

STORMWATER RUNOFF CHALLENGE
LEXINGTON TRAILS MIDDLE SCHOOL

CHALLENGE: Improve the stormwater runoff from the LTMS school grounds.

GOAL: Determine the most effective location for a rain garden.

Rain garden may or may not be placed in the most effective location; depends on actual cost and resources which is not the purpose of this challenge.

Prizes:

\$100 Grand Prize Most Detailed Comprehensive Proposal

- Should have a Basic Environmental Stormwater Runoff Impact Study for school grounds
- Research Rain Gardens-include information on why rain gardens are helpful and propose types of plants
- Include information where the most effective placement of rain gardens.
- Present alternatives for improving stormwater runoff.
- Must include all the creative aspects, scientific aspects and most detailed.
- Organization of digital presentation should include photos, illustrations and maps.
- Should include suggestions of other ways to improve school ground runoff.

\$50 Most Science Related Proposal

- Should have Basic Environmental Stormwater Runoff Impact Study
- Rain Garden Research & plant selection
- Presentation should include alternatives for improving stormwater runoff.
- Emphasis should be on choosing a site and justifying location.

\$50 Most Creative Proposal

- Emphasis should be on creative digital presentation using photos, illustrations, drawing and maps.
- More emphasis on design of rain garden & plants with emphasis on most effective plants for location.

Task:

Design a rain garden and site proposal based on research, observations, and testing.

Project is to be presented in digital format to the Friends of the KAW for judging (please download to a disk.) Judging will be based on all the above requirements. The grand prize will be awarded to the person or group that designs and takes the story of stormwater runoff to a bigger audience.

Due Date: December 7, 2012; no later than 3:45 PM

Steps:

1. Investigate how to locate and construct a rain garden.
2. Investigate runoff water from the LTMS grounds
 - a. Identify and map path of water runoff
 - b. Identify where the water goes
 - c. Identify activities around the school that might add to the pollution to runoff water
 - d. Identify types of pollution that might be found in runoff water at site (examples: soil, chemicals, litter, poop, etc)
3. Propose site for LTMS rain garden include your reasoning for choosing location
4. Design a rain garden for the site you chose:
 - a. Continue to research rain gardens.
 - b. What is the targeted pollutant(s) that you intend to reduce and how will the rain garden accomplish this reduction.
 - c. Including what plants you would use for the rain garden and reason for selection.

Key Ideas to Help With Research:

1. Survey School Property (Information to be used for Basic Environmental Storm-water Impact Report):
 - Estimate amount of vegetation (grass, trees, shrubs vs. bare ground)
 - Find out types of chemicals put on grounds (fertilizers, herbicides, pesticides)
 - Find out soil improvements other than fertilizer such as-mulch or manure, etc?
 - What type of soil is around school? (soil test)
 - Observe erosion or soil loss around grounds?
 - Activities on school grounds and what types of pollutants could they contribute?
 - Determine amount (percent) of vegetation to asphalt & cement
2. Determine the affects school ground runoff affects the streams in immediate area:
 - Map where runoff goes (what streams or rivers are affected?)
3. Determine most effective location of rain garden:
 - Research rain gardens
 - Decide location for rain garden & why you believe your choice of location is best.
 - What are your targeted pollutants and what do you see this rain garden will accomplish.
 - On the above research where would you place a rain garden