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**Oklahoma Department of Environmental Quality**

**Education Topics**

**The Oklahoma Department of Environmental Quality is a large agency that oversees many environmental issues in our great state. We have employees with abundant knowledge in a range of topics.  The listings below offer speakers eager to share their interests and expertise.**

**If a speaker and topic below is appropriate to your group, please feel free to inquire with the speaker directly, or contact Sara Ivey, Education Programs and Services Coordinator to find the right person to fit your needs.**



**Air Quality**

**Speaker**: Madison Stirland
**Affiliation**:  OK Department of Environmental Quality
**Audience**:  Youth and Adult
**Phone**:  405-702-4134
**E-mail**: Madison.Stirland@deq.ok.gov

**Topic:** Outdoor Air Quality

Brief Summary of Topic:

**Topic 1: Outdoor Air Quality Monitoring**—Introduction to DEQ’s air quality monitoring network, how it works, and how we use the collected data to notify the public about air quality conditions (we can bring in some of our monitoring equipment to show what the machines look like and explain how they work) \*This is usually a topic intended for grades 5 - 12 and adult audiences

**Topic 2: Air Quality Index and Air Quality Health Advisories**—These are some of the tools we use to notify the public about outdoor air quality conditions and we instruct our audiences on how to access and use these tools (the information provided by our air quality tools is especially useful for parents with young children, elderly adults, people who work or exercise outdoors often, people with respiratory or heart conditions, teachers who have asthmatic students, people planning outdoor events, etc.) \*This topic can be presented to any age group

**Topic 3: Ozone in Oklahoma**—Oklahoma can have significant outdoor air quality problems in the summer months due to ozone. We explain what ozone is, how it forms, how it can impact health, what health precautions should be taken when ozone levels are high, and ways to modify daily activities that can reduce ozone formation and improve overall air quality.  (\*We have a large full-scale model that demonstrates how air pollution episodes can form in valleys in addition to related games, puzzles, coloring books, activity booklets, etc.) \*This topic can be presented to any age group

**Topic 4: Weather’s Impact on Outdoor Air Quality**—Weather has a great impact on air quality conditions and we explain how wind, pressure, temperature, sunlight, etc. can influence air pollution episodes and how they evolve over time. Several of our air monitoring sites are equipped with weather instrumentation (some of which can be brought in for display during presentations). \*This topic can be presented to any age group.



 **Energy Conservation**

**Speaker**: Sara Ivey **Affiliation**:  OK Dept. of Environmental Quality
**Topic**: Energy Conservation
**Audience**:  Youth
**Phone**:  405-702-7122
**Email**:  Sara.Ivey@deq.ok.gov

Brief Summary of Topic:

**Energy: Use it wisely**

We all use energy on a daily basis. But that energy does not just magically come from the outlet in the wall. We use many resources in generating electricity, so we need to think about how we use it. Discussion will include energy generation sources, and the pros and cons of each. We will do a lighting investigation, an electrical nameplate investigation and use kill-a-watt meters to see how devices vary in their energy efficiency. A hand-generation bike will be used to demonstrate how much human power is needed to provide the energy for various light bulbs.



 **Waste and Recycling**

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**Speaker**: Fenton Rood
**Affiliation**: OK Dept. of Environmental Quality
**Topic**: **Recycling and solid and hazardous waste management**
**Audience**:  Youth and Adult
**E-mail**: fenton.rood@deq.state.ok.us

**Speaker**:  Bryce Hulsey
**Affiliation**:  OK Dept. of Environmental Quality
**Audience**:  Youth
Notes:  Need at least 3 weeks’ notice normally, and 6 months’ notice for April and May.
**Phone**:  405-702-5295
**E-mail**:  Bryce.hulsey@deq.ok.gov

**Topic**:  **Recycling (Use Less Stuff!)**
Brief Summary of Topic:

**Topic 1:  Waste responsibility to include the 3 R’s (Reduce, Reuse, Recycle).
Topic 2:  Paper making course using waste paper and other items.
Topic 3:  For K to 3rd grades – A fishing game that ID’s fish, recyclables and waste, and what to do with it!**

**Speaker**: Sara Ivey
**Affiliation**:  OK Dept. of Environmental Quality
**Topic**: Waste and Recycling

**Phone:** 405-702-7122

**Email:** sara.ivey@deq.ok.gov

Brief Summary of Topic:

**Topic 1:  Where is Away? –** When you throw something away, where is away? We all generate waste, and disposing of our waste properly is crucial for keeping us healthy and keeping our environment clean. But is the trashcan the right place for all of our waste? We will discuss landfills and how they work, as well as recycling, composting, hazardous household waste, and other ways to rid ourselves of unwanted things. Students will play a trash sorting game (using laminated cards with trash items pictured) to determine if they know the best place for each kind of trash.

Ages: K-5, teen, or adult. Modifications made depending on age of participants.

**Topic 2:  Reduce, Reuse, Recycle** –The most effective way to reduce waste is to not create it in the first place. Making a new product requires a lot of materials and energy: raw materials must be extracted from the earth, and the product must be fabricated and then transported to wherever it will be sold. As a result, reduction and reuse are the most effective ways you can save natural resources, protect the environment, and save money. Recycling is the process of collecting and processing materials that would otherwise be thrown away as trash and turning them into new products. Recycling can benefit your community and the environment. Come learn how you can more effectively reduce, reuse and recycle and help keep Oklahoma beautiful! Younger participants will learn the Re-Re-Recycle Song.

Ages: K-5, teen, or adult. Modifications made depending on age of participants.

**Topic 3:  Recycling 101 –** By recycling one ton of paper, the following resources are saved: 500 pounds of air pollution, 17 trees, 7,000 gallons of water, 3.3 cubic yards of landfill space, and enough energy to power an average home for six months! Recycling has become more convenient for many people. Come and learn some exciting recycling facts and learn how you can be a great recycler.

Ages: K-5, teen, or adult. Modifications made depending on age of participants.



 **Water Resources**

**Speaker**: Sara Ivey
**Affiliation**:  OK Dept. of Environmental Quality
**Topic**: Water Quality/Water Resources
**Audience**:  Youth
**Phone**:  405-702-7122
**Email**:  Sara.Ivey@deq.ok.gov

Brief Summary of Topic:

Topic 1: The Incredible Journey – A walk through the water cycle. Water goes through several processes earth (evaporation, condensation, precipitation, transpiration and infiltration) and is stored in various places on the planet (lakes, oceans, clouds, groundwater, soil, animals/humans, rivers, glaciers, plants, etc.). There are other factors that play a role in water cycle (sun and gravity). Discussion will focus on the water cycle, and students will do an activity that simulates a drop of water going through the water cycle.

Topic 2: Are you polluting our water? – We all live in a watershed and water pollution comes from many sources and contributes a great deal to the pollution in our water bodies. The combined effect of pollution from many small sources can have a real impact on the quality of our shared water resources. The discussion will cover: what is watershed, various types on nonpoint source pollution, affects nonpoint source pollution has on our water bodies, best management practices, and what individual actions students can take to prevent nonpoint source pollution. A watershed model with various nonpoint source pollution activities will be used to demonstrate the topic with a visual, hands-on experience. Additionally, students will play a game of limbo to demonstrate how best management practices and laws can impact water quality.

Topic 3: Water: A precious resource – 71% of the Earth’s surface is covered by water, but only a small percentage is available fresh water. Students will help calculate how much of the water on earth is fresh water, available for human consumption with discussion on why water is considered a limited resource. Discussion will also include the accessibility of water in the United States, and how water is often taken for granted. Students will also learn about various volumes of water, as well as ways for individuals to reduce their water use.  A demonstration of volumes of water, representing the amount of water on earth, and a water hauling game for students to better understand how water accessibility leads to wasteful practices.