

Model Curriculum for Clean Streams Program: Watershed Awareness and Storm Water Pollution
Auburn University Sustainability Initiative

- Each module is 45 minutes
- In association with the activities below, there will be discussion that will convey the information for each of the goals.

Module 1 – What is a watershed & Local watershed awareness

Goals: Students will: 1) understand the term “watershed”

- 2) recognize how watersheds are defined and that all land is part of one
- 3) understand that Alabama is made up of many watersheds, and that many cities they've visited are in different watersheds
- 4) understand connectivity of watersheds and the implications of other communities upstream in your watershed, or the responsibility of being upstream of another community
- 5) relate the previous points to creek watersheds in the Auburn area
- 6) know where their school and home fits in to the Auburn watersheds

Activities: 1) “Create a creek” -- Students will crumple a piece of paper and then unfold it partly to create a landscape. They will then draw creeks and watersheds in the valleys and low areas (folds that were created by crumpling). Finally, they will determine how many watersheds they have, based on the regions on the paper that would “drain” to the edge.

2) State watershed puzzle and Pin the city on the watershed -- Using a large map of Alabama, some students will be given colored shapes that represent the state watersheds. Students will cooperate in helping to fit all the watershed pieces together within the outline of the state. Next, other students will be given tags with names of major cities in Alabama to pin in the appropriate zone. Pinning will be done without blindfolds, and students will be helped if they do not know where a city is in the state.

3) Connect the dots to outline Auburn's creek watersheds -- Students will be given a sheet with the outlines of the four creek watersheds in Auburn outlined by a connect-the-dot path. Students will outline the creek watersheds, find their school on the map, and find their home on the map.

Module 2 – Local watershed issues & Storm water/Water pollution

Goals: Students will: 1) learn how generalized pollution affects local watersheds

- 2) understand the difference between the sanitary sewer and storm drain systems
- 3) understand that while some people who pollute do it consciously, most water pollution now comes from everyone, and we generally don't know we're doing it
- 4) understand large and small sources of water pollution
- 5) understand how pollution can affect plants, animals and humans
- 6) know what “everyday” materials from their own homes might be sources of water pollution if they get into storm drains

Activities: 1) “Pipe maze”: How rainwater can become polluted on its way to waterways, and how wastewater from sinks is different -- We'll first discuss how they think pollution could get into water. Students will be divided into groups, some will be “sink water” others will be “raindrops”. First chairs will be positioned as a maze (or two if space allows). The “sink water” students will walk through the sanitary sewer maze carrying “dirt” from washing dishes. At the end of the maze, an adult will be the treatment plant and will take the dirt from the “sink water” before allowing them into a river.

For the next section, the “raindrops” will start by running in place (rain storm). Half will fall on soil and soak in (by squatting down). The other half will land on pavement, pick up a pollutant (balled paper, and other pollutant stand-ins on the ground) and then they'll enter the storm drain maze. They will also walk through the pipe maze, but this time there will not be a treatment plant to take their dirt before they flow toward into the river.

2) “Life in a fish bowl” -- Visual demonstration associated with a story to show cumulative effects of pollutants in a water system. A container with “clean” water and the outline of a fish will be placed on an overhead projector (to shine through water). Following a story about a fish swimming in a stream past various potential sources of pollution, students will add different things representing common items that can become pollutants (e.g. chocolate syrup for oil). They will be asked how they think the fish feels as the story progresses. Then they will be told their drinking water comes from that stream (the case in Auburn, and many bottled water facilities), and asked how they would feel drinking it before it's cleaned at the water plant, and how they think some of the need to clean could be avoided.

3) “What's wrong with this picture” -- Students will be given a sheet showing a street scene with residents engaged in various activities. The students will highlight the activities that if performed incorrectly (e.g. changing oil, relieving a dog, washing a car) can contribute to pollution to local streams and ground water sources.

Take home activities:

1) Students will be given a scavenger hunt to do with their parents to see whether their house has common items that are major sources of pollution when they accidentally (or purposefully) get into water bodies. The checklist will be part of a pamphlet that will allow students to share what they've learned with their parents, and to also educate the parents that almost every house contributes in some small way to the larger problem of local water pollution.

2) Students will be given the template sheet for the storm drain marker design competition. They will have two weeks to work on a design entry for the competition.