
Clean Storm Water

CLEAN STORM WATER LEARNING ACTIVITIES
TEACHER'S GUIDE

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*Please call the Fresno Metropolitan Flood Control District Storm Water Quality Hotline, (559) 456-3292 for replacement of lost or worn support materials.

INTRODUCTION

Welcome to the Clean Storm Water Learning Activities Guide!

These learning activities were developed by the Fresno Metropolitan Flood Control District in keeping with its commitment to educate all sectors of the population - residents, businesses, industries, public agencies, and of course, school children - about the importance of preventing storm water pollution.

The enclosed materials will teach students about:

- the storm drain system and its relationship to the hydrologic cycle and water resources;
- the sources and impacts of storm water pollution; and
- ways we can all help prevent storm water pollution.

WHY TEACH ABOUT STORM WATER POLLUTION?

It is extremely important that young people understand that we all depend on a safe, clean water supply. Our drinking water must be very high quality to protect our health. High quality water supplies are necessary to grow our food and support industries. The plants and animals in the natural world around us need clean water as well. And the water we use today must be reused forevermore.

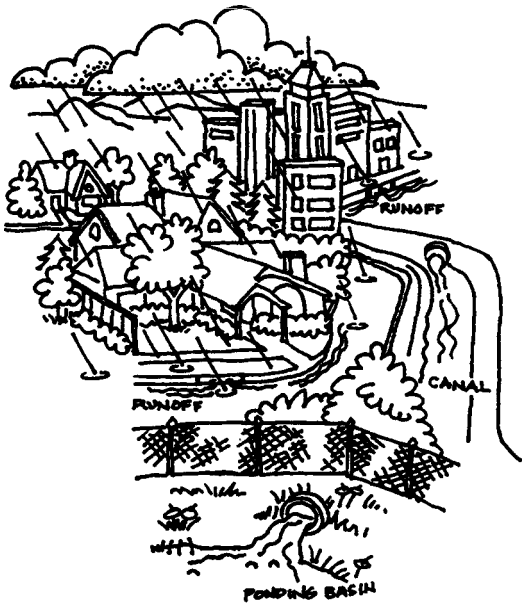
It is important to keep storm water runoff clean -- from the moment a raindrop splashes onto the pavement and races along the curb, to the point where it enters the storm drain system and flows to ponding basins, canals, creeks or the San Joaquin River. All of these waterbodies replenish groundwater -- water stored in the spaces between sand, silt and clay particles deep beneath our feet. Groundwater is Clovis and Fresno's sole source of drinking water.

Throughout the nation, pollutants in storm water runoff have become one of the leading causes of pollution of rivers and streams. Storm water runoff and water from our garden hoses and sprinklers wash harmful pollutants from our yards, streets, parking lots, sidewalks, and gutters into the storm drain system. Common pollutants found in urban storm water runoff include motor oil, pesticides, fertilizers, antifreeze, weed killers, household chemicals, paints, and anything else that is dripped, spilled, or dumped onto the ground or into storm drains. In most communities, storm drains release runoff and associated pollutants right into creeks and rivers, threatening the health of the aquatic ecosystems, wildlife, and people who depend on clean water.

The good news is that the Fresno Metropolitan Flood Control District's storm drain system serving Fresno and Clovis is one of the best in the nation for protecting our water resources from storm water pollution. The system prevents the release of storm water-borne pollutants to canals, creeks and the river by capturing the contaminants in the District's ponding basins. The District monitors and manages basin sediments to ensure that contaminants do not accumulate to levels which may pose risks to public health and the environment.

We must work together to protect ponding basins and our water resources by preventing storm water runoff from becoming polluted in the first place. The District's Storm Water Quality Management Program, required by federal and state water quality regulations, must prevent and reduce storm water pollution to the maximum extent possible in order to protect and preserve:

- the quality of the San Joaquin River, streams, and their habitats;
- the quality of groundwater, which we drink and use in our homes and businesses;
- the long-term use of ponding basins for storm water management; and
- the quality of our neighborhoods, community, and environment.



HOW DO THESE ACTIVITIES MEET YOUR CURRICULUM NEEDS?

The three Clean Storm Water learning activities presented in this guide are designed to supplement hydrologic cycle and water resources units within the ecosystems portion of the California State Science Framework (Figure TG-1). Each learning activity is multi-disciplinary, incorporating geology/earth science, biology, and human impact on the natural environment, among other concepts.

Because of its multi-disciplinary approach, it is readily applicable to the integrated approach of the Secondary Science Core Curriculum adopted by Fresno and Clovis Unified School Districts. Activities are appropriate for Integrated Science 7 and 8, and Science I and II.

OVERVIEW OF THE LEARNING ACTIVITIES

Although each of the Clean Storm Water learning activities may be taught independently, it is recommended the activities be used sequentially, since they describe the key elements of a process. When presented together the three interconnected learning activities provide a comprehensive message about the importance of preventing storm water pollution and the ways in which students and their families can participate to keep their water clean.

Each activity is designed to be taught in a fifty minute class period, with some take-home exercises.

The three activities are:

ACTIVITY 1:
WHAT 1S STORM WATER & WHERE DOES IT GO?

This activity introduces students to the concept of storm water runoff and teaches them about the storm drain system, which includes streets, gutters, storm drain inlets, pipelines, ponding basins, canals, creeks, and the San Joaquin River.

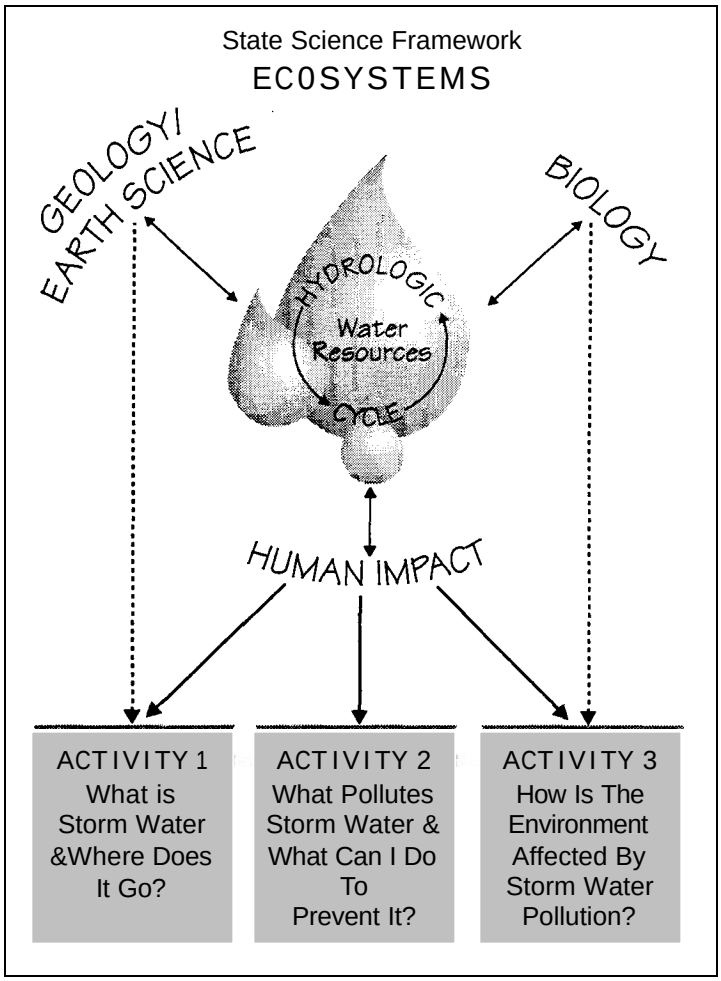


Figure *TG-1:* State Science Framework

ACTIVITY 2:
WHAT POLLUTES STORM WATER & WHAT CAN I DO TO PREVENT IT?

This activity teaches students about the sources of storm water pollution in their urban, school, and home environments and asks them to identify pollution solutions.

ACTIVITY 3:
HOW IS THE ENVIRONMENT AFFECTED BY STORM WATER POLLUTION?

This activity presents potential impacts of storm water pollution on a river ecosystem and challenges students to identify the environmental values affected by water pollution.