

# **MATHEMATICS AND SCIENCE ACADEMY AT LINKHORN PARK ELEMENTARY SCHOOL**

## **Year-Two Evaluation**

VIRGINIA BEACH CITY PUBLIC SCHOOLS  
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**MATHEMATICS AND SCIENCE ACADEMY  
AT LINKHORN PARK ELEMENTARY SCHOOL  
YEAR-TWO EVALUATION**

**EXECUTIVE SUMMARY**

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**INTRODUCTION/BACKGROUND**

This evaluation provides the School Board and superintendent information on the second year of the school division's Mathematics and Science Academy at Linkhorn Park Elementary School. The evaluation focused on the accomplishment of program goals and objectives.

The academy functions as a regional school-within-a-school for students in Linkhorn Park Elementary School, as well as Alanton, Birdneck, Cooke, John B. Dey, Seatack, and Trantwood elementary schools. The Mathematics and Science Academy was proposed to "address the needs of students in grades three, four, and five who have a high level of interest in mathematics and science and who would benefit from a rigorous program." During the 2005-06 school year, the Mathematics and Science Academy enrolled 48 third-grade students and 50 fourth-grade students.

**FINDINGS**

- Academy personnel responded positively to the year-one evaluation recommendations. Academy staff explored marketing efforts and monitored application and enrollment data. The selection committee composition and the selection process continued to provide an impartial and balanced selection of academy students. Academy staff explored different methods to communicate with parents. In addition, collaborative planning time was scheduled for academy teachers.
- The academy marketing, application process, and student selection process was similar to year one. Marketing efforts appeared effective in providing information to parents.
- Compared to year one, fewer students applied overall, as well as from Linkhorn Park Elementary School and four of the six feeder schools.

- Academy personnel followed selection guidelines as outlined in the proposal. Students from Linkhorn Park Elementary School represented a larger percentage of the academy enrollment than students from the feeder schools.
- Compared to year one, more female students enrolled in the academy in year two. However, a larger percentage of academy students were male and Caucasian. Overall, academy students' characteristics did not reflect those of students in Linkhorn Park Elementary School or the division. A larger percentage of academy students were Caucasian, male, and gifted, when compared with Linkhorn Park Elementary School and division students.
- Parents enrolled their children because of the academic challenge in mathematics and science. Parents' and students' satisfaction with the academy was evidenced by high retention during year two (99%) and the high anticipated reenrollment rate for year three (>93%).
- The academy program expanded to fourth grade, and students received instruction from experienced, qualified, and trained academy teachers. Teams of teachers at grade three and grade four provided interdisciplinary instruction to academy students. The academy continued to schedule field trips and learning that provided enriched opportunities for academy students. A substantial percentage (>95%) of parents and students agreed that they liked the academy field trips.
- The transportation plan in year two followed the proposed plan. A majority of parents agreed bus transportation allowed their child to fully participate in the academy, and the percentage of agreement responses increased from year one.
- Progress was made in achieving the program goals.
  - Goal 1:
    - Objective 1: The academy provided interdisciplinary, accelerated, and enriched instruction in mathematics and science.
      - Third-grade students surpassed the benchmark (50 percent of academy students will achieve a pass advanced score on mathematics and science SOL scores). More than 82 percent of the academy students achieved pass advanced on mathematics and science as well as English and social studies SOL tests. In addition, the percentage of academy students achieving pass advanced on SOL tests surpassed non-academy Linkhorn Park Elementary School and division students.
      - Fourth-grade academy students participated in SOL assessments in mathematics. More than 74 percent of the academy students achieved pass advanced on the assessment. The percentage of academy students achieving pass advanced on the SOL tests surpassed non-academy Linkhorn Park Elementary School and division students.
      - Fourth-grade academy students did not meet the benchmark on the local mathematics and science posttests; however, they outperformed non-academy Linkhorn Park Elementary School and division students.

Objective 2: Students were integrating computer literacy in their data collections, research, and electronic presentations.

- Goal 2: A building classroom was reconfigured as a laboratory and was stocked with appropriate materials. The laboratory continued to provide benefits for academy students and non-academy students in year two. A substantial majority of parents and students indicated they liked the activities in the laboratory.
- Goal 3: Academy partners provided curriculum development training and facilitated field trips. Mentors were secured for fifth-grade students for the 2006-07 school year.
- Goal 4: The feasibility of using the Linkhorn Park Elementary School academy as a prototype for other mathematics and science academies will need to be evaluated when the academy has reached full implementation.
- Students, parents, and academy staff held positive perceptions about the academy. Students indicated they were learning the core subjects. Parents and teachers agreed students were challenged in learning math and science; although, second-year parents expressed less agreement. Parents, teachers, and students indicated students were learning health at the expected rate. However, third-grade students and first-year parents reported lower percentages of agreement about learning health, compared to second-year parents and fourth-grade students.
- Parents were aware of academy expectations and understood their responsibilities as academy parents; however, a larger percentage of second-year parents than first-year parents were more likely to agree with this survey item. Parents indicated they were able to provide help with math and science at home, but a larger percentage of first-year parents than second-year parents held this opinion. Overall, fourth-grade students and second-year parents held more positive opinions about the academy.
- Parents and their children liked the hands-on activities, experiments, field trips, and fast-paced learning opportunities in the academy. Academy students gained challenging instruction, greater understanding of math and science, and experiences that connected learning among different subject areas.
- Parents and students made only a few suggestions about how to improve the academy. Parents, students, teachers, and community partners suggested changes in field trips, more community involvement, and continued collaborative planning time. A few parents wanted the program to extend to middle school or additional elementary schools.
- The total projected operational academy expenses for 2005-06 were \$92,500, while the actual operational academy expenses totaled \$53,678, which was \$38,822 less than proposed.

## **RECOMMENDATIONS**

- Continue the Mathematics and Science Academy at Linkhorn Park Elementary School through the third year of implementation.
- Continue to utilize marketing efforts that maintain academy interest and attract additional minority and female students.
- Continue to track application, selection, and enrollment data in 2006-07 to evaluate the effectiveness of marketing efforts.
- Establish benchmarks to include new assessments at grade 4 and adjust existing benchmarks to evaluate progress toward continuous improvement.
- Continue to provide information to parents regarding academy expectations, guidelines for projects, and study guides.