



# **Sustaining our Future through Youth Education**

**Tonya Bronleewe  
EARTH Program &  
Sedgwick County Extension  
Natural Resources**

# Mission Statement

“K-State Research and Extension is dedicated to a safe, sustainable, competitive food and fiber system and to strong, **healthy communities**, families and **youth** through integrated research, analysis, and **education**.”



# Statistics

- Most American adults are not scientifically literate
- In a public survey,  $\frac{1}{2}$  of the people surveyed did not know that the earth revolves around the sun once per year.
- 55% of adults do not complete a chemistry class and 80% do not complete physics
- $\frac{2}{3}$  of 3rd graders get less than 2hrs/wk of science
- By 8th grade only  $\frac{1}{5}$  of students have positive attitudes towards science
- By high school most students lose interest in science; they find it boring, difficult and irrelevant

Kober, N. *EDTALK: What We Know about Science Teaching and Learning*. Washington, DC: Council for Educational Development and Research.



**EARTH**

**AWARENESS**

**RESEARCHERS**

**FOR**

**TOMORROW'S**


**HABITAT**





***E.A.R.T.H. began Spring of 1998.***

***Modeled after Nebraska's award-winning  
"earth wellness festival".***

The background of the slide is a photograph of a park or outdoor area. In the foreground, there is a grassy field. In the middle ground, several people are walking along a path. The background is filled with various trees, including some tall, thin evergreens and some shorter, bushier trees. The overall scene is bright and appears to be a public outdoor space.

## ***E.A.R.T.H. is a year long environmental educational program***

- Focus on middle and high school students
- Curriculum satisfies Kansas Department of Education Curricular Standards for Science.
- Provides kits with supplies to complete all activities.
- Sponsors an annual student workshop



## E.A.R.T.H.'s Goal

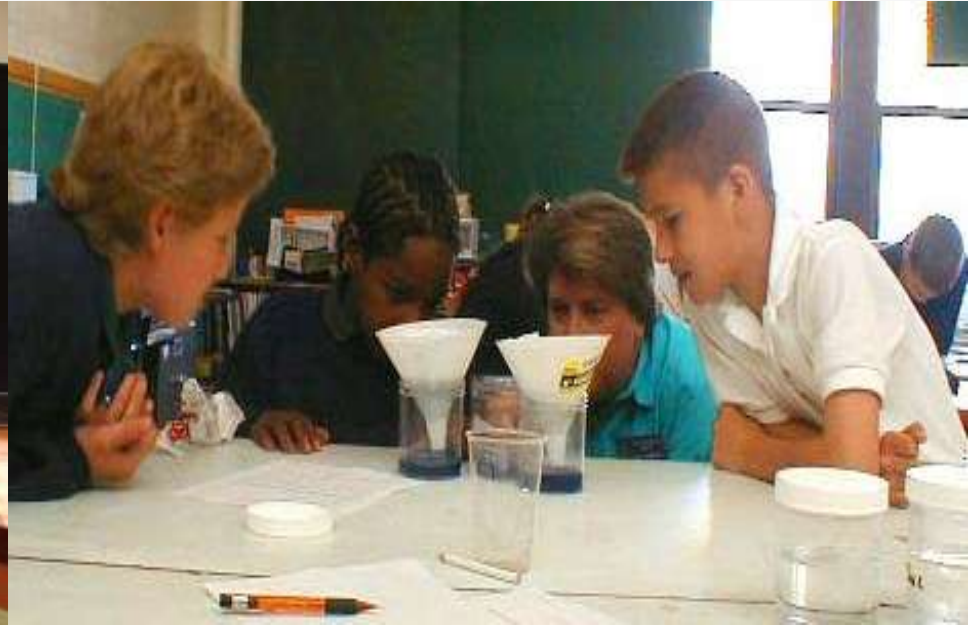
- Make students aware of environmental issues
- Give them the tools to identify, prevent or solve environmental problems.



# **E.A.R.T.H. in the Classroom**

**Each year begins with  
teacher training**

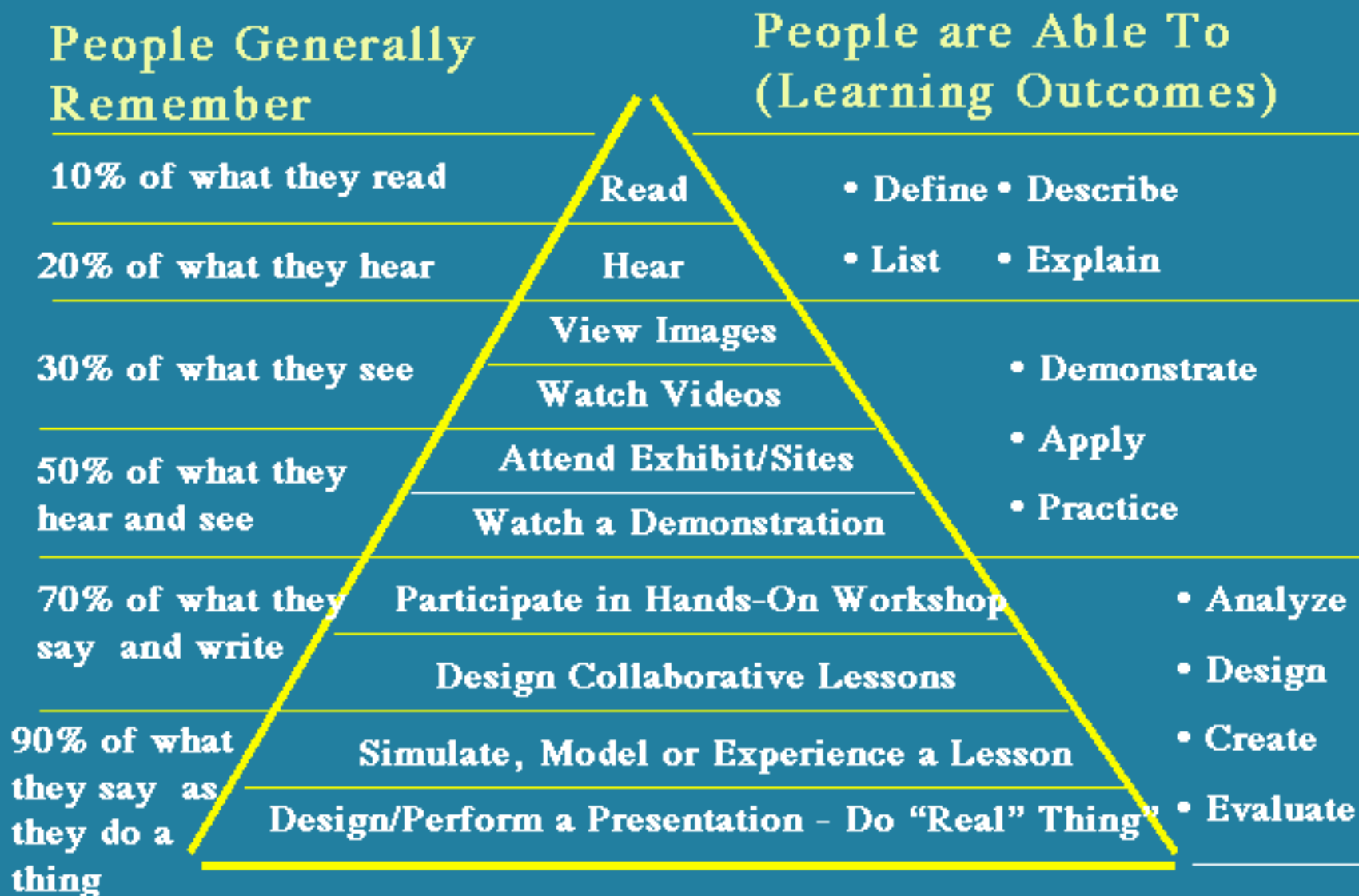
**Then teachers take  
curriculum and supplies  
into their classrooms**







# Dale's Cone of Experience





# AIR



- Outdoor air pollution
- Indoor air pollution
- Air sampling
- Acid Rain
- Radon
- CO2 Lab

# SOIL



- Soil as a filter
- Soil pollution
- Composting
- Erosion
- Riparian areas

# W A T E R



- Water Cycle
- Chemistry
- Oil Spills
- Aquifers and nonpoint pollution
- Water Treatment
- Wetlands



# LIVING RESOURCES

- Macroinvertebrates
- Habitats
- Predators & Prey
- Cycles

E.A.R.T.H. lessons are  
**correlated to the Kansas  
Science Standards.**

Each lesson meets at least one  
science standard.



E.A.R.T.H. was reviewed by the  
NAAEE Curriculum Review Board  
and

E.A.R.T.H. met 27 of the 28  
Guidelines for Excellence





**At the E.A.R.T.H. Workshop local environmental professionals lead sessions on real world applications to classroom studies.**

**The E.A.R.T.H. Workshop provides students with opportunities to explore careers in the science field.**



# Program Sponsors



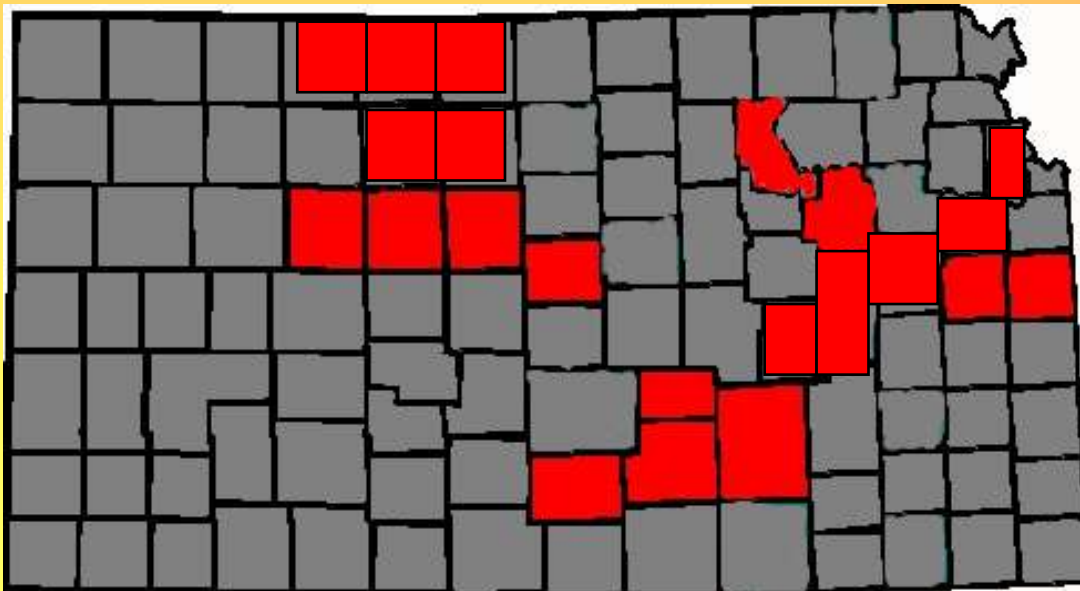
Financial assistance for this project has been provided through EPA - Section 319 Nonpoint Source Pollution Control Grant C9007405 99 (3889 9591) through a grant agreement with the Kansas Department of Health and Environment





# Expansion

Over the past 5 years, E.A.R.T.H. has been replicated in 22 Kansas Counties

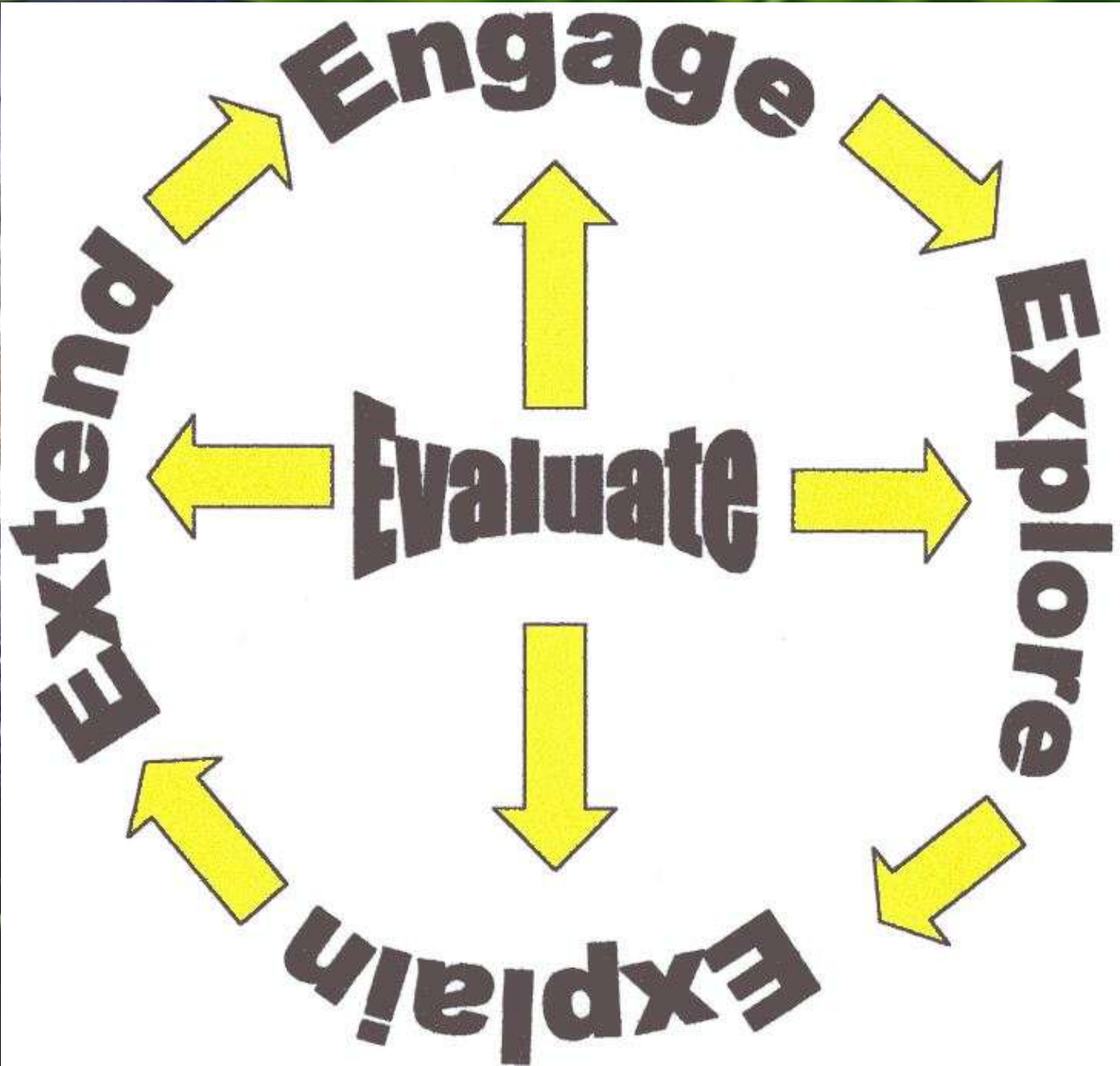


**E.A.R.T.H. serves  
5,000 students  
statewide**

The background of the slide features a composite image. On the left side, there is a view of the Earth from space, showing blue oceans, white clouds, and brown landmasses. On the right side, there are vibrant green, elongated leaves, possibly from a plant like a lily or iris, which are slightly out of focus. The overall aesthetic is clean and nature-oriented.

# Stakeholders

- **Teachers**
- **Students**
- **Steering Committee Members**
- **Funders**
- **Workshop Presenters**
- **Workshop Volunteers**





# ***Engage***

- **Grab their attention**
- **Draw them into the topic**
- **Use activities that connect what they already know to what they will learn**





# *Explore*

- **Get the learners involved**
- **Have them use their hands and minds**
- **Provide a common base of experience**
- **Guide the learning**



# ***Explain***



- Discuss the exploration activity
- Use **formal terms** and define them
- Explain the concepts they experienced
- The terms are more meaningful after the experience



# ***Extend***



- Practice the new knowledge, skills and behaviors in new, but similar ways
- Have students apply the new understanding to the world around them
- Use the formal labels and definitions



# ***Evaluate***

- **Assess the learner's understanding and abilities**
- **Observe change in knowledge and behavior**
- **Self-assessment**
- **Open-ended questions**
- **Interviews**
- **Written, oral, behavioral, assessment**

