

Action Project Units

Solid Waste

- Composting
 - Issue: food scraps go to landfill, which fills up landfill faster and doesn't allow those nutrients to be recycled and used by other organisms; soil is precious resource
 - Activities: Trash Timeline, AFF Composting activities, Trash Free Lunch (weigh food scraps), gardening
 - Action: Create compost bin at school
 - Additional materials: TFS Resource Center
- Vermiculture
 - Issue: food scraps go to landfill, which fills up landfill faster and doesn't allow those nutrients to be recycled and used by other organisms; soil is precious resource
 - Activities: Trash Timeline, AFF Vermiculture activities, gardening, AFF compost activities
 - Action: create worm bin for classroom
 - Additional materials: TFS resource center
- Schoolyard Cleanup
 - Issue: Litter negatively impacts our watershed
 - Activities: Trash Timeline, Trash Free Lunch, Who Polluted the Potomac?, Sprinkle A Day, Crumpled Paper Watershed, Trash Reduction Home Challenge
 - Action: schoolyard cleanup
 - Additional materials: TFS resource center
- Recycling/Waste Reduction/TFS
 - Issue: recyclable (and non-renewable) materials go to landfill, which fills up landfill faster and doesn't allow those materials to be reused; landfills fill up quickly and have negative environmental impacts
 - Activities: Trash Timeline, Trash Free Lunch, Who Polluted the Potomac?, Sweet Resources, Trash Reduction Home Challenge, 4Rs TI Binder Activity
 - Action: recycling, reuse/rethink campaign, become a Trash Free School
 - Additional materials: TFS resource center

Water Quality (Pollution)

- Water Quality Testing
 - How do human activities impact the water quality of a local waterway?
 - Sprinkle A Day, Crumpled Paper Watershed, Watershed Address, Who Polluted the Potomac, Trash Tally, Trash Timeline, Great Terrain Robbery,
 - Additional Materials: World Water Monitoring water testing kit & lesson plans: http://www.monitorwater.org/Guides_Lesson_Plans.aspx

Gardens

- Local Food
 - Issue: Non-locally grown food requires fuel/energy to transport, monoculture not good ecologically, quality & nutrient value of food decreased
 - Activities: Apple Earth, Sweet Resources, Soil Study?, gardening activities; investigate avg. distance foods travel, fuel used, and nutrient content of vegetables/fruit picked early vs. ripe, ecological impact of monoculture vs polyculture
 - Action: grow food in schoolyard
 - Additional materials: TI materials, Master Gardener website
- Pollinator Garden (see Habitat Creation)
- Rain Garden (see Erosion/Runoff)

Habitat Creation

- Pollinator Garden, Bird houses/feeders, bats
 - Issue: Habitat loss for wild animals; losing food, shelter, space
 - Activities: Oh Deer!, Ecosystem food web
 - Actions
 - Food: Plant native plants to provide food, no-mow areas, make bird feeders
 - Shelter: make birdhouses and hang in schoolyard, create bee/wasp/ect. nesting boxes/habitat, bat boxes, no-mow areas
 - Space: no-mow areas, 'off limit areas' to encourage wildlife nesting
 - Additional materials:
- Native Species
 - Issue: Native species are adapted to their environment, non-native species can outcompete native species and disturb an ecosystem's balance
 - Activities: HBF Curriculum: Eat Like A Bird, Animal Adaptations, Frankenfish, (Let's Take A Dip & Macro Field Study?)

- Actions: plant native plants, remove non-native species, raise & release native species like horseshoe crab, grasses, insects?
- Additional Materials: MD DNR website?

Erosion/Runoff

- Issue: Erosion and runoff can negatively impact the water quality of the Potomac River & Chesapeake Bay, for organisms that live in it, drink from it (us!), and use it on the land
- Activities: Who Polluted the Potomac?, Sprinkle A Day, Great Terrain Robbery, Soil Study, Sediment: Choking life out of the bay, water quality testing, wetland metaphors, Bernie's Toes
- Action: Storm Drain Stenciling, Rain Garden, Planting to decrease erosion/soil loss, rain barrels
- Additional Materials: MD DNR website

Climate change solutions from [Project Drawdown](#)

- Afforestation
- Airplanes
- Alternative Cement
- Artificial Leaf
- Autonomous Vehicles
- Bamboo
- Bike Infrastructure
- Biochar
- Biomass
- Bioplastic
- Building Automation
- Building with Wood
- Clean Cookstoves
- Coastal Wetlands
- Cogeneration
- Composting
- Concentrated Solar
- Conservation Agriculture
- Direct Air Capture
- District Heating
- Educating Girls
- Electric Bikes
- Electric Vehicles
- Energy Storage
- Enhanced Weathering of Materials
- Family Planning
- Farmland Irrigation
- Farmland Restoration
- Forest Protection
- Geothermal
- Green Roofs
- Grid Flexibility
- Heat Pumps
- High Speed Rail
- Household Recycling
- Hybrid Cars
- Hydrogen Boron Fusion
- Hyperloop
- Improved Rice Cultivation
- In-Stream Hydro
- Indigenous People's Land Management
- Industrial Hemp
- Industrial Recycling
- Insulation
- Intensive Silvopasture
- Landfill Methane
- LED Lighting
- Living Buildings
- Managed Grazing
- Marine Permaculture
- Mass Transit
- Methane Digesters
- Micro Wind Turbines
- Microbial Farming
- Microgrids
- Multistrata Agroforestry
- Net-Zero Buildings
- Nuclear
- Nutrient Management
- Ocean Farming
- Oceanic Freight
- Pasture Cropping
- Peatlands
- Perennial Bioenergy
- Perennial Crops
- Plant-Rich Diet
- Recycled Paper
- Reduced Food Waste
- Refrigerant Management
- Regenerative Agriculture
- Repopulating the Mammoth Steppe
- Retrofitting
- Ridesharing
- Rooftop Solar
- Silvopasture
- Smart Glass
- Smart Grids
- Smart Highways
- Smart Thermostats
- Solar Farms
- Solar Water
- Solid State Wave Energy
- Telepresence
- Temperate Forests
- Trains
- Tree Intercropping
- Tropical Forests
- Tropical Staple Trees
- Trucks
- Walkable Cities
- Waste-to-Energy
- Water Distribution Efficiency
- Water Saving at Home
- Wave and Tidal
- Wind Turbines
- Women Smallholders