

AWESOME AQUIFER

City of Wichita Public Works Department
Environmental Health Division
Environment & Remediation Section
W.A.T.E.R. Center

Science Olympiad 2011

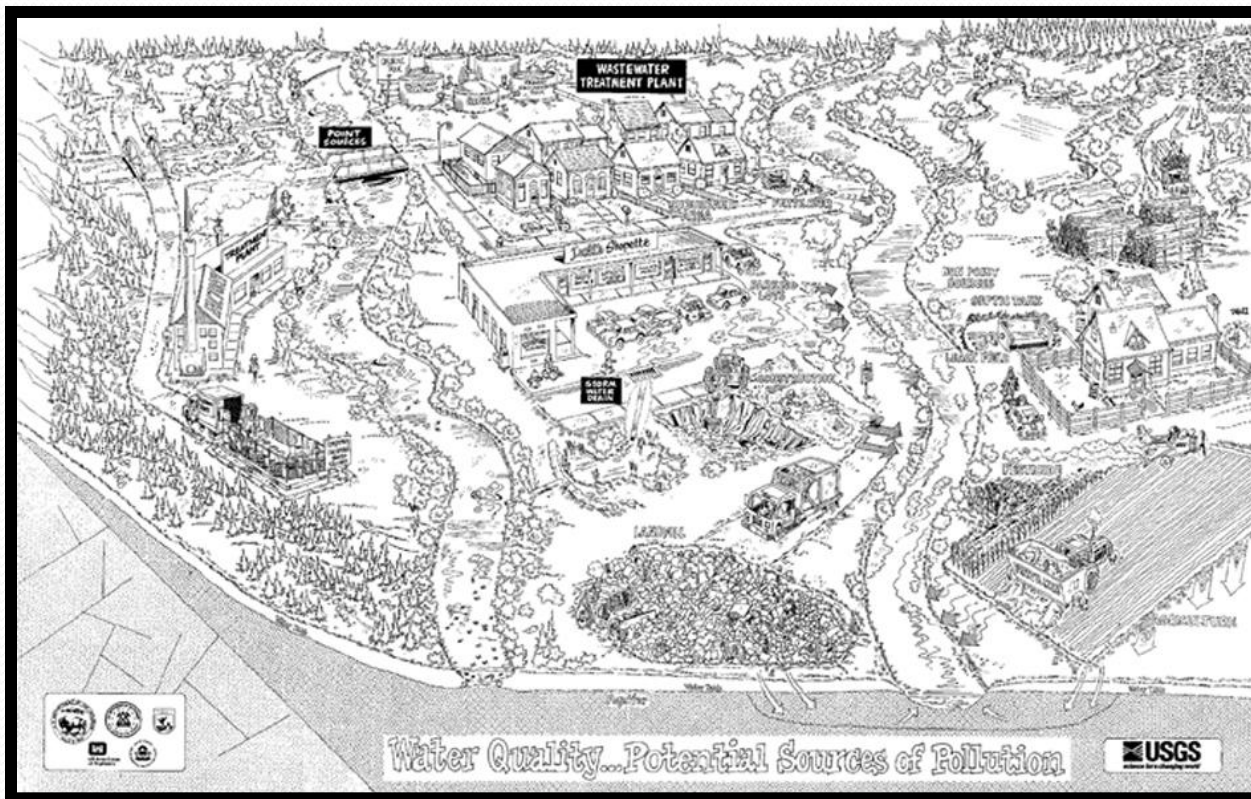
Awesome Aquifer

Awesome Aquifer was last featured as a Science Olympiad event in 2007



Science Olympiad 2011

Awesome Aquifer



A review of the 2011 rules has found them to be the same as those used during the last year (2007) of the previous 3 years that Awesome Aquifer was a sanctioned event

Science Olympiad 2011

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The event consists of 4 stations:

- **1:** a written test
- **2:** a test using charts, maps, models, graphs & etc.
- **3:** building a model to explain & demonstrate groundwater concepts
- **4:** verbal explanation & physical demonstration of the required concepts

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Event is 50 minutes long with students having 10 minutes to complete each station

Highest Score Wins

- Station 1 is 25%
- Station 2 is 25%
- Station 3, where the models are built, is not scored
- Station 4 is 50%

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Tiebreakers

- First tiebreaker = highest score at Station 4 (worth 0.5 points)
- Second tiebreaker = highest score on pre-selected questions at Station 1 & 2 (worth 0.01 points for each question)
- No partial points are awarded for partially correct answers or semi-complete success with the built aquifer requirements. It is all or nothing.



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Please circle the correct answer for each of these 10 questions. There is only one correct answer per question.

- A hole or shaft drilled into the earth to pump water to the surface is referred to as a :
 - Sink hole
 - Spring
 - Water Supply
 - Well
- The solid rock beneath the soil and superficial rock is:
 - Foundation
 - Core rock
 - Bedrock
 - Base
- The zone immediately below the land surface where the pores and fractures contain both water and air is the:
 - Confining zone
 - Withdrawal zone
 - Unsaturated zone
 - Saturated zone
- _____ taps a confined aquifer where the water level is above the land surface.
 - An artesian well
 - An injection well
 - A flowing artesian well
 - A monitoring well
 - A spring

Students are usually very proficient in the identification of the pieces and parts of aquifers. They do well with the written test at Station 1.

Reading and interpreting maps, charts, graphs & etc. at Station 2 is a bit more challenging.

Test questions will be multiple choice, true/false, fill in the blank, short answer or a combination of these at both Stations 1 & 2.

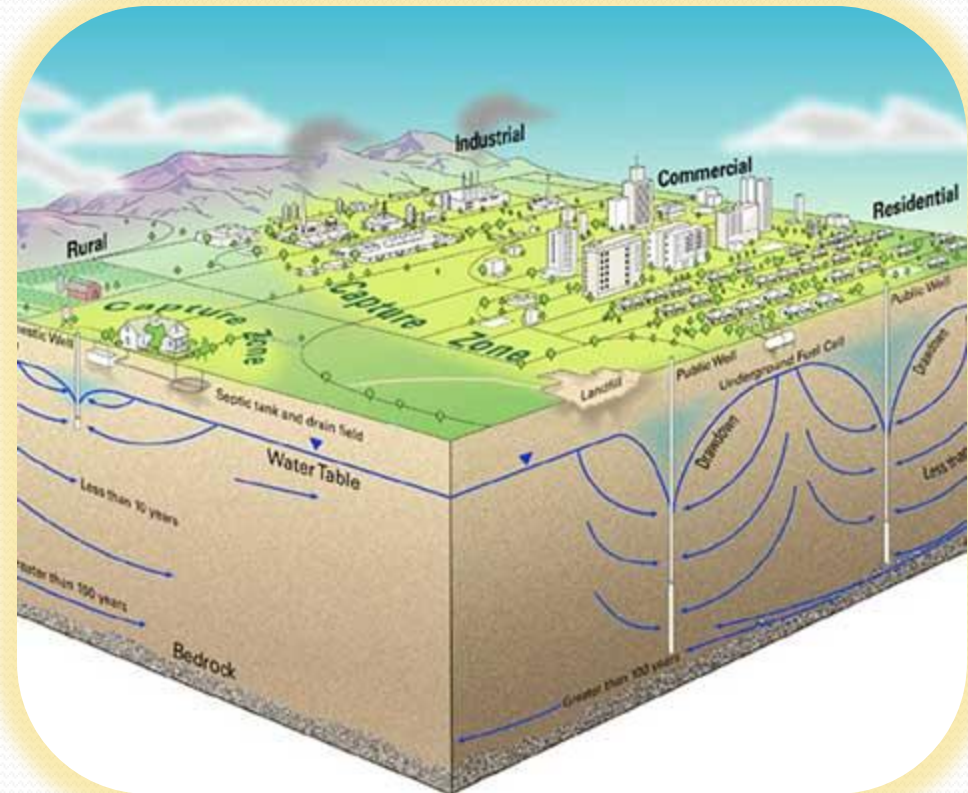
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Students are given a worksheet at Station 3 that lists a set of concepts. They are to build their aquifer model so that they can define, explain and demonstrate these concepts. Everything must fit into the volume of the 3-liter model.

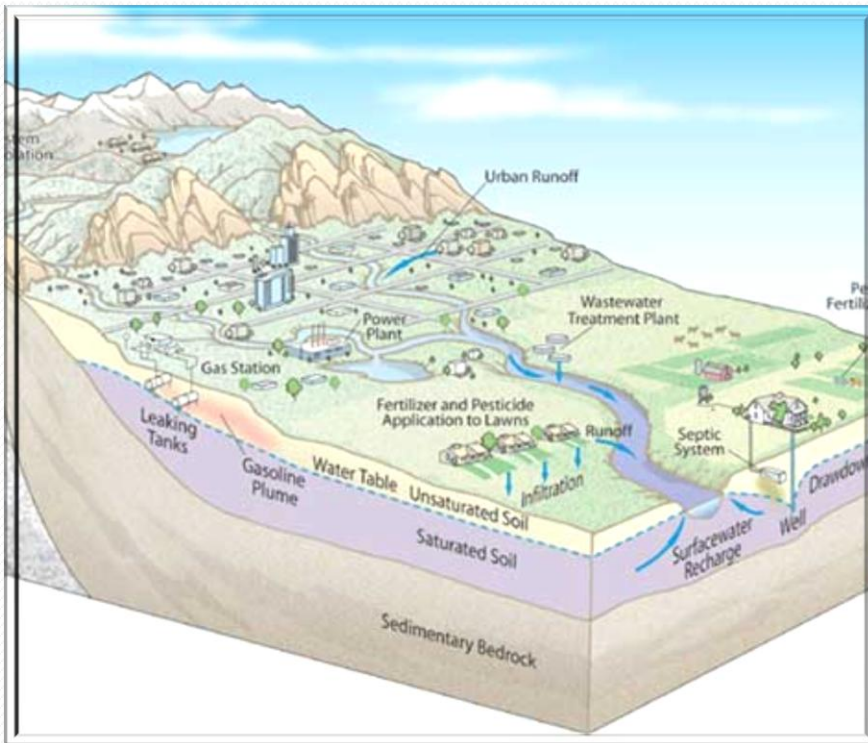
Students struggle with depicting:

- “How an aquifer works” concepts



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Station 4 is the most difficult one because of the presentation skills required.

Can one action can be used to show more than one concept?

How scientifically accurate and clear is the demonstration?

Will demonstrating one concept first make it more difficult to show another concept later?

How will the team members share the presentation duties?

What contingency measures might be needed in case of mishap, mistake or material failure?

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- **Scheduling** – depends on several variables
 - Number of teams entered
 - Size of venue room
 - Number of judge's recruited
- **Event Supervisor's Goal** - to have all teams complete competition within 4 hours
- **Please plan appropriately**

Science Olympiad 2011

Awesome Aquifer

- **Event Supervisor**

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