

Carroll County Outdoor School

Student Journal & Resource Book

Name: _____

Group: _____

For additional information and ideas to TAKE ACTION, check out the following...

Website- <http://www.carrollk12.org/ods/>
Blog- <http://blogs.carrollk12.org/ods/>

E

I

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Step 1 -

Step 2 -

Step 3 -

Step 4 -



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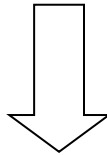
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Confidence Course - Reflection
How to Solve an Environmental Issue

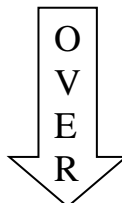
The Issue -

The principal of your school has announced that your school's electrical bill is the highest in Carroll County.

In your own words, describe the environmental issue from above.



Brainstorm and list ideas for solving this environmental issue.



Develop an action plan and list the steps below.

If your action plan is unsuccessful, describe in detail what next steps you will take to correct the environmental issue at hand. Use what you have learned at the Confidence Course today to add to your plan and ensure its success.

~WORD BANK~

Brainstorm
Sequencing
Analyze

Trial and error
Teamwork
Compromise

Communicate
Clarify
Support

Understand
Visualize
Patience

Wetlands – Notes

Habitat Notes

Habitat – Reflection

- Using the data/information from your habitat exploration, determine which habitat provides the best shelter for wildlife. Be sure to use evidence from your games of camouflage to support your claim.

- List actions that can be taken to help improve habitat. Next to each action, list whether it provides food, water, or shelter. Then, decide which animals this action would help.

<u>Action</u>	<u>Provides...</u>	<u>Animals</u>
1. Example: Planting native berry bushes	Food, Shelter	Songbirds, Chipmunks, Insects
2.		
3.		
4.		

~WORD BANK~

Food	Native species	Environment	Space
Non-native species	Shelter	Biodiversity	Water
Limiting factor	Habitat	Population	Oxygen

Stream Ecology – Notes

STREAM PHYSICAL ASSESSMENT

WHAT TO LOOK FOR		GOOD	FAIR	POOR
Pollution	CHEMICALS CHEMICALS CAN MAKE THE WATER SMELL STRANGE.	WATER SMELLS LIKE NATURE	STRANGE MILD ODOR	SMELLS LIKE ROTTEN EGGS, DEAD FISH, MANURE
	TURBIDITY HOW CLEAR OR CLOUDY THE WATER IS WHEN IT IS DISTURBED.	CLEAR	CLOUDY	VERY CLOUDY
Oxygen	WATER TEMPERATURE SHADE COOLS DOWN THE WATER.	COOL LOTS OF SHADE	WARM PARTLY SHADY	TOO WARM VERY LITTLE SHADE
	RIFFLES WATER MOVING OVER ROCKS.	LOTS OF THEM (EVERY 10 FEET)	FEW	NONE
Shelter	ROCKS LOOK AT THE BOTTOM OF THE STREAM.	ROCKS	ROCKS AND SEDIMENT	JUST SEDIMENT
	TREE DEBRIS LEAVES, BRANCHES, AND LOGS IN THE STREAM.	LOTS	SOME	NONE
Land Around Stream	RIPARIAN BUFFER ZONE TREES AROUND THE STREAM.	ALL TREES	TREES AND SOME GRASS	GRASS, DIRT, FEW TREES
	STREAM BANK EROSION THIS LOOKS LIKE SOMEONE CHOPPED AT THE STREAM BANK WITH A SHOVEL.	NONE	SOME	LOTS

Based upon the physical data you have collected, this section of the stream is... *Circle one*



GOOD FAIR POOR

What is the biggest issue in this section of the stream?

CARROLL COUNTY MACROINVERTEBRATES

Sensitive

Somewhat Sensitive

Tolerant



Caddisfly Larva



Dragonfly Nymph



Leech



Hellgrammite



Scud



Midge Larva



Mayfly Nymph



Aquatic Sowbug



Freshwater Snail



Stonefly Nymph



Ripple Beetle



Aquatic Worm



Water Penny



Whirligig Beetle



Blackfly Larva



Crane Fly Larva



Flatworm



Crayfish



Damselfly Nymph



Water Strider

CARROLL COUNTY STREAM FISH

Sensitive



Brook
Trout



Rosy Sided
Dace

Somewhat Sensitive



Tessellated
Darter



Blue-Ridge
Sculpin



Creek
Chub



Longnose
Dace

Tolerant



Blacknose
Dace



White
Sucker



Common
Shiner

Watershed – Notes

Watershed – Reflection

1. Make a claim about how humans have impacted the Chesapeake Bay watershed. Be sure to use knowledge that you gained during watershed class.

2. Using the knowledge that you gained in watershed class, complete the chart below. Think about actions that you can do to help make the Chesapeake Bay healthier and that are both inside and outside our buildings.

Action	Why will it help the watershed?
Example: Turning off the lights when you don't need them.	By reducing energy, there is less air pollution from the power plant that produces the energy. With less air pollution, there is less acid rain to affect the bay.

~WORD BANK~

Fertilizer Erosion Infiltration Run-off Rain garden
 Litter Sediment/dirt Asphalt Mowed grass
 Impervious surface Construction/development Agriculture

Action! - Reflection

YOUR OWN PART OF THE WORLD

In the space below, draw a bird's eye view of where you live. Use the key to help you. Add to it if you need. Don't forget things like driveways and sidewalks!

Key



Downspouts/Gutters



Storm Drains



Gardens



Trees

Where
I
Live

2. Make a list of the steps you will follow to complete your ACTION project:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____

3. List the materials you will need to complete your project in the chart below:

Material	Where do I get it?	How will I pay for it?



When you take this ACTION PLAN home and complete it, be sure to fill out your Student Service Learning sheet at the back of this journal to get your 10 hours. Also, don't forget to add your pictures and comments to our blog! Blog your ideas at <http://blogs.carrollk12.org/ods/>

Reference Section

The following pages are fantastic references for you to complete a project that will help keep YOUR environment healthy.

Outdoor School also has a website, www.carrollk12.org/ods/ that is loaded with even more great ideas for you! Check it out and who knows, you might just see your picture there too!

Important!! Please remember that you may need help from friends or adults, maybe even permission to do something! It is EXTREMELY important to know what project will improve YOUR environment. You may want a rain garden in your yard or at your school, but to complete a BIG job, you have to be extra prepared.

HINT HINT WINK WINK NUDGE NUDGE

Environmental Issue Investigation (E.I.I.) is your tool to help get through the planning and make your project a success.

1. Ask a Question
2. Gather Data
3. Answer the Question
4. TAKE ACTION – Have fun and know that what you do makes everyone’s life a little better!

If everyone does a little, then no one has to do a lot, yet
a lot gets



WATER CONSERVATION

Why is saving water so important? There is a limited supply of clean water. Any water that is used in your home must be cleaned at a water treatment facility.

To reduce the amount of water that you and your family use you can:

1. Install a low flow showerhead.
2. Turn the water off when you brush your teeth or while washing your face or hands
3. Turn off the water while you wash dishes. Leave only a light stream on for rinsing
4. Fix leaking faucets and toilets
5. If it is an old toilet, place a brick or a small jug of water in the tank of your toilet to displace water, which then uses less to fill the tank
6. Take quick showers – try for 5 minutes or even better, a BAY SHOWER!! 😊
7. Do not water your lawn – if you absolutely have to, do so in the morning or at night: native plants won't require this as much! Hint, hint.
8. Use a watering can to water gardens
9. Collect rainwater in a barrel for use in the garden
10. Wash your car with a bucket of soapy water. DO NOT LEAVE THE WATER RUNNING
11. Only flush the toilet when you absolutely need to
12. Use water from boiling or steaming vegetables or even water from doing dishes to water plants after the water is cooled
13. Use a broom, rather than a hose, to clean off walkways and patios
14. Ask your family and friends to use less water

You must put into practice a household water conservation plan to earn your service hours. Submit the written plan with your service hour form.



Water, Water, Everywhere...

According to the Environmental Protection Agency, the average American uses 100 gallons of water every day.

How is it even possible that we use *THAT* much???

Water is a limited resource—we have what we are going to have for the rest of time... so how much you use and dirty up, affects everyone!

ROAR!
That's my water!



Consider that . . .

When you . . .	you use . . .
Flush a toilet	5–7 gallons per flush
Fill a bathtub	36–50 gallons
Brush your teeth	10 gallons if the tap is running
Wash your hands	2 gallons if the tap is running

How Much Water Does It Take to Make . . .

- A SHEET OF PAPER? 2 gallons
- A CUP OF TEA? 8 gallons
- AN APPLE? 18 gallons
- A CUP OF COFFEE? 35 gallons
- A GLASS OF APPLE JUICE? 50 gallons
- A 2-LITER BOTTLE OF SODA? 132 gallons
- A POUND OF SUGAR? 200 gallons
- A PAIR OF JEANS? 500 gallons
- A HAMBURGER? 630 gallons
- A COTTON T-SHIRT? 700 gallons

1 Water Drop = 35 Gallons

How long was your shower today?
How many gallons did that use?



How many gallons would you save if you shortened your shower to 5 minutes?

If you brush your teeth twice a day for a week and leave the water running, how many gallons of water have you used?

1. HOW ARE YOU USING WATER?? List as many ways as you can think that you RELY on water every day.

If you only eat half of your hamburger and throw away the rest, how much water have you wasted?

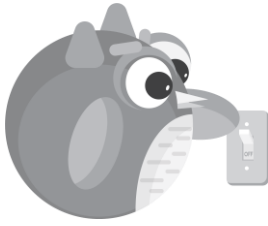


2. HOW ARE YOU WASTING WATER??	How I can fix that...



If you have clothes that you never wear, are you wasting water? Why?

Think... When it comes to water, why do we care about SLOP?



Energy Conservation

Put into practice an energy conservation plan for your household that reduces your electric bill and help the environment too!

Some ideas to get you started:

- 1.) Turn off the lights when you leave the room
- 2.) Turn off and unplug appliances (TV's, videogames, computers) when they are not being used
- 3.) Use less hot water
- 4.) Turn the thermostat down to 65⁰ F in the winter
- 5.) Turn the A/C to above 72⁰ F in the summer
- 6.) Use energy efficient light bulbs
- 7.) Draft-proof your home by checking for air leaks around doors and windows.
- 8.) Place insulating blankets on hot water heaters and pipes
- 9.) Only leave the refrigerator open long enough to get what you need

Try to create other energy saving ideas. Write up your household plan and submit it with your student Service Learning form.

THE THREE Rs!!

Put into practice a household program for reducing the amount of trash you send to the landfill! Reduce is the most important way to limit trash production, but if you can't reduce, then at least try to reuse it in a different way. And recycling is better than throwing anything away. Why? Even recycling requires energy, so if we can do something else with the "trash" before it even leaves your house that is best. Submit your household plans with your Service Learning form.

1.) REDUCE

Reduce the amount of food that your family throws away by composting and limiting waste. NO SLIC and SLOP!! 😊

2.) REUSE

Reuse items whenever possible (i.e. plastic bags) and buy recycled products when available.

3.) RECYCLE

Set up a recycling center in your home:

- a.) Contact the local sanitation company to determine recyclable materials.
- b.) Set up containers for the materials you plan to recycle
- c.) Remember to put the recycling containers out when pick-up is scheduled OR transport the materials to the proper recycling center.

☆ Try to create new ways to keep waste out of the landfill. ☆



SLIC & SLOP

1. Ask a Question:

Our topic is SLOP (STUFF LEFT ON PLATE). What can you ask?

2. Gather Data:

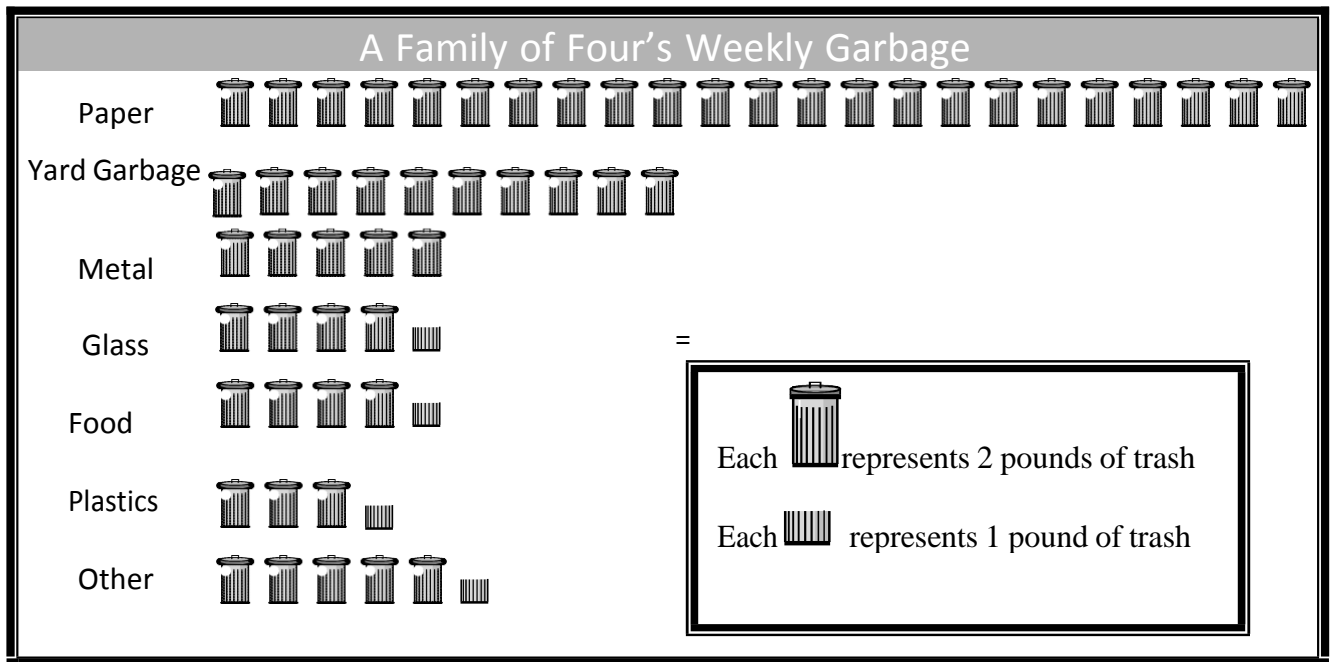
Listen to an expert, look at pictures, use what you already know, research MORE, look at DATA you have.

3. Answer the Question:

Find what your DATA means and then....ANSWER the QUESTION!!!

4. Take ACTION!

What can YOU do to SOLVE the problem? How will you DO your ANSWER?



STREAM CLEAN-UP



Get your parents' permission before you work near a stream.

Plastic and animals is a deadly combination. For a project you and a group of friends could do a clean-up project. Areas to consider are ponds, lakes, streams, creeks, or other bodies of water.

Why near water? Because, water attracts animals.

Be very careful when cleaning up trash. There are many sharp objects that could hurt you. Watch out for glass, metal, needles, etc. DO NOT HURT YOURSELF DOING THIS PROJECT!

1. Get a group of friends together and find a stream that needs some cleaning
2. Get permission from the land owner to improve his/her stream
3. Walk the area that you have chosen looking for trash
4. Place the trash in a trash bag
5. Separate trash and recyclables
6. Wash your hands when you are done
7. Dispose of trash and recyclables properly

REMEMBER: Wear gloves for protection

You and your friends should make this a monthly project. For your service hours you should do two or three clean-ups.

How to Plant a Native Tree

To find a list of native trees, check out our website at www.carrollk12.org/ods/ and go to the “links for resources” and click on “native plant guide”.

1. Dig a hole twice as wide and the same depth as the tree’s container.



2. Center the tree in the hole. Test to see that the top of the root ball is level with the surrounding ground. Orient and straighten the tree



3. Backfill loose soil around root ball and tamp with foot.



4. Build a circle of mulch that goes around the base of the tree trunk like a donut, but does not touch the tree.



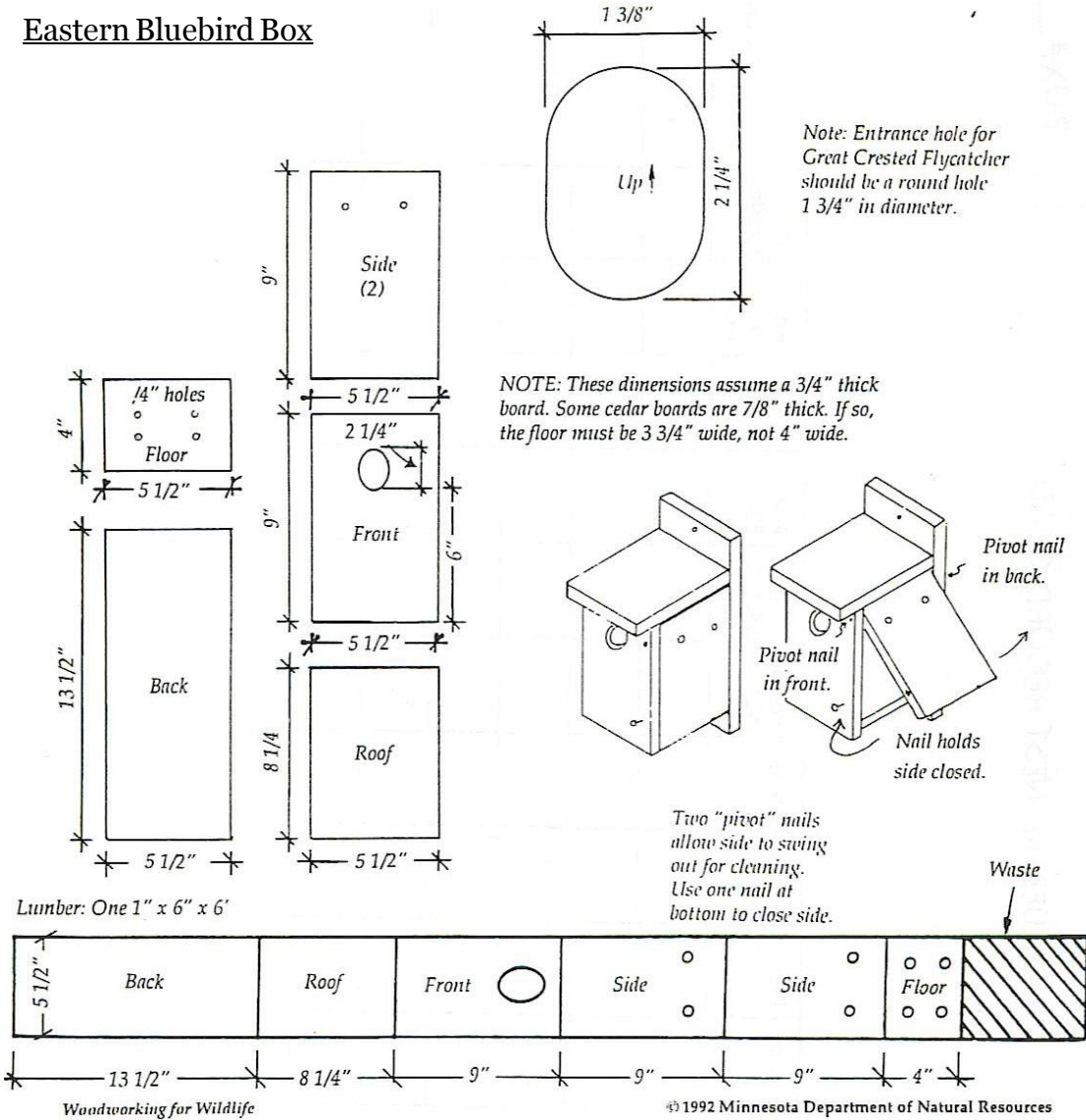
5. Fill a bucket several times with water and water the tree thoroughly



Build a Shelter for a Cavity Nester

When we put up nesting boxes for cavity-nesting birds, we are providing these species with important shelter.

Eastern Bluebird Box



Composting

Composting is a way to recycle certain foods and create fertilizer for your lawn and gardens.

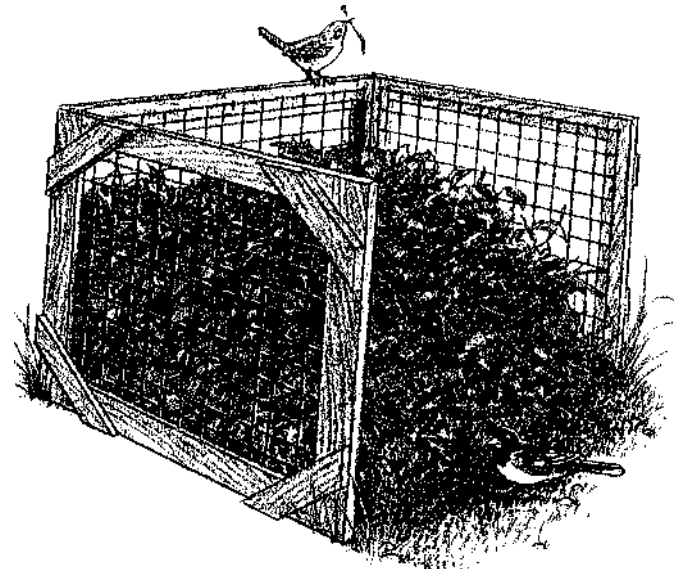
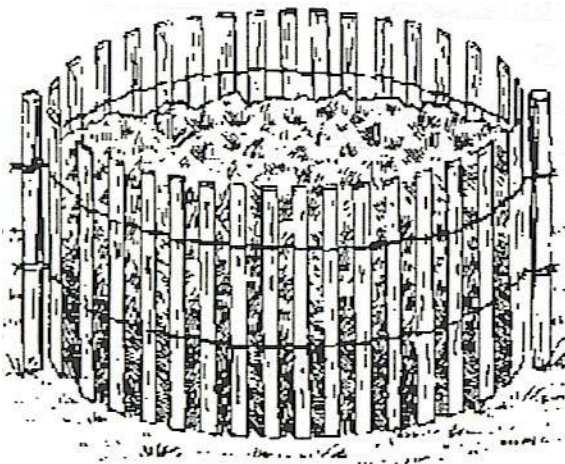
- 1.) Pick a location for your compost pile
- 2.) Start adding stuff to your pile
 - a.) Vegetable and fruit scraps
 - b.) Coffee grounds
 - c.) Egg shells
 - d.) Breads
 - e.) Grass, leaves, and other yard waste
 - f.) Ashes and saw dust

Do not add meat scraps, bones, dairy products, oils, or fat.

This may attract animals and cause an odor.

- 3.) Turn the compost pile with a shovel or pitch fork once a week for quick compost.
- 4.) Dark, rich soil will be the result. Use this on flowers, vegetables, or potted plants.

You may choose to enclose the pile with a wire fence, pallets, or other materials. You can also have several piles to allow one to finish decomposing.



A healthy compost pile full of bugs and earthworms is an all you can eat buffet for backyard birds. In the spring, birds also raid compost piles looking for twigs and grasses to build nests



Outdoor School Service-Learning Reflection Form

After leaving Outdoor School you have the opportunity to earn an additional 10 service-learning hours. Choose one action project in this booklet, complete it, and fill out this form. You must turn in your completed form to the Service-Learning Coordinator at your school by October 31st of your 7th grade year to receive your hours.

Time Recorded	
To be completed by adult site supervisor	
Dates of service: _____ to _____	
HOURS EARNED: 10	<i>Lina C. Fetter</i>
Signature of Adult Project Supervisor	
410-751-3301	Contact Phone Number

PLEASE PRINT OR TYPE

NAME OF SPONSORING ORGANIZATION/CLASS _____

PHONE _____ GRADE _____ ADVISOR _____

STUDENT NAME _____

Last	First	MI	ACTIVITY
------	-------	----	----------

Reflection to be completed by student: (If you need additional space please attach a separate sheet.) Now that you have completed your service-learning project you are ready to write a description of your activity.

- Tell **why** you chose to do this project. What community need were you attempting to meet?

- What were your responsibilities and **what** did you actually do?

- How did your actions benefit the community?

- Would you select this project again? Why or why not?

Signatures: Student: _____ Date: _____
Parent: _____ Date: _____

This completed form must be returned to the school Service-Learning Coordinator within one year from the time the service is complete. Exceptions may be considered for approval by contacting Joe Carr, Coordinator of Curriculum and Instructional Resources—Secondary Social Studies and Service Learning, at 410-751-3096. Service-learning activities will be approved by the school Principal or Student Service Coordinator. Students shall: not be paid for their service; not earn hours for service to a for-profit business; not earn hours for service in preparation for or during religious services or religious education; not earn hours for assisting family members with tasks such as cutting the lawn or babysitting; not be excused from school to earn service-learning hours. Please check with the school Service-Learning Coordinator if you need clarification.

Approval Date: _____ Coordinator Initials: _____ Hours Approved: _____