THE OHIO STATE UNIVERSITY
COLLEGE OF EDUCATION AND HUMAN ECOLOGY

ENGINEERING IS ELEMENTARY-OHIO 1, 2, AND 3: BUILDING 21ST CENTURY STEAM LEARNERS

SUMMARY

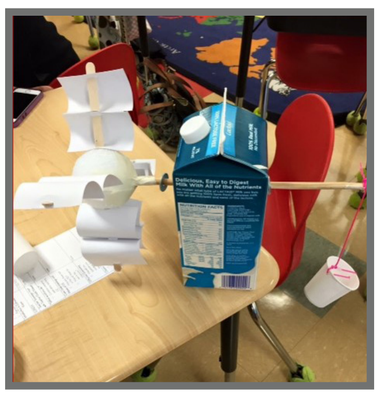
The EiE-Ohio – Building 21st Century Learners project is a collaboration between the Columbus City Schools (LEA), Whitehall City Schools, the OSU Colleges of Education & Human Ecology, Arts & Sciences, and Engineering to bring STEM integrated engineering units to high-needs elementary schools. The main activities for the project include continued support for schools involved in the first years of the project as well as training for 3 elementary teachers and 1 graduate student to implement the Engineering is Elementary (EiE) units designed by the Science Museum of Boston with support from the National Science Foundation. By introducing one teacher from each participating building to the EiE teacher educator training, the teachers in participating schools will have a peer mentor to guide their implementation of the EiE units with their students. Columbus City Schools partnered in the summer workshops and EiE training in years 1 and 2. Whitehall City Schools is partnering in year 3 of the project.

IMPACT/ PROGRAM DETAILS

The first summer institute (1.6 weeks), scheduled at the end of the school year, introduces teachers to the EiE unit on windmills (early elementary) and a second unit on parachutes (upper elementary). Teachers complete the unit in student mode and offer critique from teacher mode. During Institute I, video annotation software will be introduced and practiced. Each teacher participant will select one unit for implementation during the following school year with Ohio Standards aligned content appropriate to their grade level. In Summer Institute II, held in mid-August I, teachers have a 2-day opportunity to plan for implementation of their chosen units. The third element of the project includes Follow-Up Sessions to continue the community of practice and to provide opportunity to share and critique video of classroom implementation. The fourth element of the project includes support for the six schools who participated in years 1 & 2 to establish and support after school STEAM clubs.

OUTCOMES

Outcomes for the project include for teachers: improved pedagogy in STEM instruction; improved content knowledge in STEM fields; increased teacher self-efficacy, and increased teacher dialogue within professional learning communities. Outcomes for students include: increased content knowledge in STEM content; improved attitudes toward science and engineering career; improved understanding of engineering and scientific practices.



WHAT DO YOU NEED TO PARTICIPATE?

- High Needs Elementary and Middle Schools
- 10 teachers willing to participate at each participating school
- Principal supportive of the project
- One teacher willing to be a teacher leader at each school communities.

EiE Engineering is Elementary
Developed by the Museum of Science, Boston

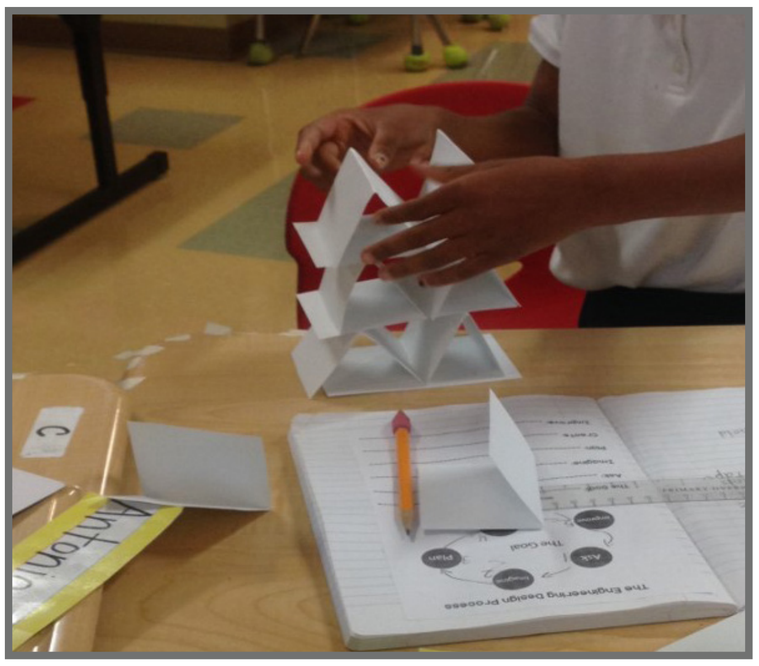
OSU COLLEGES/UNITS INVOLVED

College of Education and Human Ecology
College of Arts and Sciences
College of Engineering

COMMUNITY/SCHOOLS INVOLVED

Columbus City Schools
Year 1: South Mifflin STEM Academy; Duxberry Park Arts Impact Elementary School; Berwick Alternative K-8;
Year 2: Starling P-8; Georgian Heights Elementary; Indianola Informal K-8;

Whitehall City Schools
Year 3: Beechwood Elementary School; Etna Road Elementary Schools
Kae Avenue Elementary School



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