

WORLD SCOUT ENVIRONMENT BADGE
PROGRAMME ACTIVITY RESOURCE



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Sticky Leaves

Aim 1

Scouts are working towards a world where people and natural systems have clean water and clean air.

Educational objectives

Explore the sources of clean water and clean air in the local environment.
Understand the ways water and air are naturally cleaned.

Age range

Under 11

Summary

A fun, outdoor activity that investigates air and makes air pollution visible.

Aim

To learn about air pollution and investigate local air quality.

Equipment

Clear sticky tape, maps, white paper

Preparation

Find a suitable place to run the activity

Duration

One hour

Setting

An outdoor setting with trees and shrubs. The activity can be done at more than one location. If this is the case, choose areas that differ in their proximity to roads, factories, or other sources of air pollution. The areas will need trees or bushes in leaf but the leaves should not be near the ground. One important point to note is that smooth surfaced leaves give better results than hairy leaves.

Background

An air pollutant is any unwanted substance or chemical that contaminates the air that we breathe resulting in a decline in air quality. Air pollutants include smoke, carbon monoxide, nitrogen oxides, sulphur dioxide, particulates and ozone.

Air pollutants have sources that are both natural and human. Natural sources include volcanoes, wildfires, airborne dust, cattle digesting grass and natural radioactive decay. Although some pollution comes from natural sources, most pollution is the result of human activity. The biggest causes are the operation of fossil fuel-burning power plants and automobiles that combust fuel.

Most of the main air pollutants can be harmful to human health. Air pollution is frequently associated with respiratory problems. It can make people sick or cause long-term illness, particularly in those most sensitive to pollution, such as children and the elderly.

There are three ways in which animals can be affected by air pollution. They can breathe in gases or small particles, eat particles in food or water or absorb gases through the skin. Soft-bodied invertebrates, such as earthworms, or animals with thin, moist skin such as frogs, are particularly affected by absorbing pollution.

Sources of air pollution and dust often leave residues on the top of exposed leaves. The sticky leaves activity collects these residues. This makes air pollution 'visible' and easier to understand. The air pollution in different areas can be compared and related to the source of the pollution.

Step by step guide to activity

1. Give the Scouts five minutes to explore their surroundings. They can explore in small groups or individually. Ask them to discover all the different things that make up the environment around them.

2. Gather the group together and discuss their discoveries. They should have noticed living things such as trees, plants and animals as well as inanimate objects like soil, rocks and water. Ask the Scouts how are these things all connected? Who eats who? Where do the animals live? What do the trees and plants need to survive? They should discover that the environment is all linked together. Ask them if there is anything else that is vital to this environment that we can't see. The answer is air.

3. Sit the Scouts down and ask them to spend one or two minutes breathing in the air and thinking about it. They should take really deep breaths and try to fill their lungs. At the end of the allotted time ask them to describe the air around them. Does it taste of anything? Does it smell of anything? Can they see it? What is in air?

4. Introduce the sticky leaves activity. Our air contains 21% oxygen, 72% nitrogen, approximately 7% carbon dioxide and approximately 1% other gases including pollutants. The majority of the gases and particles that make up our air, including the oxygen, nitrogen and carbon dioxide, are colourless, odourless and tasteless. However, some of the pollutants are in particles big enough to be visible to the naked eye. The sticky leaves activity enables these particles to be collected.

5. Ask the Scouts where they think air pollutants might come from (some sources are cars, fossil fuel-burning power plants, volcanoes, fires, dust). Ask the Scouts about their current location. What sources of air pollution are nearby?

6. Split the Scouts into small groups and give each group some white paper, scissors and some sticky tape. Depending on the size or other characteristics of your natural area and the size of your group, you can allocate each group their own area or vegetation type or you can allow them to decide themselves where they sample.

7. The Scouts cut a piece of sticky tape and press it firmly, sticky side down, onto a leaf. They then carefully remove the tape and stick it onto a piece of white paper. Each group should do this at least ten times in order to get a representative sample and write down or draw the location where they took the sample.

Evaluation

1. Gather the Scouts together and compare the results. If you have access to a magnifying glass or microscope, look closely at the samples. Rank the different samples in order of how dirty they are. Where were the dirtiest samples taken from? Where were the cleanest samples taken from? Is there a pattern, if so why? Where is the pollution coming from?

2. If you have sampled in more than one area then transfer your results to a map and discuss. Is there a reason why certain areas show more pollution than others? Where is the pollution coming from?

3. Think about the damage the pollution in the air might be doing. How might it affect the plants? How might it affect human health? How might it affect animals? Bear in mind that this is only the pollution that is visible. A lot of pollution is not visible to the naked eye.

Further activities

1. There are other ways that air pollution can be 'seen'. Investigate buildings made of stone in your local area. These can show evidence of air pollution, in particular from vehicles on adjacent roads. Look out for natural stone that looks 'dirty'. Graveyards are also good places for seeing the effect of air pollution on stone. Find out how scientists measure air quality.

2. Think about how our actions affect air pollution. How they contribute to it and what we can do to reduce air pollution.

3. Make a poster showing all the different things in your local area that contribute to air pollution.

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Sense Nature

Aim 2

Scouts are working towards a world where sufficient natural habitat exists to support native species.

Educational objectives

Explore a local natural area.

Discover some of the local native species of plants and animals and their habitat needs.

Demonstrate knowledge of some contrasting natural habitats.

Age range

Under 11

Summary

An outdoor activity where the Scouts use their five senses to explore and connect with nature.

Aim

To experience and connect with nature using all of the senses (seeing, hearing, tasting, smelling, touching) and understand how the information from our senses combine to create our awareness of the natural world.

Equipment

Blindfolds, paper, pens

Preparation

Find a suitable place to visit

Duration

One hour

Setting

A local natural area, for example, forest, beach, mountain or park

Background

Nature can be appreciated using all of our senses. The sense we use the most often to understand our environment is sight but in actual fact we are using our other senses at the same time to help build up the picture of what is around us. By concentrating individually on each of our senses we can gain a better awareness of our local environment.

Step by step guide to activity

1. Find a suitable local natural area and take the group there.
2. Ask the group to name the five senses and discuss how we use these in our daily lives. How do our senses help us to understand our surroundings?
3. Explain to the group that they are going to explore the natural environment around them using each of the senses individually. Which senses do they use the most? Which senses do they think will tell them the most and the least?
4. Do the following activities. Each activity will identify different features of the natural environment you are exploring. Write down these features as the activities progress. The final activity ends by summing up how our senses have painted a picture of the local environment.

Activity 1 Scavenger Hunt Sense: Sight

1. Split the Scouts into teams and ask them to find ten objects that have something in common. For example, ten natural objects that are soft. Other ideas are objects that are hard, green, brown, dead, man made etc.
2. Each group could have the same category or one group could have to find soft objects and the other group hard objects.
3. The Scouts should take care not to harm or disturb living creatures.
4. Once they have found their objects they present them to the rest of the group.
5. Have a discussion about what they have found. Some ideas for questions are given below.
6. After the discussion put the natural objects back appropriately. If a group has collected man made objects, make sure these are taken away with you and disposed of correctly.

How many different natural objects have they found overall?

Are the group surprised by the number of different things they have found?

What is the most surprising thing collected?

How much man made material was found?

Where did they look for the objects?

How well do these objects represent what is living in the natural area?

Was this activity easy? It depended on our sense of sight. How useful is our sight? How important is sight to our awareness and understanding of nature?

Activity 2 Barefoot Walk Sense: Touch

1. Split the group into pairs and choose one of the pair to go first.
2. The Scout going first takes off their shoes and socks and puts on a blindfold.
3. The blindfolded Scout is then led over a course by their partner.
4. As they walk the blindfolded Scout must concentrate on what their feet can feel. They must describe to their partner what the ground feels like on their feet and try to identify what they are walking over. The path should be safe from sharp or dangerous objects and should include different textures and surfaces.
5. The pair then swaps roles and repeats the activity.
6. Gather the group together and discuss the activity. Some ideas for discussion are given below:

What did the ground feel like? Was it soft, hard, warm, cold, wet, dry etc? Try thinking of really imaginative words to describe how the ground felt.

What were you walking over?

How sensitive are your feet? Are they more, the same, or less sensitive than your hands? Did you use your sense of hearing to help you identify what you were walking on? (for example, if walking through leaves or through mud or water)

How did being blindfolded make you feel?

Activity 3

Find Your Tree

Sense: Touch

1. Introduce this activity by looking at and discussing the trees in your surroundings. Ask the Scouts what the distinctive features of the trees are and visit several trees to see their differences and similarities.

2. Split the group into pairs and blindfold one of the pair.

3. The blindfolded Scout is spun around and then guided carefully to a tree. This is best done in silence.

4. They must touch the tree to discover its size, shape and texture. They need to learn enough about the tree to be able to identify it without their blindfold on. Good things to feel for are distinctive patterns in the bark, branches coming from the trunk, roots or plants at the base of the tree. An excellent way to identify your tree is to know its diameter. Get the Scouts to wrap their arms around the tree to work this out.

5. They are then taken away from the tree, spun around again and their blindfold taken off. They must use their memory of what the tree felt like to find it.

6. The pair then swaps over and repeats the activity.

7. Gather the group together and discuss the activity. Some ideas for discussion are given below:

How easy was it to find your tree?

What features of your tree helped you to find it?

As you touched the tree, how easy was it to imagine what it looked like?

How sensitive are your fingers?

What features of the tree could they feel (for example, different textures, different temperatures, dampness, dryness)?

If you have done the barefoot walk activity, are your fingers more sensitive than your feet?

How does touching the tree compare with just looking at the tree?

What did you learn about the tree from touching it that you wouldn't learn from looking at it?

Activity 4

What do you hear?

Sense: Hearing

1. Ask each Scout to find a comfortable place to sit.

2. The group must sit quietly for five minutes and listen to the sounds around them. When they hear a sound, they must think about what has made it and remember it.

3. After five minutes, ask the group what they heard and discuss the sounds. Some ideas for questions are given below.

What sounds did they hear?

Were they natural or man made sounds?

Were they surprised at how much/ how little noise there was?

Did they hear any sounds they had never heard before, if so, what?

How did the sounds help them to understand what is surrounding them?

Activity 5

Nature Smells

Sense: Smell

1. Sit the group down and ask them to shut their eyes and sit quietly for a few minutes and concentrate on what they can smell around them.

2. After a few minutes have a group discussion on the different smells in their surroundings. The results of this discussion are very dependent on the natural area, the time of year, the weather and even the time of day. Ask the Scouts to identify any smells. Where are they coming from? Do they like the smells? How do the smells make them feel?

3. Ask the Scouts to explore the natural area and smell as many natural things as possible to find their favourite smell. Explain that they can rub things with their fingers to generate a smell. The smell might then be passed onto their fingers.

4. Once they have found their favourite smell, ask each Scout to present their object and its smell to the whole group. Have a discussion about the natural smells. Some ideas for questions are given below.

Can they describe why they like their favourite smell?

Does their favourite smell remind them of anything?

Did they find any smells they didn't like?

Were the smells of the natural place what they expected?

Does nature have its own smell?

How do they think the animals that live here use the smells around them?

If they couldn't see, how would their sense of smell help them to picture their surroundings?

Activity 6

Natures Larder

Sense: Taste

1. Save this activity until the end.

2. Ask the group to name all the different things that make up the natural environment surrounding them. Which of these things could they eat? What would the different tastes be? What does something taste like that is bad for us? Which other senses could we use to help us decide not to eat something?

3. If there are any edible plants in your local natural environment that can be picked without harming the local ecosystem then allow the Scouts to taste these.

4. Ask each Scout to choose an animal that lives in the surrounding environment. They must tell the rest of the group what that animal eats. Do they think animals have taste buds? How do animals use their sense of taste? How does their animal decide what is good to eat and what is bad to eat?

Evaluation

1. Gather the group together and discuss their experiences exploring nature using each of their senses. Some ideas for questions are given below.

Which sense gives you the most information about your surroundings?

Which sense gives you the least?

How do the senses work together to give you information?

What natural things have you discovered today?

How do the living things in this environment use their different senses?
What is your favourite thing in this natural environment?

Further activities

1. Create a poster or display showing all the different features of your local natural environment

2. Learn about the difference between native and non native species and find out about them in your local area.

3. Explore different natural habitats in your local area and other places or learn about them from local experts, books, films or the internet.

4. Encourage the Scouts to practice their sensory skills simultaneously by themselves in their own time.

5. Encourage Scouts to keep their own nature journal where they can record their observations with different senses.

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Catch the Carbon Dioxide

Aim 3

Scouts are working towards a world where the risk of harmful substances to people and the environment are minimised.

Educational objectives

Be aware of harmful substances in the local environment.

Explain ways to reduce the risk of harmful substances to people, plants and animals.

Age range

Under 11

Summary

A fun, activity to introduce climate change

Aim

To learn the basic science behind climate change.

Equipment

Blindfolds

Preparation

None

Duration

Fifteen to thirty minutes

Setting

Scout meeting place

Background

Our planet is surrounded by a blanket of gases. This is our atmosphere. As the sun shines on the earth it sends us heat. Some of this is absorbed by the earth's surface and some of it bounces back into the atmosphere. The reflected heat is trapped by the atmosphere and this keeps our planet warm. This is known as the greenhouse effect.

The blanket of gases is getting thicker as we release greenhouse gases by burning fossil fuels for energy and as we cut down forests for timber and agriculture. Greenhouse gases are carbon dioxide (CO₂), methane and nitrous oxide. As the blanket gets thicker, the temperature rises. As a result of this, our climate is starting to change.

Step by step guide to activity

1. Split the group into two teams. One team are trees and one team are carbon dioxide molecules. There should be more carbon dioxide molecules than trees.
2. Ask the trees to find a place to grow with plenty of space in between each tree. Once the tree has chosen its place to grow it cannot move, only its branches (arms). As they are growing the trees need to catch carbon dioxide. They do this with their branches and leaves. Ask the trees to practice catching carbon dioxide (they should wave their arms around).
3. The carbon dioxide molecules are found floating around in the air. They can move very quickly but they can't see where they are going (put blindfolds on the carbon dioxide molecules). The carbon dioxide molecules have to move from one side of the playing area to the other without getting caught. The trees have to try and catch them with their branches. A carbon dioxide molecule is caught if a tree touches it and the molecule then becomes a tree.
4. Continue the game until nearly all the carbon dioxide is gone then stop and announce that humans have discovered this forest and want to chop down the trees so they can grow crops on the soil. The trees get burnt and the carbon dioxide is released. Choose three quarters of the trees and turn them into carbon dioxide molecules. After a while the land becomes useless for growing crops so they decide to build a town there instead. In the town there are lots of cars and factories. These burn fuel which releases more carbon dioxide into the atmosphere. Choose half of the remaining trees and turn them into carbon dioxide molecules.

5. The scenario can then be changed so that Scouts come along and plant more trees (turn some of the carbon dioxide molecules into trees).

Evaluation

1. Discuss the game afterwards using the ideas below.

In the game, what effect does the number of trees have on the number of carbon dioxide molecules?

Does this also happen in real life?

Halfway through the game humans came along and chopped down lots of the trees. What effects did this have (think about immediate and long term)?

What effect did the planting of trees by the Scouts have on the carbon dioxide molecules?

Why does it matter how much carbon dioxide there is in the atmosphere? Explain the greenhouse effect.

How can we reduce the amount of carbon dioxide in the atmosphere?

Further activities

1. Ask the Scouts to think about how their daily actions might affect climate change. What can they do to reduce the amount of greenhouse gases they produce?

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What have I done today?

Aim 4

Scouts are working towards a world where the most suitable environmental practices are used.

Educational objectives

Show awareness of how our actions affect the environment and alternative ways to make a smaller impact.

Age range

Under 11

Summary

A fun and easy game to start the Scouts thinking about how their actions affect the environment.

Aim

To understand that our daily actions have an impact on the environment.

Equipment

Ball

Preparation

None

Duration

Ten to twenty minutes

Setting

Scout meeting place

Background

Every day we do things that impact on the environment. Some things we do are good for the environment and some things we do are bad for the environment. Very often we do things without even being aware of how it affects the environment. This game encourages the Scouts to think about how our daily actions affect the natural world all around us.

Step by step guide to activity

1. Gather the group in a circle and hand the ball to one person.
2. The person with the ball starts by telling the group one thing they have done today that is good for the environment. They should explain why their actions were good for the environment. If they find it difficult to think of something ask them to think of one thing they have done today and decide if and how it was good for the environment (have a leader keep note of the answers given by the Scouts throughout the activity).
3. The Scout then passes the ball onto another participant who does the same.
4. Once the ball has been round the whole group, repeat the game but with the question 'what have I done today that is bad for the environment?'

Evaluation

1. After everyone has had a go, have a quick discussion with the group using the ideas below.

Was it easier to think of things that were good or things that were bad?

When you do everyday things do you think about how it affects the environment?

Do you think it is important to consider the environment?

What differences are there within the group? Why is this?

2. Have each Scout choose one thing they do that is good for the environment and one thing they could improve upon.

3. Make a group picture showing one half of things they do which are good for the environment and the other half the things they can improve.

Further activities

1. Ask each Scout to change their actions until the next meeting and to share their plan with their family, class and/or friends.
2. At the next meeting look at the first pictures and make a third picture showing how their actions have improved.
3. Use this activity as an introduction to subjects such as renewable energy, recycling, water conservation and energy conservation.

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What disaster am I?

Aim 5

Scouts are working towards a world where people are prepared to respond to environmental hazards and natural disasters.

Educational objectives

Be able to recognise different types of environmental hazards and natural disasters.
Demonstrate how to be prepared and react to environmental hazards and natural disasters in the local area.

Age range

Under 11

Summary

A fun game to introduce the different types of natural disaster.

Aim

To encourage thinking about natural disasters and their different characteristics.

Equipment

Cards showing images of natural disasters, safety pins.

Preparation

Print cards showing a picture of a natural disaster and its name. There should be enough cards for one for each Scout.

Duration

Twenty minutes

Setting

Scout meeting place

Background

Natural disasters occur all around the world and can have a devastating effect on the natural environment and on human beings. There are lots of different types of natural disaster, for example, hurricane, tropical cyclone, typhoon, tornado, drought, flood, volcano, landslide, tsunami, heat wave, wildfire, insect plague, famine, health epidemic, avalanche and earthquake. It is very important that we have an understanding of natural disasters. We need to be prepared to respond to them when they happen to us and to be able to provide support when they happen to others.

Step by step guide to activity

1. Introduce the subject of natural disasters. Ask the Scouts to name some different types of natural disaster. Ensure that they have enough knowledge to begin the game and if necessary show the group some pictures and ask them to describe the images.
2. Pin a picture of a natural disaster onto the back of each Scout. Explain the object of the game. They have to find out what their natural disaster is by moving around the group and asking each other questions. The question can only be answered with a "yes" or a "no". For example, "does my disaster involve wind?"
3. The Scouts move around the room, asking questions until they have worked out which natural disaster they are. The first Scout to tell the leader the correct answer wins.
4. Allow the game to continue until everyone has worked out which natural disaster they are.

Evaluation

1. Gather the whole group together and show them all the different natural disaster images. Find out from the group which images they are familiar with and which images they are not familiar with.

Further activities

1. Choose a few suitable examples of natural disasters and ask the Scouts to think about how they could prepare for them.
2. Find out about natural disasters in your country and prepare some information about what happened, why it happened and how the emergency services coped with the situation.
3. Go on a visit to a local emergency services station, for example, the Fire Brigade or the Police Station and find out how they deal with emergency situations. Discover if they have ever helped out in a natural disaster.
4. Practice basic first aid skills and how to get help in an emergency.

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