

This quarterly evaluation report will focus on end of year interviews (conducted in May 2010) with each school's principal, interviews with each school's coordinator, and teacher survey data. This report will also give an overview of the evaluation plan for the final report.

### **Summary of Principal and Environmental Education Coordinator Interviews**

Interviews were conducted with the principals of the two schools, Portland Elementary and Cane Run Elementary, as well as both schools' program coordinators. This section will summarize the results of these interviews. See Appendix A for the interview questions used. The same set of questions was used for both the principals and the coordinators.

#### TEACHER, STUDENT, AND FAMILY GROWTH

When talking with the principals and coordinators, the one resounding theme that consistently emerged was the growth of the different people involved. This included the students, teachers, principals, coordinators, and the students' family.

##### *Teacher Growth*

A coordinator discussed how there was anxiety early on but a small group of teachers would do a short (10 minute) lesson and then continually try more lessons. Other teachers then heard about their successes and so they would try a lesson. This has gradually "snowballed" into a higher level of comfort teaching environmental topics. Both principals further attributed much of the growth, especially early in the school year, to the modeling of lessons by their coordinators. Other aspects mentioned that led to teacher growth and teacher "buy-in" were: a) teachers started to see strong connections to Kentucky Core Content, b) teachers saw it was not an add-on, but something that would enrich what they were already doing, and c) teachers saw students making more connections within the content and to the real world.

The principals and coordinators noted several specific ways that they noticed changes in the teachers and their instructional strategies. They all mentioned some form of teachers doing more inquiry and/or problem solving based lessons. There were a few specific lessons mentioned like measuring a garden space and then determining appropriate spacing of plants according to their research, classification of bugs, and producing an environmental play. The interviewees talked about how the teachers were taking their students outside a lot more whether they were working on the garden area, using the schoolyard as the classroom (set-ups included whiteboards that could be used outdoors), or going on a nature walk. They also discussed how teachers were helping students make more connections to the environment in their readings, on field trips, and at home. It was noted how now, toward the end of the year, teachers are taking the initiative and are more willing to tackle some of the larger exploration activities.

One principal commented on how much she has grown professionally.

### *Student Growth*

All interviewees noted how students have grown throughout this year with respect to academics. It was mentioned that students were doing more writings connected to the field studies, were making more real world applications, were making more connections from what they were learning in the classroom to the real world (ex. field trips more meaningful), were doing more nonfiction reading, were learning richer vocabulary, and were developing stronger observation skills. It was also mentioned that students were using higher level thinking using more “how” and “why” questions. One coordinator noted that lower level students, those identified as special needs, would often do quite well on activities in ways that a paper and pencil test could not show.

All principals and coordinators described how students have grown in additional ways beyond the academics. They mentioned how students at these schools tend to live in highly populated areas, which do not easily afford them the opportunities to experience and explore nature. The students as a whole were unaccustomed to being outside. According to the interviewees, at the beginning of the school year, students were not comfortable and even at times fearful of being out in a natural setting. For example the 5<sup>th</sup> grade students went to Red River Gorge and started playing in a creek, splashing the water, looking under rocks, etc. When this story was being recalled it was stated that thinking back to when these same students were in 3<sup>rd</sup> grade they would not have even put their hands in the water, much less getting in and playing in it. Another example given was when we had some snow the students were excited to go outside to look for animal tracks, take the temperature of snow, etc. Students realized that “life doesn’t stop during the winter.” It was noted how the kids have developed respect for nature.

### *Family Growth*

Another item that emerged when discussing growth was how not only the students have been affected, but also their families. Just as the kids were not accustomed to being outside, neither were many of their families. One of the interviewees noted how many parents had misconceptions about how food was grown. It was also mentioned how it took some time for parents to begin understanding that environmental education was not an add-on, but embedded in what the school was about. Lastly, interviewees described how the students would often go home and teach their parents about what they were learning with respect to the environment.

### LEADING CHANGE

One of the topics discussed was how the principals and coordinators at each school were leading the change in becoming environmental education magnets. Certain common themes arose from the interview:

### *Principals Leading Change*

Both principals discussed the importance of having a vision for the school and then discussing with their staffs what that vision looks like. Both schools rewrote their vision and mission statements. Both principals would discuss at staff meetings “what the vision is” and “what does it look like.” They would do this throughout the year. One principal met with teachers in large group, small group and individually to discuss expectations. Both principals are working toward having their teachers teach toward the mission and vision. At the end of this year, both principals mentioned that a few teachers have decided, for a variety of reasons (i.e. health or lack of “buy-in”), that teaching at an environmental education school was not for them and they put in for transfers to other schools within the county.

### *Program Coordinators Leading Change*

As the principals’ seemed focused on the philosophical and providing a framework for change, the coordinators seemed focus on assisting teachers where they were and providing the day-to-day assistance with becoming an environmental educational school. Both principals were highly complementary of their coordinators. Both coordinators talked about how, especially at the beginning of the school year, they would model lessons for teachers. These lessons could be in the classroom, on a field trip, or using an outdoor classroom. These lessons were focused on being inquiry-based, making connections between concepts, and making connections to the environment. Both principals mentioned how helpful the coordinators are when they give a “heads-up” of what is coming next and how that connects.

## COMMUNITY INVOLVEMENT

Another thread that was a major part of the interviews revolved around their respective communities. These discussions focused on making the community aware of opportunities at each school and being involved with their local communities.

### *Community Awareness of Opportunities*

Jefferson County Public Schools uses a school choice student assignment model. It is very important for schools to let their local community and the community at-large know the advantages of attending their school to maintain or increase school enrollment. Both schools do monthly newsletters to their students’ households, participated in the Showcase of Schools (schools set-up booths for parents and students to meet school representatives and discuss what each school has to offer), sent out mailings/postcards to those households in their area, hosted open houses/community meetings/family nights, and featured on local TV news reports. Portland Elementary’s Environmental Education Program has also been featured in the *Portland Anchor*, a neighborhood newspaper. Cane Run Elementary has been working on updating their school website.

*Involvement with the Local Community*

Both schools are getting more involved with their respective communities. Portland Elementary has participated in two school-wide *Brightside*, a city-wide volunteer operation coordinated by the metro government, clean-ups. One was centered on cleaning up the school grounds. The second was neighborhood based, where the students did a clean-up within a mile radius of the school. One of the things that both the coordinator and the principal proudly mentioned was the large number of parents that participated with their child. Cane Run Elementary has made significant progress with establishing community partners. Being located close to several industrial plants, they have arranged several community partnerships. These community partners have been involved with donating money, resources, and time. Several of these partners participated in the school's Pioneer Day. Although these partners were originally established to form environmental education partners, some are now supporting the school in other ways. Additionally, Cane Run has a community trail, which is making the campus more attractive and used by their neighbors.

## ENVIRONMENTAL EDUCATION PROGRAMS

As part of the Environmental Education Grant there are several components that are specifically part of this grant. Below is a short description of the interviewees' responses on how the different components are currently functioning.

*FOSS*

Both schools agree that Foss is going well. They mentioned that the consultants worked great with the staff, the materials were great, and the professional development (PD) providers were outstanding. Each school mentioned how they liked the hands-on lessons and how well the lessons connect. A coordinator mentioned how the FOSS helped connect short lessons with real world applications (soils, rock, organisms, etc.). One suggestion made was to schedule follow-up school visits in August. This would help considerably with planning, maximizing teacher time with the FOSS consultants, and possibly using a job-embedded PD model with FOSS.

*Blackacre State Nature Preserve*

The interviewees were all positive about Blackacre. One coordinator mentioned how nicely the lessons connected with FOSS. One of the principals stated, "some kids have never been out and experienced outdoors like that; it gives (them) experiences." One principal was very positive about the summer PD provided with the Blackacre staff. Some of the suggestions made were a) more hands-on, b) try to time and match up the Blackacre lessons with lessons at school or give schools an agenda a few days ahead of visit so teachers can prep kids, and c) be mindful of kids' age (occasionally too much talking for younger kids) and experiences (many kids have never hiked before).

### *School at the Zoo Program*

All participants were extremely positive about the School at the Zoo Program. Words used to describe this program were “fabulous”, “great”, “wonderful”, and “excellent”. Some of the other comments included: a) excellent review of life sciences, b) tremendous amount of misconceptions addressed, c) a full week that was different than school which was focused and gave students a different lens, and d) allowed students to see things first hand. Suggestions included: a) giving the environmental education schools priority in scheduling and b) would like other grades to be able to participate in this program for at least 2-3 days.

### *School Gardening*

Both schools reported successes using barrels and limited space. Classes had individualized space for them to grow their vegetables and plants. One principal mentioned how the teachers were taking on ownership of the garden. An example of teachers taking ownership is that a teacher is driving everyday to school to take care of the garden even though she lives on the other side of the county. Both coordinators talked about how the kids enjoyed eating what they grew and how many students had no prior knowledge or experiences in eating what you grow. Both schools felt limited in what they could do due to space and summer remodeling (see challenges). The coordinators are anxious to expand the garden areas next year. (See semi-annual report, March 2010, for a summary of the School Gardening Survey).

### *Field Study Opportunities*

The interviewees consistently stated that this was either one of the best or the best part of this program. Phrases used to describe this part of the program were “best thing”, “huge impact on kids”, “excellent”, and “kids liked the most”. Both schools discussed how students have grown through these experiences. The kids now know and expect to be outside on a regular basis. In addition to Blackacre and the Louisville Zoo, Portland Elementary and Cane Run Elementary have worked with Metro Parks, Louisville Science Center, and Oxmoor Farms. The 5<sup>th</sup> graders did the “Kids in the Woods” Program with Metro Parks where they planted trees and did a river walk. One principal is confident that the students with these experiences and the connections being made will make significant academic gains, especially once they have been in the program multiple years. The same principal noted that she anticipates increases in attendance rates because students want to come for the field studies.

### *Integrating Environmental Education Across Contents*

The two environmental education schools are currently integrating the content through science and literacy. One principal stated she is looking for more resources in social studies because there is such a natural fit between environmental education and the social sciences. The same principal said they will focus on integrating environmental education with mathematics this next year. The other principal noted that in order for integration into other curriculum to be effective it must be related to Core

Content, meaningful, and relevant to student lives. One coordinator mentioned that the outdoor classroom makes it easier to integrate environmental education.

### *Stewardship and School Projects*

Both schools have several programs and projects that they have either completed or are currently working.

Portland Elementary reported doing the following projects/programs:

- They have an active Environmental Club that meets after school (currently working on worm composting).
- As mentioned previously, they have participated in two Operation Brightside projects.
- They started a recycling program in March, which includes students sorting their trash when they finish lunch.
- Next year they are planning on making available food from the school garden in the cafeteria.
- Planted 150 trees at Portland Neighborhood Park.
- Established an environmental book room.
- Had an Earth Day celebration.
- Hosted Parent nights.
- Students present at the Environmental Youth Summit.

Cane Run Elementary has reported the following projects/programs:

- Recycling has been started.
- Completed student produced programs of “Santa Going Green” and “Cane Run Going Green”.
- Had Pioneer day, which was a major building block in implementing environmental education. This event had approximately 30 stations such as agriculture (with an African American liaison for minority farms and small gardens), bee keepers, Kentucky Department of Fish and Wildlife, Forestry Department, Blackacre Staff, and many other. Community Partners had booths in the section of “Pioneers of the Future”, which included kids making slime, polymer sand castles, Space Shuttle posters, etc.
- Community Partners volunteered hours and did a “healthy foods” give-away.
- Had an Earth Day celebration.
- Participate in a mapping program (Edu tech) tracking birds and insects.
- Students present at the Environmental Youth Summit.

One fascinating thing that occurred at both schools, even though not directly related to Environmental Education, was their support of a charity. Portland Elementary students raised \$750 for Haiti and Cane Run raised money for Wayside Christian Mission (a local homeless shelter). Both principals attribute this to the students learning to take care of others and the world around you. As one principal state, “we are stressing the more help you get the more responsibility to give back.”

## CHALLENGES

The principals and coordinators noted several challenges currently being faced.

- It seemed like the biggest for both schools were the district renovation projects which are preventing them from working during the summer to prepare for next year. Both schools have grants and volunteers that they cannot use because of the renovation projects. Neither one received a details of the timing of the summer work. Portland noted that they do not have much physical outdoor space, but they are hoping that the outdoor renovations will make at least some improvement.
- Both said a challenge originally was getting everyone on-board, but they both are reporting that they are excited about the possibilities next year will bring, especially after seeing the growth of the staffs this year.
- Funding, above the grant, for extras is always an issue according to one principal. This funding would pay for reading materials, PD, and other resources.

### **Summary of Teacher Surveys (May 2010)**

In May 2010, all teachers at Portland Elementary and Cane Run Elementary were given a survey regarding different components of the evaluation. The primary purpose of this survey was to gage what aspects of the program are going well and which need more attention. The following sections will provide a summary from the survey. See Appendix B for the survey used.

## GENERAL INFORMATION

There were 49 teachers total completing the survey, 28 from Cane Run Elementary and 21 from Portland Elementary. The median years experience teaching was in the 5-9 years range with Cane Run's median years teaching in the 10-14 years experience range and Portland's being in the 5-9 years experience range. The median years at the present school was in the 0-4 year range, with Cane Run's median being in the 0-4 year range and Portland's being 5-9 year range. When examining the grades taught 10.2% (n=5) taught kindergarten, 16.3% (n=8) were 1<sup>st</sup> grade, 12.2% (n=6) were 2<sup>nd</sup> grade, 12.2% (n=6) were 3<sup>rd</sup> grade, 6.1% (n=3) were 4<sup>th</sup> grade, 4.1% (n=2) were 5<sup>th</sup> grade, and 38.8% (n=19) taught multiple grades, were teacher assistants, or were special area teachers (these percentages were similar across schools).

## PROFESSIONAL DEVELOPMENT (PD)

The majority (77.6%) of the teachers reported having at least 24 PD hours. Of those hours, 59.2% (81.0% at Portland and 42.8% at Cane Run) of the teachers estimated that 13-24 hours were focused on environmental education. Overall, 75% of the teachers ranked all PD "strong" or "very strong" with respect to their growth in teaching and implementing the environmental education program. There were seven areas, highlighted in grey, over 85% of the teachers ranked as "strong" or "very strong".

There were two categories that there was over a 10% difference between the two schools in how they were perceived in affecting growth. These categories were “instructional ideas” and “specific content that I used.”

Table 1: Ratings of PD (Percent Strong or Very Strong)

PD TOPIC	Cane Run n=28	Portland n=21	Total n=49
Foss Curriculum – Module Implementation	85.7% n=21	78.5% n=14	82.9% n=35
Foss Curriculum – OBIS/Science in the Schoolyard	72.7% n=22	78.5% n=14	75.0% n=36
Blackacre Visits	88.5% n=26	88.2% n=17	88.4% n=43
School at the Zoo Program	87.5% n=16	85.7% n=14	86.7% n=30
Specific content that I used	79.2% n=24	68.8% n=16	75.0% n=40
Ideas for the classroom	88.0% n=25	88.2% n=17	88.1% n=42
Ideas for field experiences	79.2% n=24	82.4% n=17	80.5% n=41
Instructional Ideas	92.0% n=25	78.9% n=19	86.4% n=44
Making environmental education relevant to student lives	92.3% n=26	85.0% n=20	89.1% n=46
Engaging the students	92.3% n=26	84.2% n=19	88.9% n=45
School/Community Gardens	88.5% n=26	84.2% n=19	86.7% n=45

Note: <sup>1</sup> Not all numbers add up to total number possible since teachers had the option to leave blank or mark NA if that particular item did not apply to them.

<sup>2</sup> The n in the table represents the number of respondents that answered this question. The percentage given is that based on the n for each question, not the total number.

## PEOPLE RESOURCES

The teachers were asked to rate different positions on a scale from “not supportive” to “highly supportive.” All of the people resources were deemed as “supportive” or “highly supportive” by over 75% of the teachers. There was a discrepancy, over 10% difference, between the two schools on the Science Resource Teacher and other teachers with Portland rating these both higher. Almost all staff at both schools felt “supported” or “highly supported” by both the principal and the environmental education coordinator.

TABLE 2: Ratings of People Resources

<b>Position Being Rated</b>	<b>Cane Run* n=28</b>	<b>Portland* n=21</b>	<b>Total* n=49</b>
Principal	96.4% n=28	100% n=21	97.8% n=49
School Environmental Education Program Coordinator	100% n=27	100% n=21	100% n=48
Science Resource Teacher	60.9% n=23	100% n=20	79.1% n=43
Other Teachers	74.1% n=27	100% n=21	85.4% n=48
Other Staff (counselor(s), FRYSC, etc.)	84.0% n=25	90.5% n=21	87.0% n=46
Off-site Personnel (Blackacre, Zoo, Gheens, Foss Developers, etc.)	92.3% n=26	95.2% n=21	93.6% n=47

\* Percent of teachers that reported this person as either supportive or highly supportive.

Note: *The n in the table represents the number of respondents that answered this question. The percentage given is that based on the n for each question, not the total number.*

## ENVIRONMENTAL EDUCATION TOPICS TAUGHT

There was wide range of the number of hours that teachers taught science. Both schools approximately 25% reported teaching science between 0-2 hours, 25% between 3-4 hours, and 25% between 5-6 hours per week. The other 25% were split between no response (6%) and more than 6 hours (18%). At both schools over 30% reported teaching environmental education 26-50% of the time and slightly more than 25% reported teaching environmental education between 51-75% of the time. The topics that over 50% of the teachers report having taught are: recycling (81.6%), weather/climate (71.4%), gardening/composting (71.4%), respect for animals and plants in the local environment (71.4%), and the conservation of energy. It is important to note that some of the topics that fewer teachers reported teaching may have been taught by others, such as Blackacre or the Louisville Zoo staff members.

TABLE 3: Topics Reported Taught by the Teachers

<b>Topic</b>	<b>Cane Run* n=28</b>	<b>Portland* n=21</b>	<b>Total* n=49</b>
Recycling	85.7%	76.2%	81.6%
Weather/Climate	78.6%	61.9%	71.4%
Gardening/Composting	67.9%	76.2%	71.4%
Respect for Animals and Plants in the Local Environment	71.4%	66.7%	69.4%
Conservation of Energy	67.9%	57.1%	63.3%
Earth Science/Conservation of Natural Resources	46.4%	42.9%	44.9%
Wildlife	46.4%	42.9%	44.9%
Water Quality	32.1%	47.6%	38.8%
Endangered Species	42.9%	28.6%	36.7%
Forests and Wetlands/Nature Preservation	21.4%	38.1%	28.6%
Mineral Resources	28.6%	19%	24.5%
Land Stewardship	21.4%	28.6%	24.5%
Biodiversity	10.7%	23.8%	16.3%

\* Percent of teachers reporting to have taught this topic this past year.

## INTEGRATION OF ENVIRONMENTAL EDUCATION ACROSS THE CURRICULUM

The place where integration of environmental education is currently being implemented most consistently is in reading/literacy. Reading/Literacy had the highest percent of teachers teaching environmental education at least once a week. This was also the highest number of teachers that did not leave blank or filled in NA. When looking at content areas with at least five respondents, math was the topic that environmental education was integrated the least (43.8 % teaching at least once a week). As one principal explained in their interview, they will be looking to integrate math more in later years; this year was one of the first years of implementing a new math program and teachers were asked to follow the teaching guides closely. There was wide-variation in amount of integration of environmental education in itinerant subjects.

TABLE 4: Integration of Environmental Education Across the Curriculum

<b>Subject</b>	<b>Cane Run* n=28</b>	<b>Portland* n=21</b>	<b>Total* n=49</b>
Reading/Literacy	81.8% n=22	81.3% n=16	81.6% n=38
PE	68.8% n=16	50% n=6	63.6% n=22
Art/Music	72.7% n=11	0.0% n=2	61.5% n=13
Social Studies	55.0% n=20	58.3% n=12	56.3% n=32
Computer	66.7% n=12	0.0% n=3	53.3% n=15
Math	50% n=20	33.3% n=12	43.8% n=32

\* Percent of those non-blank and non-NA that report teaching environmental education at least once a week.

Note: The n in the table represents the number of respondents that answered this question. The percentage given is that based on the n for each question, not the total number.

## SCHOOL/COMMUNITY BASED ENVIRONMENTAL EDUCATION INITIATIVES

The schools were very consistent as to the percent of teachers that had their classes participate in the various environmental education initiatives. Over 75% had participated in using the school grounds as an outdoor classroom (79.6%), recycling (79.6%), and taking their students on a field trip(s) to Blackacre State Nature Preserve. The program with the least percent of teachers having their classes participate was the Louisville Zoo Program, but this is because this program was only for the 4<sup>th</sup> grade and was not a school-wide initiative. The only other area that was below 50% was the stewardship projects. At the moment, 42.9% of the teachers had their students participating in this initiative. This is one area that the principals and coordinators mentioned in their interviews that they are working on to increase the numbers for next year.

TABLE 5: School/Community Based Environmental Education Initiatives

<b>Initiative</b>	<b>Cane Run* n=28</b>	<b>Portland* n=21</b>	<b>Total* n=49</b>
School Grounds (Outdoor Classroom)	82.1%	76.2%	79.6%
Recycling	82.1%	76.2%	79.6%
Blackacre Field Trip	78.6%	71.4%	75.5%
Working on School Garden	71.4%	66.7%	69.4%
Visited a park	53.6%	57.1%	55.1%
Stewardship Projects	50.0%	33.3%	42.9%
School at the Zoo Program	28.6%	23.8%	26.5%

*\* Percent reporting class has participated in this initiative.*

## TEACHING METHODS USED WHEN TEACHING ENVIRONMENTAL EDUCATION

The top four methods used to teach environmental education on a weekly basis was consistent between Cane Run Elementary and Portland Elementary. These methods are: hands-on activities (69.4%), discussion of reading materials (65.3%), notebook/journal writing (61.2%), and scientific inquiry (61.2%). The largest discrepancy between the schools occurred with the field experiences. This can be explained in the amount of outdoor space which is available for classroom usage. Portland has limited space. The principal is confident that there will be more space after the summer outdoor renovations. The two methods used the least on a weekly basis by teachers were debate (14.3%) and field trips (18.4%).

TABLE 6: Teaching Methods Used when Teaching Environmental Education

Teaching Method	Cane Run* n=28	Portland* n=21	Total* n=49
Hands-on Activities	71.4%	66.7%	69.4%
Discussion of Reading Materials	67.9%	61.9%	65.3%
Notebook/Journal Writing	67.9%	52.4%	61.2%
Scientific Inquiry	67.9%	52.4%	61.2%
Students Organize Data/Classify	46.4%	52.4%	49.0%
Use Technology to Explore Environmental Issues	50.0%	42.9%	46.9%
Group Problems/Investigations	46.4%	28.6%	38.8%
Field Experiences	46.4%	19.0%	34.7%
Students Design Experiments	39.3%	33.3%	32.7%
Group Projects/Presentations	35.7%	23.8%	30.6%
Field Trips	21.4%	14.3%	18.4%
Debate	14.3%	14.3%	14.3%

\* Percent reporting using this teaching method at least once a week when teaching environmental education.

BLACKACRE STATE NATURE PRESERVE

Over 70% of the teachers from Cane Run Elementary and Portland Elementary reported having been on at least one field trip to Blackacre State Nature Preserve. Over 50% reported having gone three times or more. Blackacre’s ratings were extremely positive. Their highest ratings came in the categories of “students learning a lot” (97.4%), “time was well spent” (97.4%), “what was taught related to core content” (94.9%), “I was able to use what the students learned/did at Blackacre back in the classroom” (92.1%), and “The Blackacre’s staff’s lessons gave me models that I can use back at school” (90.0%). The lowest category rating was “students enjoyed going” and that was positive at 84.2% of the teachers marking either “agree” or “strongly agree”. Although both schools rated Blackacre positively, it is interesting to note that the teachers at Portland Elementary were extremely satisfied with the Blackacre experience with all categories getting at least 93.3% of the teachers marking “agree” or “strongly agree.”

TABLE 7: Blackacre Results

<b>Blackacre Component</b>	<b>Cane Run* n=28</b>	<b>Portland* n=21</b>	<b>Total* n=49</b>
The students learned a lot	95.7% n=23	100.0% n=15	97.4% n=38
Time was well spent	95.8% n=24	100.0% n=15	97.4% n=39
What was taught is related to core content	91.7% n=24	100.0% n=15	94.9% n=39
I was able to use what the students learned/did at Blackacre back in the classroom	87.0% n=23	100.0% n=15	92.1% n=38
The Blackacre’s staff’s lessons gave me models that I can use back at school	84.0% n=25	100.0% n=15	90.0% n=40
Blackacre staff were helpful	83.3% n=24	100.0% n=15	89.7% n=39
The Blackacre visits added to my own growth as a teacher	84.6% n=26	93.3% n=15	87.8% n=41
The students enjoyed going	78.3% n=23	93.3% n=15	84.2% n=38

*\*Percent rated either “agree” or “strongly agree.”*

*Note: The n in the table represents the number of respondents that answered this question. The percentage given is that based on the n for each question, not the total number.*

## ENVIRONMENTAL EDUCATION TEACHER RATINGS OF MATERIALS

When examining the teacher ratings of the material the FOSS Materials and Modules received the highest percent of teachers rating it as either “supportive” or “highly supportive.” It is interesting to note that over 40% of the teachers did not rate the on-line materials by leaving this item blank or by marking NA. This leads to wonder how many teachers used or are comfortable enough to even use the on-line materials.

TABLE 8: Teacher Ratings of Environmental Education Materials

<b>MATERIAL</b>	<b>Cane Run*</b> <b>n=28</b>	<b>Portland*</b> <b>n=21</b>	<b>Total*</b> <b>n=49</b>
FOSS Material/Modules	80.9% n=21	85.7% n=14	82.9% n=35
OBIS On-Line Material	69.2% n=13	77.8% n=9	72.7% n=22
FOSS On-Line Material	63.2% n=19	75.0% n=12	65.5% n=29
Science in the Schoolyard On-Line Material	54.5% n=11	75.0% n=12	65.2% n=23

*\*Percent rated either “Supportive” or “Highly Supportive.”*

*Note: The n in the table represents the number of respondents that answered this question. The percentage given is that based on the n for each question, not the total number.*

ENVIRONMENTAL EDUCATION SUPPORTS AND BARRIERS

The highest percent of teachers agreeing as supports for environmental education was the “professional development” and “student interest”. It is interesting to note that teachers rated the resources as a main support (69.4%), but also it is listed as the biggest barrier (44.9%) for teaching environmental education. One way to resolve this apparent contradiction is that teachers appreciate the resources that they have been given, but at the same time they see the need for more to teach environmental education properly. The other main barrier was “time”.

TABLE 9: Environmental Education Supports

<b>MATERIAL</b>	<b>Cane Run* n=28</b>	<b>Portland* n=21</b>	<b>Total* n=49</b>
Professional development	75.0%	81.0%	77.6%
Student Interest	71.4%	71.4%	71.4%
Resources provided	75.0%	61.9%	69.4%
Environmental education support of other content areas	60.7%	66.7%	63.3%
My own content knowledge	64.3%	52.4%	59.2%
Issues are relevant	46.4%	42.9%	44.9%
Student backpack – Field study equipment	35.7%	47.6%	40.8%

TABLE 10: Environmental Education Barriers

<b>MATERIAL</b>	<b>Cane Run* n=28</b>	<b>Portland* n=21</b>	<b>Total* n=49</b>
Don't have enough resources	35.7%	57.1%	44.9%
Don't have enough time	42.9%	38.1%	40.8%
Don't have enough knowledge	35.7%	28.6%	32.7%
Too many other topics to cover	17.9%	4.8%	12.2%
Children uninterested	17.9%	0.0%	10.2%
Issues too controversial	0.0%	4.8%	2.0%

## **Conclusion**

When examining the data for implementing the environmental education grant, the two schools ratings show the most success and satisfaction with:

- the professional development,
- support personnel (especially the principals, the coordinators, and off-site personnel),
- teaching about recycling, weather/climate, gardening/composting, respect for animals and plants in the local environment, and conservation of energy,
- integrating environmental education with reading and literacy,
- implementing and using most of the school/community based environmental education initiatives,
- using a variety of teaching methods (especially hands-on activities, discussion of reading materials, notebook/journal writing, and scientific inquiry),
- using Blackacre State Nature Preserve and the Louisville Zoo as a resource, and
- the FOSS materials/modules.

Suggestions for continuing growth in implementing the environmental education program are:

- increasing the teacher content knowledge (approximately one third marked that they need more content knowledge),
- increasing the topics that are being taught in conjunction with off-site staff,
- continuing the integration of environmental education with other contents,
- developing more stewardship projects, and
- exploring the on-line resources.

## **Plan for Final Evaluation**

To complete the final report, the following activities are currently being planned:

- re-interview the principal and coordinator,
- re-administer teacher survey,
- get and analyze zoo data (Fall 2010),
- get data from Blackacre State Nature Preserve,
- analyze Comprehensive School Survey,
- analyze school data including test scores, attendance rates, suspensions, enrollment, etc.,
- obtain teacher descriptions of stewardship projects, and
- conduct a student focus group at each school.

**Appendix A****Evaluation of EPA Grant (Project #6020) – Quarterly Report (June)**

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- 1) What are some of the ways in which Environmental Education is being implemented at [SCHOOL]?
- 2) What aspects of the Environmental Education program are your teachers most supportive?
- 3) What aspects of the Environmental Education program are your teachers least supportive?
- 4) Since this is such a new program, what are some ways that you are leading the change in becoming an Environmental Magnet?
- 5) Are you seeing teachers change or use a wider-variety of instructional strategies in their Environmental Education classes? If so, can you give me some examples?
- 6) What are the best indicators that your school is transitioning successfully as an Environmental Magnet?
- 7) What are the current challenges you are facing as a leader? As a school?
- 8) How are parents of current students learning about the Environmental Education opportunities happening here?
- 9) What are some of the ways the community and potential future students learn about what the school has to offer as an Environmental Education Magnet?
- 10) What is your opinion about how the following aspects of the grant are going:
  - a) FOSS Material
  - b) Blackacre
  - c) Zoo Program
  - d) School Gardening
  - e) Field Study Opportunities
  - f) Integrating Environmental Education across contents
  - g) Stewardship Projects
- 11) Is there any particular aspect of the program that you would like to tell me about?

**Appendix B**

See attached PDF for Teacher Survey