LEARNING GARDEN ACTIVITIES

33 WORKSHOPS

For kids aged
7 to 14

A series of
nature-based
workshops

جبال
Jibal
environmental
& social justice

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A series of nature-based workshops
for kids aged 7 to 14

Authors: Corinne Jabbour
Assisted by: Jessica Daoud

Jibal
environmental & social justice

WITH THE SUPPORT OF

Zaher

CISU CIVIL SOCIETY IN DEVELOPMENT

IN PARTNERSHIP WITH

Buzuruna Juzuruna

eedama
Realize. Rethink. React.

PILOT WORKSHOPS DELIVERED AT

ghossoun

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ABOUT JIBAL

JIBAL is a not-for-profit association founded in Beirut in 2017, with final governmental approval in January 2019. It promotes and advances social and environmental justice – or the fair and equitable distribution of environmental and social benefits and burdens – in Lebanon through collective organisation, accessible and open knowledge, and regenerative principles.

JIBAL's work intertwines socio-cultural and ecological perspectives to promote a holistic approach to societal development. It promotes sustainability in all its aspects – in the built and natural environments, in human societies, and in economic and social policies – by developing and implementing programs on environmental justice, food sovereignty, and social justice.

INTRODUCTION

Welcome to our series of 33 workshops for children ages 7 to 14. They approach pedagogy from nature-based, experiential, rights-based, and child-centered perspectives. Alternative pedagogy can create meaningful learning experiences for children, while spending time in nature can be a powerful tool for fostering a deep connection to the natural world.

Through Jibal's ongoing work with children, we have recognized a growing disconnect with nature and a sense of "otherness" that affects their relationship with the natural world and with each other. Our workshops aim to provide children with an opportunity to experience nature in a way that allows them to remember that they are a part of it, have a role in sustaining, and even can contribute to regenerating it. By creating opportunities for learning about where food comes from, how it grows, and the people who produce it, we hope to inspire a sense of responsibility, a sense of belonging with nature, and an active concern for the multiple issues we face today.

We use a variety of tools, with some inspired by popular education approaches such as theater, crafts, sensory experiences, and movement, to make our workshops engaging, interactive, and to encourage action. In some sessions, we focus on seasonal changes, in others, we teach practical skills that can help in achieving food sovereignty, such as seed harvesting, making compost, and DIY mixes for farming. We introduce the concept of environmental justice to children, helping them to understand the importance of taking action to promote social and environmental justice.

We also observed that children often focus on their educators. They are motivated to give "correct" answers rather than actively participating in discussions and reflections with their peers. This top-down dynamic is often a result of the formal schooling system, where children are expected to receive knowledge from their educators as passive recipients. However, in order to foster meaningful learning experiences, children need to unlearn this dynamic and actively participate in discussions by sharing their opinions, perspectives, and experiences with their peers. Oftentimes, educators asking the right questions can guide the reflection in that direction. These can include questions about their experiences, their feelings, or their perspectives. Stepping outside the discussion circle can often support the process of allowing the children to focus on each other rather than direct their answers at the educator.

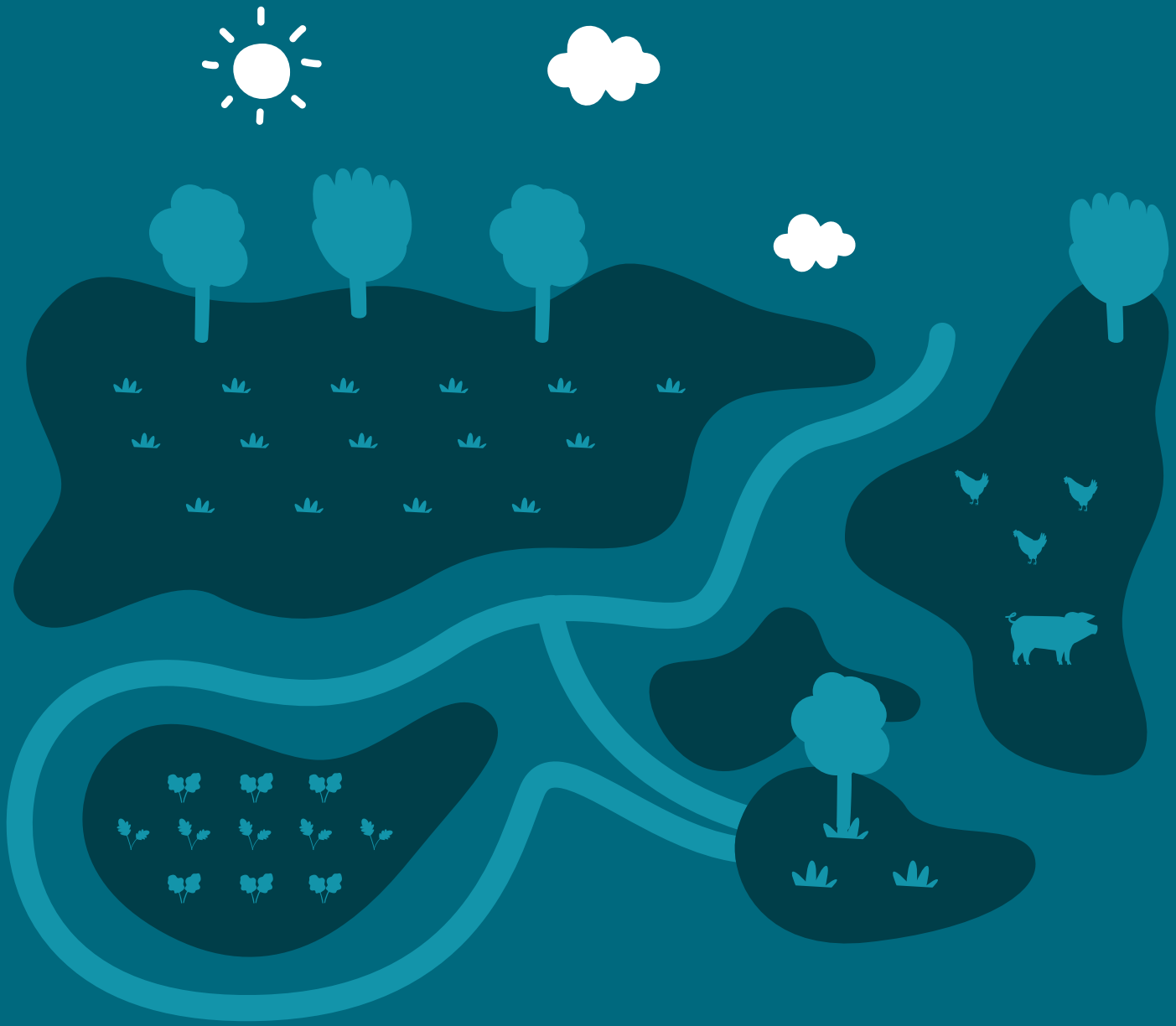
As educators, we recognize our responsibility to create an environment where participants feel emotionally safe and intellectually stimulated enough to engage with each other in diverse ways. We strive to create a space where their input is not only valued but essential for the success of the project at hand. By encouraging children to converse and collaborate, we can help build a sense of community that fosters a spirit of cooperation rather than competition.

In order to address the growing disconnect with nature and promote a more sustainable future, it is essential that we create a dynamic of active engagement and meaningful participation among children; and so our workshops are designed to nurture children's relationship with nature, their food, food producers, and with each other.

By providing a space for them to connect with nature and learn about the world around them, and by nurturing their sense of community, we aim to inspire the next generation of environmental stewards who will work together to be able to thrive on this planet.

These workshops were created as part of a funded project realized by Jibal, in partnership with Zaher and Buzuruna Juzuruna, and with funding by CISU (Denmark). Pilot workshops were initially delivered at Ghossoun Zgharta farm, with the support of Eedama, a dedicated social enterprise working on sustainability in the Middle East. We hope that this tool proves to be valuable for your needs.

01



MAPPING

Activity 1

Web Of Life

Summary	The participants make a web with a string of yarn symbolizing the connections between different elements in nature and reflecting on how that makes a system stronger.
Objectives	Breaking the ice and increasing connection between the participants. Reflecting on how diversity of interacting elements in a system makes it stronger.
Materials	Ball of yarn, ball
Duration	30 min

STEPS OF THE ACTIVITY:

The participants sit in a circle with a ball of yarn.
The instructor asks a question and every participant needs to answer this question about themselves, then throw the ball of yarn to someone else in the group while still holding on to their end of the yarn. The next person needs to answer the same question then again pass the yarn on to someone else while still holding on to the string until everyone had a turn to answer. Then the instructor moves on to a new question.

Examples of the questions:
What is your name and how do you feel today?
What was the best thing about the past week for you?
What is your favorite thing about gardens?
What would you like to grow and why?
What do you wish you could do during these workshops?

After a few questions, the participants would have formed a web in between them. The instructor then throws a ball at the center of the web and everyone tries to bounce it on the web. The instructor then asks one of the participants from the group to let go of their strings, and the ball is bounced again. Then the instructor asks another student to let go of their strings, and the ball is bounced again. This will show how losing members of the group will cause weakness in the web (to be linked later with the idea that losing diversity in an ecosystem causes loss of resilience, a weaker system).

REFLECTION:

What did you like about this activity? What do you think about the web that was formed? What do you think about the change that happened? How can this be an example about the way nature works? What combinations do you find more beneficial than others? Not only the number of elements is important but also the type of interaction, what interactions do you believe can be more beneficial on a farm? What can be done in your opinion to boost diversity in a farm and make it stronger?

BREAK:

Preferably with a light snack and refreshments to keep the kids hydrated and focused.

Activity 2

Heat Map

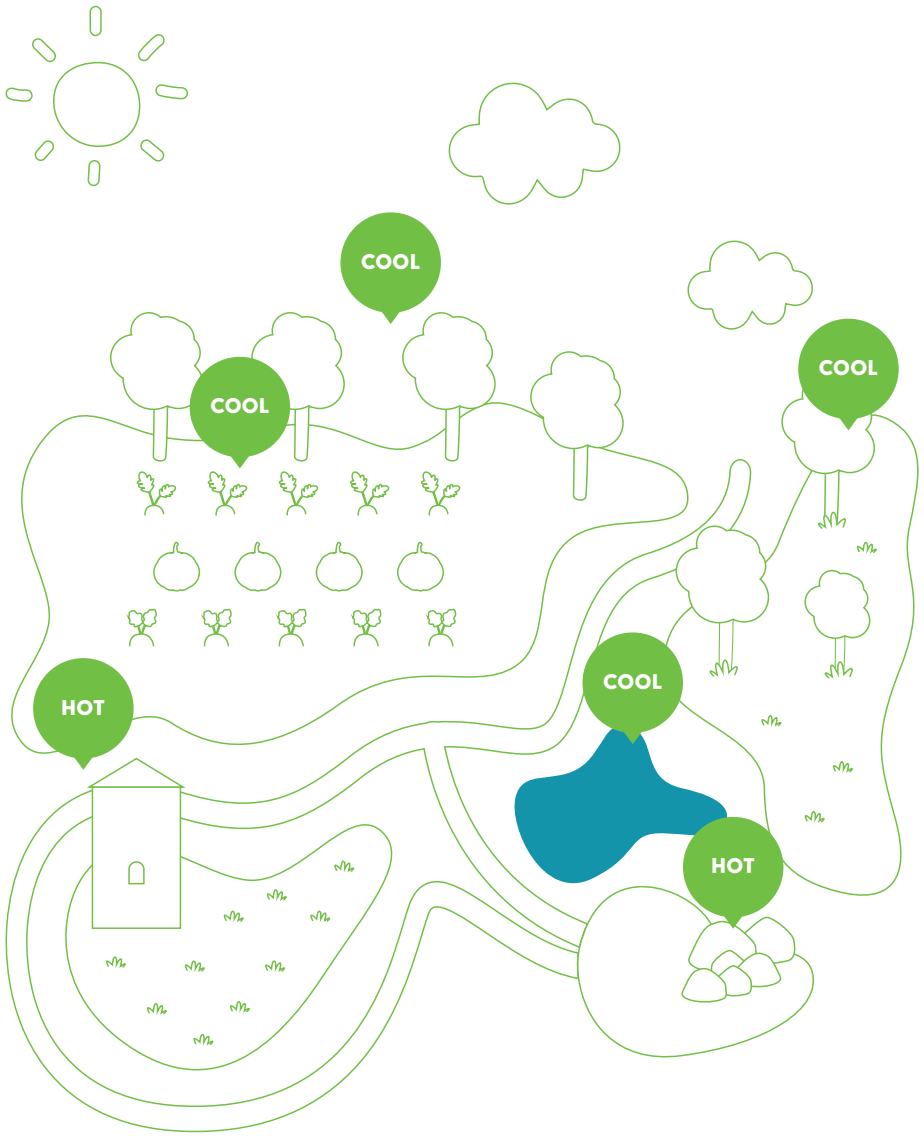
Summary	The participants go around the farm in groups exploring it and feeling the temperature of surfaces and areas to draw a heat map of the farm.
Objectives	Exploring the farm in all its areas. Drawing a map of the farm with indications of temperature differences. Reflecting on how different elements allow for different plants and elements to grow in different microclimates in the farm. Experiencing how vegetation affects temperatures and creates microclimates.
Materials	Paper, pencils, erasers, coloring pencils.
Duration	45 min

STEPS OF THE ACTIVITY:

The participants are asked to go out for 30 minutes in groups of 3 or 4 (mix the age) into the farm and to do the following steps:
- Make a drawing of the farm shape and pathways
- Define on the drawing where the vegetable area is, the aromatic area is, where the trees are, where the animals are, where the compost is...
- Walk around and feel the temperatures of different areas and locate them on the maps
- Color the cold and hot areas differently on their map
- Define the cause of the difference in temperature in each zone or on each surface

REFLECTION:

What did you like about this activity? What did you notice about the farm? What did you notice about the temperatures? What made the difference in temperature? (sun direction, trees and shade, nearby structures giving shade or storing heat, nearby water, compost giving heat...) What did you notice about the location of different elements next to each other? How can we use this in designing a garden? How can we use this in designing villages and cities?



02

TRANSPLANTING

Activity 1

Making A Measuring Chord

Summary	The groups will make a chord with colored ribbons tied to it at every 30cm.
Objectives	Preparing an artistic rope that can be hung in the garden. Having a measuring device for the planting process.
Materials	Measuring tape, string, colored ribbons, markers, and scissors.
Duration	30 min

STEPS OF THE ACTIVITY:

The participants are divided into groups. Each group gets a string, or rope or chord, and is also given colorful ribbons, a pair of scissors, a marker and a measuring tape.
The participants are instructed to do the following:
- Cut the colorful ribbons into segments 30 to 40 cm long (roughly)
- Use the marker and measuring tape to make a mark on the main chord at 30cm intervals.
- Tie the colorful ribbons on the chord at the 30 cm marks.
The chord needs to be long enough to stretch the whole length of the plant bed that the group will be planting in the next activity.

For the older Kids: Need to be involved in the measuring process to make sure it is accurate to be later used as a measuring tool for planting.

REFLECTION:

What did you like about this activity? What can you tell us about the process about how you worked as a team? How can we use this chord in the garden? (Measuring for planting, decoration, scaring away birds so they don't eat seeds)

Optional:
If time allows, music can be played and the students can be asked to choreograph a dance using the colorful chords they made.

BREAK:

Preferably with a light snack and refreshments to keep the kids hydrated and focused.

Activity 2

Transplanting

Summary	The participants transplant seedlings of seasonal leafy greens into their assigned plot.
Objectives	Recognizing the crops of the season. Learning how to transplant seedlings while respecting the distance required between plants. Growing their own food.
Preparation	A plot in the garden already prepared for transplanting seedlings. (spring season they will prepare the soil on their own after harvesting their winter crops) One bed or section of the plot assigned per group.
Materials	String, scissors, barbecue sticks (or any sticks or canes to mark the boundaries of the plant bed), trowels, forks, gloves, watering hose or can, seedlings. (Tools to be organized per group, ex: Group 1: 1 roll of string, 4 sticks, 1 pair of scissors, 4 trowels, 2 forks, 4 gloves, 1 tray of seedlings)) The marker rope they made in the previous activity.
Duration	1 hr (depends on the size of the plot)

STEPS OF THE ACTIVITY:

The participants will gather next to the greenhouse where the seedlings and the tools will be placed. Every group will take the trays and tools assigned to them and head to the plot.

The facilitator will explain that the following steps will take place in the plot where the planting will take place:

- Weeding (cleaning out any remaining weeds)
- Defining boundaries of each plant bed by placing canes on each corner and connecting them through strings.
- Cleaning the pathways to define the clear boundaries of every plant bed.
- Using the marker rope they made and a stick or trowel to mark the location of every seedling that needs to be planted.
- Transplanting the seedlings.
- Watering the plants.

The participants will follow the steps while receiving as much support and guidance as they need or ask for.

They remove any remaining or newly sprouted weeds which would not be much since the ground has been prepared already so it should be relatively clean.
The students will plant the 4 sticks on the 4 corners of the group's plant bed, then tie the strings between them to define the limits of the bed.
They will then clean the pathways with their trowels making the boundaries of the beds well defined.

The kids will then use the measuring chord that they made in the previous activity to know where to place the plants.

After using the trowel to dig holes, they transplant the seedlings according to plan, then they gently but thoroughly water the plot with a watering can or a hose or drip irrigation if available.

REFLECTION:

What was your least favorite part of the transplanting? What was your favorite part? What will you do to make sure your plants live long enough for you to harvest? What would you prepare from your harvest? What would you change to make the process faster next time? What would you change if you had to do this over a large piece of land.

03

THE NATURE ARTIST

Activity 1

Art Like Andy Goldsworthy

Summary	The groups will gather natural material from the garden and use them to make a piece of Art inspired by the artist Andy Goldsworthy.
Objectives	Creating a piece of art from natural material in the garden.
Materials	Glue, elastic bands, scissors, paint (any material that can help the kids create art with all the stones, leaves, and sticks that they have gathered)
Duration	45 min

STEPS OF THE ACTIVITY:

The participants are divided into groups and introduced to the work of the artist Andy Goldsworthy, they observe a series of his artwork on the internet. Each group will gather and agree on what to make then go out into the garden and gather material that will be used in making their art piece. After 10 minutes of gathering, the materials are displayed in the class area and the work begins.

The students will use any material they want to create and support their structures, they can install it indoors or outdoors and integrate elements like trees or ponds in their idea.

When the artwork is ready, a picture should be taken of each piece.

BREAK:

Preferably with a light snack and refreshments to keep the kids hydrated and focused.

Activity 2

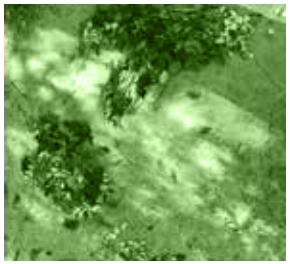
The Art Show

Summary	The participants will pretend to be artists and art critics and will be interviewed by the facilitator and asked questions about their artwork and the story behind it...
Objectives	Reflecting on their artwork and the process they used to make it through roleplay. Reflecting on nature's value to their lives. Reflecting on the impact of pollution.
Materials	Any material that can be used to make a disguise (washable markers to draw on the face, hats, scarves, dresses, suits...)
Duration	30 min

STEPS OF THE ACTIVITY:

The participants will be given clothes, pace paint, wigs, to be able to disguise themselves as artists, and given 10 minutes to get ready. The facilitator will explain that they will play the role of a reporter visiting an art show, and will interview each of the groups for an explanation of their work.

The facilitators who are role playing reporters can ask the groups questions such as:
What can you tell me about this piece? What does it mean to you? What can you tell me about the material you used? What does nature mean to you? What are you trying to tell people with this art work? What message are you hoping to share by working with nature like this? What is the value of nature to you? As an artist, what is the impact of pollution (for smaller kids) or global warming (for older kids who have knowledge of the subject) on your life and work? What would you like to tell our viewers?



04

PRUNING AND POTTING AROMATICS

AUTUMN

Activity 1

Pruning And Sorting Aromatics

Summary	The participants will spread in the garden to prune the aromatics after a brief explanation of how it's done.
Objectives	Maintaining an aromatic garden.
Materials	Pruning scissors, gloves, sticks or canes or bamboo of different sizes, string, sticks (around 30 cm long) to be used as a base for the herbs or canes to hang from. Beads, paint, and brushes (optional).
Duration	30 min

STEPS OF THE ACTIVITY:

The facilitator or the gardener explains to the participants the way of safely using pruning scissors and the basics of pruning aromatics by pruning one or 2 in front of them and explaining the process. The participants head out in pairs into the garden and take turns pruning aromatic plants and gathering the prunings in their basket/bag. The older students can observe the younger ones making sure the scissors are being used safely.

When the time is up, the students gather again and place their prunings on the table along with all the others and sort them by species using the shape of the leaves and smell. Note that for sorting, the students don't need to know what species it is, just that it looks different and smells different from the others.

REFLECTION:

What did you find difficult about the process? What do you find interesting or enjoyable? In nature, waste does not exist, waste is a resource that hasn't been utilized properly. Let's use the waste from our pruning to create abundance!

BREAK:

Preferably with a light snack and refreshments to keep the kids hydrated and focused.

Activity 2

Potting The Cuttings

Summary	The participants will select the cuttings that are suitable for potting, then they will remove the excess leaves from the bottom and pot them in a soil mix.
Objectives	Growing aromatics from cuttings. Reflecting on nature's abundance and how our disconnection from nature creates scarcity.
Preparation	Preparation of 4 stations (on tables or different areas on the ground) 1) table with all the cuttings from the first activity. 2) table with scissors. 3) table with pots and soil mix 4) table with watering can.
Materials	All the cuttings from the previous activity, pruning scissors, soil mix, pots, watering can. (Note: Keep the bigger cuttings that will not be used in this activity for the activity that will happen the following week)
Duration	45 min

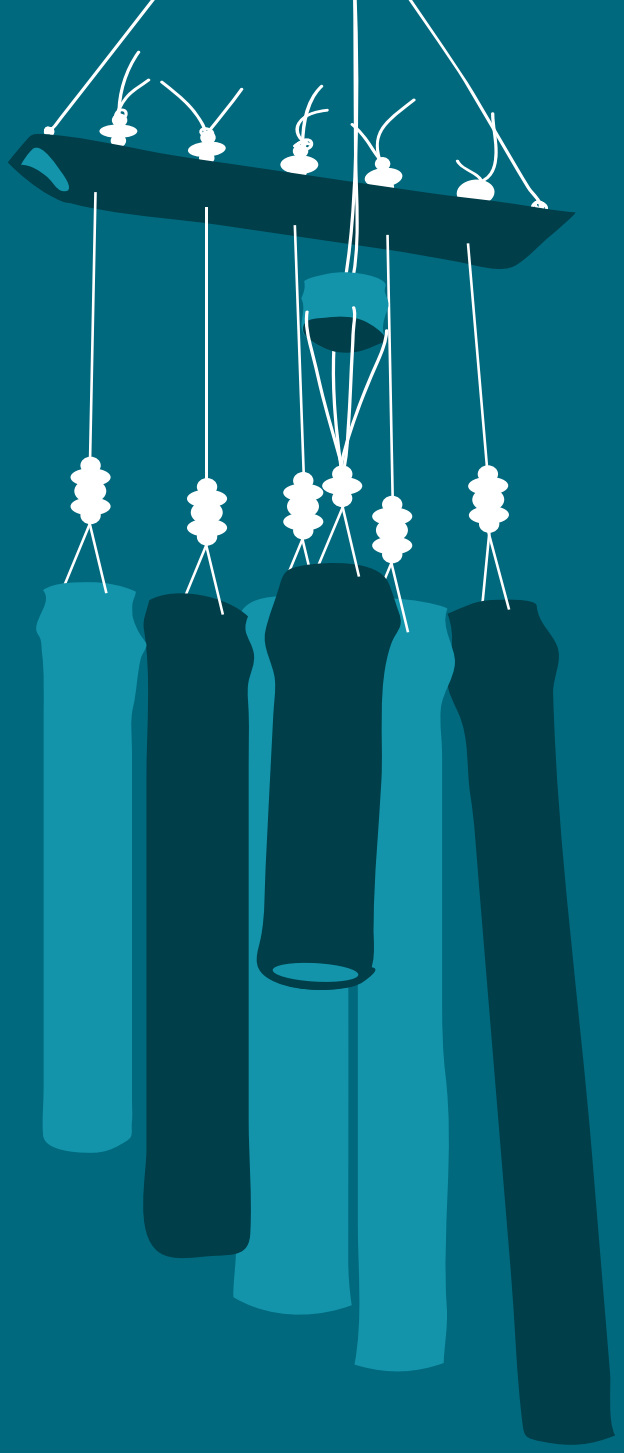
STEPS OF THE ACTIVITY:

The participants will be taken to a zone with 4 stations ready and asked to place all their cuttings in 1 pile on station1. They will be shown the items on each station, and told to use these stations to prepare the ideal cutting for potting, and potting and watering it. The students will travel through the stations and keep planting until all usable cuttings are done (or 30 min done) and they will observe what they have produced.

REFLECTION:

What can you tell me about this activity, of what you produced? What was your favorite part? Why? What do you think of what you produced from simple pruning and potting? What does this tell us about nature? Why does this abundance not exist in most communities now? Why do we experience scarcity and fear of lack? What can be done to reintroduce this abundance into our lives?

05



MAKING MOBILES AND CHIMES

AUTUMN

Activity

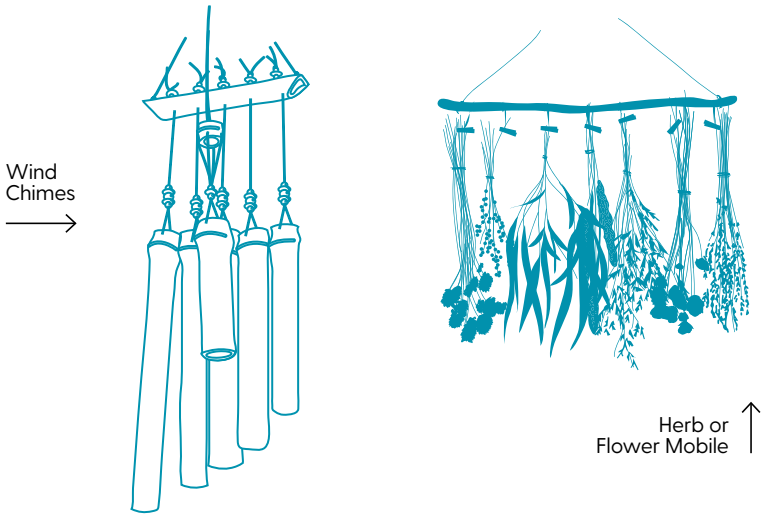
Making Aromatic Herb Mobiles And Wind Chimes

Summary	The participants will use cuttings of herbs (from previous session) to make an herbal mobile, and sticks to make wind chimes to decorate the classroom or the garden space. They will also use precut canes to make wind chimes.
Objectives	Making Aromatic and Musical mobiles to decorate their learning space in the garden.
Preparation	Piles of the different herb cuttings gathered during the previous session, 4 or 5 small bunches per group. Precut canes of different sizes ranging from 15 to 40 cm, 6 or 7 canes per group.
Materials	Pruning scissors, gloves, sticks or canes or bamboo of different sizes, string, sticks (around 30 cm long) to be used as a base for the herbs or canes to hang from. Beads, paint, and brushes (optional).
Duration	1.5 hrs

STEPS OF THE ACTIVITY:

The facilitators divide the class into small groups of 3 or 4, and divide the groups into 2, and the following is explained:
Groups 1, 2, and 3 will be making herb mobiles, while group 4, 5, and 6 will be making wind chimes, after part one of the activity is done (30 min) and everyone has made their items, the groups switch stations, so now Groups 1, 2, and 3 will be making wind chimes, while groups 4, 5, and 6 will be making herb mobiles (another 30 min).

The participants are shown the 2 following stations:
- Station 1 contains herb cuttings that were gathered during the previous session to the participants, in addition to sticks, strings and scissors. Pictures of herb mobiles are shown and a brief explanation is made on how this session is going to be about making these mobiles, and how this will be used as a decorative method to dry the garden herbs.
- Station 2 contains precut canes of different sizes (15 to 40 cm), in addition to sticks, strings and scissors, Pictures of wind chimes are shown to the participants.
- Optional: Beads can be added to thread through the strings or paint can be added to color the canes and sticks if the time allows.



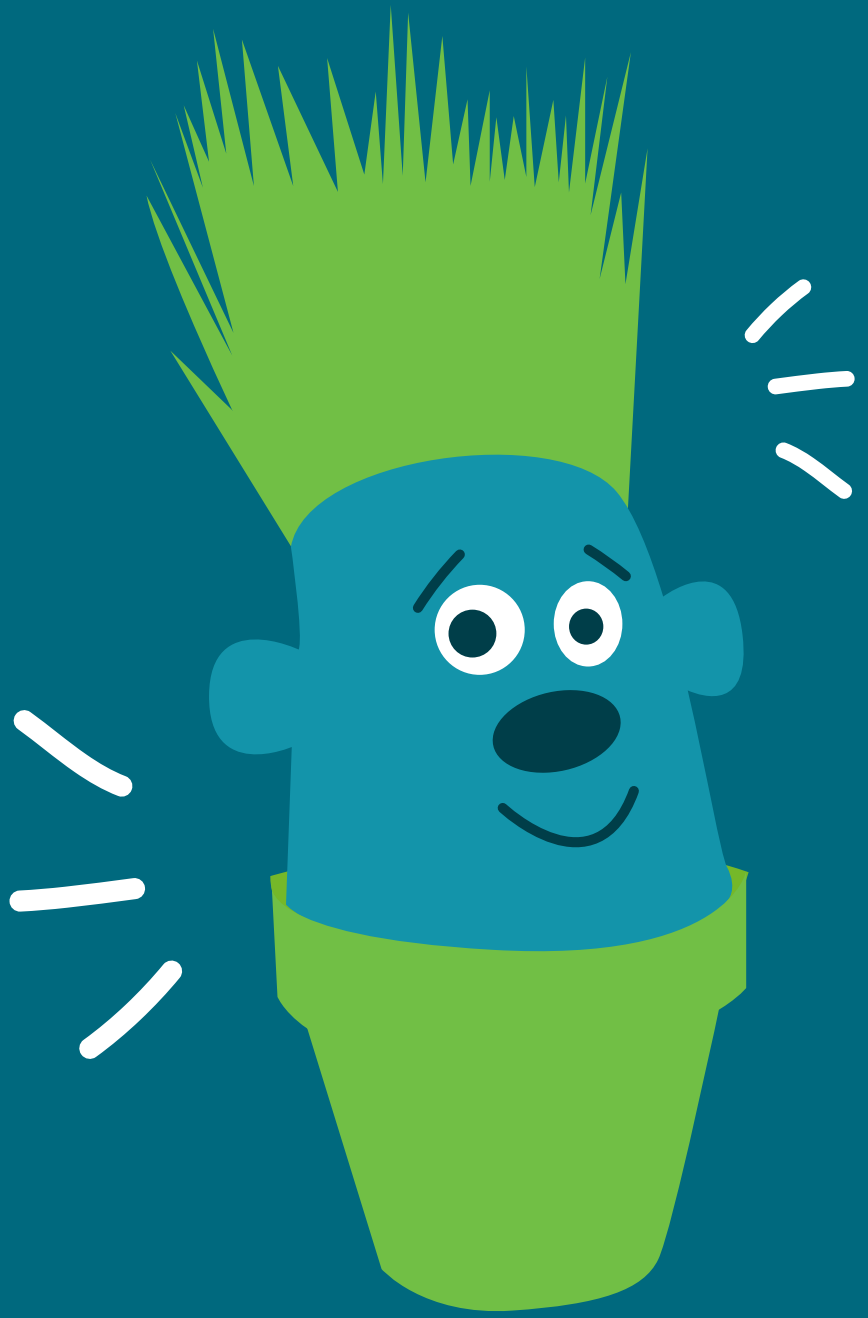
BREAK:

Preferably with a light snack and refreshments to keep the kids hydrated and focused.
Decorating the space: 10 min
The participants are now instructed to hang their work in the learning space that they are using, for example they can be hung in the classroom, on trees, on vines... (Suggestion: It is preferable to hang the chimes in windy spots and the herbs in a shaded place)

REFLECTION:

Do you or your family ever use dried herbs? For what? They are invited to close their eyes and listen to the chimes if there is enough wind. How does this sound make you feel? What other sounds do you love in nature? What smells do you love in nature? Where have you smelled or heard them? How do you feel that experiencing beauty in nature has value for you? How would you like to introduce more of nature's beauty into your life?

06



SOWING WHEAT AND GRASS HEADS

AUTUMN

Activity 1

Making Grass Heads

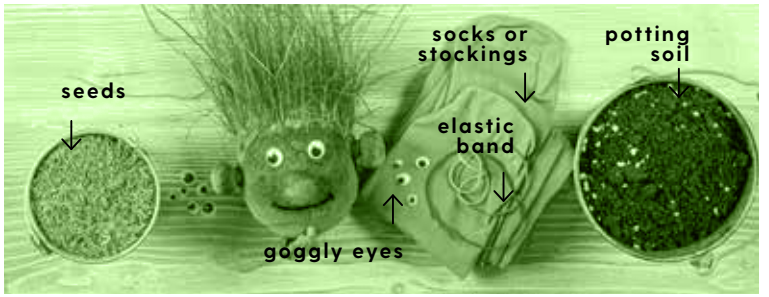
Summary	The participants will use old socks to make a grass head.
Objectives	Growing seeds in the shape of a toy's hair to add a fun and playful aspect to sowing seeds.
Preparation	Participants are told to bring a used sock or stocking with them.
Materials	Scissors, socks or stockings (the kids are told to bring one from home), potting soil, seeds (wheat), empty cups, elastic bands, decoration accessories (glue, goggly eyes...)
Duration	45 min

STEPS OF THE ACTIVITY:

The facilitators explain to the students that it is the season to sow wheat, but before they sow it outside, they will make funny grass heads with it first.

This activity is individual. Every participant will follow the steps acted out by the facilitators:
1. Cutting the stocking (no need for this step if it's a sock)
2. Filling the bottom of the sock with seeds (1 or 2 spoonfuls)
3. Adding potting soil on top of the seeds
4. Tying the sock shut with an elastic band
5. Cutting away the excess fabric from the bottom to keep just a small nub
6. Pinching out a nose and tying it with an elastic band
7. Filling the empty cup halfway with water
8. Soaking the sock and keep it in the cup
9. Wetting the seeds from top a bit
10. Placing the cup in a well-lit spot
11. Adding water to the cup for the next few days when it starts to empty
12. Observing the hair grow
13. Giving it a haircut maybe!

The participants can place their Grass Heads in the corners of their garden.



BREAK:

Preferably with a light snack and refreshments to keep the kids hydrated and focused.

Activity 2

Sowing Wheat

Summary	The participants will sow wheat in a field.
Objectives	Growing wheat and understanding the value of growing staple foods.
Preparation	A clean plot outside to be sowed with wheat.
Materials	Wheat seeds, watering hose or sprinkler
Duration	30 min

STEPS OF THE ACTIVITY:

The participants are instructed to take the bags of wheat seeds and go outside to a specific area in the plot and sow the seeds in a manner that mimics the farmer or facilitator. They are instructed to try to spread the density of seeds evenly. They water the plot.

REFLECTION:

What do you use wheat for? What other crops do you feel make up a significant part of your daily food? Most of the wheat we consume in Lebanon is imported, what is your opinion on that? What do you believe should be done? What can you do on the level of your community?

07

COLLECTING AND DRAWING

AUTUMN

Activity 1

Fall Scavenger Hunt

Summary	The participants will search for a list of elements in the garden.
Objectives	Exploring the garden and gathering material for the next activity.
Materials	Printout of the elements to collect (1 copy per team).
Duration	40 min

STEPS OF THE ACTIVITY:

The facilitators divide the class into groups of 3 or 4 and distribute a list of elements to each group that they need to gather from the garden, and they are given 20 minutes to find these elements and regather.

The list:

1. Red leaf, **2.** Yellow leaf, **3.** Green leaf, **4.** Twig, **5.** Acorn (if available in the garden), **6.** Flower, **7.** Cone (if conifer trees areavailable in the garden) **8.** Feather (if poultry is available in the garden), **9.** Snail (optional), **10.** Mushroom (optional), **11.** Something you find beautiful!, **12.** Something smooth (ex: smooth rock), **13.** Something that smells nice, **14.** Something you can eat.

The following picture can be printed as a checklist for the kids. The groups head into the garden to collect the required items, then regather in 20 min and display their collections.

CAN YOU FIND THEM ALL?

☐ Red leaf	☐ Yellow leaf	☐ Green leaf	☐ Twig	☐ Acorn	☐ Flower	☐ Cone
☐ Feather	☐ Snail	☐ Mushroom	☐ Something you find beautiful!	☐ Something smooth	☐ Something that smells nice	☐ Something you can eat

REFLECTION:

What have you gathered? Which items are your favorites? Why? Which items were hardest to find? What did you notice in the garden during your search? Did you see any bugs? How would you describe the garden in autumn?

BREAK:

Preferably with a light snack and refreshments to keep the kids hydrated and focused.

Activity 2

Drawing

Summary	The groups will display their gathered items in an artistic way and individually make drawings of their collection.
Objectives	Drawing details of elements found in nature in the fall season. Observing details and noticing patterns in nature.
Materials	Paper, pencils, erasers, drawing pencils or paint, string or rope, laundry pegs (to hang the drawings on a string).
Duration	40 min

STEPS OF THE ACTIVITY:

The participants are instructed to take the pencils and coloring pencils and make drawings of the collections. They are free to draw them in any way they see or imagine them, to focus on details or draw the whole... Let their imaginations be the only boundary.

When done, the participants can hang a laundry line in the classroom by one of the walls and hang their drawings on it with laundry pegs.

REFLECTION:

Did you notice any extra details when you were drawing? Tell us more about your drawings. Did you see any patterns in these elements? Where else can you see these patterns in nature?

08

ENVIRONMENTAL JUSTICE FORUM THEATER

Activity

Forum Theater

Summary	The participants will do forum theater acting out scenes that they create about environmental justice, specifically access to public spaces.
Objectives	Participants reflecting on ways to change the situation, and bring their own perspectives and experiences into play to create the outcome that they seek concerning access to public spaces in Lebanon.
Materials	Optional: Props for acting such as wigs, clothes, hats...
Duration	1.5 hrs

STEPS OF THE ACTIVITY:

The facilitators divide the class into 2 groups. Each group will choose one of the following subjects:
- Public Beach being purchased for constructing a private resort, or
- Public Park being closed to be turned into a parking lot for a hospital.

Each group will prepare a theater scene about their subject:
- Group A Public Beach: The participants will act out diverse roles such as: members of the community who like to swim at this beach, fishermen who make their living there, the mayor of the town, and the business person who wants to build a resort.
- Group B Public Park: The participants will act out diverse roles such as: members of the community who bring their families for picnics at the park, kids who like to play there, adults who like to work out or read there, the mayor of the town, and the business person who wants to build a parking for a nearby hospital.

The groups meet for 20 minutes and each write and rehearse a 3 to 5 minute long theater scene about their public space, their use of this space, its value to the community, the plan of the project that is planned, the perspective of each side on the issue, and the conflict it creates. The instructor explains that rehearsal is important because the scene needs to be acted out twice in a row.

After the preparation and rehearsal is done, group A acts out their scene while group B is the audience. After the scene is done, the instructor explains that now it will be repeated and the audience members can now interrupt the play at any moment by saying FREEZE and choosing to replace 1 of the actors and changing the behavior of this character. The scene can be interrupted as often as needed, and any actor replaced by an audience member. The goal of replacing the actors and changing their behavior is to change the outcome and try to find alternative conclusions to the theater scene. This activity will encourage the participants to reflect on ways to change the situation, and bring their own perspectives and experiences into play to create the outcome that they seek.

After the Group As scene is done, and the desired outcome reached, the participants take a break.

BREAK:

Preferably with a light snack and refreshments to keep the kids hydrated and focused.

After the break, the roles are switched. Group B will now play their theater scene and Group A will be the audience. Once again, the scene is acted out and after it is done it is repeated and the audience can now interrupt and replace the actors and change the outcome.

When all is done, the participants gather for a reflection.

REFLECTION:

What did you think of this activity? What part reminded you of something you or someone close to you has experienced? How did you feel about the potential destruction of the public space or its privatization? What do you think would be fair? What do you think should be done in Lebanon concerning public spaces?

09

GROWING SPROUTS AND AVOCADO

Activity 1

Growing Sprouts

Summary	The participants will grow microgreens in jars they take home with them and discuss the importance of growing your own food.
Objectives	Participants grow their own food easily and quickly. They get encouraged to eat healthy greens. They reflect on the importance of growing your own food.
Materials	Transparent jars (sterilized), mesh fabric, elastic bands, bowls (to place the jar upside down in), water, and seeds (lettuce, alfalfa, peas, coriander, rocket, beetroot, broccoli, spinach, basil, sunflower, mustard greens...) The participants can be asked to bring their own jars from home.
Duration	45 min

STEPS OF THE ACTIVITY:

The facilitators ask the participants to gather their material, 1 jar, 1 mesh, 1 elastic band, and 1 portion of seeds for each, then the facilitator can do all the steps in a row then ask the students to do the same (older kids) while going around observing each and checking if everyone is doing well, or do the process step by step while the kids follow each step at a time (younger kids). Alternatively, the facilitator can ask the students to make drawings of each step while it is being explained and done, then use their own drawings as a guide for their own jars.

- Label the jars (name, seed type, date)
- Place the seeds in the jar (if large seeds such as peas or sunflower you need ½ cup, if small seeds such as alfalfa, broccoli kale, mustard, you only need 3 tablespoons)
- Fill the jar with cool clean water
- Cover the jar opening with the mesh, and hold it in place using the elastic bands
- Leave the seeds soaking for 4 to 12 hours for better germination
- Rinse the seeds and drain them well
- Place the jar upside down at around 45 degree angle or more in order to ensure that the water will keep draining out and not pool inside the jar
- Place the jar away from direct sunlight otherwise they will grow bitter
- Every 12 hours (once or twice a day) rinse the seeds again, drain, and place the jar upside down in the bowl
- The sprouts will be ready in 4 to 5 days to add to salads or sandwiches or eggs...
- Pat them dry and store in the fridge in a closed container to keep them longer

When all is done, the participants gather for a reflection.

REFLECTION:

What did you think of this activity? What did you like the most about it? What do you expect will happen in a few days with your seeds? What do you think of how easy one can grow food? How do you feel about growing healthy food for your family?

BREAK:

Preferably with a light snack and refreshments to keep the kids hydrated and focused.

Activity 2

Growing An Avocado Plant From Seed

Summary	The participants will grow an avocado plant from seed, they will do the required steps to clean the seed, support it and they will observe it slowly at home grow roots then shoots and turn into a full plant (it will only be ornamental in Lebanon but can be grafted).
Objectives	Participants growing food from food scraps or "waste" and reflecting on the idea of the abundance of nature.
Materials	Jars (or cups, or cut plastic bottles) , avocado seeds, toothpicks Participants can be asked to bring avocado seeds with them.
Duration	45 min

STEPS OF THE ACTIVITY:

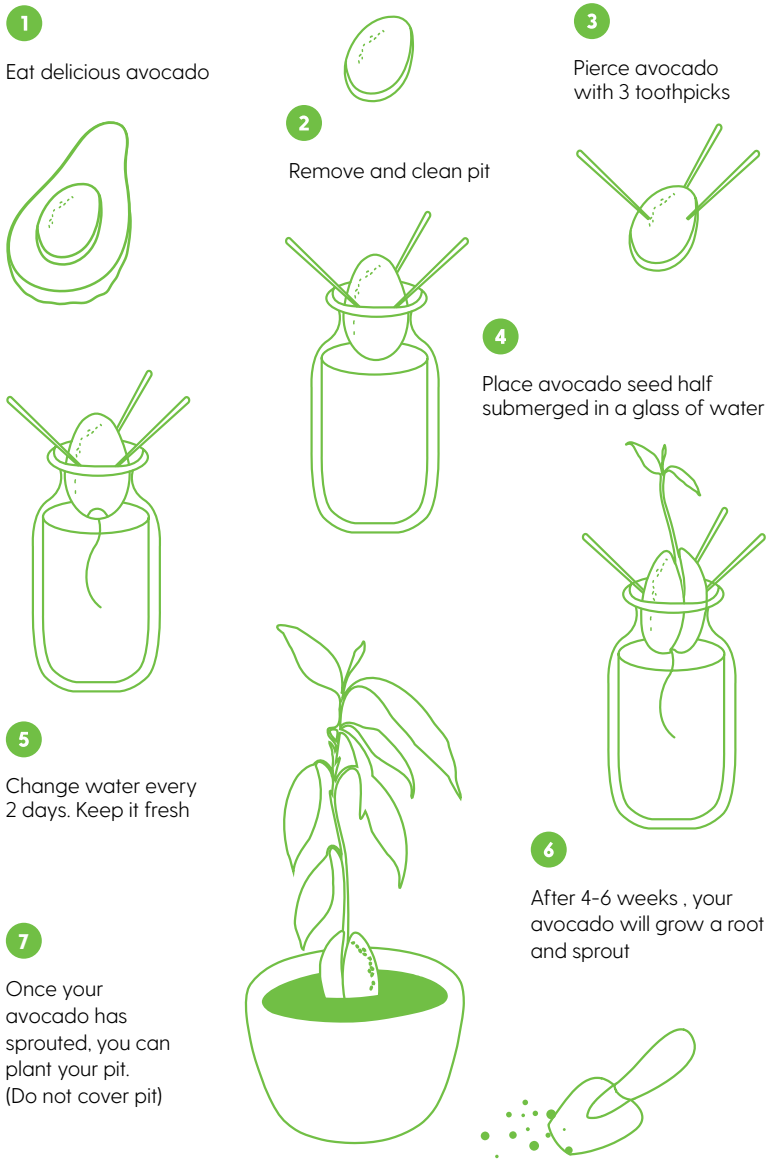
The facilitators divide the class into groups.
Each group will have a copy of the infographic showing the steps of the activity and be asked to follow the same steps with their own seeds, toothpicks, and jars.

1. Eat the avocado
2. Take out the seed, clean and peel the brown shell
3. Pierce the seed with 3 toothpicks at a slight angle
4. Place the seed half submerged in water
5. Change water every 2 days
6. In 4 to 6 weeks the seed will grow a root and shoot
7. Once it has sprouted plant in soil with seed half covered

In Lebanon's climate, this avocado will not grow fruits, it will be ornamental.

REFLECTION:

What did you think of this activity? Do you know of any other food scraps or leftovers that you can grow more food with?What does that represent to you? What do you think about the fact that seeds turn into trees that give us food? What do you think about the fact that something (the pit, the seed) that we usually throw away after we eat the fruit, can give us a tree that gives more of this fruit? What does this tell us about nature? What does the abundance of nature mean to you? If nature could talk, what can it tell people about abundance, about generosity, about giving? (As many participants should take turns speaking in the name of nature) How do you think working with nature instead of fighting it can help us benefit from and experience this abundance?



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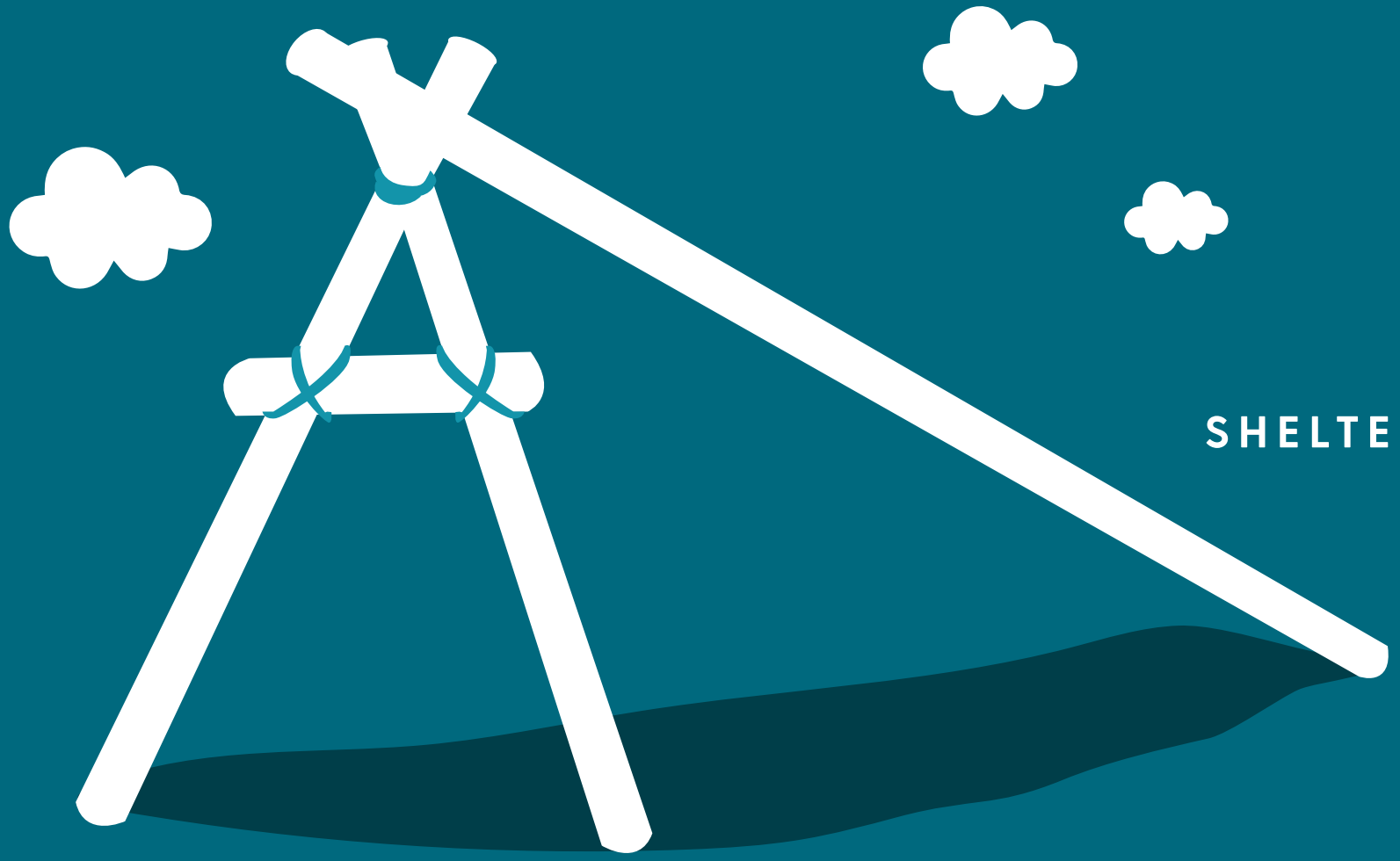


SHELTER IN NATURE

Activity

Building A Shelter From Tree Prunings

Summary	The participants will use tree prunings to build a shelter.
Objectives	Participants use material produced from the garden to build a shelter,
Materials	Ropes or cords, sticks (from pruning of trees)
Duration	1.5 hrs

STEPS OF THE ACTIVITY:

The facilitators ask the participants to gather to listen to the instructions. They are shown the sticks available from tree prunings, and the cords, instructed to build a shelter from these materials. The participants are divided into groups of 3 or 4 and if needed, they are shown several shelter pictures so they can choose which they would like to build.

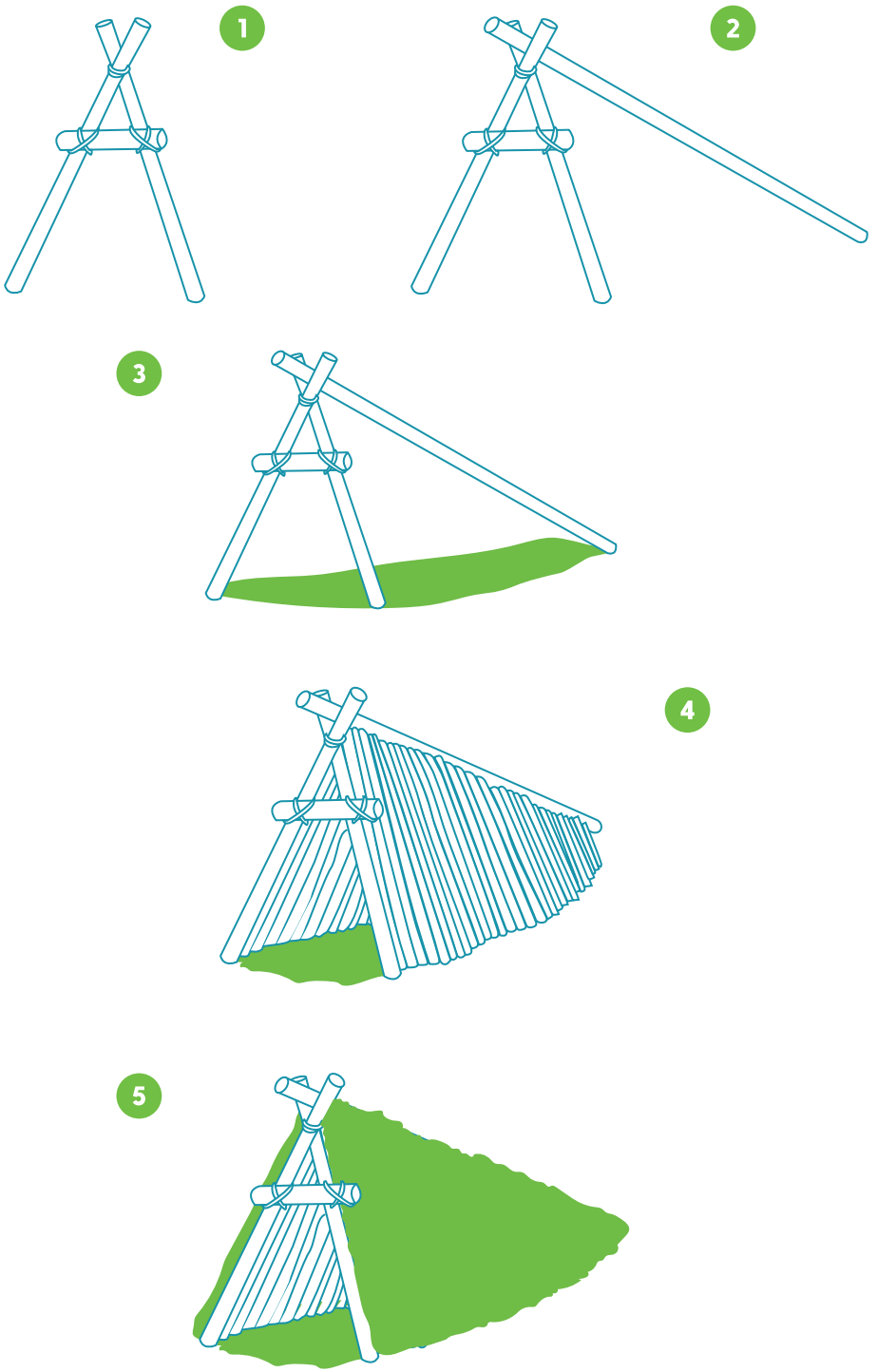
BREAK:

During the building process, the kids take a break, preferably with a light snack and refreshments to keep them hydrated and focused.

When all is done, the participants gather for a reflection.

REFLECTION:

What did you think of this activity? What did you like the most about it? Which part of it did you find difficult? Have you ever built a shelter before



11

PLANNING AND SOWING SEEDS

Activity 1

Crop Planning

Summary	The participants will plan what crops they will plant based on a crop calendar, a companion chart, and the size of their plot.
Objectives	Participants learn that different crops grow in different seasons, need a certain space to grow, and that plants like or dislike certain companions.
Materials	For each group: 1 copy Crop Calendar, 1 copy Companion, paper, pens, 1 assigned plot (1 zone per group).
Duration	30 min

STEPS OF THE ACTIVITY:

The facilitators divide the participants into groups of around 4 and give each group a copy of the calendar, the companion chart, and a list of the available seeds on the farm. Each team will decide on which plants they will grow on the specified piece of the plot while the instructor circles around to make sure things are going smoothly.

Crop Calendar for Lebanon

Planting | Harvesting

Optimal crop planting & harvesting months in Lebanon (Vary according to regional conditions).
The best source for this type of information will always be the experienced local farmers.

Crop	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Asparagus			P	P	H	H						
Beet greens	H	H	H						P	P	H	H
Beets			P	P		H	H					
Broccoli	H	H	H							P	P	H
Cabbage	H	H	H	H						P	P	
Carrots			P	P		H	H	H				
Cauliflower	H	H	H							P	P	H
Celery			P	P		H	H					
Collard greens	H	H	H						P	P	H	H
Corn					P	P		H	H			
Cucumbers				P	P		H	H	H			
Eggplants			P	P			H	H	H			
Fennel			P	P		H	H					
Garlic						H	H			P	P	
Green beans					P	P	H	H				
Herbs			P	P	H	H						
Kale	H	H	H						P	P	H	H
Leeks			P	P		H	H					
Lettuce	H	H	H	H					P	P	H	H
Melons				P	P			H	H			
Mustard greens	H	H	H						P	P	H	H
Onions			P	P			H	H				
Peppers			P	P			H	H	H	H		
Potatoes		P	P		H	H						
Pumpkins				P	P				H	H		
Radishes			P	P	H	H						
Rhubarb			P	P	H	H						
Snap peas					P	P	H	H				
Spices			P	P	H	H						
Spinach	H	H	H	H					P	P	H	H
Squash				P	P		H	H	H			
Sweet peas			P	P		H	H					
Swiss chard	H	H	H						P	P	H	H
Tomatoes			P	P		H	H	H	H	H		
Turnip greens	H	H	H						P	P	H	H
Turnips			P	P		H	H					
Watermelons				P	P			H	H			
Zucchini				P	P		H	H	H			

Activity 2

Preparing Soil Mix And Sowing The Seeds

Summary	The participants will prepare the growing mix of soil and compost and spread it in trays.
Objectives	Participants learn that compost enriches soil with life and nutrients and gives seeds a suitable environment to grow. They also learn the first step in growing your own food.
Materials	Compost, soil, growing, trays, trowels, buckets, labels, pens, seeds, water sprayer.
Duration	1 hr

STEPS OF THE ACTIVITY:

The facilitators divide the participants into pairs. Every couple of students will use a bucket and a trowel to mix soil and compost, then after mixing properly, they spread the mix gently in the growing tray, then gently tapping with their hands without pressing hard.

When all is done, the participants clean up and keep only the filled trays for the next part.

BREAK:

Preferably with a light snack and refreshments to keep the kids hydrated and focused.

The participants get the seeds for the plants they have planned for. The instructor reminds them to sow double the number decided in their plan because some of the seeds might not sprout, and some seedlings might die, and later some plants might get sick or die too.

The participants place the seeds gently in each square of the trays, then sprinkle some soil on top and gently tap to make sure the seed is touching the soil surrounding it, then they use the water sprayers to gently sprinkle the trays until the soil is moist.

The trays are placed in a bright sheltered spot (example: green house, or well-lit window) and watered regularly with a sprayer to make sure moisture remains fairly stable and fluctuations of wet-dry are avoided.

In a week the participants will observe some seeds sprouting (ex: fava beans, zucchini...) while other seeds might take up to 3 weeks. The Participants clean up and gather for a reflection on their day

REFLECTION:

What did you think of this activity? Did you enjoy working with the soil? How did it smell for you? What was your favorite part? What are you most excited about growing? How did you feel about the planning? Did you know some plants were friends and helped each other? What do you think of that? How does it feel to be learning how to grow your own food? What will you do once you know all the steps of growing food? How can you apply this at home?

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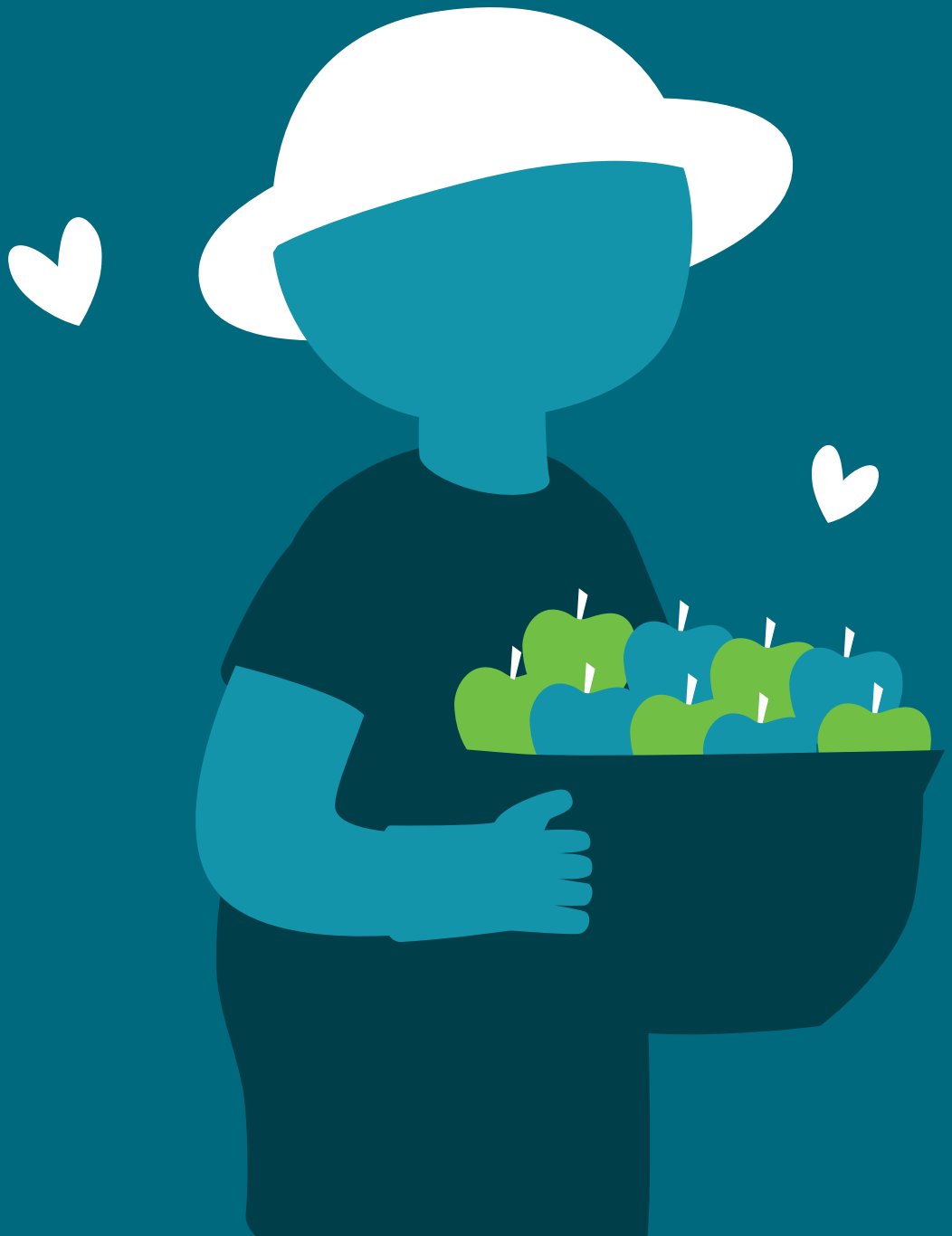


PICK AND EAT

Activity 1

Harvesting

Summary	The participants will explore the garden and pick some ingredients for a meal.
Objectives	Participants explore the garden, observe every plant carefully, and slow down their rhythm. They will harvest leafy greens and vegetables grown on site.
Materials	Baskets, scissors.
Duration	45min

STEPS OF THE ACTIVITY:

The facilitators gather the students and explain what is required:
First the participants will walk around the garden, calmly, carefully on the pathways so the soil doesn't get compacted, how each plant should be observed to see if it has any mature leaves or fruits, only observed, no picking at this stage. The facilitator should not be far, in case they have questions, but should give them the freedom to explore and discuss freely on their own without the facilitator's presence nearby. The participants gather after 20 minutes of walking around and observing without doing any picking (Instructor could use whistle or clapping signal to gather them), they discuss what they saw, what they choose to gather for their meal, then they decide among each other who will get what. The participants spread out again on their own in the garden and gather the items agreed on. After 20 min they all gather again (again the whistle or clap can be used by the facilitator) and share what they gather and organize them.

REFLECTION:

During their 2 gatherings the participants discuss what they saw, that is when the facilitators can throw in questions to fuel up the conversation more, take it deeper and try to get them to share more, open up more, describe their experiences more and share their perspective and opinions. What was your favorite part of this? Was anything about it uncomfortable for you? What plant grabbed your attention? Did anything surprise you? Did you see any bugs? What about the soil? What do you want to make from these ingredients?

Activity 2

Preparing A Meal And Eating

Summary	The participants will enjoy their harvest by preparing a simple healthy nutritious and clean meal from the produce they picked.
Objectives	Participants experience the pleasure of eating what you pick yourself, they eat healthy food, enjoy the nutritious flavors of sustainably grown vegetables.
Materials	Knives, forks, oil, lemons, lemon juicer, salt, drinking water (to rinse with), plates, bowls. Optional for frying: pan, oil, burner, spatula Optional for steaming: pot, strainer, lid
Duration	1hr 30min

STEPS OF THE ACTIVITY:

The facilitators show the participants to the cooking area where all the tools are ready. The students need to agree on the menu which could be a simple salad, or include more complex options such as steamed or fried vegetables. The tasks are divided among the students, some wash the vegetables (just with water and perhaps some salt) some handle the cutting (older kids with facilitator observation) some squeeze the lemon juice, some prepare the sauce, in case there are older kids in the group (around 14) they handle any frying or cooking required while observed by facilitator, otherwise all the food can be eaten raw, or the facilitator does the cooking step.
Eating and cleanup: When the meal is ready, the students gather around and share the meal together. When done everyone contributes to cleaning up, with consideration to the amount of water used, composting, sorting...

REFLECTION:

The conversations happening during the meal will serve as a reflection, allowing the students to bond over a meal and share their feelings and perspective on this experience. Did you enjoy this activity? What was your favorite part of this? Was anything about it uncomfortable for you? Do you usually help prepare meals at home? How did the food taste? What was your favorite one? If we repeat this someday, what would you change about it or add to it? DO you usually enjoy healthy food? How does it feel to eat what you picked?

13

SCARECROW

Activity

Making a Scarecrow

Summary	The participants will build scarecrows.
Objectives	Participants build scarecrows and discuss methods of pest management.
Materials	For each group: old panty hose, old pants (for legs), old long sleeve shirt (for chest and arms), old hat, old t-shirt or football or water gallon (for head), markers (to draw face), strings (from cotton or rope, not plastic because it will break down in the sun) or duct tape (preferably not because of the waste), sticks or canes or old broom handles (for support), any extra noisy shiny decorative items (CDs, tin cans... for scaring the birds away), straw or old fabric (for stuffing), old gardening gloves or kitchen gloves (for hands, optional).
Duration	1.5 hrs

STEPS OF THE ACTIVITY:

The facilitator gathers the participants and asks questions about scarecrows, what the participants know about them, what is their favorite shape, what do they think their function is. Then the facilitator explains that scarecrows will be built by them today using these reused items.

The class is divided into groups of around 5 and each group builds their own scarecrow. The options of material used are limitless, they can range from used clothes, to used tools, to empty pots...

It is important to first make a solid framework before moving on to filling the body and making the head then accessorizing. Decide on what to use for fixations, duct tape, strings, nails and hammer...

After the scarecrows are built, the students pose and take pictures with their creations, then they go around the garden as groups to decide together on a location for their humanoids. It should be mentioned that to make scarecrows more effective, they should be placed near the vulnerable crops (vegetable patch mostly) and should be moved because birds get used to them after a while if they stay in the same spot.

REFLECTION:

What did you think of this activity? What was your favorite part? What was the most challenging part? Tell us more about your scarecrow and how you made it (1 group at a time) We share this space with birds. What do you think of birds and their role in nature? What do you love about birds? What would you like to do to encourage the role of birds without harming your produce? (Ideas can range from bird feeders to planting a small patch away from the scarecrows just to feed the birds...) What do birds add to our lives? In rural and also urban context?

14

COMPOST RUN

Activity 1

Writing a Song

Summary	The participants write a song about compost.
Objectives	Participants discuss what compost is, what its components are, and what its benefits are in order to write the song.
Materials	Paper and pens.
Duration	45 min

STEPS OF THE ACTIVITY:

The facilitator gathers the participants and explains that they need to write a song or Mouwwel about compost which they will later sing while walking around the neighborhood to encourage people to give them their compostable waste so they can start producing more compost for their garden and to reduce waste in the neighborhood. The facilitator lists the important points that the song needs to have:

- Catchy tune, preferably the tune of a famous local song or a mouwwel tune
- Clear wording for the neighbors to understand
- List of waste components needed to help the neighbors feel more comfortable to contribute (no need for the facilitator to say what they are, the participants will discuss it and start to gather the information, they will ask for help if needed, the facilitator just double checks at the end to make sure it says YES to fruits, vegetables, and eggshells, and NO to meat, fish, bread, and cooked food)

Mention of the function of compost, the benefits of compost, to encourage the neighbors.

The participants meet all together and start deciding on the tune then the words. They write it down and rehearse it together. They can also choose to make a sign to carry around with them.

Activity 2

Compost Carnival

Summary	The participants walk around the neighborhood singing their song and gathering compost.
Objectives	Participants interact with their neighbors, and the neighbors learn more about the kids, the garden, and compost.
Materials	Sticks or anything from the garden that can make music, bags or buckets to gather the waste.
Duration	45 min

STEPS OF THE ACTIVITY:

The facilitator asks the students to take 5 minutes to walk around the garden and find any sticks or tools that can help them make music because they will be walking around the neighborhood making their music and singing their song to tell people about compost and to gather compost ingredients for themselves.

The participants take their musical instruments and their buckets and head out with the facilitator for a walk around the neighborhood, singing their rehearsed song and talking to people who ask. They tell people that they are welcome to bring their compostable waste to the garden anytime.

After the participants have gathered some compostable waste, they return to the garden and add it to the pile and add mulch to it and turn.
They are now involved in the process of compost production in the garden and can redo their compost run whenever they have time.

REFLECTION:

What did you think about the activity today? What was your favorite part? Did you find any part uncomfortable? What did you think about people's reactions? Do you want to do this again? What would you change next time? What do you think about how much waste can be saved by composting? Do you think this can be applied elsewhere? Or on a bigger scale?

15

PREPPING THE SOIL WITH COMPOST & MULCH

Activity 1

Adding And Mixing In The Compost

Summary	The participants will remove weeds and add compost to prepare their plots for planting.
Objectives	Participants will be able to understand the complex nature of soil and will prepare the land for farming
Materials	Forks, trowels, rake, mattock, gardening gloves, thread or sticks
Duration	1 hr

STEPS OF THE ACTIVITY:

The facilitator gathers the participants and walks them through the soil preparations steps:
1. Begin digging the soil using forks and mattocks
2. Removing weeds by plucking them with their hands or hoes
3. Using a rake for cleaning up debris in beds and for leveling & spreading soil surface
4. Finally, the participants spread 5 cm of compost on top of the bed
5. Mixing the compost into the soil

The participants are divided into 4 or 5 groups. Each group gets a fork, a trowel, a mattock and a rake. Make sure that each group has its own plot and that the boundaries are marked with thread or sticks.

Activity 2

Adding Layer Of Mulch

Summary	The participants apply a mulch layer to their plots
Objectives	The participants will discover that mulching reduces water evaporation, suppresses weed growth and provides plant nutrients as it decomposes
Materials	forks, mulch
Duration	1 hr

STEPS OF THE ACTIVITY:

Mulch is a layer of organic material (grass clippings, dead leaves, wood chips, cardboard...) applied to the soil's surface. By mulching the plots, they prevent weeds from getting the nutrients they need from the sun in order to grow and keep soil moist.

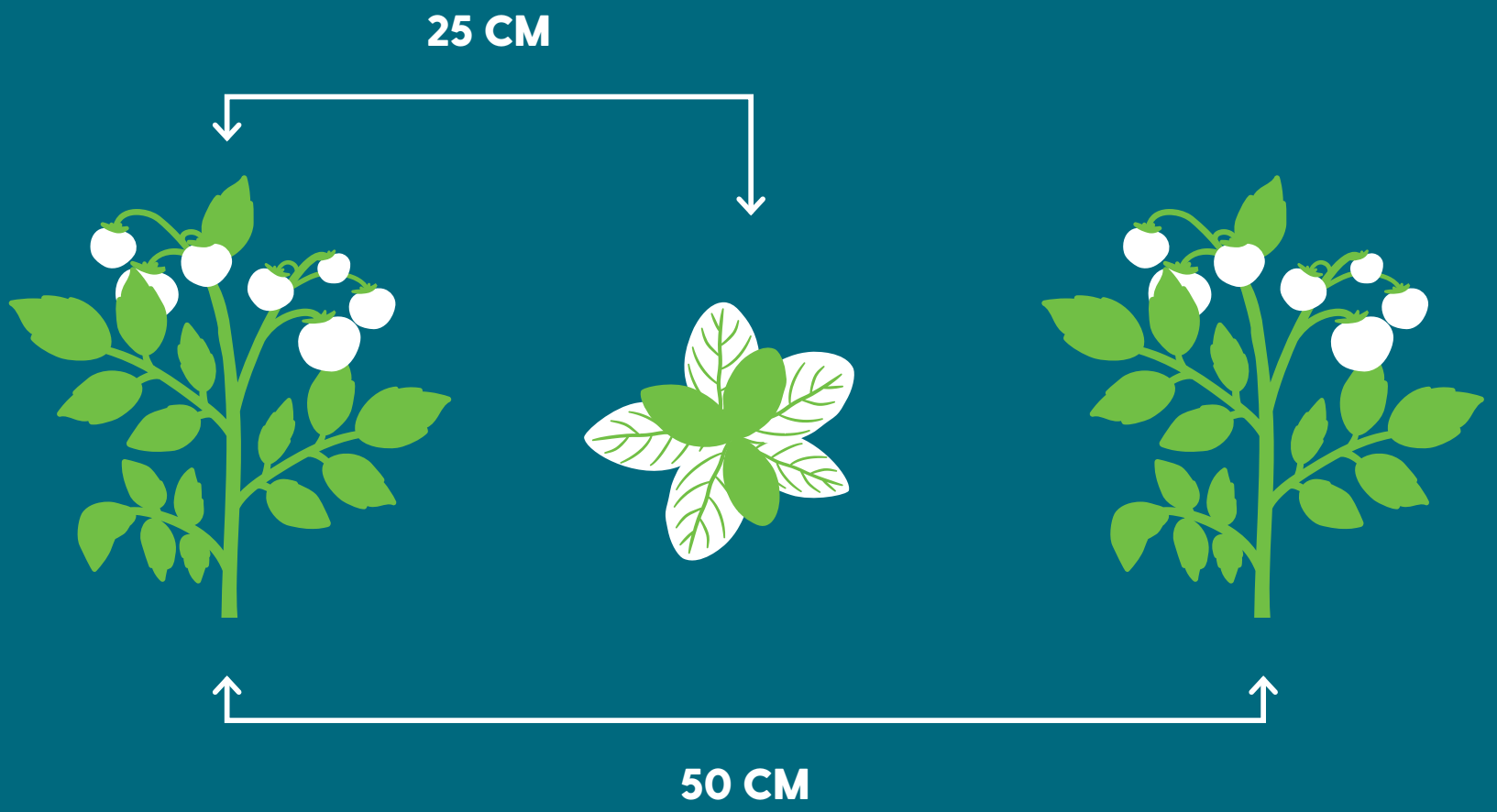
The facilitator informs the participants that a layer of mulch is necessary and asks them to apply a 15 cm thick mulch layer.

Note: the participants can gather organic materials from the farm and add them to their plots, but they must ensure that the mulch doesn't include any weed seeds, pine straw and prunes from diseased trees.

REFLECTION:

What did you think about the activity today?What was your favorite part? What would you change next time? How compost might help soil health? What would happen to the mulch layer after a while? What would you grow in your plots?

16-17



PLANTING

Activity

Planting Seeds And Seedlings On The Plot

Summary	The participants plant seedlings and seeds directly into the soil on their specified plot or beds.
Objectives	Participants plant their own crops in the garden and start the process of caring for their own productive plants.
Materials	Seeds, seedlings, trowels, forks, rakes, watering can or hose with sprinkler head.
Duration	2 hrs

STEPS OF THE ACTIVITY:

The facilitator gathers the participants and explains that they need to plant the seedlings and seeds into the ground.

They need to follow a plan, where to plant which seed or seedling, and what distance to maintain between the seedlings. Ex: on this row, plant 1 tomato seedling every 50 cm, between very 2 tomato seedlings plant a basil seedling. A crop plan drawing should accompany the explanation, the participants have previously planned what crops they wish to plant, if the age group is mostly below 12, the crop plan below can be used. If the age group is over 12 years old, the participants should have an extra session before planting, where they research what plants are companions, and what is the distance required between plants.

After they receive their instructions, the participants are divided into pairs and given their tools, their copies of the crop plan, and seedlings and sent off into the garden. The steps are:
1. Explanation of crop plan
2. Equipping pairs with tools and copy of crop plan
3. Going into garden
4. Digging and making opening through the mulch
5. Transplanting
6. Pressing the soil around the seedling to make sure the roots are in contact with the soil
7. Watering gently and thoroughly through the mulch

The participants need to take a break halfway through their work to have a snack and drink water, they should be wearing caps to protect from the sun and should remain well hydrated to avoid sunstroke. They will be visiting their plants every time they are in the garden (the last 30 minutes of every session can be a good schedule), observing them for signs of disease or distress, weeding the plot if needed, and so on...

NEEDS SUPPORT

To be repeated every 1 m length along the bed

25CM	25CM	25CM	25CM	25CM	25CM	25CM	25CM	25CM
Basil	Tomatoes + Marigold	Basil	Tomatoes + Marigold	Basil	Tomatoes + Marigold	Basil	Tomatoes + Marigold	25CM
Lettuce	Lettuce	Lettuce	Lettuce	Lettuce	Lettuce	Lettuce	Lettuce	25CM
Tomatoes + Marigold	Radishx10	Tomatoes + Marigold	Radishx10	Tomatoes + Marigold	Radishx10	Tomatoes + Marigold	Radishx10	25CM

Bed width 75 cm

REFLECTION:

What did you think about the activity today? What was your favorite part? Did you find any part uncomfortable? What would you change next time in the way you planted? What are you most excited about of all the crops planted today? What food do you want to make with these crops when we harvest them? After planting your own crops, what do you think about growing your own food?What do you think of the work of farmers that grow our food?

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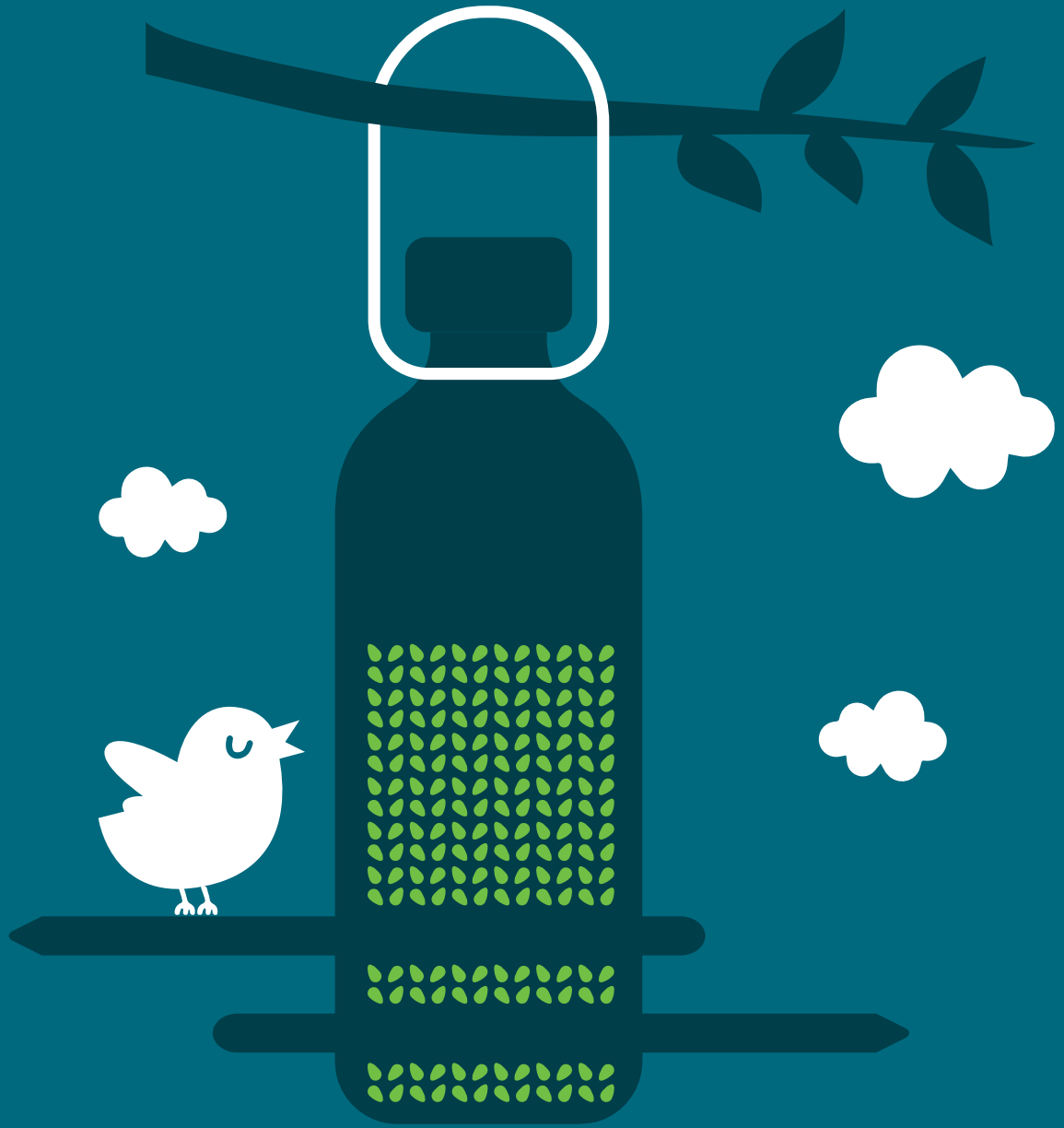


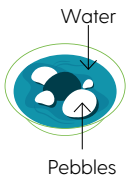
BIRD FEEDER AND BEE BATH

Activity 1

Bee Bath

Summary	The participants make small plates filled with pebbles and water for the bees and other insects and birds to drink.
Objectives	Participants will understand the benefits insects offer for the environment.
Materials	Enough for 1: 1 deep plate, a handful of stones or pebbles that can be gathered by the students or prepared beforehand, water
Duration	30 min

STEPS OF THE ACTIVITY:



The participants are divided into groups, each group gathers the material needed to make 1 bee bath. They simply place the pebbles in the plate and fill it with water. The pebbles are needed so insects can drink from shallow spaces without drowning.
The participants then spread in the garden to decide where they want to place their bird feeders and their bee baths. The birdfeeders must be placed at a safe distance away from glass windows to avoid bird collisions with the window panes.

REFLECTION:

What did you think of the activities? What was your favorite part? What would we have done differently? What can we upcycle in our daily lives just like we upcycled this bottle today? How can we take this bird feeder and bee bath activity a step further? Expand on it? What can we do to further encourage birds inhabiting our cities?

Ideas for the instructor to keep the conversation rolling or expanding on it: Increase green spaces: parks, window sills, balconies, green roofs, sidewalks...Plants specific plants that attract birds for food or shelter, fruits trees and flowers that attract them directly or the insects they feed on, and building structures that help them such as bird nests, artificial perches, bird baths, insect hotels (to attract insects they feed on)...

Activity 2

Building A Bird Feeder

Summary	The participants build a bird feeder by upcycling plastic bottles
Objectives	Participants will understand the benefits birds offer to both urban and rural environments.
Materials	Enough for 1 feeder: 1 plastic bottle, 1 pair of scissors (or a knife), 1 cord or twine, 2 chopsticks or pencils, Birdfeed (sunflower and maize mix would do well) Optional for decorating: Beads, Paint and brushes, Extra cord or twine
Duration	1 hr

STEPS OF THE ACTIVITY:

The instructor asks a few questions to introduce the participants to the activity.
What animals can live in the city? The instructor will receive many answers but waits for the answer BIRDS to continue. (clues can be given if needed).
Instructor explains briefly some of the ways each bird diet influence the ecosystem:

Fruits, nuts, seeds: Seed dispersal, by eating away the fruit and either spitting or expelling the seed, by Seed Caching when they bury seeds in the ground, by Adhesion when seeds get stuck on their feathers or in the mud on their feet, in many ways birds help seeds disperse, and sometimes to distant locations, helping species survival in more favorable environments.

Nectar and tree sap: Help with pollination, increase yield.

Seeds and grains: reduce weed growth, reduce need for herbicides.

Insects and larvae: Help manage the amounts of pests, beneficial for human comfort and protects plants. Has great financial value when it comes to reducing pest damage in agriculture, increasing yield and reducing need for pesticides. They respond to sudden outbreaks in pests because they are highly mobile and have a high metabolism.

Note: grain eating is seasonal, birds switch between grains and insects.

Rodents: reduce diseases transmitted by rodents, and financial benefit by reducing damage to crops, increasing yield.

Some studies recommend installation of nest boxes, artificial perches and shading trees to increase bird population to increase crop yield.

Dead animals: reduce bacteria spread by carcasses, compete with dogs and rats and other scavengers which spread lots of diseases.

Other values that birds can have: that they link ecosystems thanks to their motility. Aesthetic: they look and sound beautiful, birdwatching is a very attractive and common hobby (revenues in billions of dollars in the US)...

The instructor then mentions that in light of all the benefits that birds can offer, this day's activity will help invite birds to our cities and towns and reduce the stress they are subjected to with all the changes we have made to their habitats. The activity is building a bird feeder.
(A 2 year study showed that the presence of bird feeders in an area showed an increase in the number of birds, improvement in their overall health conditions, an increase in their breeding rates and a 38% increase in their survivability.)

The bird feeders are kept on the side till the next activity is done and then they will be distributed around the garden. To increase the survival rate of birds, water is needed, this also helps beneficial insects like bees so the last step will be to build a bee bath for all to drink.

1. Holes For The Perch
Make 2 holes in the bottle, opposite each other, roughly 4cm from the bottom of the bottle.

You will want the pencils to fit nice and securely in their place. The birds will thank you for it.

Pierce 2 more holes in the bottle, slightly below the other holle and again opposite each other for the second pencil.

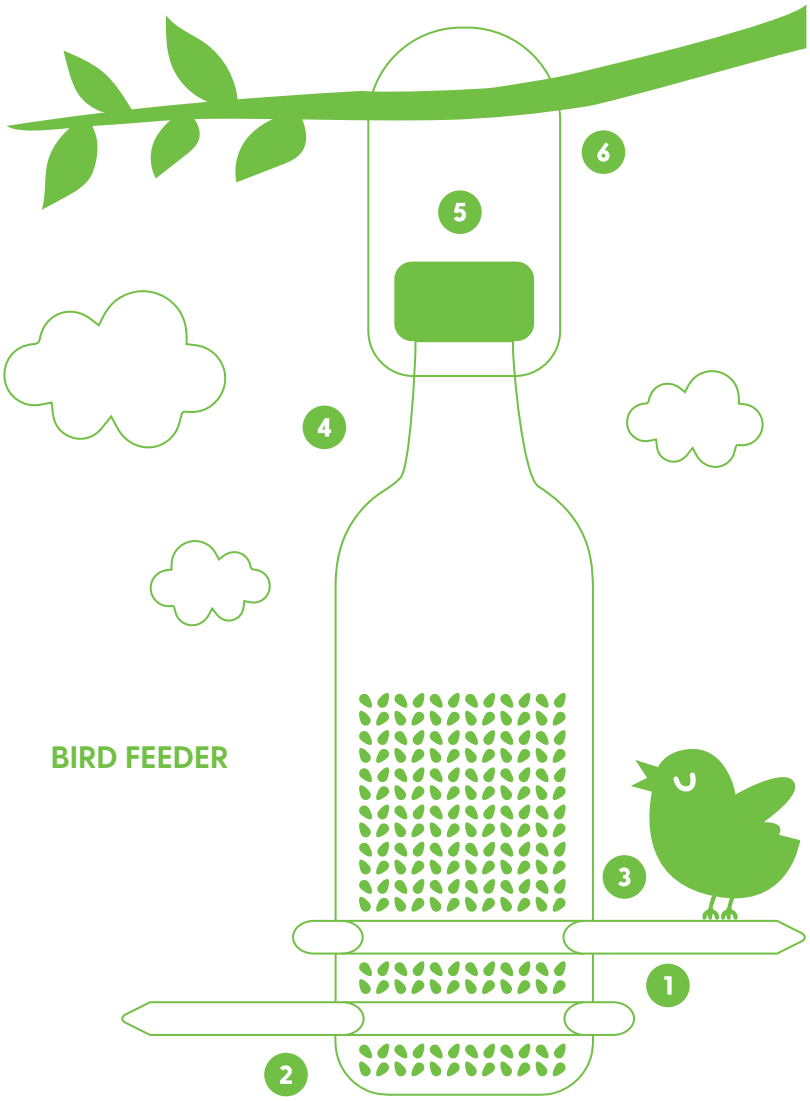
2. Fitting The Perch
Feed the two pencils through their holes at 90 degree angles.

3. Feeding Holes
Pierce small holes above the perches so the birds can reach the seeds. The holes should be slightly larger than the size of the seeds.

4. Fitting Wire or String For Hanging
Pierce two holes at the top of the bottle. beneath the lid. thread the wire or string through the holes.

5. Inserting Bird Food
Remove the lid of the bole and insert the bird feed.

6. Hanging the Bird Feeder
Tie the wire or string around a tree branch or a washing line. keep the bird feeder as high off the ground as possible so the birds can feed safely



BIRD FEEDER

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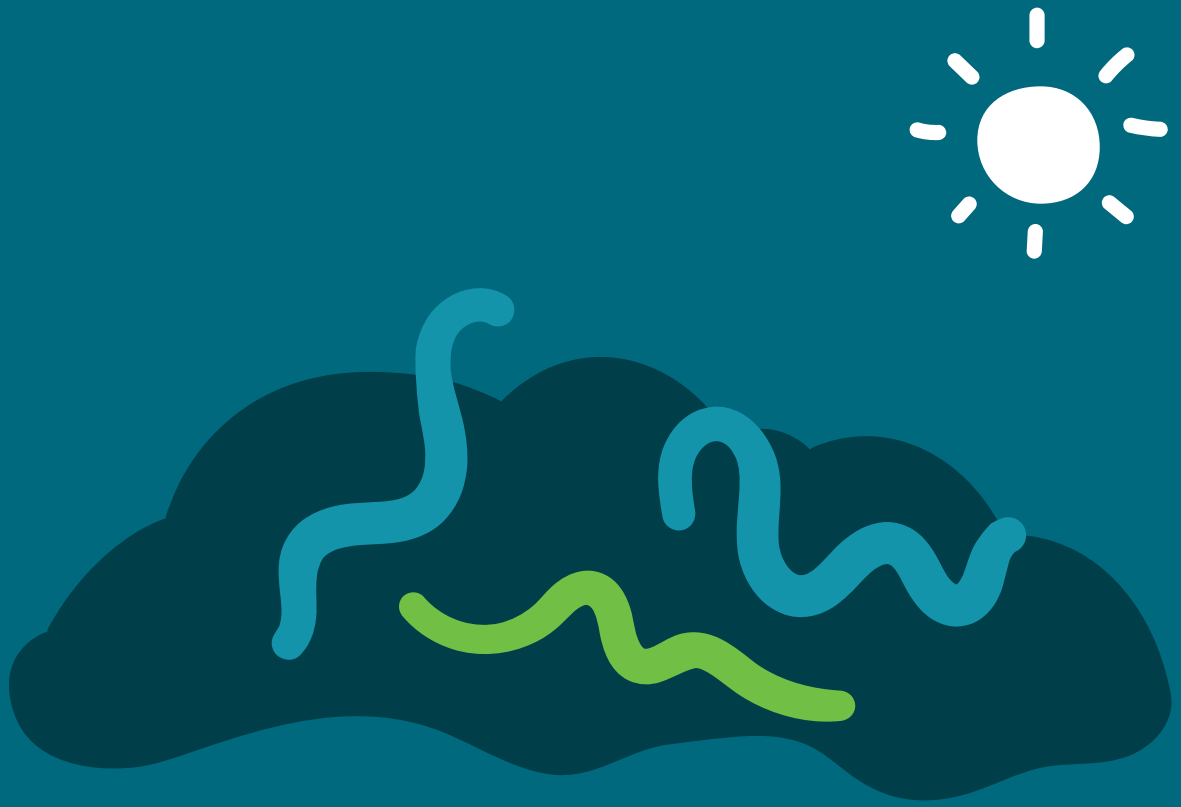

VERMICOMPOST BIN

Activity

Creating A Vermicompost Bin

Summary	The participants make a composting bin with worms.
Objectives	Participants will understand the benefits of worms in the soil ecosystem and will create their own vermicomposting bin.
Materials	Plastic bin with lid, leaves or shredded paper, worms, soil, fruit and vegetable scraps, water sprayer, knifes or scissors.
Duration	2 hrs

STEPS OF THE ACTIVITY:

The participants are divided into groups, each group will start to prepare their bin after the facilitator displays the materials and tools and explains the steps:

1. Making holes in the lid or on the top part of the box sides for air flow, worms need some aeration.
2. Collection of leaves or shredded paper or cardboard and spreading them at the bottom of the box to make the bedding
3. Spreading the soil across the bedding
4. Watering the bedding to keep it moist (but not too wet). Worms need water to live as well as to breathe.
5. Going around the farm in search of worms, under rocks or by digging holes in the soil.
 If it is difficult to find worms on site, it's preferable to purchase worms ahead of time. Redworms are ideal worms for the vermicomposting bin, known as Lumbricus rubellus and Eisenia fetida; they are commonly known as red wiggler.
6. Placing worms into the bedding inside the box
7. Adding a layer of food scrapsClosing the lid of the bin and placing it in a shaded sheltered spot

During the activity the instructor mentions how earthworms consume the organic material, pass it through the digestive system and excrete granular castings known as vermicompost and how vital that is to the cycle of life in the soil.

The participants can regularly check their vermicompost bin to add food waste they bring from home or from their compost tour around the neighborhood as well as the leftovers from gardening, after a month they will obtain their own fertilizer and apply it to their plants.

REFLECTION:

What did you think of the activity? What was your favorite part? What would we have done differently? Did you find different kinds of worms? Tell me more...While looking for worms did you find other creatures? Do you think vermicompost can be applied at home? Where else? How? Other than composting, what can we do to decrease our waste?

PROPER FOOD FOR YOUR WORM

ALWAYS

Fruits, Veggies, Coffee Grounds, Filters And Tea Bags

SOMETIMES

Grass, Garden Clippings, Rinsed Egg Shells

20

ONE LINE STORY

Activity 1

Creating A Story

Summary	The participants create a story together about a nature theme.
Objectives	Participants will use their imaginations and coordinate together to create a coherent story about the theme specified by the instructor to get a different perspective on nature (from the perspective of a bee, or a ladybug, or a worm, or a bird, or a plant, or a drop of water...)
Materials	None
Duration	45 min

STEPS OF THE ACTIVITY:

The participants are gathered in a circle sitting down on the floor and told the following by the instructor:

"Today we are going to create a story together as a team, every person will say 1 line of the story and the person to their right will continue with the next line, then the person to their right will continue with the next, and so on. After a minute or 2, while the story is flowing, I will tell you to start beginning your lines alternating between Fortunately or Unfortunately so for example:

- Yara will say The bee was flying between the flowers,
- Jad will say: Unfortunately a drop of water fell on its wing
- Nour will say: Fortunately she landed on thick mulch safely
- Tania will say: Unfortunately there was something sticky on the mulch
- Youssef will say: Fortunately she her friend was flying behind her
- And so on

Are you ready?

The instructor now chooses a nature related theme or asks the participants to do so. The theme can be a story from the perspective of a bee, or a ladybug, or a worm, or a bird, or a plant, or a drop of water...

The story will include parts where the flow will be slow, and parts where it will be fast, will also include laughter and frustration (especially the part with fortunately and unfortunately).

REFLECTION:

What did you think of the activity? What surprised you the most? What was your favorite part? What frustrated you about the activity and the story? What would you change about the activity if you could? What would you change about the events of the story? How did it feel to not have full control over what happens in the story?

Activity 2

Acting Out The Story

Summary	The participants make a short play from their story, or a part of it.
Objectives	Participants will coordinate together and divide tasks and roles and act out a scene of their story.
Materials	None. Optional, props for acting.
Duration	45 min

STEPS OF THE ACTIVITY:

If the time allows (sometimes the story and reflection take much more time than expected) the participants are told to now organize themselves and divide roles to turn their story into a play. They rehearse and then play out the scene. Optionally, the instructor or one of the participants can play the role of a videographer and film it, another participant can be a director deciding where to place everyone and how to take the shots...

REFLECTION:

What did you think of the activity? How did it feel to be a bee (or wasp or drop of water or whatever the part was)? How do you imagine the world has changed for the bees now with pollution and deforestation and pesticides? Can you describe how you imagine a healthy environment for all these creatures and elements? What do you believe you can do as humans to contribute to achieving this?

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EROSION AND COMPANION PLANTING

Activity 1

Erosion Experiment

Summary	The participants will water soil in 3 containers, one bare soil, one soil covered with mulch, and one soil with green cover to compare.
Objectives	Participants will better understand why they use mulching and cover cropping in their garden by testing and comparing erosion levels without cover, with mulch and with living cover.
Materials	Big plastic bottles (can be pre cut as in the picture, or the participants can cut them, scissors, shovel, watering can, soil, mulch, patch of soil with grass or other green cover growing from it (these can be prepared earlier and planted weeks ahead of time, or gathered from the farm) and 3 cups.
Duration	30 min

STEPS OF THE ACTIVITY:

The participants are gathered in a circle sitting down on the floor and told the following by the instructor:

We all know by now the main practices on this farm (or in this garden, or of sustainable agriculture)

SUSTAINABLE AGRICULTURE PRACTICES:

- **Companion planting** and how plants interact and can support each other to create a healthy ecosystem.
- **Crop rotation** and how by changing crops every season we limit the risk of pest infestation and keep the soil balanced.
- **Composting** and how it adds not only nutrients to the soil but also life, in the form of bacteria, fungus worms and insects that boost the health of the soil and as a result grow healthier plants.
- **Mulching** or cover crops and how they shelter the soil and preserve it and the life inside it.
- **Integration of animals** in a way that connects the different elements in the system.

How about today we make and experiment about cover crops and then a game about Companion planting?
In order to do the experiment about mulching and cover crops we need to gather the following:

- Soil to fill these 2 bottles halfway
- Mulch: brown leaves, hay... to apply a thick layer on top of the soil in 1 bottle
- A patch of soil with grass growing from it, we need to cut it carefully to keep it all together and not mess up the soil like tilling does

After the participants spread out and gather the needed material, they place them in the bottles and the experiment is carried out by watering each of these bottles and observing the water that comes out of each, the murkier water has more soil lost more erosion, the mulch will protect the soil and so will be less murky, and the grassy patch will be the clearest because the green cover will keep the soil from eroding.

REFLECTION:

What do you think of this experiment? What do you think now when you see a river flowing brown or brown areas in the sea after a heavy rain?

Activity 2

Companion Planting Role Play

Summary	The participants move around the space while roleplaying elements from the garden.
Objectives	Participants will emulate interactions between different elements of the garden allowing for a better understanding about the dynamic of the designed ecosystem
Materials	None
Duration	45 min

STEPS OF THE ACTIVITY:

The instructor mentions how plants interact just like people and all living things do, they can have a positive or negative influence on each other, and mentions some info about companion planting.

COMPANION PLANTING:

1. Enriching the soil: which produces healthier more productive plants
- Nitrogen fixing legumes enrich the soil with N by making nodules on the roots where they invite in bacteria and feed them starch in exchange for Nitrogen compounds (Legumes like peas and beans)
- Accumulators have deep roots that bring nutrients from the deep to the shallow layer (amaranth, comfrey, borage)

2. Attracting beneficial insects: which increases pollination and production (all flowers)

3. Repelling or trapping pests: which keeps the main crop plants healthy (Flowers like calendula and marigold and aromatics like basil and thyme repel, some attract and play the role of a trap like nasturtiums)

4. Bad combinations some plants have a negative influence on each other and so need a buffer in between, peace keeping plants that stand in between them (onion repels bacteria, loubieh invites bacteria so they need buffer in between)

The instructor now distributes the character cards and name tags (there will be more than 1 of each character), the participants read their character cards well, and wear their name tags.

The instructor asks the participants to sit in a circle, and says the following:

"You now know that plants, just like humans, create a community with complex interactions. Today, each of you will play a role, some of you will be tomato plants, some will be bees, some will be basil plants, some will be nitrogen fixing bacteria and so on. You each have a character card, read it carefully because you need to introduce yourself to the group and then you will need to play the part, example, if you are a pest you will try to fly around and attack the tomato, if you are a bee you will be trying to reach flowers, if you are an aromatic you will be chasing away pests, if you are bean you will be cooperating with bacteria exchanging food, and so on. You will all be moving around the space when I say GO and you will stop in place when I say FREEZE, the purpose of the game is for you to move around while keeping your garden healthy, meaning you move around while keeping the pests from reaching the tomato, even though they will try to attack, and keeping the good elements close to it."

The participants read their cards and each introduces themselves. ex: "Hello I'm a Marigold, I protect tomato roots from nematodes and attract pollinators with my flowers."

CHARACTER CARDS:

Several copies, more than 1 of each character depending on class size.

BEANS

Nitrogen fixing legumes that enrich the soil by creating partnership with bacteria in the root zone, they give the bacteria starch and take nitrogen compounds in return.

🙂 **Friends:** Tomatoes (you protect them) and Bacteria (you attract and feed them)

☹ **Enemies:** Onions (they repel your useful bacteria)

RHIZOBIUM BACTERIA

Bacteria in the root zone that create a partnership with legumes, they take starch from the plant and give nitrogen compounds.

🙂 **Friends:** Beans (their roots attract you and feed you)

☹ **Enemies:** Onions (repel you)

BASIL

Aromatic plants that defend tomatoes by repelling pests such and when they flower they also invite pollinators.

🙂 **Friends:** Tomatoes (you protect them from pests)

☹ **Enemies:** Pests (ex: you chase away white flies)

CHARACTER CARDS

🙂 Friends ☹ Enemies ★ Target

TOMATO

A crop requiring lots of sun and nutrients to grow and give fruit it requires protection from pests such as whiteflies and nematodes at the roots, it also needs pollinators to increase production.

🙂 **Friends:** Beans (feed you), Onion (protect your roots), Marigold (protect your roots), Basil(chase away your pests), Bees (pollinate)

☹ **Enemies:** Nematodes (they attack your roots)

HARMFUL NEMATODES

(not all nematodes are harmful) trying to attack tomato roots but chased away by marigold roots.

★ **Target:** Tomato roots (you want to attack them)

☹ **Enemies:** Marigold roots (they chase you away)

BEES

Pollinators initially attracted to the flowers of the floral and aromatics plants, end up pollinating the flowers of the tomato plant and increasing production.

🙂 **Friends:** All flowers (they feed you and you pollinate them)

CHARACTER CARDS

☺ Friends

☹ Enemies

★ Target

WHITE FLIES

Flying pests that try to attack the tomatoes, they are chased away by the aroma of basil plants.

★ **Target:** Tomatoes
(You like to attack them)

☹ **Enemies:** Basil
(the aroma chases you away)

ONIONS

repel bacteria in soil, can protect from pathogenic bacteria but disrupts the work of beans and other legumes, they must always have other plants separating them.

☺ **Friends:** Everyone except beans
(you protect their roots from bacteria)

☹ **Enemies:** Bacteria
(even useful ones), Beans
(you disrupt their nitrogen fixation)

MARIGOLD

A flower that defends tomato roots by repelling pest nematodes in the soil and at the same time with their flowers inviting pollinators and repelling other pests.

☺ **Friends:** Everyone
(you repel their pests), bees
(you attract and feed them)

☹ **Enemies:** Nematodes in the roots
(you chase them away)

After the introductions are done, we say GO and the participants go around trying to play their role, then in a few seconds we say FREEZE, and we see how the situation is. Are the tomatoes being well protected or open to attack by pests? Then GO then FREEZE until the participants find a good position.

The point of this is that they can organise in several ways as long as the beans and onions are not planted next to each other because they have a negative relationship, the marigold and basil are close to the tomato so it can benefit from their protection, and the beans and tomatoes are close so the tomato can benefit from the Nitrogen fixation.

REFLECTION:

What did you think of the activity? What surprised you the most? What was your favourite part? What frustrated you about the activity and the story? What would you change about the activity if you could? How do you see the interactions in the garden now? Do you think you needed more of 1 group to make this a healthier Garden?

Facilitator then shows a sample of companion planting crop plan, and asks the children to explain what they see.

Basil	Tomatoes + Marigold	Basil	Tomatoes + Marigold	Basil	Tomatoes + Marigold
Beans	Lettuce	Onions	Onions	Lettuce	Beans
Tomatoes	Marigold	Tomatoes	Basil	Tomatoes	Marigold

25 cm

25 cm

22

WEEDING AND AVOCADO TRANSPLANTATION

Activity 1

Weeding and Avocado Transplantation

Summary	The participants will identify weeds and distinguish them from the seedlings they have planted in order to remove the correct plants.
Objectives	Participants will identify and remove weeds from their beds for a better crop grow.
Materials	Hoe, fork, mattock.
Duration	1 hr

STEPS OF THE ACTIVITY:

The participants will walk around their beds and observe the plants. While observing their own crops, the instructor will ask:
- Have you seen any changes in your crops?
- How are your plants doing?
- Do you detect any other plants growing among your crops?
- What are they called?

The instructor explains that a weed is a plant that grows where we don't want it to grow. They help avoid soil erosion and weathering, but they also compete with our garden plants for light, moisture, and nutrients, therefore they must be removed. Weeds can be eliminated by hand or using tools. After spreading out and gathering the necessary materials, the participants will eradicate weeds and attempt to entirely eliminate the roots of perennial weeds. Participants can apply a layer of mulch to the soil for best weed control.

REFLECTION:

What do you think of this activity? What do you think of your bed now that the weeds have been removed? What do you think about the weeds growing in your garden? Do they have a similar appearance? Do they have the same type of roots?

Activity 2

Avocado Transplantation

Summary	The participants transplant their germinated avocado.
Objectives	The participants will discover seed germination and transplant avocado seeds into their garden.
Materials	pots, soil, compost, shovels, water sprayer.
Duration	30 mins

STEPS OF THE ACTIVITY:

The participants will observe the avocado seed carefully. When it splits and the roots appear, it is time to transplant avocado seed to a plant pot. The instructor mentions how sprouting avocado seeds by suspending them in water with toothpicks speeds seed germination. Roots develop first, followed by a sprout that grows upward to form the stalk and foliage of the plant.

The participants are divided into 4 or 5 groups, each group will:

1. Fill a pot half full with a mixture of soil and compost. This makes a lightweight soil that allows for good aeration and promotes adequate drainage.
2. Position the avocado seed so that the roots spread out in the soil and the top of the seed rests flush with the top of the soil.
3. Fill in around the roots with soil mixture and firm down the soil gently with your hands, using care not to injure the roots. This removes air pockets in the soil and secures the avocado plant.
4. Water thoroughly until water runs freely through the bottom of the pot. Keep soil moist, but not soggy, by watering once or twice a week when the soil dries to the touch.
5. Place the avocado plant in bright light

REFLECTION:

What did you think of the activity? What surprised you the most? What was your favorite part? What did you notice regarding seed germination? What would you change about the activity if you could? Do you believe this seed will grow into a plant and produce avocado fruit? Will you attempt this at home with your family and friends?

23

DECORATING PUMPKINS

Activity

Decorating Pumpkins

Summary	The participants will open and clean the inside of pumpkins (carving optional, it can be decorated without it), then decorate them with paint, flowers and twine, then hang them or place them around their classroom and garden.
Objectives	Participants will create artwork from nature and their imagination.
Materials	Pumpkins (1 per pair of students), knives, spoons (metal strong), paint, flower (or small flowerpot, or candles, or any other decorations the instructor or participants wish to use).
Duration	1.5 hrs

STEPS OF THE ACTIVITY:

The participants will be divided in pairs and given 1 pumpkin per pair. The instructor explains how they need to decorate their pumpkin in whatever style they choose, and whatever material is available around them. They can choose to carve out the pumpkin (with the help of the instructor, the instructor might choose to have the pumpkins carved out and ready before the session) and decorate it from both outside and inside adding things like candles or flowers, or they could choose to just paint it and decorate it from the outside.

The material is distributed and the participants get to work. When they are done with their work, they go around their learning space to choose where they wish to place it, perhaps hanging from a tree with a twine, or laying on the ground. After they place their pumpkins around, the participants and instructors gather to discuss their activity.

REFLECTION:

What did you think of the activity? What was your favorite part? Did any part of it seem too difficult or challenging? What did you think of working as pairs? What would you change about the activity if you could? What else from the garden do you think you could decorate?

24

SEED GATHERING

Activity 1

Seed Gathering

Summary	The participants will spread in the field and gather seeds in labelled bags.
Objectives	Participants will gather seeds from the crops they planted, they will learn about the shape and different methods of harvesting seeds.
Materials	Paper bags, markers, scissors.
Duration	45 min

STEPS OF THE ACTIVITY:

The participants are gathered in a circle sitting down on the floor and told by the instructor that:
- They will be divided in pairs
- Each pair will have a marker, a pair of scissors, and paper bags
- They will go around the garden and gather seeds from different types of crops
- They need to label each bag
- Gathered seedheads need to be ripe and ready
- Some seeds will be gathered from flowers (basil, marigold, lettuce...) while others will be harvested from inside a ripe fruit (tomatoes, pepper, cucumbers...) or pods (peas, beans)
- For gathering flowers, they should place the paper bag under the flower and cut it to allow it to fall into the bag, avoiding wasting any seeds that may fall due to the shaking of the flower
- For the fruits, they simply need to pick the fruit whole

The instructor could distribute the pairs by type of crop, or allow them to spread randomly around the garden gathering what they wish and exploring the different types (recommended). They are instructed to gather back at the same spot half in half an hour.

REFLECTION:

What did you gather? Is there anything you noticed that you would like to share?

Activity 2

Cleaning The Seeds

Summary	The participants clean and sort the seeds they gathered.
Objectives	Participants will clean the seeds from different types of crops and learn how they need to store them for use in the next seasons. They will reflect on the significance of this process of seed harvesting for farmers.
Materials	Trays, bowls, sieves
Duration	45 min

STEPS OF THE ACTIVITY:

Participants will be instructed on how to clean every type of seed they gathered. How to blow away the chaff, how to remove the petals mixed with the seeds, how to sieve off the fruit and wash off the pulp remaining attached to it, each according to the type of plant.

Dry seeds will be gathered in labelled paper bags in sealed containers and stored in a dark, dry, and cool place (fridge also good) for use in the next season. These seeds, if clean, dry, and stored properly, can stay viable for many years.

REFLECTION:

What did you think of the activity? What was your favourite part? Did you find any part tricky? What do you think about seed gathering? What can we do with these seeds next year? What do you think of the gathering and cleaning techniques that you used? How do you think these were developed? What do you think the difference is between a farmer that gathers seeds and one who doesn't? Do you think anyone should own these seeds and forbid you from gathering them? Big companies now agree with some governments to forbid farmers from growing and harvesting their own seeds. What is your opinion on that?

25

DIY PESTICIDES

Activity 1

Weeding And Garden Maintenance

Summary	The participants will remove the weeds and clean up the garden, adding mulch where needed and cleaning up contours, checking irrigation...
Objectives	Participants will remove weeds from their beds and check their crop.
Materials	Hoe, fork, mattock, mulch.
Duration	45 min

STEPS OF THE ACTIVITY:

The participants will walk around their plots and check their plants. While they are inspecting their crops, the instructor will ask:
- What changes have occurred in your plots?
- Are your plants growing rapidly? If not, the participant will indicate the infected plant to us.
- What do you think is the cause of the infection?

Following crop observation, participants will remove weeds, clean their beds, and add a layer of mulch for better weed control.

Activity 2

Making And Spraying The DIY Pesticides

Summary	The participants will prepare chilli pepper extract and spray it on their crops to repel and control insects
Objectives	Participants will learn how to make natural pesticides instead of using pesticides to control pests.
Materials	Bowl, hot water, chilli pepper, mortar and pestle, knife, soap, sprayer.
Duration	45 min

STEPS OF THE ACTIVITY:

The participants are gathered in a circle sitting down on the floor and told the following by the instructor:

To prepare the chilli extract we need to follow these steps:
Step 1: tear 200g of pepper into small pieces
Step 2: Using a mortar and pestle, grind the chilli pepper until it becomes a coarse powder
Step 3: boil it in 4L of water
Step 4: add another 4L of water and a few drops of liquid soap
Step 5: mix it and fill the sprayer with the mixture

The participants will be divided into 4 groups, each group will walk around the garden collecting hot peppers. They will then prepare their mixture and spray their crops.

Note: Avoid touching your face while handling hot pepper. If you accidentally touch your eyes, flush them with cold water.

REFLECTION:

What did you think of the activity? What was your favourite part? What frustrated you about the activity? What would you change about the activity if you could? What do you think about natural mixtures? Are they safer for humans and insects than pesticides? Would you use this mixture on your plants at home?

26

FENCING

Activity 1

Painting The Fence Sticks

Summary	The participants will paint the sticks that will be used to build a fence around their plot in the garden.
Objectives	Participants will use repurposed wood or used stake canes from the garden to make a fence after painting and personalizing its design.
Materials	Paint, paintbrushes, sticks from the pruned trees or used wood or used canes that were previously used to stake plants (all precut to similar length)...
Duration	30 min

STEPS OF THE ACTIVITY:

The participants will walk around their plots and check their plants. While they are inspecting their crops, the instructor will ask:
What changes have occurred in your plots? Are your plants growing rapidly? If not, the participant will indicate the infected plant to us. What do you think is the cause of the infection?

Following crop observation, participants will remove weeds, clean their beds, and add a layer of mulch for better weed control.
The participants are gathered in a circle sitting down on the floor and told by the instructor that they need to build a fence for their garden plot today and that the first step will be painting the sticks (or canes) that will be used.
The participants are left to discuss what design they wish to implement, what colours they would like to use, what patterns...

The paint and brushes are shared and they start working all together implementing the design they chose (e.g.: they might want to paint all with 1 or 2 colours, they might want to make rainbow patterns with adjacent sticks gradually changing colour, or they might want to make each individual stick itself have patterns on it...) The paint might need to be left to dry for a while.

BREAK:

Preferably with a light snack and refreshments to keep the kids hydrated and focused and allow for the paint to dry.

Activity 2

Installing The Fence

(The hammering part of this activity is mostly done by the older students)

Summary	The participants will build a fence around their plot in the garden (if they are planting in plant beds in an urban garden, this activity can be replaced by staking tomatoes, cucumbers...)
Objectives	Participants will use recycled wood and sticks from the garden pruning that they have decorated to build a fence around their plot.
Materials	Hammers or rocks, twine or metal wire, (optional ribbons, flowers, signage...)
Duration	1 hour (or more, depending on the circumference of the plot)

STEPS OF THE ACTIVITY:

The participants are now told by the instructor that they need to:

- Use the pile of sticks (or canes or wood) that they painted to build a fence around the plot
- Hammer the sticks into the ground using hammers or rocks and make sure they are stable, note that the deeper they go into the ground, the more stable they are
- Connect the neighbouring sticks using a twine or metal wire by tying the string around a stick, then connecting it to the next and tying it around the next, and so on, this will help maintain the distance between the sticks, and give more support to the fence
- Make sure not much water reaches the fence during watering so the wood doesn't rot and break down faster
- Add any decoration or signage to the fence.

Optional: Plant vines at the base of the fence so it can climb on the fence (making sure it is very well supported beforehand)

REFLECTION:

What did you think of the activity? What was your favourite part? What would you change about the activity if you could? Can you think of a way to improve on this fence even more with time? What else would you like to add to your garden?

27

NATURAL DYES

Activity 1

Collecting Different Type Of Plants

Summary	The participants will collect flowers, leaves, bark and berries from the garden.
Objectives	Participants will learn about several plant species that may be used to create natural dyes.
Materials	Paper bags , scissors, plant materials.
Duration	30 min

STEPS OF THE ACTIVITY:

The instructor will gather the participants around and explain that natural dyes can be made from pigments found in nature, and that to do that today, they will need to gather the required ingredients from the garden. The instructor explains examples of plant pigments that create dye:

- Yellow dye can be made from: marigolds, dandelion, yarrow sunflowers
- Orange dyes from plants can be made from: carrot roots, onion skin
- For natural plant dyes in shades of brown: walnut husks fennel
- Pink dye can be derived from: camellias, roses, lavender
- Purple colours can come from: blueberries, grapes, coneflowers hibiscus

The participants will be divided into five groups, with each group searching for a different species of plant to use in the preparation of the natural dye.

Yellow Marigolds, Dandelion, Yarrow Sunflowers

Orange Carrot Roots, Onion Skin

Brown Walnut Husks, Fennel

Pink Camellias, Roses, Lavender

Purple Blueberries, Grapes, Coneflowers Hibiscus

Activity 2

Preparing Natural Dyes

Summary	The participants will prepare natural dyes from different types of plants.
Objectives	Participants will discover how to make dye bath using plants and apply it on fabric.
Materials	Stainless steel pot with lid, bowl, water, tongs, strainer, plant materials.
Duration	1 hr

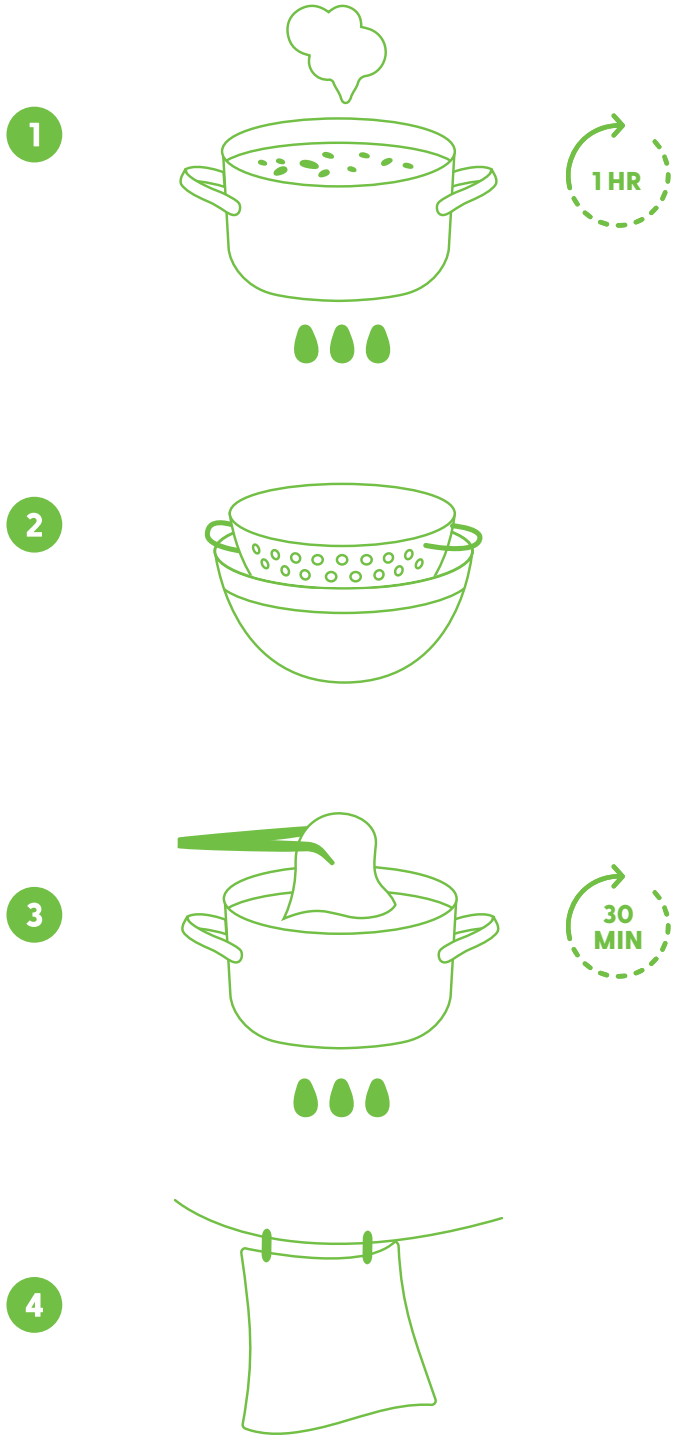
STEPS OF THE ACTIVITY:

The participants are gathered in a circle sitting down on the floor and told by the instructor that in order to prepare natural dyes they need to follow these steps:

Step 1: Fill the first pot with about 3 times as much water as you have plant material. Cover the pot and bring the dye bath to a boil then turn the stove down and simmer for one hour
Step 2: Place the strainer on the top of a bowl and strain the dye bath over it to remove plant material from the dyebath
Step 3: Add the fabric to the dyebath and let it simmer on the stove for 30 mins or longer, depending on how deep you want the colour to be. Use the tongs to remove the fabric and place it into a bowl to cool down.
Step 4: Once the yarn is cool enough to handle, rinse it gently under warm water. Hang the yarn up to dry on a clothesline or portable drying rack out of the drying sun.

REFLECTION:

What did you think of the activity? What was your favourite part? What changes did you observe in the garden? What other things in nature do you think could produce dye? Did anything frustrate you about the activity? What would you change about the activity if you could? Did you get the colours you expected? What was your favourite colour? Would you attempt this dye bath at home to dye your shirts?



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MUD ART

Activity 1

Preparing The Material

Summary	The participants will mix water and clay to get the desirable consistency of mud for their different art projects, and gather other material from the garden to be used in their art activity.
Objectives	Participants will work with soil and mud, observe soil texture and water retention. They will walk around the garden observing and searching for material to be used in their artwork.
Materials	Soil, water (hose or watering can or bottles), containers for the mix (bowls, cups, trays). Alternatively, ready-made clay can be used. Scissors, basket to gather leaves and flowers or any other material from the garden.
Duration	45 min

STEPS OF THE ACTIVITY:

The instructor will gather the participants around and explain that today they will be making art with mud. There are several options, including:

- Mud or clay models, where they can make models or insects, or trees, or any elements of the garden or forest.
- Mud painting, where they will use mud on paper to make painting
- Tree faces, where they will use mud or clay to make faces on trunks of trees
- Pressed flowers, where they prepare a flat piece of mud or clay and press flowers or leaves into them
- Any other idea they can think up

The participants are asked to do the following:
1. Decide what each is going to do as artwork
2. Gather material from the garden to be used in the activity
3. Mix mud and water in a container to get the right consistency to be able to use it in the activity without it being too dry and crumbly, nor too wet and soggy.

Activity 2

Making Mud Art

Summary	The participants will make their artwork from the mud and material they gathered.
Objectives	Participants will create art from mud and leaves and other gathered material.
Materials	The gathered material and mixed mud, paper, brushes...
Duration	45 min

STEPS OF THE ACTIVITY:

The participants use their gathered material and the mixed mud to create the art work they decided on, then clean up the space and sit for reflection.

REFLECTION:

What did you think of the activity? What was your favourite part? What was the most challenging part? What would you change about the activity if you could? What other ideas do you imagine you can do some other time?

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ECO PRINTING ON PAPER

Activity 1

Prepare The Bundle Of Papers

Summary	The participants will prepare their bundles using flowers, leaves from nature and papers.
Objectives	Participants gather botanical materials such as leaves and flowers to stack within layers of paper for printing.
Materials	Scissors, basket to gather leaves and flowers or any other material from the garden, heavy paper, vinegar solution, basin, strings.
Duration	30 min

STEPS OF THE ACTIVITY:

The instructor will gather the participants around and explain that today they will be making eco printing on paper, it's a form of natural dying where the colours from plant material will be transferred to paper via steaming or boiling.

The participants are asked to do the following:
1. Gather leaves and flowers from the garden
2. Pass the sheets of paper through the vinegar water solution
3. Place various flowers and leaves on your paper
4. Fold the paper to close it or place another sheet on the top of the first
5. Continue laying out the plant material on each of the sheets of paper
6. Take the stack of paper and press down firmly to get good contact between the paper and the leaves or flowers
7. Tie the bundle with strings

Activity 2

Steam The Papers

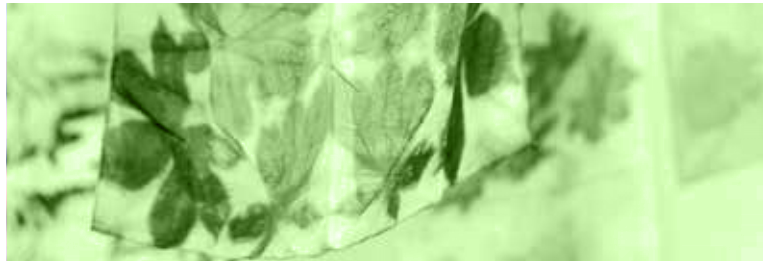
Summary	The participants steam their bundles to print leaf and flowers on paper.
Objectives	Participants will print leaves and flowers they gathered on paper.
Materials	Water, vinegar, onion skins, cooking pot.
Duration	1 hr

STEPS OF THE ACTIVITY:

The participants are gathered in a circle sitting down on the floor and told by the instructor to follow these steps:
Step 1: Fill the pot with water, about 500 ml of vinegar and add some onion skins
Step 2: Cover the pot and bring the bath to a boil
Step 3: Drop the bundle carefully inside the hot water
Step 4: Let it simmer on the stove for 1 hour or longer
Step 5: Turn off the heat and let the paper cool but don't allow it to dry out
Step 6: Open the bundle of paper to reveal the prints, remove carefully the vegetation from papers
Step 7: Leave the paper to dry

REFLECTION:

What did you think of the activity? What was your favourite part? What was the most challenging part? What would you change about the activity if you could? What other ideas do you imagine you can do some other time? What can you do with your printed papers? Would you try it on any other material than paper?



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SHADOW ART

Activity 1

Shadow Shapes

Summary	The participants will make fun shapes with their bodies and trace them, this activity should be repeated at different times of the year to compare sun position.
Objectives	Participants will learn about light and shadow and the sun's movement throughout the year.
Materials	Chalk, sunny day, a floor that can be marked with chalk.
Duration	30 min

STEPS OF THE ACTIVITY:

The instructor will gather the participants and explain that they will be creating shadow art on the floor.

- First, the participant will strike a variety of poses, attempting to make their shadows as unique as possible in order to inspire their art.
- Second, once they have a shadow shape that they like, they will freeze.
- Third, the shadow will be traced by the second participant.

Activity 2

Shadow Art

Summary	The participants will make fun shapes with their bodies and trace them, this activity should be repeated at different times of the year to compare sun position.
Objectives	Participants will learn about light and shadow and the sun's movement throughout the year.
Materials	Chalk, sunny day, a floor that can be marked with chalk.
Duration	30 min

STEPS OF THE ACTIVITY:

The participants will work together to transform that simple shadow shape into a work of art inspired by nature. They may enhance their nature art by including natural elements gathered from the garden such as flowers, leaves, seedpods, stones, etc.

REFLECTION:

What did you think of the activity? What was your favourite part? What other ideas do you imagine you can do some other time? How do you feel about your shadow art? Why did you transform your shadow into this piece of nature art? What do you think will change if we repeat this activity at another part of the day or in another season? How do you think that impacts planting? How can you make this useful in your garden?

If the reflection is happening the second time in another season:
What differences did you notice between this time and last time?

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INSECT HOTEL

Activity

Building the Insect Hotel

Summary	The participants will use a wooden structure and add elements to it to build an insect hotel for their garden
Objectives	Participants learn how to build a good quality insect hotel, with specifications that increase the odds of survival of the beneficial inhabitants and prevent the buildup of molds and pests. They will explore the different methods for boosting insect population in a certain area or ecosystem.
Materials	For 1 insect hotel: (One hotel can be built by 1 student or more) Wooden box with a solid slanted roof (divided into 2 to 6 compartments depending on age group), Canes or bamboo sticks, Straw or wood wool, Twigs, Leaves, Terracotta flower pots, sandpaper. NOT recommended: Pinecones, glued snail shells, wood shavings and clear plastic tubes.
Duration	1.5 hrs

STEPS BEFORE THE DAY OF THE ACTIVITY:

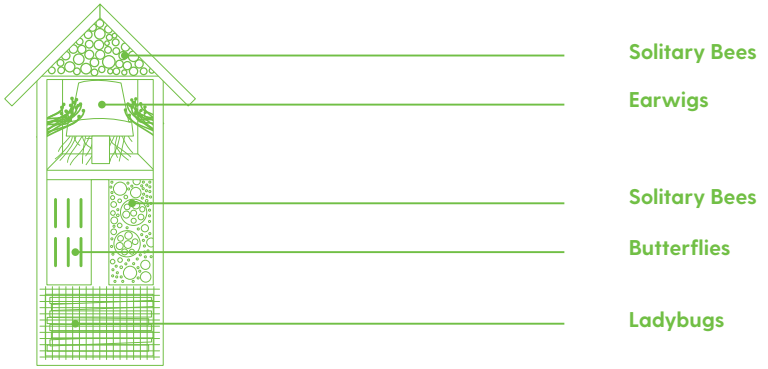
Instructors prepare precut, pre-drill all the wood, then the participants need to sand the wood then fill the compartments. Note: For older kids, the workshop can be done in a carpenter workshop and all the cutting of wood and drilling could be done by them.

STEPS OF THE ACTIVITY:

The instructors gather the participants and start the discussion with some questions like:
Does anyone here like insects? What insects have you seen so far in the garden? Most of us are not crazy about mosquitoes or flies, but who likes butterflies? Who likes ladybugs? What else do you like? Bees, dragonflies...?

A reminder that we need those insects to keep the balance in an ecosystem, that they are predators that eat pests, that they are pollinators, they take part in decomposition and are needed for enriching the soil, and even make products like honey and beeswax, silk... This activity aims at helping these tiny creatures reproduce, hibernate, and do their jobs. Building an insect hotel!

The participants will be instructed to follow these steps:



- Sand the wood to make it smooth and avoid ripping the delicate wings of the insects. Then they fill the different compartments of the box with the following:
- Invert the terracotta flower pot and fill it with wood wool or straws (for the Earwigs).
- Piles of cut hollow canes or bamboo sticks should be placed at a slight tilt so they don't fill with rain water (for the solitary bees).
- Horizontal pile of twigs (for the ladybugs).
- Vertical bundle of leaves (for the butterflies).

Other options for older participants:
- Timber panel with smooth vertical openings cut into it (for butterflies)
- A portion of a cut tree trunk or timber in which holes are drilled of different sizes (e.g. 2, 4, 6 and 8 mm, NOT more than 10mm) a few centimeters apart.

Important Notes for the activity:
- Large insect hotels might be harmful because they invite parasitism, smaller shelters are recommended.
- The wood used should NOT be treated with any chemicals.
- The openings should be sanded soft because any splinters can damage the fragile wings.
- The hotel should be placed in a dry sheltered area (no rain water should leak in), with plenty of sun, facing southeast or south, higher than the ground and preferably close to a water salad and some insectary plants for food source. It must also be fixed securely to prevent shaking and swaying from wind.
- Must be inspected and cleaned at the end of every summer and drilled blocks replaced with brand new ones every two years. This will help to prevent the build-up of fungus molds, mites and other pests and parasites.
- A chicken wire can be added to protect the larvae from birds.

REFLECTION:

What did you think of the activity? What could we have done differently? What other material could we have used? What was your favorite part? How can we take this insect hotel activity a step further? Expand on it? What else can we do to help insects thrive in a garden or a park like here for example?

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ROCK PAINTING

Activity 1

Gathering Rocks

Summary	The participants will search for rocks or stones around the garden.
Objectives	Participants will hunt for and discover different shapes and types of rocks in nature.
Materials	Baskets if needed.
Duration	30 min

STEPS OF THE ACTIVITY:

The instructor will gather the participants and explain that they will be looking for smooth rocks or stones in the garden to paint later. The participants walk around the garden exploring and looking for rocks, they need to each gather 1 or more.

After the participants have collected the stones, the instructor will ask them to observe the shape and textures of all the gathered rocks:
- What did you notice about the stone texture?
- Did you find anything interesting under your rocks when gathering them? If so, could you please tell us what you discovered?

Activity 2

Painting And Placing The Rocks

Summary	The participants will paint their rocks and place them around the garden.
Objectives	Participants will hunt for and discover different shapes and types of rocks in nature.
Materials	Paint and paintbrushes, marker.
Duration	1 hr

STEPS OF THE ACTIVITY:

After having gathered their rocks, the participants follow these steps to paint their rocks:
1. Put down a piece of newspaper or a white poster board to protect the surface that you will be working on.
2. Paint a single-color acrylic base layer on each rock that you want to paint and allow the paint to dry before moving on to the next step. This optional step is recommended for most painted rocks and rock painting designs.
3. Next, paint the rocks in any way that they like or imagine...
4. Allow the paint on the painted rocks time to dry.

REFLECTION:

What did you think of the activity? What was your favourite part? What would you change about this activity if we were to do it again? What other ideas do you imagine you can do some other time? How do you feel about your painted rocks? What story can you make from your rocks? What do you think other children will feel when they discover your painted rocks in the garden?

33

SEED BALLS

Activity 1

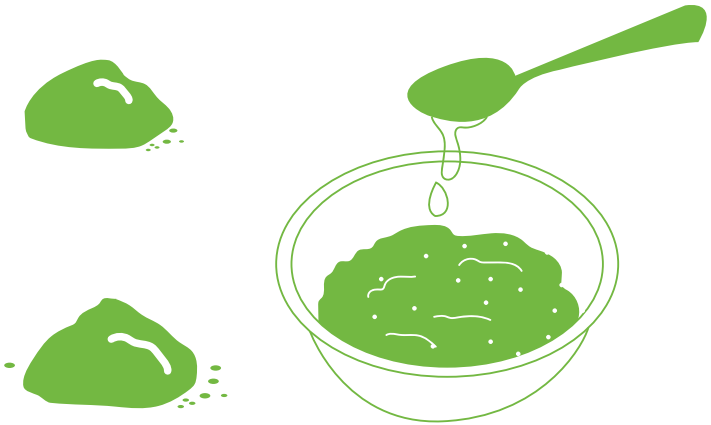
Preparing The Soil Mix

Summary	The participants will make seed balls by mixing the soil and water rolling them into small balls
Objectives	Participants will make clay balls to use for adding seeds later (native wild plants)
Materials	Organic potting soil, clay, water, mixing bowl
Duration	45 min

STEPS OF THE ACTIVITY:

The instructor will gather the participants and explain that they will be preparing seed balls which are marble sized balls made of clay, soil and seeds that are used to replant areas where the natural flora has been destroyed.

- Mix dry clay and potting soil together
- Slowly add water while still mixing the potting soil
- When you are able to form a ball of the blended material without it falling apart, you are ready to stop mixing.
- Try to mould the mixture into small balls



Activity 2

Making The Seed Balls

Summary	The participants will add seeds to their mixture and dry the seed balls so they can later be used.
Objectives	Participants will make seed balls to reseed the landscape with native wild plants.
Materials	Seeds, tray, cardboard box.
Duration	45 min

STEPS OF THE ACTIVITY:

The participants will be asked to:
- Add seeds (native wildflower seeds, native aromatic seeds, native legume seeds, native tree seeds...) to their mixture
- Continue kneading the dough until the seeds are well mixed in (add more water if necessary).
- take small bits of the clay mixture and roll it into a ball about 3 cm in diameter. The balls should hold together easily. If they're crumbly, the participants will need to add more water.
- Dry seed balls for 24-48 hours in a shady place before sowing or storing. They store best in a cardboard box.

Participants can take the seed balls home with them to throw later around their neighbourhoods. They can either place their seed balls carefully over the area to be planted or they can gently toss them one at a time, which is a lot more fun. This is best done at the beginning of the rainy season.

REFLECTION:

What did you think of the activity? What was your favourite part? How do you feel about the process of making seed balls? What influence do you believe seed balls might have on nature? What plant seeds would you place in seed balls if you make them again? Where do you plan on throwing them?

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