

Oklahoma GreenSchools- **STEM** in Action!

The Oklahoma GreenSchools Program (OGSP) will be conducting two training sessions this summer for educators. One of the focus areas is to highlight HOW the OGSP can help teachers meet STEM requirements and expectations. So, what the heck is STEM?

Science – Technology – Engineering – Math

Well, as the saying goes, we believe there are two groups of educators; those who know about STEM and are incorporating its concepts into instruction, and those who will. In the past year or so, we have participated in multiple conference sessions, webinars and informal conversations regarding STEM and the prominent role it plays in the Next Generation Science Standards. A school's ability to incorporate STEM guidelines and content may also affect future federal funding.

Many educators feel uneasy and ill equipped to teach these subjects but, if you break it down and look at the concepts as well as applications to real world problems, the big picture may come into sharper focus. According to the National Research Council definitions, here are the fundamentals.

Science the study of the world around us including its natural laws, content knowledge from various fields of study and methods of inquiry, i.e. the 'scientific method'.

Technology simply, the use of devices (tools) to create, operate, explore and organize artifacts or data. A digital camera is technology. Simple machines are technology. A ruler, a Biltmore stick, a microscope. . .

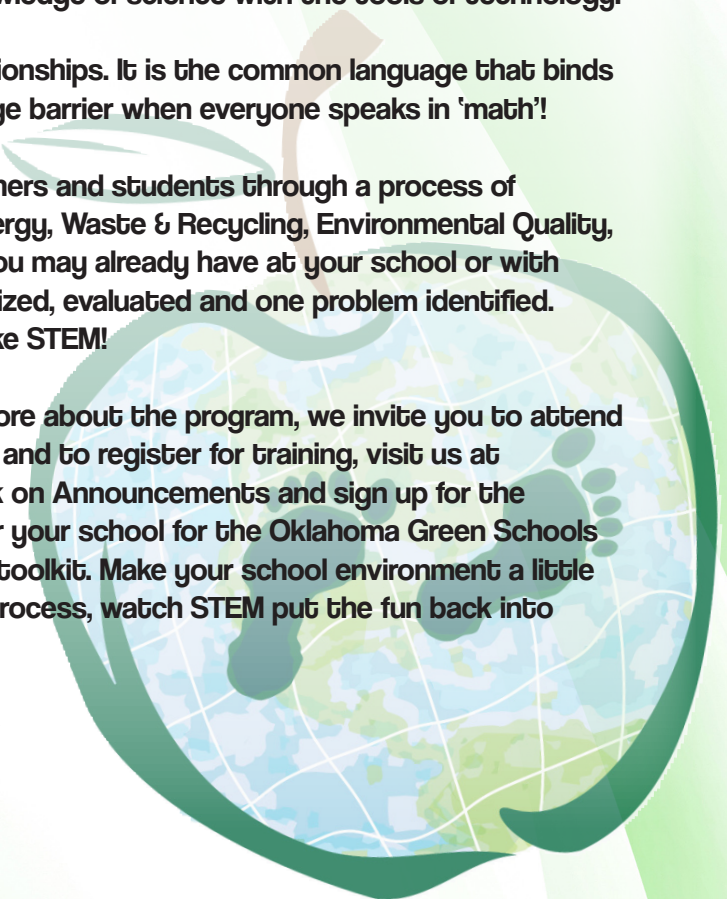
Engineering the application of concepts, data and ideas to design and create solutions. It is the process of problem solving using the content knowledge of science with the tools of technology.

Math the study, or analysis, of patterns and relationships. It is the common language that binds all 4 areas together and lends meaning. No language barrier when everyone speaks in 'math'!

The Oklahoma Green Schools Program takes teachers and students through a process of scientific investigation in one of five key areas: Energy, Waste & Recycling, Environmental Quality, School Site and Water utilizing basic equipment you may already have at your school or with items from our checkout Tool Kits. Data are organized, evaluated and one problem identified. Solutions are proposed and acted upon. Sounds like STEM!

If you and your school are interested in learning more about the program, we invite you to attend one of our summer trainings. For more information and to register for training, visit us at www.okgreenschools.org. While you are there, click on Announcements and sign up for the OGSP listserv. When you are ready, please register your school for the Oklahoma Green Schools Program so we can offer assistance and provide a toolkit. Make your school environment a little greener and healthier this school year and in the process, watch STEM put the fun back into learning.

The Oklahoma Green Schools Program Committee



STEM

SCIENCE, TECHNOLOGY, ENGINEERING, MATH

The **OK Green Schools Program** can help **YOU**
meet **STEM Requirements, Standards and Outcomes!!!**

STEM, basically, is solving problems, such as the big environmental, sociological and economic issues that confront our nation and our planet, right now. It is interdisciplinary by design. It is the application of scientific knowledge, using technology to investigate, collect and interpret data thru mathematics to solve a problem or do something better through engineering.

SCIENCE – studying, inquiring, and investigating the problem through the laws, concepts, facts and principals of scientific disciplines. The core of the Oklahoma Green Schools program is science. Though the 5 inquiry based, student led INVESTIGATIONS of the school environment, students do hands-on science including observation, measuring, data collection, creating a hypothesis, and more.

TECHNOLOGY – analyzing and documenting (data) the problem, creation and use of tools. Utilizing the Oklahoma Green Schools Tool Kit, students use technology such as light meters, Kill-a-watt meters, Infrared Thermometers, Ballast testers, Spring Scale, and CO2 Meters to take readings around the school, recording results for future discussion.

ENGINEERING – design and creation of solutions and products, application portion. Students in the Oklahoma Green Schools program take the data they collected during the investigations using the tool kit and they design and implement a student action project. This student action project creates a solution to one or more of the problems discovered during the investigations.

MATH – the common language, study of patterns and relationships, includes statistics. The data collection and analysis that occurs during the OK Green Schools investigations and during the student action project is all math centered! Students can compare conditions before and after implementation of their student action project and look at patterns, relationships and statistics.

ALL aspects of the OK Green Schools Program
are done within service learning guidelines
and encourage student leadership!

Bring the MOTIVATION back into Learning!

