

LONGFELLOW MATH SCIENCE MAGNET SCHOOL AND BATTELLE IN THE ADOPT A SCHOOL PROGRAM

By Dr. Phil Sticksel and Mr. Paul Held

Seventy five years ago in 1931 the Longfellow Elementary School opened on Hiawatha Avenue. The building is near the intersection of Hiawatha Avenue and South Knox Street. Longfellow was chosen as the school's name because it was on Hiawatha Avenue. The name Hiawatha had been given to this avenue because when the street was named, a Native American was living on it. These names demonstrate the erudition of the citizens of Westerville and their pride in America.

Longfellow School was the very first school in Westerville to be named for an American author or poet. Following this precedent many of the later elementary schools were given the names of American literary figures while the names of several of the existing schools were changed to author's or poet's names.

The Longfellow School served people in the surrounding neighborhood. There were families all of whose children had attended this school and these children were following in the footsteps of their father or mother or both.

The architecture of the building and its location on a small hill on a secluded street made Longfellow School a showplace among schools. Recent landscaping along the front of the building has given it additional beauty.

As the school's 60th anniversary approached, changes were afoot. The newer elementary school buildings were much larger and had one-floor plans. Their classrooms were larger and many of the buildings had indoor gymnasiums.

The other old school buildings had the same size limitations as the Longfellow School. The original high school had been converted to an elementary school when a new high school was built. The newer schools with their newer facilities were more attractive to the students. Some of the older schools had inadequate parking facilities and were surrounded by business establishments separating the students' homes from their school. They were no longer neighborhood schools.

The solution to the question of what to do with these small old elementary schools was to convert them into magnet schools that would attract elementary students from the entire school district. It was expected that these schools would appeal to parents of students who were either gifted or interested in a certain subject area. Admission to a magnet school would be based on a lottery system. In the lottery system parents applied for their children's admission to a certain grade and pieces of paper bearing the name of each applicant for that grade were placed in a rotating drum. A person then drew the names out of the drum recording the order in which the names were removed from the drum. If the class size was 26 students divided equally between boys and girls, the first 13 girls and first 13 boys whose names had been picked from the drum were admitted to the class. The other applicants were put on a waiting list in case some of the selected students decided not to attend the school.

These schools are called magnet schools because students are attracted, not assigned, to them. The first magnet school in the Westerville system was Central College for which the attracting instructional method was an integrated approach in using the language arts.

During the 1990-91 school year Mike Hayfield, the Assistant Superintendent of Elementary Education, began a plan to convert the Longfellow School to a magnet elementary school focusing on mathematics and science. He selected from various Westerville elementary schools several teachers who had special talents, such as knowledge of the operation of personal computers, which would be useful in a school focusing on math and science. He asked these teachers to prepare ideas for the proposed curriculum. The group all got together and presented their results to each other.

The planning for the new magnet school was materializing. However, the school would become a reality only if the upcoming vote on a new school levy passed. It did pass.

The next step was to announce the future new school to the public and ask interested parents to submit the names of their children for the lottery which would pick the students for each of the five grades that would commence at the Longfellow Math Science Magnet School in September, 1991.

Based on the number and size of the Longfellow classrooms the plan was that there would be only one class for each grade and each class would consist of 13 girls and 13 boys. The same 26 students who started in the class would progress as a unit until they finished the fifth grade. If a student transferred out of the school or moved, he or she would be replaced by another student who had been the 14th girl or boy in the lottery.

The response to the announcement of the math science magnet school was overwhelming. For example, there were exactly 100 applications for the 26 openings in the third grade

The reasons that parents wanted their child to enter the new math science school varied. Some of them had detected that their student had an interest in math and/or science. Some parents were mathematicians or scientists or teachers of these subjects. Some desired that their child would acquire the characteristics of scientists such as thinking critically –questioning assumptions then doing research before forming an opinion.

Other parents were attracted by the magnet school concept regardless of what the school's curriculum was. They expected the small class size to enhance the learning process. They were not dissuaded by the emphasis on math and science. Their reasoning was that what the child learned in these specialties would be beneficial even if the child eventually went into an unrelated occupation..

Some parents had a child in another magnet school and were quite happy with the concept. Longfellow was an opportunity to have a second child in a magnet school even if it was a different magnet school.

Other parents applied for entirely unrelated reasons. For instance, two children from one family had been at Longfellow for all their years in school as had their older siblings. Their parents wanted these children to complete their elementary school education at their neighborhood school.

By the end of the 1990 – 91 school year the Longfellow student body for the following school year had been selected. In the meantime Mike Hayfield had solicited applications for teachers at the new math science magnet school. Three teachers from the original teacher planning group applied and were accepted. Two other teachers were added.

Longfellow Magnet School has been in operation for 16 years beginning in September 1991. Three of the original five teachers have been at Longfellow since its inception – Kim Wickham (third grade), Mark Bach (4th grade), and Charlie Lozano (fifth grade). Purr Inniger, the original first grade teacher, was succeeded by Kaitlyn Ashbrook hired in 1998 when Purr's husband was transferred to another city. Rick Oxley, who was in the original teachers' group that prepared the Longfellow curriculum, was the initial 2nd grade teacher, but he left after one year to become the principal at Emerson Elementary School, He was succeeded by Mary Petrovic, who was succeeded by Denise Kish. Mrs. Kish has been the second grade teacher at Longfellow since the 1994 school year.

During the summer of 1991 the five original Longfellow Math Science Magnet School teachers were joined by the man who has been the school's principal for its entire existence, Steve Petercsak. Steve and the five teachers came together several times in that summer for planning workshops.

Another important person in the school's planning process was Pat Holcomb, Supervisor of Able and Talented for the school district. She emphasized the special training aspect that the students should receive in math and science. Pat was also the person who was responsible for Longfellow's adopt-a-school partnership with Battelle. Pat lived in Reynoldsburg and was a neighbor of Paul Held, a member of the materials department at Battelle. One day in a conversation with Paul, Pat asked him whether he thought that Battelle might be interested in assisting the Westerville School District in its new venture of starting up an elementary school with a curriculum specializing in math and science. Paul told Pat that he could not answer that question, but that she should call Polly Shoemaker who was in charge of Battelle's participation in community services.

Polly was working with Battelle staff members who had expressed an interest in volunteer activities. She was instrumental in forming Team Battelle, a more formal organized way for staff members to provide assistance to non-profit agencies. This included overseeing several Battelle scientists who had ongoing relationships with selected Columbus schools.

As it turned out, Battelle management had been considering involvement in elementary education, so Pat and Polly were able to put together a plan under which Battelle would place one volunteer scientist in each of each of Longfellow's five grades to work with the teacher in that grade.

Polly was easily able to recruit five staff members. Three of the five, Dr. Charles Marschall, Dr. Dick Ridgway, and Dr. Phil Stickse were from Westerville and had children or grandchildren who were current or former students in the Westerville schools. Paul Held, a researcher in the Materials Group, was a member of the original Battelle-Longfellow group because of his interest in working with children and his involvement in arranging the cooperative venture. Jane Cochren, a Battelle research technician in pathology was the fifth member of the original quintet.

Shortly before the formation of the Battelle-Longfellow plan a Science & Math Network had been created for Central Ohio. In the summer of 1991 a facilitator from the network spent an entire day at the Longfellow School with the teachers, scientists, principal Steve Petercsak and Pat Holcomb during which time everyone got to know each other and planned just how to make the partnership work. One of the Battelle participants recalls this meeting as "being a great experience and very helpful to me and my Longfellow teacher partner".

In the meeting the ten people who would be in the classrooms introduced themselves. They told everyone about their background and their previous experience. Then the five teachers described their plans and expectations for the Math Science School. Many of the scientists had been in classrooms to give single presentations and the teachers had had guests who lectured or helped out for short periods. However, the extended involvement of a single scientist in the classroom on a schedule of once a month to once a week was new to the members of both groups. Questions of how am I going to use this person and how am I going to plan for his or her assistance arose in the teachers' minds. These scientists were not teacher's aids helping to grade papers or assist in maintaining records. They were to be cooperating teachers.

At the conclusion of this meeting each scientist was asked to write down the name of the teacher whom he or she thought would be the most interesting faculty member with whom to work in the coming school year. These choices were given to Steve and Pat. At a later time they met with the teachers and decided on the pairing of scientists with teachers.

Westerville's magnet school program has been successful. Support for this conclusion from the Longfellow experience includes the following examples.

- 1) Field trips to places like COSI and Highbanks Metropolitan Park attracted many parents who acted as escorts.

- 2) A science curriculum based on a “hands on “ approach such as:
Joint construction of hot air balloons by two person teams of one fifth grader and one fourth grader has been an annual event.

Under the guidance of a parent naturalist, third and first grade buddies explored Alum Creek looking for crayfish and bugs.
- 3) Laboratory experiments are held in the classrooms on a regular basis. Some require single student work. Others use teams of two to five students.
- 4) Longfellow has a basement computer room where each class member regularly uses an individual personal computer to complete projects.
- 5) A survey of 26 former Longfellow students who graduated from high school in 2002 found that all of them entered college. A subsequent survey of these students in the summer of 2006 found that 17 students had graduated from college and six more would graduate in 2007 or 2008 or maybe even later. Three had dropped out of college, but hoped to return.

Several activities are unique to Longfellow. In the fourth grade each student dissects a fish. Like many other schools Longfellow holds an Invention Convention contest in the late winter. In some years there is 100 percent participation by some of the Longfellow classes.

Each year in May the members of the graduating fifth grade class are taken to Battelle where they are divided into small groups of five or six students. These students are conducted on tours of four or five of the Battelle laboratories where the scientists who work in these labs explain and demonstrate what they are doing on a current project. The labs that are visited change from year to year as Battelle’s active projects change. When the tours are completed, the students and their tour guides are invited to have lunch in the Battelle dining room.

Another Longfellow annual tradition does not involve math or science. Mark Bach and his fourth grade class invite veterans from the United States Armed Forces to a thank-you celebration each year in observance of Veteran’s Day. A special flag raising is held in the morning. Then in the afternoon the class and the veterans assemble in the school cafeteria where patriotic songs are sung, poems are read, and thank-you notes are given by the students to the veterans. A member of the Westerville Police Force reads a letter from the President of the United States thanking all the veterans.. Each veteran is asked to tell the students the service branch in which he served and to describe what his duties and experiences were while he was in the service. The majority of the veterans at these celebrations are fathers or grandfathers of students in the class.

The Battelle scientists, when they come to Longfellow, assist the teachers with whom they work helping to set up and conduct the laboratory experiments. During classroom learning and discussions they can draw upon their own experiences to add observations or ask questions. There are opportunities when they can make use of their field of expertise to provide special contributions to the students’ education. For instance in the initial year of the Math Science Magnet School’s operation the first graders were interested in how to make slime. Their Battelle scientist, Paul Held, is an expert in materials. He found a special “slime” recipe suitable for the first graders. It was a memorable occasion and Paul has repeated it for subsequent first grade classes.

For the fifth grade Dr. Pete Taussig , a Battelle chemical engineer who succeeded Jane Cochren as the fifth grade scientist, introduced a method of visualizing the composition of molecules by using different colors

of gum drops to represent different atoms and toothpicks to join the atoms together forming molecules. Each year Dr. Phil Sticksel, a meteorologist, teaches the fourth grade unit on weather.

The scientists also bring to class some materials and equipment not available to the school. The third grade students were educated about the nature of very cold temperatures and the accompanying physical changes by their first two scientists, Dr. Dick Ridgway and his successor Karen Veley. Karen brought canisters of liquid nitrogen to the classroom. She released the liquid which transformed into a gas by absorbing heat from its environment. The demonstration used a banana that became frozen into a fragile solid then easily broke into pieces to the delight of the students.

The Battelle scientists who worked with the third grade classes, King Wong and Mindy Graber, have specialized in demonstrating chemical changes. Mindy, a chemist, sometimes brings her husband, who is also a chemist, with her to help perform the experiments.

However, the principal benefit from the Battelle scientists to the Longfellow students may not be what the scientists teach in class as part of the curriculum. A recent college graduate, who is a Longfellow alumnus, commented that the associations with the Battelle scientists in the classroom, or on a visit to Battelle, or during activities such as at COSI provide the students with experiences in a variety of scientific fields by just having listened to these scientists describing their work. It is a valuable asset when a student is deciding what she or he wants to study in college. Even if the student's parents are scientists, engineers, or science teachers, the associations with people from various specialties may open new fields of interest which were previously unknown to the student.

The current set of volunteer scientists at Longfellow includes Paul Held, Mindy Graber, Phil Sticksel, and Laura Dues. Steve Krak, the other member of the group, oversees the group and arranges the annual tour of Battelle. Paul Held is unique. He has retired from Battelle and now has another job. But, not only does Paul still serve as the volunteer scientist for Longfellow's first grade, he also is the only volunteer scientist at the Central College Math Science Magnet School. Central College became Westerville's second Science Math Magnet School several years ago. Paul works with the first grade class at Central College just as he does at Longfellow.

At Battelle the partnership with Longfellow Math Science Magnet School is under the jurisdiction of Volunteer Coordinator Amy Fry who is in the Battelle Community Services Division. One benefit to Battelle from the Longfellow partnership is that it is one of the many community projects in which Battelle participates to meet the requirements of its charter as a not-for-profit company.

There may come a day in the future when some former Longfellow Math Science Magnet School student takes employment as a Battelle scientist. That would be a proud day for both organizations as well as for all the Longfellow teachers and volunteer scientists.

In September 2006, as part of its No Child Left Behind program, the United States Department of Education selected the Longfellow Math Science Magnet School as a Blue Ribbon School. There are several requisites that a school must meet to receive this honor. For Ohio schools the first requisite this year was that at least 75 percent of all students must score 75 percent or higher on the 2005 - 2006 achievement tests, thereby qualifying as one of the State Superintendent's Schools of Distinction. Secondly, if the school's scores on this test were in the top 10 percent for Ohio, the school would be considered for a national award. A third requisite was that the school must also show Adequate Yearly Progress in math, reading, and language arts on the state's report card. If all these requisites were met, the school could apply for consideration as a national Blue Ribbon School. The letter of application must describe the school, how it operates, its curriculum, and any special features that other schools might be interested in adopting.

There were three schools in Westerville on the list of 12 Ohio schools eligible for consideration as national Blue Ribbon Schools – Longfellow, Central College, and Emerson World Languages & Cultures Magnet School. When the first list of the 250 schools selected for the entire nation as Blue Ribbon Schools was released, Longfellow and Emerson were on it. A second list was to be released at a later date.

It is believed that one of the reasons Longfellow School received the Blue Ribbon School award was that its letter of application described the involvement of the Battelle scientists, some of whom have continued to participate even after their retirement from Battelle. This belief was supported by the actions of Kristine Cohn, the Region 5 representative of the U. S. Secretary of Education who came to Westerville in October, 2006, to congratulate the students and teachers of Longfellow and Emerson Schools on their awards. When Ms Cohn visited each classroom at Longfellow, she made a point of locating the Battelle scientist who was there, going up to him or her, and profusely thanking the scientist for his or her work with the class.

Longfellow's Principal Steve Petercsak and third grade teacher Kim Wickham, along with Emerson's Principal Bev Good and teacher Kristy Courtwright as well as Superintendent George Tombaugh traveled to Washington, D.C. in November to receive the National Blue Ribbon School Award along with representatives from the other winning schools throughout the country.

The Longfellow – Battelle partnership provides an excellent and unique example that could be recommended to similar schools throughout the nation if opportunities are available.

One side effect of the Longfellow experience is that many longtime friendships have been formed as a result of people with similar interests being together in a single class for two or more years. The students may have been separated in middle school, then brought together again in high school where their friendship blossomed again. Other friendships which started at Longfellow did not need for the people to be brought together again to continue. These friendships include those among the Longfellow teachers and staff, the Battelle scientists and the parents of the students.

In summary, the success of the Longfellow Math Science Magnet School begins with Mike Hayfield who conceived the idea and assembled the teachers and the principal who together developed the curriculum for the school. Pat Holcomb suggested asking Battelle Memorial Institute to become involved and Battelle, through Polly Shoemaker, agreed to supply a scientist volunteer for each of the five grades. These scientists joined the exceptional staff of educators and meshed with them. Support from the parents has always been a key ingredient. The cohesiveness of the principal, teaching staff, support staff and scientists and the persistence of all these people with the school for its entire period of existence is also remarkable. The result is a school and a program that can be used as a model to be emulated nationwide.