tender one, this one makes such and such a sound. They smell the leaves and say, this one is not a lemon leaf.” Throughout, the teachers are there to supply the names of plants and trees, to guide the children’s eager interest, and to suggest that science is all around us.

“Even the KG child can differentiate among insects,” the teacher says. “When they collect insects and caterpillars on the playground, we speak about them, observe their body structure. Most of them know an insect has six legs and a head, thorax and abdomen. Their knowledge is not restricted to the syllabus. They learn what they want to.”

Another LP science teacher points out that every moment for a child is a “science moment.” “When they are playing in the rain, they put plastic, wooden, paper, and cardboard objects into the water and comment upon how some of them sink while some others float.”

The teacher adds that the fact that the children’s scientific interest is given free rein leads to a respect for living things. “When they catch grasshoppers in a box, they take care of them. They say, this grasshopper needs air, and they poke holes in the lid. Then they ask us what grasshoppers eat, and after playing with it for some time, they let it go.”

Last year, the school had a minor disaster. During a weekend, a large tree on the playground was knocked over in a high windstorm. When the children returned to school, they were dismayed to find that their favourite tree had fallen. But they were immensely interested in seeing the lumber cut and removed and in observing the stump that was left behind. “After that tree fell,” one teacher said, “the playground became hotter and dustier, and children understood from their own experience the importance of trees. Now that we have planted new ones, they take care of them and water them.”

It is not only on the playground, but also in the LP classrooms that scientific experiments go on. “Once we did an experiment with a beaker of water with a glass inserted in it upside down, with a piece of paper inside the glass. The children were all interested to see the paper remain dry. Then one boy put his hand inside the beaker and noticed that the water was slowly getting warmer. He came to the conclusion that the air pressure inside the glass was creating heat.”

Sometimes the children's scientific interest leads them to literary pursuits. One second-standard boy, who was fascinated by birds, noticed some birds making a nest in a tree on the playground. His interest led him to the LP library where he learned which birds are migratory, which are Indian birds. He ended by making a book of his own about birds, with their names in English, Hindi, and Malayalam.

With a firm basis in science, through their own practical experience, trial and error, these children may go on to a deeper pursuit of science. In the Upper Primary section, these activities are broadened to include more detailed experiments and projects that require a longer attention span. By the seventh standard, the children proudly wear white "lab coats." In the High School and Plus Two sections, the ICSE and ISC syllabi are followed, with formal classes in physics, chemistry and biology.

Principal Tarla Nanavati says that more than half of the school's previous two graduating classes have gone on to higher education in science. Even if they do not make science a career, these children will have a healthy respect for the world around them and a joyful outlook on science.

What is the KPM Approach to Children?

The relationship between teacher and child is at the heart of the KPM Approach to Children. Sri. Padmanabha Menon is the founder of Sri Atmananda Memorial School, Malakkara, Kerala, named for the founder's father, Sri. Atmananda (Sri. Krishna Menon, 1883 – 1959), a noted poet, teacher, writer, and Sage. This school first demonstrated the effectiveness of the KPM (named after the founder) Approach to Children. The teacher values the child unconditionally, and treats the child with unfailing regard for his or her feelings and opinions. The child can trust the teacher, and feels safe and open. In this learning environment, the child gains self-confidence and is free to develop in all facets. As cognitive skills grow, the child also learns regard for the feelings of others, and how to make decisions and solve problems. Sri. Atmananda Memorial School has demonstrated that schools can meet the child's most basic needs, and by so doing, can support the development of the whole child. A visitor soon begins to see what is important, and in some cases, unique about this school.

- The teacher – child relationship is profound, yet simple.
- The teacher values the child unconditionally so he or she cannot fail.
- The teacher is trained to see and enter the child's world.
- The teacher puts the child's needs and interests first.
- The child can trust the teachers, and knows they won't let him down.
- The child listens and hears and welcomes the teacher's involvement.

Activities and games are encouraging, supportive, and noncompetitive. Exams, homework, and formal classroom experiences are introduced gradually, as the student matures, and are fun and confidence-building. Assessment of the child is made in terms of the child's individual development. Parents' growing understanding of the KPM Approach to Children deepens their understanding of their own children. Children benefit fully from the school when they feel their parents' support.