**5E Template- Science**

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| **Name: Jessica James** | **Date: 7/2011** |
| **Content Area: Science** | **Grade Level(s): 6** | **Topic(s): Watershed Systems** |

**Standards (SOL)**

6.7 The student will investigate and understand the natural processes and human interactions thataffect watershed systems. Key concepts include

a) the health of ecosystems and the abiotic factors of a watershed;

b) the location and structure of Virginia’s regional watershed systems;

c) divides, tributaries, river systems, and river and stream processes;

f) major conservation, health, and safety issues associated with watersheds; and

g) water monitoring and analysis using field equipment including hand-held technology.

**Objectives (UKD’s)**

I can investigate how the local community can affect the greater Chesapeake Bay watershed.

**Materials & Resources**

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| * Probe ware
* Seining Nets
* Ice cube trays
* Video camera
* Editing software
 | * Water testing kits (oxygen, nitrates)
* Meter sticks
* Floating ball
* String/Rope
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**Safety Considerations**

It is essential that you discuss water safety with students (slippery rocks/banks etc). Also explain that they are NOT swimming. If possible go to area where the creek survey will occur. Bring a first aid kit, inhalers, and epi pens for students who have medical needs. Encourage students to bring a change of clothes and shoes.

**Engage – Time Estimate 5 minutes**

Bring students to a local creek. Drop a floating object into the stream. Ask students to pair up and discuss if the object did not get caught what bodies of water it would travel through. Come back together and discuss how the object would eventually make it to the Chesapeake Bay.

**Explore – Time Estimate 2 hours**

Have stations set up for students to collect data about the stream health. If possible have an adult manning each station.

* Bank/Erosion/Vegetation Visual assessment
* Water speed/Depth/Quality
	+ Use rope to measure distance between banks
	+ Use water testing kits for dissolved oxygen and nitrates
	+ Use floating object to measure speed of water
* Seining for macroinvertebrates
	+ These critters can indicate pollution
	+ Return these back to the creek when finished
	+ Use ice cube trays to store critters during the station
* Use probe ware to collect information about temperature and amount of radiated light

**Explain -- Time Estimate 15 minutes**

Homework: Using the data the student collected what is the current health of the local stream? What evidence do you have to support your conclusion?

**Extend -- Time Estimate variable**

Visit a creek or river downstream from the school. If possible take similar readings to asses the health of this water. Compare and contrast the water in that area to your school data.

OR
Partner with an area school to compare data.

**Evaluate -- Time Estimate 2-3 class periods**

Have students prepare movie showing the various aspects of the health of the local stream.

**Plans for Diversity**

Mobility may be an issue for some students. Check for handicap accessibility.

**Connections**

This lesson is a perfect example of think globally act locally. This is a great way to show students how the school affects the health and life of the watershed community. Choices being made about the school ground and land use are directly affecting the life and habitat around the school.