

Warren County
Water and Sewer
Source Water Protection
Educational Services



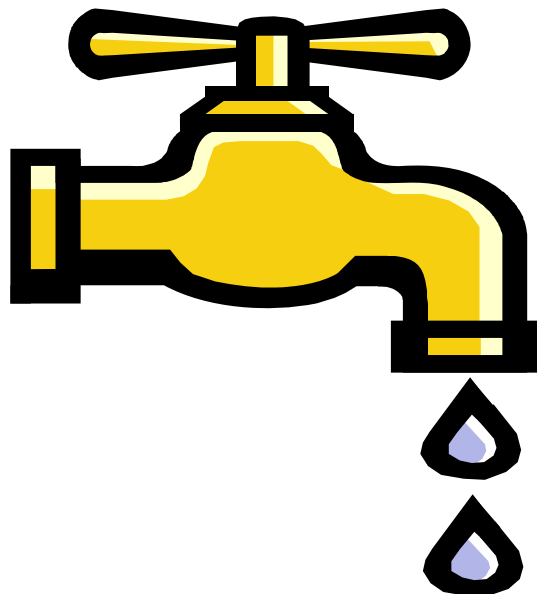
The Warren County Water and Sewer Department offers a variety of presentations and support services to teachers in the Franklin and Carlisle School Districts. These school districts are located within the well head protection zone and are part of Warren County's Source Water Protection Plan.

All services are free of charge!

All lessons are aligned with the Ohio Department of Education's Academic Content Standards.

Suzanne can assist teachers by:

- Presenting lessons on source water protection issues to classes in Franklin and Carlisle School districts.
- Assisting with environmental clubs.



Where Has All the Water Gone? (grades 4-12) The Educator will use a groundwater model to demonstrate the movement of water and pollutants through the aquifer. Non-point source pollution, source-point pollution, time of travel, groundwater, aquifers, water tables, water cycle and source water protection and remediation will be discussed and demonstrated. Water must be available on site. (60 min) **Earth and Space Science:** Grade 6: #1, Grade 7: #2,3,4, Grade 10: #5,6,7. **Life Sciences:** Grade 7: #5,6, Grade10: #9, 18,19. **Science and Technology:** Grade 6:#2, Grade 7: #1,2, Grade 9: #1.

Macroinvertebrate Mayhem (grades 4-8): Students play a game of tag to simulate the effects of environmental stressors on macroinvertebrate populations. Students will draw conclusions about how water quality effects diversity of populations of macroinvertebrates and will relate how population diversity provides insight into the health of an ecosystem. **Earth and Space:** First grade #3. Seventh grade: #4 Tenth grade: #5, 6, 7 Eleventh grade: # 11, 12, 13 **Life Sciences:** First grade #1, 2,3,4 Second grade: #1, 2, 3, 5, 7 Third grade: #6 Fifth grade: #1, #2, #3, #4, #5, #6 Seventh grade #2, #3, #4, #5, #6, #7 Tenth grade #16, #18, #19 Eleventh grade #9, #11 Twelfth grade #3 **Physical Sciences:** First grade #8 **Science and Technology:** Second grade #2 Fifth grade #1, #3 Sixth grade #2 Seventh grade #2 #2 Tenth Eleventh grade #2 **Scientific Inquiry:** Fourth grade #2 **Scientific Ways of Knowing:** Kindergarten #3 Eleventh grade #9, #10 **Social Studies Skills and Methods:** Second grade #6 **Citizenship Rights and Responsibilities:** Third grade #1 Fourth grade #1, grade #1 Eleventh grade #1 , #6 Twelfth grade #7 **Geography:** Fifth grade #9 (Project Wet p.322)

A Drop in the Bucket (grades 4-8) Using a 100ml beaker, graduated cylinders and an eye dropper, Students will estimate and calculate the percentage of available fresh water on Earth. Students will understand that water is a limited resource and must be conserved. (45 minutes) **Life sciences:** K#1,5 Seventh grade: #2,3,4,5,6 **Earth and Space Sciences:** First grade:#1,2,3 Second grade: #5 Third grade: #4,5,6 Fourth grade #2,3,4 Fifth grade:#3,6 Sixth grade #1 Seventh grade: #1,2,3,4 **Life Sciences** First grade:#1,2,3,4 Second grade: #1,2,3,5,7 Third grade #6 **Physical Sciences:** First grade # 2,3,8 **Science and Technology** Second grade#3 Third grade #2 Fifth grade#1,3 Sixth grade: #2 Seventh grade: #1,2 **Scientific Ways of Knowing** Second grade #3 Fifth grade: #4 **Scientific Inquiry:** Fourth grade #2, Seventh grade #7 (WET)

Mysteries of Landfills (grades 6-12): Students examine what happens to our garbage from curbside to the landfill. A landfill model is used to demonstrate the components of a sanitary landfill. Students will compare and contrast the differences between a landfill and a dump and observe the use of systems to protect the aquifer. A discussion of other threats to groundwater will be discussed. (45 minutes) **Earth and Space:** Seventh grade #2, #3, #4 Tenth grade #5, #6, #7 Eleventh grade #11, #12, #13, #14 **Life Sciences:** Seventh grade #5 tenth grade #18, #19, Eleventh grade #9, #11 **Physical Science:** Sixth grade #5, #6, #7, #8 **Science and Technology:** Sixth grade #2 Seventh grade #2 Eleventh grade #2 **Scientific Ways of Knowing:** Eleventh grade #9, #10 **Citizenship Rights and Responsibilities:** Tenth grade #1 Eleventh grade #1, #6 Twelfth grade #3

Sum of the Parts (grades 4-8): Using a poster board representation of a river, students will plan land use for their section of land. The land use upstream will effect everyone downstream. Students will distinguish between point source and non-point source pollution, recognize that everyone contributes to the water quality of a waterway, and identify best management practices to reduce pollution. (45 minutes) **Earth and Space:** First grade #3 Seventh grade #4 Tenth grade #5, #6, #7 Eleventh grade # 11, #12, #13 **Life Sciences:** First grade #1, #2, #3, #4 Second grade #1, #2, #3, #5, #7 Third grade #6 Fifth grade #1, #2, #3, #4, #5, #6 Seventh grade #2, #3, #4, #5, #6, #7 Tenth grade #16, #18, #19 Eleventh grade #9, #11 Twelfth grade #3 **Physical Sciences:** First grade #8 **Science and Technology:** Second grade #2 Fifth grade #1, #3 Sixth grade #2 Seventh grade #2 #2 Tenth Eleventh grade #2 **Scientific Inquiry:** Fourth grade #2 **Scientific Ways of Knowing:** Kindergarten #3 Eleventh grade #9, #10 **Social Studies Skills and Methods:** Second grade #6 **Citizenship Rights and Responsibilities:** Third grade #1 Fourth grade #1, grade #1 Eleventh grade #1, #6 Twelfth grade #7 **Geography:** Fifth grade #9 (Project Wet p.267)

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