

The background of the entire page is a photograph of a sunset. The sun is a bright, glowing orb positioned slightly above the center of the frame. It is surrounded by a soft, golden-orange glow that fills the sky. In the foreground, there are numerous tall, thin stalks of grass, likely reeds or marsh grass, which are silhouetted against the bright sky. Some of these stalks have feathery seed heads. The lower portion of the image shows the surface of a body of water, which reflects the golden light from the sun, creating a shimmering effect. The overall color palette is dominated by warm tones of orange, yellow, and gold, with the dark silhouettes of the grass providing contrast.

**Six Week Summer Session**

**Nature Study**

**Appropriate for All Ages**

## Why study nature?

The purpose of a nature study is to ponder the signs of Allah's creation. There are many ayat in the Noble Qur'an pertaining to Allah's signs in nature. In Surah Ash-Shura, Allah states, "And among His Ayât (proofs, evidences, lessons, signs, etc.) is the creation of the heavens and the earth, and whatever moving (living) creatures He has dispersed in them both. And He is All-Potent over their assembling (i.e. resurrecting them on the Day of Resurrection after their death, and dispersion of their bodies) whenever He will. (Ash-Shura 42:29)

Embarking on a nature study should increase and strengthen our emaan, insha Allah. "And on the earth are signs for those who have Faith with certainty." (Adh-Dhariyat 51:20)



In addition there are an abundance of beneficial developmental factors for studying and being in nature. Some studies show that children's cognitive, affective, and moral development is positively effected by direct contact with nature. Exploring the unaltered outside world also may have an impact on the way children treat humans and other creatures in society.

Insha Allah, these children who have been fortunate enough to have nature experiences may show more compassion, empathy, and respect for fellow creatures. Insha Allah, these beneficial encounters with nature will ensure our children will become Muslims who better understand the responsibility that Allah has given us in caring for the planet.

Truly, We did offer AlAmânah (the trust or moral responsibility or honesty and all the duties which Allâh has ordained) to the heavens and the earth, and the mountains, but they declined to bear it and were afraid of it (i.e. afraid of Allâh's Torment). But man bore it. Verily, he was unjust (to himself) and ignorant (of its results). (Al-Ahzab 33:72)



## Objectives

1. To provide children direct contact with nature through simple, yet thought provoking hands-on activities.
2. To naturalize children with Allah's signs in nature.
3. To familiarize children with ayat and ahadith pertaining to Allah's signs in nature.
4. To develop children's nature consciousness.
5. To engage children in positive social interactions with other peers, family members, and other creatures.
6. To promote literacy through direct contact with nature.
7. To introduce children to journal keeping.

# Six Week Outline

Week One- Introduction to Nature Study

Week Two- Bugs and Creepy Crawlies

Week Three- Birds

Week Four- Plants

Week Five-Soil and Water

Week Six-Environmental Science



# Week One- Introduction to Nature Studies

## Day one- Nature Journal

On the first day of the nature study, it is imperative that the children create and organize a nature journal.

### Purpose:

The intention of composing a nature journal is to make children accustomed to writing about their experiences in nature and expressing their thoughts about their encounters. This composition can be saved for further entries and reflection.

### Materials:

Three-ring binder (one per child)

Three hole puncher

Cover sheet to slip into the front sleeve of the binder

Title page

Paper in a variety of colors

Colored pencils

Pens

Watercolors

Glue

Crayons

Markers

Chalk

Field guides (optional)



### Procedure:

Decorate the cover sheet as the child wishes. Use either the title page provided or another cover page. Explain to the children that

this journal will be used through the length of the nature study, so it is important that they take good care of the journal. Furthermore, the children will be expected to keep their journal organized.

What to include:

Children can make journal entries anytime they wish in addition to the suggested journal activities in this nature study. They should include the date, the location, and the time for each entry, insha Allah. They may also include weather conditions. The entries can be pictures, descriptions, thoughts, feelings, drawings, poems, riddles, du'as, etc.

## Day One- Colors/Shapes Scavenger Hunt

Have the children become familiar with their surrounding by kicking off the nature study with a scavenger hunt.

In preparation for a color/shape scavenger hunt, instruct the children that the varieties of color in nature are a sign from Allah. There is diversity of colors in plants, animals, humans, and mountains, masha Allah.

**See you not that Allâh sends down water (rain) from the sky, and We produce therewith fruits of varying colours, and among the mountains are streaks white and red, of varying colours and (others) very black. (Fatir 35:27)**

**And of men and AdDawâb (moving living creatures, beasts, etc.), and cattle, in like manner of various colours. It is only those who have knowledge among His slaves that fear Allâh. Verily, Allâh is AllMighty, OftForgiving. (Fatir 35:28)**

Give each child a color to find and have he/she go retrieve an object in nature. Save these objects as well for later reflection in a journal entry.

Next, give each child a shape (circle, triangle, square, etc.) on a piece of paper and have he/she go retrieve an object that is their assigned shape. Save the objects for later reflection in a journal entry.

## Day Two- Clouds

Explain to the children that topic for the day is clouds. They will be observing clouds while remembering that Allah created the clouds as a blessing that provides shade as well as rain for us.

**It is He who shows you the lightning, as a fear (for travellers) and as a hope (for those who wait for rain). And it is He Who brings up (or originates) the clouds, heavy (with water). (Ra'd 13:12)**



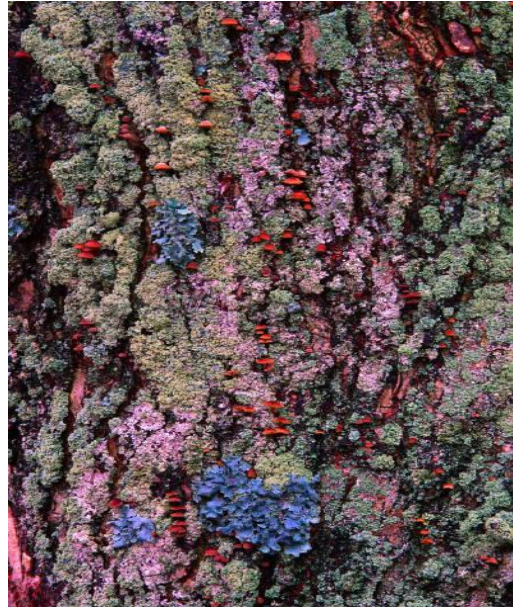
Gather a blanket for the children if desired and lay it on the ground. Have the children lie on it and observe the clouds. After sufficient time spent observing the clouds, they may sketch drawings or describe in their journals what they saw. Another idea is to have them draw the clouds with white paint, white crayon, or chalk on blue paper to be later added to the journal, insha Allah. Older children may like to label the clouds with their scientific names, insha Allah.



## Day Three- Tree Rubbings

Today's theme will be about trees. Again, this week is just introduction to nature study. This means we are merely skimming the surface and becoming acquainted with our surroundings. Cite to the children that another sign from Allah is trees. Each tree has its own unique bark pattern, subhannallah. In addition mention to the children that the trees also prostrate to Allah in their own unique way.

**And the herbs (or stars) and the trees both prostrate. (Ar-Rahman 55:6)**



The children will need to choose a tree and place paper over the bark. It may be easier to tape the paper to the tree using strong tape. Next, use a thick crayon and rub on the paper. Insha Allah, you will see the bark's pattern emerge. Repeat this with as many different trees as desired. Then add these rubbings to the journal with labels if possible.

## Day 4- Art in Nature

Nature is made up of lines and many different shapes. Shapes are not limited to circles, squares, and triangles, but exist in many forms. Examples of other shapes include curvy shapes, blob-like shapes and shapes made up of straight lines. It is important to

explain to the children Allah's Work is Perfect and He is the Al Musawwir (Bestower of Forms and Colours).

**And you will see the mountains and think them solid, but they shall pass away as the passing away of the clouds. The Work of Allâh, Who perfected all things, verily! He is Well-Acquainted with what you do. (An-Naml 27:88)**

The children will search for shapes as well as lines in nature. Shapes may consist of outlines of clouds and rocks. Lines may consist of sticks or twigs and pine needles. They should collect the specimens and record them in their journals with labels as possible.

This may also be an appropriate time to play I Spy in nature.

## Day 5- Treasure Hunt

Give written or oral instructions to children in order for them to find their "treasure." Example- take four steps forward, take two steps to the right, walk around the tree, etc. For more advanced children you may want to incorporate the use of a compass to find the treasure. Remind the children that while they may not know where the treasure is, Allah, Al Alim, knows all things. He is the Knower of the Hidden and Open, subhannallah.

In the journal, the children may retrace their steps with written



instructions and /or sketching. Also, encourage children to draw a map of the area they are studying whether it be their backyard or other location.

## **Week Two- Bugs and Creepy Crawlies**

### **Day One-Ants**

The first activity this week will be an experiment with ants, insha Allah. Mention to the children the ayat about the ants.

**Till, when they came to the valley of the ants, one of the ants said: “O ants! Enter your dwellings, lest Sulaimân (Solomon) and his hosts crush you, while they perceive not.” (An-Naml 27:18)**

Then explain that it was just recently that modern science discovered that the worker ants were female, but this information was revealed long ago to the Prophet (sallallahu aleyhis wa salaam) in the Qur'an, subhannallah.

Materials:

Small pieces of bread

One cup of water

Two tsp. Sugar

Procedure:

Dissolve sugar in water and soak the bread in the solution. Five pieces of bread should be placed together in one spot and another five pieces in a second spot. Record where the pieces of bread were placed on a map in the journal. The bread should be checked every half hour to see if it has been moved. After the bread has been found, the children can check to see how long it takes the ants to move the food to their nest.

Mention to the children that the worker ants or female ants collect the food after smelling it with their antennae. Have the children record their finding and observations in their journal, insha Allah.

## Day Two-Earthworms

Earthworms are the subjects of today's study, insha Allah. Earthworms have no legs and creep on their bellies. Allah mentions these types of creatures in the following ayah.

**Allâh has created every moving (living) creature from water. Of them there are some that creep on their bellies, some that walk on two legs, and some that walk on four. Allâh creates what He wills. Verily! Allâh is Able to do all things. (An-Nur 24:45)**



Materials:

Two earthworms

Magnifying glass  
Paper towel  
Ice Cube  
Mound of soil

For this activity, the children will need to capture an earthworm. Remind the children that utmost care should be taken in handling the creature. Have them try to find with end is the head and which end is the tail. The head usually comes to a point and the saddle or the smooth bulge is closer to the head than the tail. Hold the worm gently by the tail and allow the worm to wiggle around. It should start searching for the ground. Point out to the children that the worm is strong and they will be able to feel its strength in their hands. Next, allow the worm to lengthen its body and watch as the segments (sections) become thinner and longer. Record the findings/observations in the journal.

Then place the earthworm on a wet paper towel and observe the earthworm with a magnifying glass. Touch the earthworm with an ice cube and record the results. Cover the earthworm with another paper towel for several minutes. Next, uncover the earthworm and expose it to the light and record results. Finally, place a mound of soil on the worm and observe the results. After the activity is completed, the children should place the earthworm back where it was found.

## Day Three-Spiders

Explain to the children that there is an excellent parable in the Qu'ran about the spider's web, masha Allah.

**The likeness of those who take Auliyâ' (protectors and helpers) other than Allâh is as the likeness of a spider, who builds (for**



**itself) a house, but verily, the frailest (weakest) of houses is the spider's house; if they but knew. (Al-'Ankabut 29:41)**

Explain to the children the meaning of this ayah. Then while viewing an actual spider's web, reemphasize how weak and fragile their homes really are.

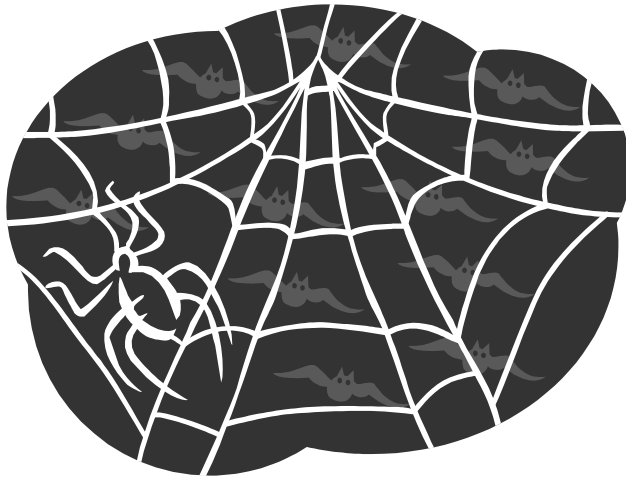
Materials:

Spider

Jar

Small paintbrush

Paper



Today the children will be looking for actual spiders and spider webs. Emphasize to them that they need to be cautious with spiders as many of them do bite.

Try to find a spider's web and with a blade of grass, gently tap the web so that it vibrates, insha Allah. Watch the spider as it comes down the web toward the "food." As soon as the children stop tapping, the spider will stop moving. Observe the spider and record the finding in the journal.

Explain to the children that not all spiders spin webs. In warm parts of the world, the children may be able to find trap door spiders. Look for a camouflaged lid on the earth floor where a spider may be hiding.

Even though not all spiders spin webs, when they move around they have a line of silk behind them. Obtain a spider and place it into a jar. Ensure that the spider is on the bottom of the jar by gently tapping the jar. Use the brush and gently nudge the spider out of the jar. The children will be able to observe the spider hang

by its thread and come back up again by its dragline. Children should record result in the journal.

## Day Four- Creatures of the Leaf Litter

Discuss with the children the story of Nuh (aleyhis wa salaam) and relate the following ayat. Every kind of living thing was placed on the ark including insects, masha Allah.

**(So it was) till then there came Our Command and the oven gushed forth (water like fountains from the earth). We said: “Embark therein, of each kind two (male and female), and your family, except him against whom the Word has already gone forth, and those who believe. And none believed with him, except a few.” (Hud 11:40)**

Materials:

Moist leaf litter

Pan with edges

Lamp

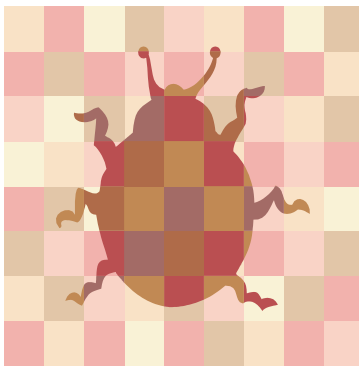
Paper

Small shovel

Specimen collection bag

Magnifying glass

Insect field guide



The children will collect leaf litter by placing some wet leaf litter in a bag and transferring it to a pan covered with paper. Make sure to only use a small amount of litter and spread it out evenly around the pan. Shine the light on the litter and watch the creatures scurry out. Observe the creatures with a magnifying glass. Once all

observations, drawings, and sketches have been completed, place the creatures and the litter back to where they were found. If an insect field guide is available determine which species you have found.

Next, place the same paper lined pan under some branches of a tree. Shake the branches forcefully in order to make the insects fall into the lined pan. Inspect your finding and record results. If the children would like to observe some insects for a longer amount of time place them in a jar along with some leaves from the tree they fell from. Make sure the lids have air holes and give them several drops of water. Be sure to release them after a couple of days.

Finally, the children will also be able to observe insect that live on the ground in contrast to the ones that live in the trees, insha Allah.

#### Materials:

Two containers made of any materials

Leaves broken up

A small shovel or spoon

Some fruit and cereal

Tops for the containers

Tape or small rocks



Dig two holes and place each container in one of the holes. Add some of the fruit and leaves to one and some of the cereal and leaves to the other. Place the containers in the ground so the tops of the containers are at ground level. Wad up small balls of tape or use small rocks and place them on the top of the edges of the containers. Now put the tops back on the wads of tape or small rocks. Be sure to check and record findings several times a day.

## Day 5- Bees and Butterflies

Before today's hands-on adventure, be sure to discuss with the children the ayah concerning the bees in the Qur'an. Bees are truly a sign from Allah as well as a blessing as they produce honey and pollinate the plants, masha Allah. Also, discuss the process in which the bees make the honey. They collect the nectar from the flowers and make honey to feed to their grubs.

And your Lord inspired the bee, saying: "Take you habitations in the mountains and in the trees and in what they erect. (An-Nahl 16:68) "Then, eat of all fruits, and follow the ways of your Lord made easy (for you)." There comes forth from their bellies, a drink of varying colour wherein is healing for men. Verily, in this is indeed a sign for people who think. (An-Nahl 16:69)

### Materials:

Brightly colored cardstock

Sugary water mixture

Bottle tops



Cut out several flower shapes from the brightly colored cardstock and leave a whole in the middle just big enough for the bottle top. Place several drops of the sugary water mixture in the bottle tops and place the flowers and bottle tops outside. Wait for the honeybees to find the flowers and communicate with their fellow bees about the site. See which color flower the bees congregate to the most and record your observations.

### Materials:

Ripe banana

Bowl

Fork

Spoon

½ tsp dark brown sugar

1 c water

Paper plate

Pencil or pen

String or yarn



Mash the banana in the bowl using a fork. Place the mashed banana in a pot with the sugar and water and mix. Cook the mixture until it is sticky. Allow it to cool. Poke three holes in the paper plate with a pencil or pen. Tie the string or yarn around the holes. Spread the mixture onto the plate and tie the plate to a tree branch. Record the findings in the journal.

## Night-time Activities

The creatures by day may differ from the ones that are active by night, masha Allah. Some creatures are diurnal (awake during the day) while some are nocturnal (awake during the night). Allah is the One who creates the alternation of day and night,

ubhannallah. Verily! In the creation of the heavens and the earth, and in the alternation of night and day, there are indeed signs for men of understanding. (Aali Imran 3:190)

## Fireflies



While embarking on a search for fireflies, pay close attention to the pattern of light signals (bioluminescence) that the fireflies give off. The



fireflies that are flying light up to attract the female fireflies on the ground. Observe the females sending their signals back to the male fireflies as they return the signal, masha Allah. Transfer the observations to the journal.

## Night crawlers



Cover flashlight with red tissue paper and secure it with a rubber band. Take the flashlight outside and look around for creepy crawlies in leaf litter, gardens, under rocks, etc. The insects will not run away from the red tinted light and the children may be able to find creatures that they couldn't find during the day, insha Allah. The children may find sow bugs, daddy-long-legs, walking sticks, garden snails, ground beetles, etc.

## Night fliers

Insha Allah, in the search for night creatures, there may be many flying insects such as mosquitoes and other types of flying insects such as crane flies, lacewings, etc. Relate the ayah about the parable of the fly, insha Allah.

O mankind! A similitude has been coined, so listen to it (carefully): Verily! Those on whom you call besides Allâh, cannot create (even) a fly, even though they combine together for the purpose. And if the fly snatched away a thing from them, they would have no power to release it from the fly. So weak are (both) the seeker and the sought. (Al-Hajj 22:73)

Even though there are some insects that dislike light, there are also some that are attracted to it. Observe these insects by turning on

an outside light and watching the flying insects swarm to the light, insha Allah. Record how many different types of insects you find. Take note of their shimmering colors and type of wings.

## Week Three –Birds

### Day One- Feed the Birds

It is highly recommended to have a field guide for this week's study in order to be able to try to recognize the birds that are observed, insha Allah.

Discuss with the children that the variety of species of birds have distinct names. Just as humans are an ummah, birds are also an ummah.

There is not a moving (living) creature on earth, nor a bird that flies with its two wings, but are communities like you. We have neglected nothing in the Book, then unto their Lord they (all) shall be gathered. (Al-An'am 6:38)

### Buffet

Materials:

6 bowls

Mealworms or worms

Breadcrumbs

Fruit

Beef bacon fat or other animal fat

Seeds (sunflower or other)

Soaked oats

Place each of the above foods in bowls and place them in an area of the backyard that may have overhanging trees or bushes if possible. Insha Allah, the children will soon see that some birds will devour the meat quickly while others will be vegetarian. Some birds will eat both meat and vegetables, yet others will be very picky. A suggestion for the journal entry is to have the children draw the varying beaks and which food they gravitate towards.

## Day Two- More Bird Food

Mention the following ayah to the children and explain that the birds also glorify and worship Allah as they soar through the air. Allah is well aware of their mode of worship, as He is well aware with all creatures mode of worship.

See you not (O Muhammad) that Allâh, He it is Whom glorify whosoever is in the heavens and the earth, and the birds with wings out-spread (in their flight). Of each one He (Allâh) knows indeed his Salât (prayer) and his glorification, [or everyone knows his Salât (prayer) and his glorification], and Allâh is All-Aware of what they do. (An-Nur 24:41)

## Bird Feeder

Materials:

Plastic bottle with top

Pencils or pens

Funnel

String or yarn

Birdseed

Make holes in the bottle toward the bottom by pushing a pencil or pen through the bottle on one side and then the other side. Leave

the pencil or pens there as a perch for the birds. Make four more holes several inches above the pencils or pens, but this time removing the object that was used to make the hole. Finally, fill the bottle with birdseed and tighten the top. Hang the feeder to a low branch using string or yarn.

Materials:

Needle

Strong thread

Raisins, cereal, popcorn, unshelled peanuts

Another easy way to lure birds to your backyard is to make a food chain for them. String one type of food per chain and hang the chains close to a window. Record which food the birds prefer and what type of birds came to investigate in your journal.

## Day Three- Observing flight and attracting birds

Before embarking on today's adventure, spend some time pondering the following ayah with the children.

Do they not see the birds held (flying) in the midst of the sky?



None holds them but Allâh [none gave them the ability to fly but Allâh]. Verily, in this are clear proofs and signs for people who believe (in the Oneness of Allâh). (An-Nahl 16:79)

### Birds in Flight

Spend some time watching birds in flight, insha Allah. Their silhouette as well as their flight styles can identify birds. For example, pigeons and doves tend to fly

level and straight and in flocks. On the other hand, finches tend to rise and fall through the air traveling in short bursts.

If you are not able to identify the birds, at least notice the differences in flying styles.

## Birdbath

Materials:

Rocks/small pebbles

Garbage can lid

Bricks or blocks of wood

Set up a birdbath by filling up a garbage can lid with small rocks/pebbles. Place the lid on top of some bricks or blocks of wood. Fill the birdbath with water and make sure the water is replaced every several days.

## Day Four-Bird Nests

Quote the following ayah concerning the Prophet Sulaimân (aleyhis wa salaam).

And Sulaimân (Solomon) inherited (the knowledge of) Dawûd (David). He said: “O mankind! We have been taught the language of birds, and on us have been bestowed all things. This, verily, is an evident grace (from Allâh).” (An-Naml 27:16)

## Bird Nest



Materials:



Dirt  
Water  
Spoon  
Materials birds might use to build a nest

Concoct a water and dirt mixture by mixing dirt and water into a muddy mixture in a bowl. Now use a spoon to build the rest of the nest with materials such as twigs, feathers, leaf litter, bark, bits of threads, strings, etc. The use of the spoon simulates a beak. Have children record their experiences in their journals.

## Day Five- Song birds and bird feathers

Just as each human has a unique voice; Allah has made each bird to have a unique call, ubhannallah. Even though, certain species of birds do have distinguishing calls. For example, crows make sounds like caw-caw-caw and robins sing a lovely cheerily-cheerily song.

### Bird Songs

In this journal activity, the children will be listening for bird calls and describing them as best as they can in their journals. By experiencing bird songs/call, the children will be more likely to listen for and become more aware of birds in nature.



Cawing crow



Cuckoo whistle



Robin call



Quail call



Seagull



Loon call



Hawk call

### Feather Parts

Materials:  
Bird feathers  
Pipette or eye dropper

Water  
Magnifying glass

Obtain some bird feathers and observe the parts of the feather. The tiny hair like sections are called barbs and the many tiny-hooked hair like branches on each barb are called barbules. The feathers are waterproof and dropping a few drops of water on the feather and observing the results can prove this.

In addition to the water experiment, draw the feathers and try to find the bird that matches the feather. Take appropriate notes in the journal.

## Week Four- Plants

### Day One-Seeds

Expound on the following ayah from the Qur'an that mentions seeds. Emphasize to the children that only Allah can make the seed grain sprout, masha Allah.



Verily! It is Allâh Who causes the seed grain and the fruit stone (like date stone, etc.) to split and sprout. He brings forth the living from the dead, and it is He Who brings forth the dead from the living. Such is Allâh, then how are you deluded away from the truth? (Al-An'am 6:95)

The following ayah will also fit appropriately in with today's lesson about seeds, insha Allah.

Muhammad (SAW) is the Messenger of Allâh, and those who are with him are severe against disbelievers, and merciful among themselves. You see them bowing and falling down prostrate (in prayer), seeking Bounty from Allâh and (His) Good Pleasure. The mark of them (i.e. of their Faith) is on their faces (foreheads) from the traces of (their) prostration (during prayers). This is their description in the Taurât (Torah). But their description in the Injeel (Gospel) is like a (sown) seed which sends forth its shoot, then makes it strong, it then becomes thick, and it stands straight on its stem, delighting the sowers that He may enrage the disbelievers with them. Allâh has promised those among them who believe (i.e. all those who follow Islâmic Monotheism, the religion of Prophet Muhammad till the Day of Resurrection) and do righteous good deeds, forgiveness and a mighty reward (i.e. Paradise). (Al-Fath 48:29)

## Seed Hunt

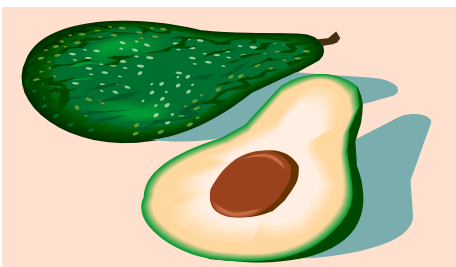
Materials:

Old sock

Piece of paper

To perform this activity place an old sock over a shoe and walk, jump, and/or skip through high grass or bushes. Next, take off the sock and shake the sock over a piece of water to see what types of seeds fall off. Record results either by sketching the seeds and/or describing them. Find hunt for seed that may not have been able to be picked up on the socks such as maple seeds (helicopters), pine seeds, elm seeds, etc. Sort the seeds collected into six categories-

1. Fruits
2. Cones
3. Catkins
4. Seeds with wings
5. Pods
6. Nuts



## Planting a Seed

Materials:

Avocado seed

Several toothpicks

A drinking glass

Obtain an avocado seed and peel away the outer layer. Place several toothpicks around the center of the seed and set it on the rim of a drinking glass. Add water so that one third of the seed is covered with water. Keep the seed away from direct sunlight and keep the water level high. Be patient as the growth may take several weeks, masha Allah.

## Parts of a Seed

Materials:

Lima bean

Cup

Water

Knife

Magnifying glass

Place the lima bean in a cup and soak the lima bean for 5 minutes in water. Cut the lima bean in half lengthways. Examine the bean with a magnifying lens and identify the parts. The miniature plant of the seed is called the embryo. The outer layer is called the seed coat. Inside the seed the largest area that provides food to the seed is called the endosperm.

## Day Two- Dandelions

Relate the following hadith relating to flowers, insha Allah.

Narrated AbuHurayrah

Allah's Messenger (peace be upon him) said: He who is presented with a flower should not reject it, for it is light to carry and pleasant in odour.  
Sahih Muslim 1050

## Dandelion Sap

Materials:  
Dandelion

After breaking the stem of a dandelion, squeeze the sap from the stem. Have the children cover their fingers up to their knuckle with the sap. Allow the sap to dry on their fingers for several minutes. Next, try to gently roll the sap off of the finger. Notice how that as the sap dried it became stretchable and has similar characteristics as rubber. Then, record findings in journal.

## Compound Flowers

Materials:  
Dandelion  
Scissors  
Magnifying glass



Examine a dandelion flower using a magnifying glass. After noticing all of the petals, cut the flower in half lengthways in order to get a better view of the inside. Record what it looks like inside. Then, find a dandelion that has transformed into a puffball. Blow the seeds and record the results.

The dandelion is called a compound flower because they are composed of florets, which are a band of thin petals that have



grown together to form one flower. Another example of this type of flower is a sunflower.

## Flower Parts

Materials:

Any flower

Examine the parts of a flower. The pistil is the female part of the flower. The ovary, which is at the bottom of the pistil, is where fertilization takes place. The sepals are the small leaves right under the flower and act as a protective cover for the flower when it is still a bud. The stamen holds the anthers, which produce the pollen, are at the tip of the stamen. The petals are the beautifully colored that advertise the flower. Nectaries make the nectar and are located towards the bottom of the flower. The stem supports the weight of the flower.

## Day Three – Getting to know trees

In this lesson, the children will be becoming acquainted with trees.

Materials:

Tree

Cloth as blindfold



Choose a tree and cover eyes with blindfold. Then the children should wrap their arms around the tree feeling its texture, size, etc. Allow the children ample time touching the tree to be able to describe it when the blindfold is taken off. The children can

also name the tree and possible sketch it in their journals.

Next the children should sit under the tree and listen for sounds coming from it. Some sounds could include birds, the leaves rustling, wind, etc.

## Day Four- Trees Leaves

Reflect on the ayah concerning leaves, insha Allah. Stress to the children that Allah alone knows all things that will happen before they do, masha Allah.



And with Him are the keys of the Ghaib (all that is hidden), none knows them but He. And He knows whatever there is in (or on) the earth and in the sea; not a leaf falls, but he knows it. There is not a grain in the darkness of the earth nor anything fresh or dry, but is written in a Clear Record. (Al-An'am 6:59)

## Leaf Scents

Materials:

Leaves of several different types of trees

Water

Cup

In addition to trees being unique by their bark patterns, they are also unique by the leaf scent. To investigate leaf scent, first obtain

a leaf and crush it between your fingers. Mix the leaves in about a half a cup of water and inhale. Try this with as many different types of leaves as desired, insha Allah. Record results in journal.

## Sorting Leaves

Materials:

Leaves

Collect a wide variety of leaves and sort them by their edges. The eight categories of leaves include narrow, toothed edges, wide toothed edges, narrow, smooth edge, leaflets, narrow, large-toothed edge, needles, wide, large-toothed edge and wide, smooth edge. Trace some of leaves for each type in the nature journal.

## Leaf prints

Choose some of the leaves that have large veins and thinly paint the underside of the leaf. Press the leaf onto a white piece of paper. Then peel the leaf off of the paper.

## Day Five- Twigs, bark, and stumps

Discuss the following ayah about Allah being the only one that can cause trees to grow, insha Allah.

Is not He (better than your gods) Who created the heavens and the earth, and sends down for you water (rain) from the sky, whereby We cause to grow wonderful gardens full of beauty and delight? It is not in your ability to cause the growth of their trees. Is there any ilâh (god) with Allâh? Nay, but they are a people who ascribe equals (to Him)! (An-Naml 27:60)

## Twigs

In this activity, the children will make a mat with some twigs, insha Allah.

Materials:

Twigs cut at 4-inch intervals

Peel the bark from the twigs and flatten them for a couple of hours between some newspapers. Next strips should be cut about  $\frac{1}{4}$  inch wide. Lay four strips out and weave in four others. Continue weaving until the mat is complete.

## Tree stump

Materials:

Tree stump

Examine a tree stump for rings and holes. Take note of some reason why the tree may have had to be cut down. Was there any indication that the tree stump had rotted? Count things to see how old the tree is, insha Allah. In the early years of tree growth, the rings are farther apart due to faster growth in those years.

## Who's been there?

Materials:

Trees

Examine trees to evidence of animals. Watch for animal homes, hair left on branches, tree scratching, branches and leaves chewed. Look near the tree for animal scat (poop) and tracks. Record finding in nature journal.

# Week Four- Soil and Water

## Day One- Soil Investigations

### Soil Composition

Materials:

Soil with equal parts of sand, fine soil, stones, gravel,

Pebbles

Water

Jar with lid

Try to find equal amounts of the materials mentioned above. If that is not possible just work with what is available. Place the soil in a jar and add water until the jar is three-quarters full. Secure a lid on the jar and shake it. Allow the jar to sit and observe the materials as they settle, insha Allah. Soil consists of different layers. The layer at the top is called topsoil. The next layer is subsoil. Then comes the layer of broken rock. The way it settles in the jar is exactly the same way the soil is layered on the earth, masha Allah.

### Dirt Garden

Materials:

Top of a shoebox

Plastic to line the top

Dirt from three different locations



Divide the shoebox top up into three sections by drawing two lines. Line the top with plastic and place dirt from each location in each separate space. Make sure and keep the soil moist. Observe the dirt over several days. Insha Allah, plants will grow. There are

tiny seeds in the dirt that may grow into plants. Examine some of the dirt under a microscope if there is one available.

## Day Two- More Dirt Investigation

### Dirt Detective

Materials: Dirt  
Screen/sifter  
Boxes/pans  
Magnifying glass



Gather some dirt from different locations and place them in separate boxes/pans. Place the dirt in the sifter and examine what falls from it. Do this for each sample of dirt that was collected. Record how much earth, rock, or sand is in each sample. Also, record how many pine needles or leaves are present. Smell each sample. Observe which sample has the most insect life. Take note of the moisture level in each sample. Notice as many small details as possible.

## Day Three- Sand Colors

### What is Sand made from?



Materials:  
Handful of sand  
Sheet of dark paper  
Magnifying lens

Place a handful of sand on a piece of dark paper. Move the sand around and observe the sand grains with a magnifying glass. Be on the lookout for variation of colors. There are different types of



minerals that make up sand. Some minerals may include Quartz, which is translucent, Feldspar that is gray or pink, and fragments of seashells which are white or opaque. Attempt to sketch your findings.

## Day Four- Water

### What is in the water?

Materials:

Water from outside (puddles)

Cup

Magnifying glass

Microscope (optional)

Collect some water in a cup and observe it with a magnifying glass. Are there creatures swimming around in the water? What does the water smell like? What does it look like? Next place some water on a slide and observe it under a microscope. Record your results.



## Day Five- Water cycle

### Water cycle at work

Materials:

Soil

Plastic bag that zips

Water

Masking tape

Pour soil in the bottom of the zip loc bag and then moisten the soil with water. Tightly close the bag and tape it to a sunny window. Record the observations over the next several days. Explain to the children that water move in a cycle. After it rains, the water flows into bodies of water and the ground. When the sun heats up the earth the water changes into water vapor and evaporates into the air. They cycle begins again as the water vapor is turned into rain.

## **Week Six- Environmental Science**

### **Day One- Air pollution test**

Is the air where you live clean or dirty?

Materials:

White poster board or sheet of white paper

7 lids 9(glass jar lids or bottle tops)

This experiment takes seven days, so insha Allah; set it up on the first day of week six. On the white paper, write numbers one through seven on the lids as well as evenly spaced on the paper. Place the lids on each corresponding number on the paper. Place the cardboards and lids outside in a spot where there is not too much traffic. At the end of each day take one lid off of the paper. After seven days all of the lids will be taken off of the paper. If the air is dirty the area around the first lids will be dirtier than the other ones. The air in the city will probably be dirtier than the air in the county. Have the children use critical thinking to determine why that is the case. Also, ask the children what are some ways to lessen the air pollution they emit (using car less, using less electricity, using less water, etc.)

## Tree Lichen and Air pollution

Materials:

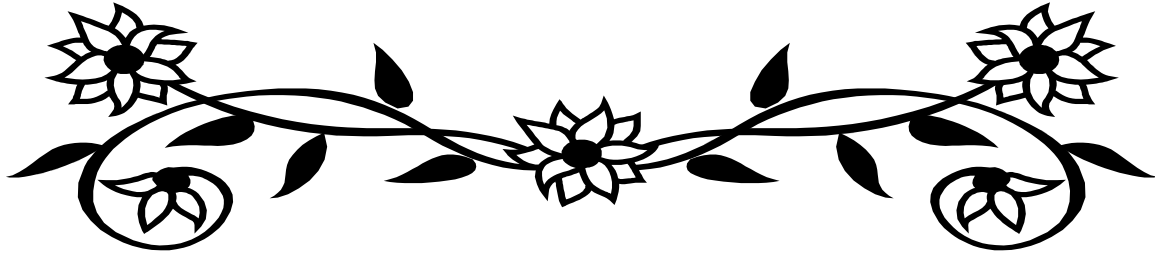
Trees

Stone buildings

Rocks

Another good indicator of how clean the air is to observe the type of lichen (plants made up of algae and fungus) on trees, stone buildings, and rocks. The crusty orange lichen found on stones is an indicator of slightly polluted air. On the other hand the green leafy lichen found on walls and trees, indicates that the air is clean. Powdery green algae may be an indicator of very poor air quality as it can tolerate very polluted air.

If you live in a city, you probably not find any lichen at all. The buildings may look discolored in the city as well. If you have the opportunity to get a close look at some buildings, be on the lookout for damage caused by dirt build up as well as harmful chemicals.



# My Nature Journal

Verily! In the creation of the heavens and the earth, and in the alternation of night and day, there are indeed signs for men of understanding. (Aali Imran 3:190)

