



Scouts Meeting Schedule

Theme: World Scout Environment Programme – Harmful Substances

Objective: To understand the impact of harmful substances on our Earth, and investigate ways that we can reduce this impact.

Time	Activity	Program Details	Leader Responsible
10 mins	Gathering Activity	Plastic Scavenger Hunt	
10 mins	Opening Ceremony		
15 mins	Game	Secret Code	
10 mins	Theme Activity	Ocean in a Bottle Yellow Fish Road	
10 mins	Theme Activity	“Greenwashing”	
30 mins	Game	Deadly Links	
<i>Optional</i>	Theme Activity	Yellow Fish Road	
15 mins	Patrol/Troop Meeting		
10 mins	Closing Ceremony		
15 mins	Leader Discussion Time		

Meeting Notes: _____

Scouts Meeting – Detail Planning

Introduction

Harmful substances are all around us. We use potentially harmful substances in our everyday lives – to clean our houses, and drive our cars, for example. There can be pollution in the air, in the water, and in the soil. It is important for youth to understand the risk and potential impact of harmful substances on the environment, and to work to minimize this risk to people, plants, and animals.

For example, phosphates from detergents can enter the water system when they are used to wash clothes. These phosphates can cause algae and weeds to grow very quickly in surface water, which can choke the waterway and use up precious oxygen, which can result in the death of important fish and aquatic organisms.

Similarly, oil spills in the ocean can also cause fish and aquatic organisms to smother or become poisoned. Oil spills also affect important habitat areas.

Objects that have been disposed of in landfills can also cause toxic leachate that can adversely affect animals, water systems, and habitats.

Greenhouse gases enter the atmosphere through human activities, decay and decomposition, large-scale livestock operations and so on. These can cause air pollution and climate change, which has an enormous potential to affect the environment, as well as the future of the Earth itself.

As we have seen in the other sections of the World Scout Environment Programme, *Clean Air*, *Clean Water*, and *Natural Habitats*, pollution can come from many sources. There are also many ways that we can work to reduce pollution. This Jumpstart will help your section think about ways that they can help to protect the environment.

Gathering Activity

Plastic Scavenger Hunt

Objective:

Scouts will begin to understand how much plastic we use in our everyday lives.

Background Information:

There are seven different kinds of plastics. These plastics are used for a multitude of purposes, ranging from toys to dishes to boats, parts of cars, shopping bags, and so on. Most plastic is recyclable in most areas, but certain numbers of plastic, such as #6 (polystyrene or Styrofoam) can be more difficult to recycle. Check with your local recycling facility to determine what is accepted for recycling in your area. Although most plastics are technically recyclable, not all plastics are in demand for recycling by manufacturers.

The manufacture of plastics can release harmful toxins into the air and water. When some plastics are heated, they can leach harmful chemicals. For example, it can be dangerous to cook with #3 PVC plastic, however, #5 PP plastic is considered “food safe.”



#1 – PET or PETE (Polyethylene Terephthalate). Used for water and soft drink bottles, etc. Can be recycled into carpet or polar fleece clothing.



#2 – HDPE (High Density Polyethylene). Used for milk jugs, shampoo bottles, etc. Can be recycled into oil bottles, pens, drainage pipes.



#3 – V or PVC (Polyvinyl Chloride). Used for cooking oil bottles, siding, pipes, etc. Can be recycled into decks, paneling, etc.



#4 – LDPE (Low Density Polyethylene). Used for squeezable bottles, bread bags, etc. Can be recycled into garbage cans, compost bins, etc.



#5 – PP (Polypropylene). Used for yogurt containers, syrup bottles, straws. Can be recycled into signal lights, bicycle racks, ice scrapers.



#6 – PS (Polystyrene). Used for egg cartons, disposable cups and plates, meat trays. Can be recycled into insulation, egg cartons, take-out food containers.



#7 – OTHER (Miscellaneous). Used for water jugs, sunglasses, DVDs, computer cases, sunglasses. Can be recycled into plastic lumber, some custom made products.

Equipment

- Plastic Scavenger Hunt worksheet
- Examples of different kinds of plastics (as many of the different kinds as possible)

Instructions:

Talk to Scouts about plastics, showing them the examples of different kinds of plastics. Ask them to think about the various types of plastics that we use in our everyday lives. Ask them to look at their outfits – is there any plastic? Have them look around the room – what different kinds of plastic do they see?

Plastic Scavenger Hunt

When you had breakfast this morning, do you remember using any plastic? What kind of plastic did you use? List the types here.

Look at your clothes – including your shoes. Are you wearing any plastic? Where?

Look around the meeting area – is there any plastic? What can you find?

How much plastic can you find? Count each piece of plastic and write the number below.

How much plastic is in your meeting area? What do you think about this?

Think about the things that the plastic is being used for – what would life be like without plastic?

Enrichment Activity:

Show the Scouts a picture of the recycling symbol, and a picture of a plastics recycling symbol.

Ask Scouts to find as many different types of plastic in the meeting room (numbers 1-7). Ask them to be very careful picking items up to look at the bottom, and make a tally sheet of the items they have found.

Ask Scouts to pick on activity that they do regularly, figure out a piece of equipment that they need for this activity that is plastic, and brainstorm ways to do this activity without plastic. For example, getting ready for school in the morning: plastic toothbrushes, plastic shampoo and soap bottles, etc. How could these be changed, in a world without plastic?

Theme Activity

Ocean in a Bottle

Objective:

To further understand the dangers of water pollution.

Background Information:

Pollution in our oceans, lakes, rivers and streams is a very serious matter. Pollution is when we add things to the ground, the air, or the water that will make it dirty or will bring harm to the life in and around it. People often dump liquids into oceans, lakes, rivers and streams. Some of these liquids will mix with water; others will not.

One big problem is that our oceans, lakes, rivers and streams can look like they are safe and clean when they are not. Some of the solids and liquids that are dumped into water become dissolved or absorbed, so we can no longer see them. Some things we put into water will not mix and we can see evidence that they are there. What we cannot see is a big problem!

In this activity, the Scouts will make an “ocean in a bottle.” They will try to mix different liquids with water to see what will and will not mix. In particular, this experiment will investigate oil and detergent.

Ask the Scouts:

Do you think we should drink in water with oil and/or detergent in it? Are these two liquids harmful to plant life, fish or other creatures? Oil and detergents are two of the most common substances that pollute the water.

Equipment:

- Water
- Sink or other place to dispose of liquids (slop bucket, etc)

For each group of Scouts:

- A clean 2L soft drink bottle with lid
- ½ cup of vegetable oil
- ½ cup of liquid dish soap or laundry detergent
- A funnel

Instructions:

Place Scouts into pairs, or groups of three, according to your group needs. Hand out materials and explain the experiment. Discuss and share ideas about examples of pollution. Help them see that pollution is making something dirty or unsafe for life. Lead into thinking about water pollution. Talk about our oceans, lakes, rivers, and streams.

Each pair or group should put three cups of water into their clean 2-liter bottle. This is like a little ocean, lake, river, or stream.

Have the pair or group add ½ cup of oil by pouring it into the bottle, using the funnel. Screw top on the bottle. Mix up the liquids by carefully shaking the bottle, and observe what happens.

Ask the Scouts:

What do you think happens when there are oil spills in the oceans? How will oil affect the water, the fish, plant life or animals that live near the water?

Now, pour out the oil and water mixture in a safe place and rinse out bottle. Now, for the second part of the experiment, put three cups of water in the clean 2-liter bottle. Add ½ cup of dish soap or liquid laundry detergent, using the funnel. Screw the top tightly onto the bottle. Mix up the liquids by shaking the bottle. Observe what happens. Did the two liquids combine?

Empty, rinse and clean the bottle. Add three cups of water, 1/4 cup of oil, and 1/4 cup of soap or detergent. Screw the top tightly on the bottle, and shake well to mix the liquids.

Watch what happens. Can you see evidence of the oil and soap? Observe what goes on in the bottle over a period of time. You will find that oil will mix with soap and then with water. This makes it very dangerous for our water systems. Oil can be present and we can't always see it because it is mixed up and broken down through the interaction with soap and water.

Compare this to trying to wash an oily pan after cooking bacon or something else greasy. If you try to use plain water, the oil will not come off. But when we add a little dish detergent, the grease or oil comes right off!

Discuss the implications of this in the environment. Is oil a harmful substance?

Game

Secret Code

Objective:

To discover how much energy can be saved by using recycled material versus raw material to generate new products.

Background Information:

Reusing materials reduces the energy and resources required to extract, refine, transport and process virgin natural resources. Some materials are more energy intensive than others to manufacture from raw resources. Resource extraction is energy intensive. The process is environmentally polluting, creating a lot of mining and processing waste which also must be disposed. The process of recycling materials – collection, processing and transportation – although it uses energy, eliminates the very energy intensive activities required for making items from raw materials. Some materials such as aluminum and glass can be recycled and reused an infinite number of times. In addition, by recycling paper products, fewer trees will be cut down. Trees play an important role in absorbing greenhouse gases (which contribute to climate change) and regulating our climate. Leaving more of them standing is good for our air and climate.

Equipment:

One of each for each patrol or group:

- Aluminum can
- Piece of paper
- Piece of plastic
- Piece of steel
- Glass bottle
- A bag
- Piece of paper and a pencil to record codes.
- Alternatively, create cards with the name of each material written on them.

Instructions:

One person must be the “Code Master,” with the answers.

Each patrol or group selects a messenger. Give each patrol or group a bag containing the five objects (aluminum can, piece of paper, piece of plastic, piece of steel, glass bottle). They cannot open it to look inside.

Tell Scouts that they have been locked in a chamber room with only five minutes to escape before the building will collapse. The door of the chamber has been locked by a secret code. There are no windows or other doors in the room. The only escape is to break the code to open the chamber door.

The code can be broken by lining up the objects in the bag according to a special order. Making objects with recycled material versus new material saves energy, and each of the objects in the bag can be made with recycled materials. However, not all of them save as much energy as the others when made from recycled materials. Patrols must line up the objects in the bag in order from most to least amount of energy saved, when made from recycled material.

Patrols are allowed to approach the “Code Master” up to three times with their answer over the course of the game. Only one patrol member (the Messenger) can approach the Code Master with the patrol’s guess. The Code Master can only tell you how many items are in the right order, but not which items are in the right order.

The first team to crack the code and open the door wins!

Answer:

Aluminum Can: saves ~95% energy

Plastic: saves ~75% energy

Steel: saves ~64% energy

Paper: saves ~ 60% energy

Glass: saves ~ 40% energy

Discussion:

After the game, discuss the results. Were the Scouts surprised? Why is it important to save energy? What would happen to these objects if they weren't recycled? What items make the biggest impact in reducing greenhouse gases (pop cans, paper and cardboard, plastic)?

Theme Activity

"Greenwashing"

Objective:

The chemicals that we use to clean our homes can actually contribute to environmental pollution. By learning how easy it is to make our own, "green" cleaning supplies, we can help minimize pollution.

This might be a good service project – clean your meeting space or a camp building!

Another idea would be to make a "green cleaning kit" for each patrol.

Equipment:

- 1 L spray bottle (2)
- Permanent marker for labeling
- Newspapers
- Buckets
- Water
- Pure Castile or Dish Soap
- White Vinegar
- Hydrogen Peroxide
- Tea Tree Essential Oil (optional)
- Baking Soda
- Steel Wool or Scrub Pads

Instructions:

There are many different recipes for homemade cleaners (a simple internet search for "homemade cleaning supplies" will yield many results). Here is a selection of the most basic recipes.

Abrasive Cleanser – for scrubbing stubborn stains on countertops, bathrooms, or bathtubs: Make a thick paste with baking soda and water, and use steel wool or a scrub pad to clean.

Window Cleaner – to clean windows or mirrors: Add ½ cup vinegar to 4 litres of water. Put in a spray bottle, and spray onto window or mirror. Use newspaper to wipe off, it will prevent streaks. Label the bottle.

All-Purpose Cleaner 1 – for kitchen and bathroom surfaces. Add 1 tsp liquid soap and ¼ cup vinegar to 2 cups water. Place in a spray bottle, label, shake to mix, and clean away!

All-Purpose Cleaner 2 – this one is a bit more complicated – to clean bathroom or kitchen surfaces: Put two cups of water in a spray bottle. Add ½ cup vinegar, 1 tsp castile or dish soap, ¾ cup hydrogen peroxide, and 20 drops of tea tree oil. Mix together and use where needed. Label the bottle.

(safe for most surfaces; granite, tile, wood, marble, spot test first in an inconspicuous spot)

Game

Deadly Links

Objective:

Scouts will be able to understand ways in which pesticides and other harmful substances can enter food chains and affect animals and the environment.

Background Information:

Chemicals such as herbicides, pesticides, and insecticides are used to control unwanted organisms, including plants, insects, and animals. Such chemicals are often poisonous and can end up in areas where they are not actually wanted, which can have undesirable consequences on the environment.

For example, a pesticide used to control insects, DDT, had the undesirable effect of causing harm to the entire food chain that depended on those insects. Fish ate the insects that were targeted by DDT, which were then eaten by birds. Those birds were poisoned, and if they did not die, over time, they began to produce eggs with unusually thin egg shells. This meant that the eggs could not hatch, or were inadvertently crushed by the parents. Quite an unforeseen and unpredicted effect!

Equipment:

- 30 items per Scout: 10 white, 20 coloured. This can be pipe cleaners, or even dried beans, as long as 10 are white and 20 are coloured (white and red dried kidney beans for example) for “food”
- One paper bag for each “grasshopper”
- Large playing area, indoors or outdoors

(clean up required if outdoors with non-biodegradable materials)

Instructions:

This is an activity about food chains. Scouts should be familiar with this from previous WSEP Jumpstarts, if not, spend some time discussing with examples, such as the one above (INSECT → BIRD → FOX, or INSECT → FISH → BIRD, etc)

Divide Scouts into three groups: hawks, shrews, and grasshoppers. There should be approximately twice as many shrews as hawks, and three times as many grasshoppers as hawks. (ie. In a group of 13 Scouts: 1 hawk, 3 shrews, 9 grasshoppers). These groups can be identified with name tags or arm ties if desired.

Each grasshopper is given a paper bag to represent the “stomach” of whichever animal is holding it. Ask Scouts to close their eyes, and scatter the “food” around the playing area.

Tell the Scouts that the grasshoppers will be the first to look for food, while the shrews and hawks wait silently on the sidelines, watching their prey. The grasshoppers go out and collect food, which they place into their “stomachs” (the bags). The grasshoppers must move quickly, as they only have 30 seconds to collect food.

Now it is time for the shrews to hunt the grasshoppers. The hawk(s) are still on the sidelines, watching their prey. This should take another 30 seconds, give enough time that each shrew can catch one or more grasshoppers. Grasshoppers continue to try to pick up food, while shrews try to “eat” (tag) them. Any grasshopper tagged by a shrew must hand over its bag of food and go sit on the sidelines.

Next, it is time for the hawk to hunt for food. The same rules follow. Any grasshopper left is still trying to pick up food, while the shrews hunt them, only now, the hawk is also hunting shrews. If a hawk catches a shrew, the hawk gets the food bag and the shrew goes to the sidelines. At the end of 30 seconds, have everyone come together in a circle, bringing any food bags that they have with them.

Ask the Scouts who has been “eaten” – to identify what organism they are, and what ate them. Next, ask the hawks to empty their food bags into a container or onto the floor. Have the hawks to count the number of white pieces of food and the total number of coloured pieces of food.

Tell the Scouts that the white pieces of “food” are pesticides that have gotten into the food chain. This pesticide was sprayed onto the crop that the grasshoppers were eating, in order to prevent crop damage (thus keeping valuable crops safe).

Ask the grasshoppers who are still “alive” to check their food bags – if there are any white food pieces, they have been killed by the pesticide.

Now, ask the shrews that are still alive to check their food bags – if more than half of their food pieces are white; they have also been killed by the pesticide. The hawk with the most white food pieces in its “stomach” has not been killed by the pesticide, but has been affected. The egg shells that it produces in the next mating season will be so thin that the eggs will not hatch properly.

Talk with the Scouts about what they have just experienced. What do they think about pesticide use? What advantages/disadvantages are there? Are there any possible alternatives? Chemical alternatives? Non-toxic substances (companion planting)? Biological alternatives (predatory insects or animals)?



Optional Theme Activity

Yellowfish Road

Objective:

To bring awareness to harmful substances that can enter the water through storm drains.

Background Information:

(Yellow Fish Road website
<http://www.yellowfishroad.org/about.html>)

In most municipalities, storm drains flow directly into the local waterbody without being treated. Almost anything other than clean rainwater is harmful to fish and other aquatic life. This includes soap used to wash your family car (that is not biodegradable), excess fertilizer on the lawn that washes into the storm drain, dirt and oil from your driveway, and construction materials. These materials have an impact on all aquatic life, including plants, insects, fish and animals, as well as the humans that depend on the local waterbody.

Storm drains are the grates found on the street by the curb. Runoff and rain water drain into these grates, go through a network of underground tunnels, and usually ends up in the local water body. The water that goes down a storm drain is usually not treated to remove pollutants before it reaches the local waterbody.

Often, people simply do not realize that storm drains do not go to the sewage treatment plant, or that simple activities, such as allowing soapy water to enter the drains, can be harmful to aquatic life.

People may also be unaware of alternatives, such as pouring soapy water down their own household drains (which are treated at the sewage treatment plant before entering the river) or using biodegradable cleaning products.

Equipment:

- Supplied by Yellow Fish Road, Trout Unlimited

Intructions:

Complete and submit a form found on the Resources page of the Yellow Fish Road website: <http://www.yellowfishroad.org/resources.html>

This will allow access to educational material, including activities, press releases for event, and even a song!

Download the Yellow Fish Road Program Guide and plan a Yellow Fish Road painting event. In Calgary, Edmonton, and Guelph, presentations on the project are provided by Trout Unlimited. Fill out the necessary paperwork, and someone from Trout Unlimited or a partner organization will contact you in order to help you set up your event.

<http://www.yellowfishroad.org/partners.html>

Through this project, Scouts will be an invaluable part of the effort to minimize the impact of harmful substances on the environment!