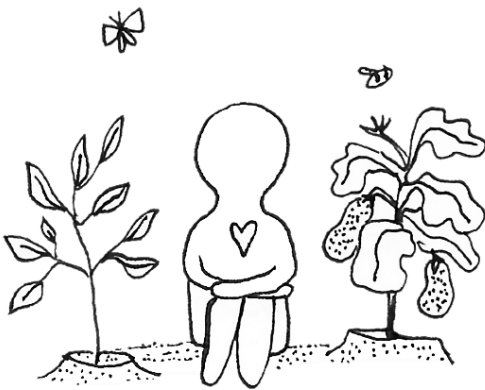




TEACH for ESD

PROMOTE LEARNER WELL-BEING



Healthy Living

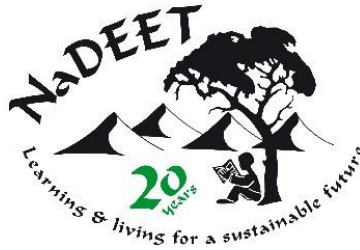


Food Gardening



21st Century Readiness

Teach for ESD - Toolkit Guide 3.7
PROMOTE LEARNER WELL-BEING



Published in 2024 by the Namib Desert Environmental Education Trust (NaDEET).

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Brot
für die Welt

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OVERVIEW

Being healthy and happy is part of a good quality of life – therefore, promoting learner well-being is an important part of ESD. Furthermore, the healthier and happier learners are, the better they can learn and engage with ESD activities. Well-being entails good mental and physical health, as well as good nutrition. Good interpersonal skills also contribute to well-being for our learners to become kind, caring and active members of our communities.

Through being mindful and proactive about our nutrition, mental and physical well-being, we can work towards **healthy living**. By establishing **food gardens**, we can provide nutritious food to our school community and can enhance local food security. We can equip our learners with **21st century skills** in readiness for the green economy and 21st century challenges.

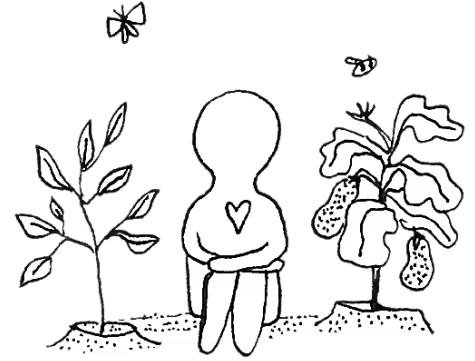
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1. HEALTHY LIVING

When looking at well-being we need to consider all the aspects that contribute to our overall health and well-being as human beings.

As teachers, we would like to have healthy and well-balanced learners. It is very difficult for us to think, learn, or act for sustainable development if we are hungry or have unresolved problems in our lives. As teachers we need to support our learners in becoming and staying healthy, by having a healthy diet and taking care of both their mental and physical health.



Stay updated about the Namibian School Health Programme in the **Training of Trainers Manual on School Health** and for a brief overview see the **National Policy for School Health** poster.

NUTRITION

A healthy balanced diet is crucial for human well-being as it provides essential nutrients, energy, and supports both our mental and physical health. It helps maintain a healthy weight, boosts the immune system, and promotes mental well-being, ensuring a longer, healthier life.



Our learners are faced with different challenges to attaining good nutrition. Some learners do not have enough food while others may have enough, but do not necessarily have access to healthy nutritious food.

As part of our school health programme, we can educate our learners about eating a balanced, healthy diet, rich in macronutrients i.e. proteins, carbohydrates and healthy fats, and micronutrients i.e. vitamins and minerals.

We can teach our learners how to read food labels and what to consider when making environmentally conscious food choices.

“Every child has the right to good quality health care, clean water, nutritious food and a clean environment”

UN CONVENTION ON THE RIGHTS OF THE CHILD



Cook healthy meals with your learners using the **Naturally Nourishing Namibia** cookbook.

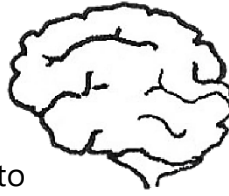


Use **Eating Well for Good Health** for lessons on healthy eating and why it is important for learners.



MENTAL HEALTH

Even at the youngest ages, learners can be affected by issues such as stress, peer pressure, bullying and low self-confidence. The first step to growing our capacity to address these issues is being able to recognise appropriate mental and physical health, and strategies to better engage with these matters at school. This has become even more relevant since the COVID-19 pandemic and with the growing climate crisis causing pressure and uncertainty around the future.



Schools provide an ideal environment and natural opportunities to address issues of mental health and illness ... Educators can play an important role by delivering accurate, comprehensive information and by challenging the stereotypes about mental illness held by the general community.

AFRICAN SCHOOL MENTAL HEALTH CURRICULUM

As educators we can create a caring and safe environment for our learners' mental health by doing the following:



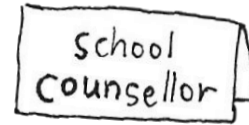
Create a sense of community



Normalise mental health issues



Allow time for a break & rest



Identify sources of help & care



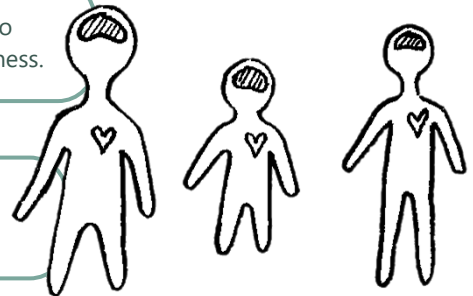
Recognize the individual



Read the comic **Mental Health Matters** with your learners, to prompt discussions and questions around mental health and illness.



See the **African School Mental Health Curriculum** to build your capacity to include mental health in teaching.



LEARNING ENVIRONMENTS GOOD FOR MENTAL HEALTH

The learning space we provide can drastically affect a learner's mood, behaviour, and their ability to learn and be creative. Exposure to time outdoors, green spaces (natural light and fresh air), and regular physical exercise have been linked to increased productivity, creativity, and positive changes in mental health. We can ensure our classrooms are welcoming spaces and include natural elements. Refer to **Toolkit 3.5 - Bring Biodiversity into Schoolgrounds** for tips on how to establish green spaces in the schoolground.

THE LINK BETWEEN NUTRITION AND MENTAL HEALTH

Recent studies have shown that nutrition and mental health are closely linked: what we eat can have a *significant* impact on our psychological well-being!

- **MOOD & EMOTIONS**

Consuming a balanced diet that includes a variety of nutrients can help regulate mood and reduce the risk of mood disorders such as depression and anxiety.

- **NUTRIENT DEFICIENCIES**

A lack of essential nutrients can lead to various mental health problems, for example:

- Low levels of certain B vitamins are associated with an increased risk of depression.
- Iron deficiency can lead to symptoms of fatigue and irritability.

Diets high in processed foods, sugar, and unhealthy fats have been associated with a higher risk of depression and anxiety!

About 90% of serotonin (the 'feel-good' hormone) is produced in our guts!

- **GUT-BRAIN CONNECTION**

A balanced diet rich in fibre and probiotics supports a healthy gut microbiome. A healthy gut has shown to positively affect mood and mental well-being.



Tips on which foods to eat (or eat less of) to improve our mental health:



The link between nutrition and mental health is complex, and a balanced diet that supports overall health can positively influence our psychological well-being. Physical exercise too is essential for our mental health – it is all connected!

PHYSICAL HEALTH

PHYSICAL EXERCISE



The promotion of a healthy lifestyle that includes a balance of physical activity and rest is essential to the ultimate functioning and capability of our learners - and ourselves. Getting out and moving not only has physical benefits, but also increases our mental capacity to absorb new information, reduces stress-levels, boosts mood levels and overall has major brain health benefits. **Classroom-based physical activity** has been recognised as an effective method of resetting and refreshing our capacity to learn during long days of class time.



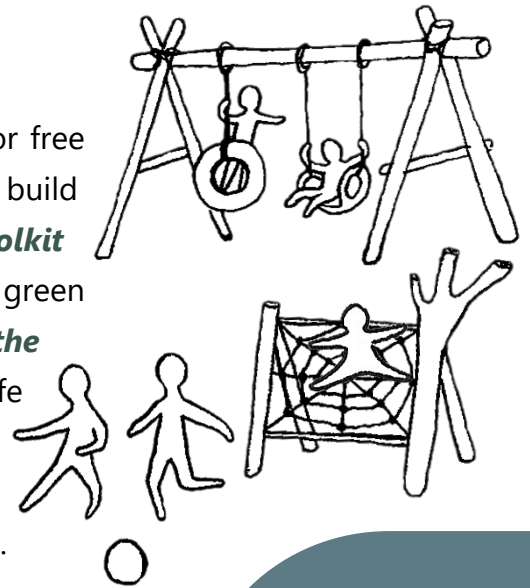
See the **Classroom-based Physical Activity** presentation for more on the inclusion of physical activity in the classroom and how to do this in a non-disruptive, purposeful way.



See Namibia's teacher's guide **Physical Education 4 Life** – a resource that explains the importance of this aspect of learning and guides educators on how best to teach it in the senior secondary phase.

PLAYGROUNDS & FREE PLAY

We must remember to give our learners enough breaks to allow for free play. Linked to this is providing safe playground spaces. We can build nature-inspired playgrounds made from upcycled materials (see **Toolkit 3.6 - Reduce Resource Use**) and/or incorporate these within our green infrastructure (see **Toolkit 3.5 – Bring Biodiversity into the Schoolgrounds**). Through play, children not only develop essential life 21st-century skills such as creativity, problem-solving, and collaboration, but they also develop important **motor skills** (the ability to control and coordinate movements of the muscles and body).



PERSONAL HYGIENE

Another important aspect of physical health is **personal hygiene and care**. We can help establish these practices from an early age and on a regular basis at our schools. Remember, that we must also ensure that our schools provide the adequate facilities to achieve good personal health.

Good personal hygiene and physical fitness can reduce the chance of diseases and health problems.



See the presentation, **Global Goals Agenda through the WASH Programme**, from the 2019 NEEN conference to see how schools are practicing good hygiene and sanitation.



RESOURCES FOR HEALTHY LIVING

Junior Primary

JP

Senior Primary

SP

Junior Secondary

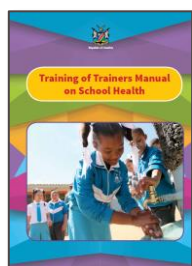
JS

Senior Secondary

SS

Teacher

T



T

Training of Trainers Manual on School Health

MANUAL: Produced as a toolkit to support those implementing the Integrated School Health Programme in Namibian schools, this manual guides on aspects of school health using a holistic approach to achieve it. **AUTHOR:** Ministry of Education, Arts and Culture (2015)



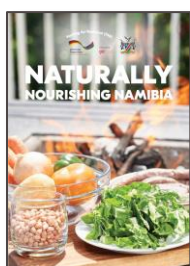
T

Tell us about the National Policy for School Health

POSTER: An overview of the National Policy for School Health, this poster outlines the core principles and practices of the School Health Programme and policy, including guidance on school accountability steps.

AUTHOR: Legal Assistance Centre (2014)

Link: <http://www.lac.org.na/projects/grap/Pdf/postershealth.pdf>



JS

SS

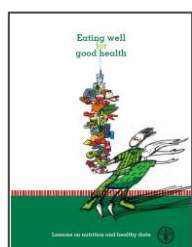
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Naturally Nourishing Namibia

RECIPE BOOK: This book includes a variety of simple, healthy and affordable meals. It includes many meals using traditional, local ingredients.

AUTHOR: GIZ (2022)

Link: <https://cloud.nafsan.org/F4R-Cookbook.pdf>



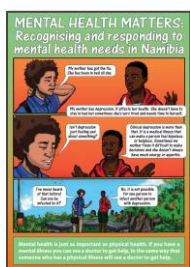
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Eating Well for Good Health

MANUAL: This compilation of easy-to-understand lesson plans exploring health and nutrition, includes the corresponding materials, learning objectives, key points, activities and engagement questions.

AUTHOR: V. Menza, C. Probart (2013)

Link: <http://www.fao.org/3/i3261e/i3261e00.pdf>



SP

JS

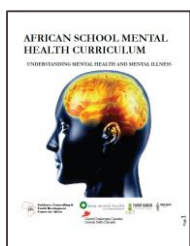
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Mental Health Matters

COMIC: Through different examples in a Namibian context, this comic highlights the significance of mental health, how to recognise issues, and respond accordingly. It includes supporting guidance and information.

AUTHOR: Legal Assistance Centre (2016)

Link: <http://www.lac.org.na/projects/grap/Pdf/comicmentalhealth.pdf>



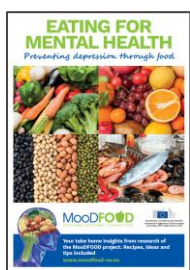
JP
SP

African School Mental Health Curriculum

MANUAL: A curriculum based on promoting mental health and resiliency of youth in Africa, this guide gives background knowledge, implementation materials and teacher’s capacity building on mental health issues.

AUTHOR: Guidance, Counselling and Youth Development Centre for Africa (2013)

Link: <https://www.mhinnovation.net/sites/default/files/content/document/African%20School%20Mental%20Health%20Curriculum.pdf>



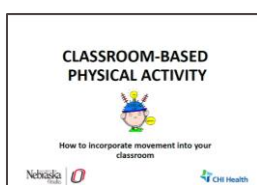
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Eating for Mental Health

MANUAL: This is a short and simple guide to which foods groups and food choices we should make to keep our brain functions healthy and therefore improve and maintain our mental health.

AUTHOR: MoodFOOD (2013)

Link: https://moodfood-vu.eu/wp-content/uploads/2019/03/eatingformental-health-16ppA5_v5-1.pdf

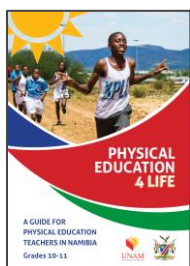


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Classroom-based Physical Activity

PRESENTATION: Including activity suggestions for classroom-based physical activity, this presentation informs on the practice, it’s benefits and gives teacher guidance on how to use it.

AUTHOR: University of Nebraska, CHI Health (n.d)



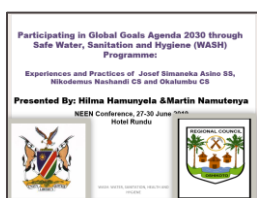
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Physical Education 4 Life

MANUAL: This Namibian guide for physical education teachers, includes information and guidance for teacher capacity building of the “for life” approach, examples of PE sessions and how to carry out lessons.

AUTHOR: Ministry of Education, Arts and Culture; Ministry of Sport, Youth and National Service (2019)

Link: <https://www.sport-for-development.com/country-collection?id=28#cat28>



T

Global Goals Agenda through the WASH Programme

PRESENTATION: Explaining the WASH programme and its significance in Namibia, this presentation looks at aspects of the programme, and how three schools are practicing its implementation.

AUTHOR: H. Hamunyela, M. Namutenya (2019)

2. FOOD GARDENING

The Ministry of Education, Arts and Culture strongly advocates for the establishment of school gardens, as part of the 2019 Namibian School Feeding Policy – see **Toolkit 3.6 – Reduce Resource Use**. School gardens provide a large range of benefits for our learners, school community, and the environment by:

- ✓ Providing us with **nutritious food** which can support the **school feeding programme**.
- ✓ Giving us the opportunity to be **physically active** and spend time outdoors.
- ✓ Improving classroom teaching with **practical** and **hands-on outdoor lessons**.
- ✓ Being a **means of income** for the school if we have surplus produce.
- ✓ Allowing learners, teachers, and other school staff to **learn food gardening skills**, which they can use to start their own food gardens at home or in the community, thereby **improving food security**.

"Gardening in schools is an element that addresses the national objectives of reducing poverty, ensure food security, and teaching our learners to appreciate food production for the improvement of the health..."

MINISTRY OF EDUCATION,
ARTS & CULTURE 2015



BEFORE WE START

Starting and maintaining a school garden is no easy task: it requires careful planning, commitment, physical labour, water, good soil, maintenance and in most cases, some form of financial investment. Once the decision to establish a food garden at our schools has been made, we can take the following general steps to prepare:

1. **ESTABLISH A GARDEN TEAM.** Form a team with fellow staff members and/or an enthusiastic group of learners. Together plan, share ideas, and assign tasks.
2. **ASSESS SCHOOL NEEDS.** What size garden does our school need?
 - a. Does our school need food for its school feeding programme?
 - b. Is it to be a garden for educational purposes only and can be smaller?
 - c. Do we want a garden with surplus to sell vegetables as a means of income for the environmental club or school?
3. **ASSESS SCHOOL RESOURCES.**
 - a. Is there space to start a garden on the schoolgrounds?
 - b. Do we have access to enough water and sunshine?
 - c. Do we already have building materials?
 - d. Do we have fertile soils?
4. **SET UP AN ACTION PLAN.** Make a list of the things we need and actions to be taken.
5. **GET THE APPROVAL AND SUPPORT FROM MANAGEMENT.**



GARDENING APPROACH

Modern commercial agriculture has become the cause of many environmental issues today. It is one of the main drivers of habitat loss, and the over-use of industrial (artificial) fertilizers has resulted in too much nitrogen and phosphorous in our natural systems, often leading to eutrophication and ocean dead zones, as explained in *Toolkit 1 – Environmental Knowledge*.

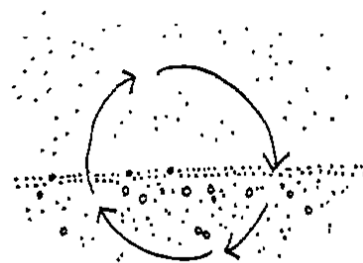
When we embark on starting or maintaining a school garden, it is important that we make sure that we use gardening methods that are *sustainable, climate-smart, organic, biodiversity-friendly* and that mimic natural ecosystems, such as the recycling of organic “waste” through composting.



Learn more about organic farming approaches from the Namibian Organic Association (NOA) - read their *Namibian Organic Production Manual* and their magazine *Living in Organic Times*.

HEALTHY SOIL: THE FOUNDATION FOR HEALTHY PLANTS

Before we plant anything, we need to make sure that the soil is healthy and fertile – this is a very important step if we want our food gardens to be successful and sustainable. Plants need many different nutrients (minerals & elements), which they absorb through their roots. We eventually obtain these important nutrients by eating the plants.

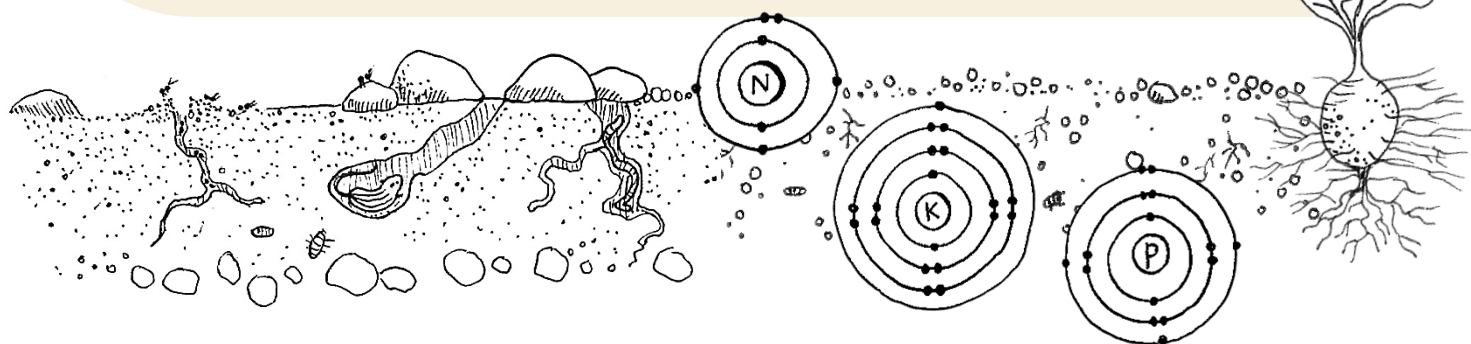


IMPORTANT PLANT NUTRIENTS

NITROGEN (N) - important for making proteins and DNA. Part of chlorophyll in plants.

PHOSPHORUS (P) - important component of DNA, RNA and cellular energy (ATP).

POTASSIUM (K) - important for overall health of plants and helps them fight disease.



Many soils in Namibia are nutrient poor. Luckily, we do not need to buy good soil, instead we can make our own by adding natural, organic fertilizers – such as compost.

COMPOSTING

Composting means to break down organic materials. It enables us to “recycle” nutrients from our organic waste back into the soil, supporting beneficial microbial communities – thereby completing important nutrient cycles. This can be done using many different methods, but the most common and simple method is **hot composting**, which is an aerobic (with air) process.



HOT COMPOSTING

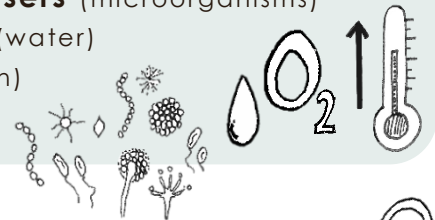
Key tips in composting:

- Get a balance of organic matter – the browns and greens.
- Make sure the material is not too large.
- Turn the compost often - help nature do its job!
- Maintain the moisture and temperature levels.

5 ESSENTIAL INGREDIENTS

for hot compost

- ✓ **Organic materials** (greens & browns)
- ✓ **Decomposers** (microorganisms)
- ✓ **Moisture** (water)
- ✓ **Air** (oxygen)
- ✓ **Warmth**



INPUTS: Organic materials

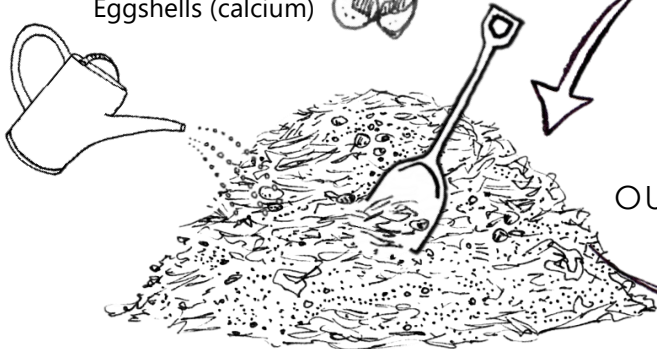


Brown (carbon): dried leaves, twigs, grasses, shredded paper, cardboard, toilet paper rolls, animal manure, nut shells.



Green (nitrogen): fresh vegetable and fruit scraps, fresh garden cuttings, coffee grounds, tea bags.

Eggshells (calcium)



OUTPUT: Compost



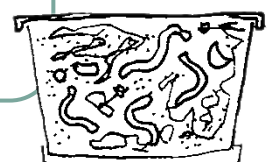
When starting a new compost heap, layer the “browns” and “greens” on top of each other, and water. Leave it like this for four days before turning it around for the first time.

Turn the compost heap around every second or third day to increase the exposure to air. Water it regularly to keep it moist.

After 3 to 4 weeks of being turned over and watered, we should have a nutrient-rich product: **compost!**

ALTERNATIVE WAYS OF COMPOSTING

We can also explore other forms of composting, such as bokashi which is an anaerobic (no air) process or using a worm farm to break-down organic matter.



RESOURCE CHECK

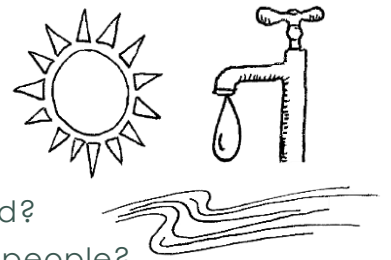
Read **Composting: Recycling Naturally** for a simple overview of the different composting methods. Learn how to use a bokashi or vermicompost system by reading **Your guide to bokashi composting** and **Your guide to worm farming**.

PLANNING & CONSTRUCTING THE GARDEN

FINDING THE RIGHT SPOT & PREPARING THE GARDEN

When determining the location of our school food garden it is important to consider the following:

1. **SPACE** – where is there enough space?
2. **WATER** – where is there access to water?
(This includes catching runoff from roofs, drains or slopes)
3. **SUN** – where would the garden get the right amount of sunlight?
4. **WIND** – where will the garden be sheltered from the prevailing wind?
5. **SECURITY** – where will the garden be protected from animals and people?



Depending on the environment of our schoolgrounds and the surrounding area, fences might be necessary to protect our school garden from larger animals. We can use dried thornbushes or consider planting indigenous hedges to increase wind protection (see the section on 'Green Infrastructure' in **Toolkit 3.5 - Bring Biodiversity into Schoolgrounds**). Investing in shade nets or even building entire greenhouses provide shade and can act as a wind break and protection against larger animals. A gate with a lock might also be necessary.



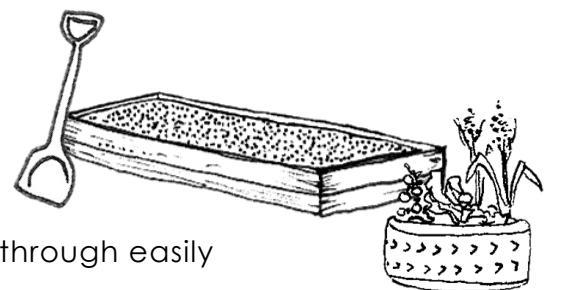
Look at the **NAFSAN Resources**: follow the straightforward **Step-By-Step Guide, Your Own Garden, the Simple Way!** video and brochure on how to set up your school garden.



RAISED BEDS

Using **raised beds** can have many advantages:

- One can determine the composition of the soil (by adding compost, sand or other elements)
- The soil can get good drainage – it can let water flow through easily
- Raised beds reduce soil erosion
- One does not need to bend down too far to work in the garden
- One can easily keep track of which type of crop one has planted when and where



Raised beds can be made using inexpensive and upcycled materials, such as old tires, wooden planks, drums etc. They should not be more than 1.5 meters wide, so that one can easily reach the middle from any side.



PLANTING

Water the garden bed *before* seeding. When we are finally ready to plant our seeds or seedlings, we need to make sure to follow the planting instructions – different types of crops need different amount of space. Add a little bit of compost or manure and mulch lightly, such as dry grass. Make sure not to use too much mulch in the beginning, otherwise our seeds/seedlings may not receive enough sunlight. Once our seeds have grown into plants, a thicker layer of mulch can be added. If we are growing plants that need a trellis (such as tomatoes, beans, cucumber, and granadilla) add it to the bed before seeding.



INDIGENOUS CROPS

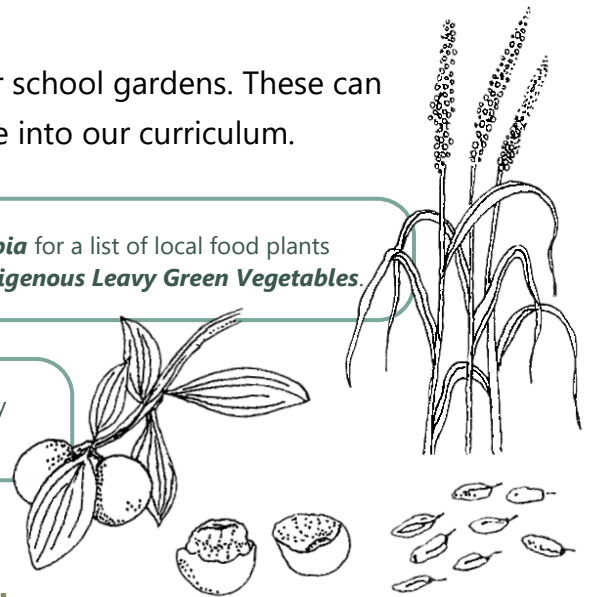
We can promote our traditional food and medicinal plants in our school gardens. These can also help to teach, conserve and integrate indigenous knowledge into our curriculum.



Refer to **pg. 11 – 13** in *Gardening for Health in Namibia* for a list of local food plants that we can grow and forage and read the brochure on *Indigenous Leavy Green Vegetables*.



Learn more about Namibia's indigenous plant products by reading *Indigenous Plant Products of Namibia*.



COMPANION PLANTING & CROP ROTATION

Different varieties of plants need varying amounts and types of different nutrients. Planting a selection of plants in the same bed, for example beetroot, garlic and lettuce, so that they support each other to grow better is known as **companion planting**.

Planting the same type of crop in the same soil patch after a harvest, causes the soil to become depleted of the same nutrient. Therefore, it is essential that one does **crop rotation**.

Both companion planting and crop rotation improve soil health and help reduce pests and weeds! By planting a diversity of plants and not a monoculture, pests are less likely to establish themselves.

COMPANION PLANTING

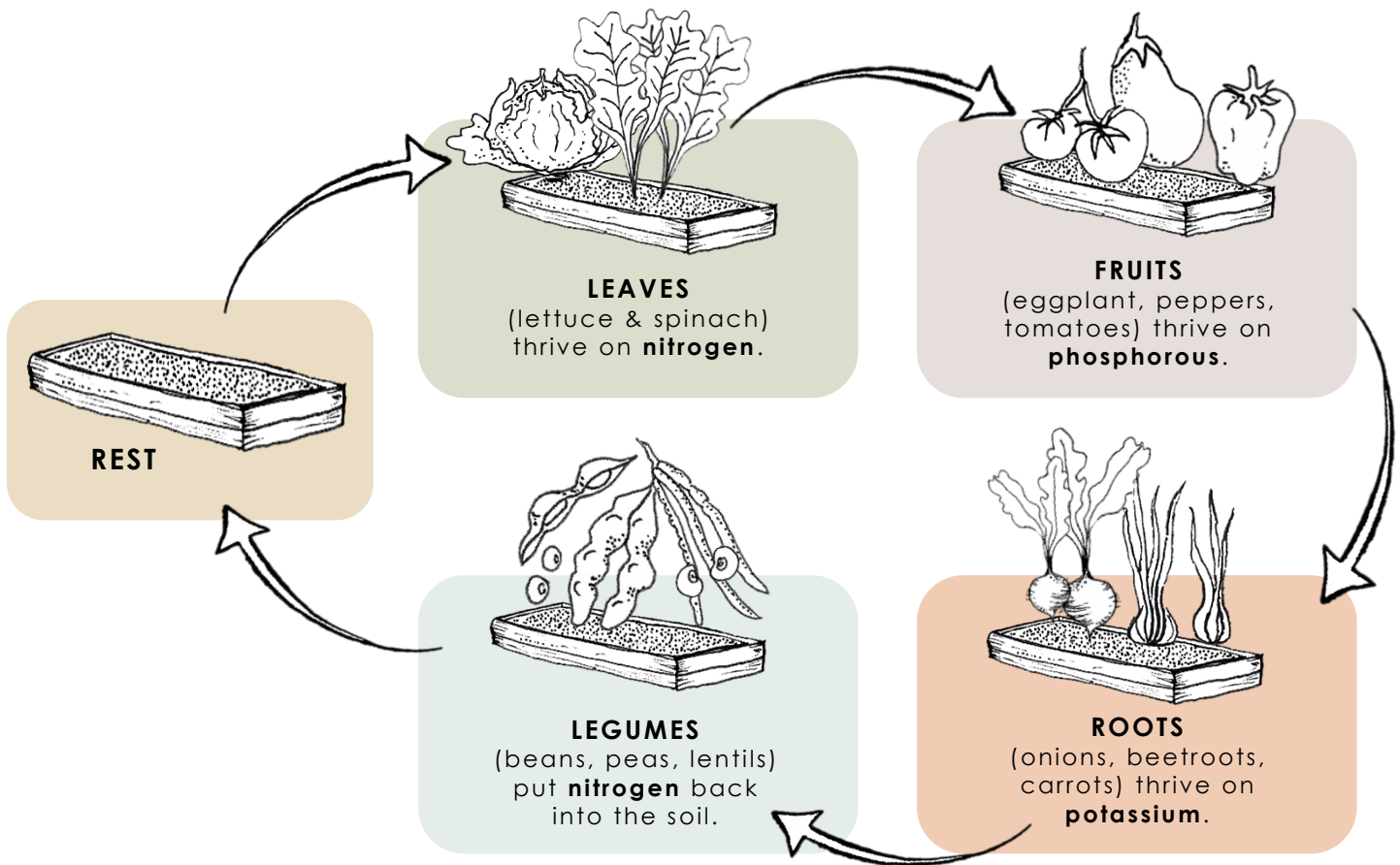
A natural way of growing vegetables and other plants together in the same bed, so they support each other to grow better and healthier.

CROP ROTATION

The practice of planting a different crop in a soil patch after each harvest. This prevents the soil from being depleted of the same nutrients.



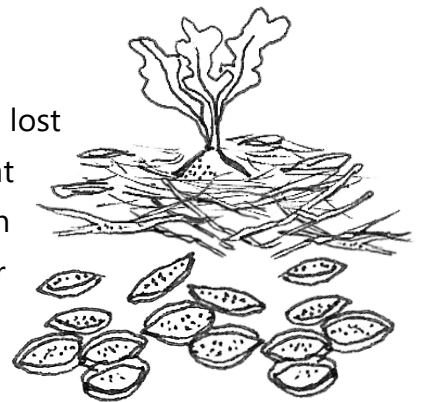
There are various ways in which to do crop rotation - this is one common example:



MAINTAINING OUR GARDEN

WATERING & MULCHING

By choosing when to water our crops and by mulching, we reduce water being lost through evaporation. Watering plants cools them down and reduces their heat stress. Watering early morning and late afternoon, avoids the heat of day when evaporation rates are highest. **Mulching** and planting under shade further reduces water evaporation from the soil, keeping it moister for longer.



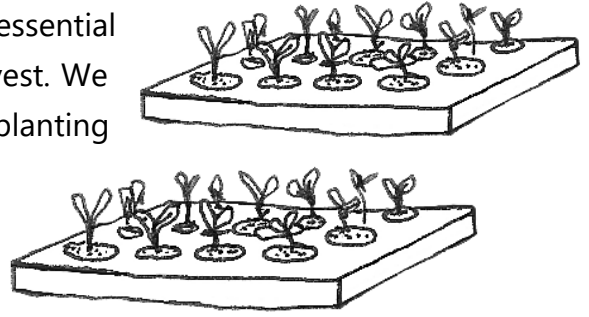
PROTECTION AGAINST PESTS & DISEASES

In addition to companion planting and crop rotation, we can keep pests away by planting garlic, mint, and African marigold in between our crops. Make sure to use **natural insecticide**. Every time we spend time in the garden, do a round of **weeding**, as these will compete for nutrients with our crops.



GROWING SEEDLINGS (SUCCESSION PLANTING)

To have fresh produce and enough quantities over time, it is essential that we carefully plan *when*, *where* and *what* we plant and harvest. We need to grow a constant supply of new seedlings, to be ready for planting once other crops are ripe for harvesting – this is called **succession planting**. Seedlings need shade, so keep our seedling nursery under a tree or extra shade net.



OTHER FOOD GARDENING METHODS

FRUIT ORCHARDS

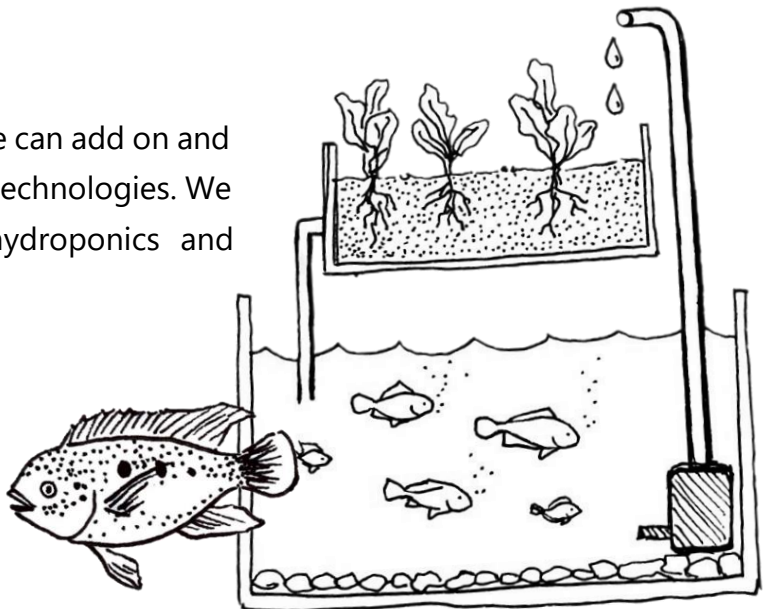
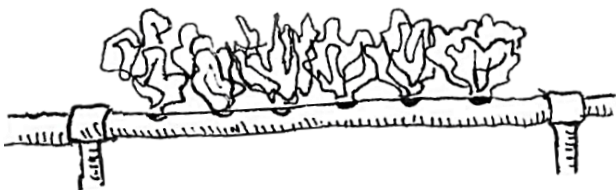
In some parts of Namibia the climate is suitable to grow fruit trees. Fruit trees, such as lemon, olive, avocado, mango and guava trees are sold at most nurseries. Fruit orchards do require more space and careful planning.



Refer to **pg. 236 – 246** in *Subtropical Fruit Production (Module 6)* from the South African **Climate-Smart Agriculture Training Manual**, for an overview of the climatic requirements for various subtropical crops.

HYDROPONICS & AQUAPONICS

As we are gaining experience with our gardens we can add on and try out different methods, approaches as well as technologies. We can also try out new approaches such as hydroponics and aquaponics.



For more information on aquaponics and hydroponics, study the **Think Namibia's Aquaponics Resources** which includes videos, factsheets, and a poster.

RESOURCES FOR FOOD GARDENING

Junior Primary

JP

Senior Primary

SP

Junior Secondary

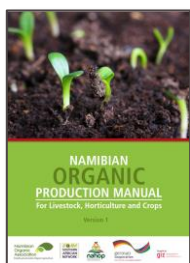
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Senior Secondary

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Teacher

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Namibian Organic Production Manual

MANUAL: This manual contains in-depth information about organic farming, tailored to the Namibian environment. There are chapters on the history of organic agriculture, on soil fertility, pest and disease control and much more.

AUTHOR: Namibian Organic Association (n.d.)

Link: <https://noa.org.na/mobile/resources/namibia-organic-production-manual>



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Living in Organic Times

MAGAZINE: This annual magazine provides interesting and current articles on organic farming in Namibia and in the world.

AUTHOR: Namibian Organic Association (2012-2014)

Link: <https://noa.org.na/mobile/resources/2014-05-organic-times>



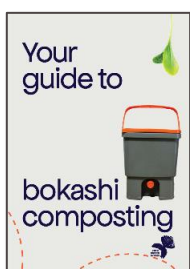
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Composting: Recycling Naturally – Simple Steps for Starting at Home

HOW-TO: This is straight-forward and visual guide on how to set up a compost system at your home. Adapt it to the school context.

AUTHOR: South Carolina Department of Health and Environmental Control (2018)

Link: <https://scdhec.gov/sites/default/files/Library/OR-1705.pdf>



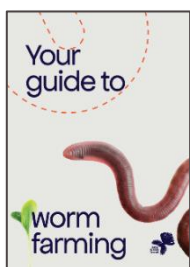
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Your Guide to Bokashi Composting

HOW-TO: This is a simple, straight-forward guide on how to set up a bokashi composting system. Bokashi is useful for a variety of kitchen waste.

AUTHOR: Zerowaste Taranaki (n.d.)

Link: <https://www.npdc.govt.nz/media/madg11ef/your-guide-to-bokashi-composting.pdf>



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Your Guide to Worm Farming

HOW-TO: This is a simple, straight-forward guide on how to set up a vermicompost or a worm farm.

AUTHOR: Zerowaste Taranaki (n.d.)

Link: <https://www.npdc.govt.nz/media/vibfk0oo/your-guide-to-worm-farming.pdf>

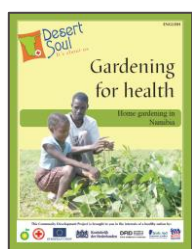


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NAFSAN Resources

BROCHURE, VIDEO, POSTER & WEBSITE: The Nutrition and Food Security Alliance of Namibia (NAFSAN) has a range of “How to” resources on how to start and maintain your own garden, using permaculture principles.

AUTHOR: NAFSAN (2020)
Link: <https://www.nafsan.org/>

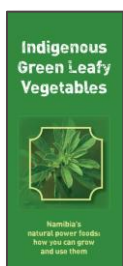


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Gardening for Health: Home Gardening in Namibia

MANUAL: This Namibian resource explores gardening and health. It is designed as an educational guide on establishing a home food garden specifically in the Namibian context.

AUTHOR: B. van der Merwe, S. Fitchat (2009)
Link: <http://the-eis.com/elibrary/sites/default/files/downloads/literature/Gardening-Booklet-Eng-LQ.pdf>

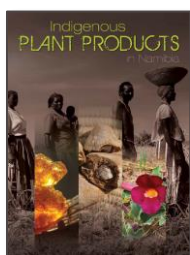


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Indigenous Green Leafy Vegetables

BROCHURE: This brochure gives information about indigenous leafy greens, such as *Ombidi*, *Ekwakwa* and *Omutete*.

AUTHOR: S. Carr, B. Malima, P. Chimwamurombe (2011)
Link: <http://the-eis.com/elibrary/sites/default/files/downloads/literature/Indigenous%20Green%20Leafy%20Vegetables.pdf>

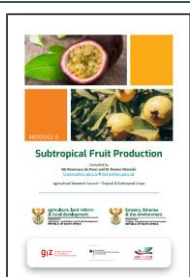


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Indigenous Plant Products

BOOK: This book explores indigenous plants and the corresponding products that have come about as a result of the plant’s natural properties. It explains the product commercialisation in Namibia.

AUTHOR: Venture Publications (2014)
Link: <http://the-eis.com/elibrary/sites/default/files/downloads/literature/Indigenous%20Plant%20Products%20in%20Namibia.pdf>



SS
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Subtropical Fruit Production

MANUAL: This is Module 6 of the *Climate-Smart Agriculture – Training Manual*, developed by the Agricultural Research Council (South Africa). It provides instructions on how to care for subtropical fruit crops.

AUTHOR: Agricultural Research Council – Tropic & Subtropical Crops (n.d.)
Link: <https://www.arc.agric.za/arc-iscw/CSA-Toolbox/Pages/assets/modules/6.pdf>



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Think Namibia: Aquaponics Website

FACTSHEET & VIDEO: This factsheet and video are some of the resources on the Think Namibia website. There are a range of “How to” resources providing guidance on how to set up and maintain your own aquaponics and hydroponics system.

AUTHOR: Think Namibia (2020)
Link: <https://www.thinknamibia.org.na/projects/aquaponics>

3. 21ST CENTURY READINESS

SDG4 – Quality Education calls upon us as educators to prepare our learners to be active citizens that have the knowledge, skills, values to positively contribute to sustainable development. The term 21st century skills refers to a wide set of skills including knowledge, life skills, career skills, personal traits that are critically important for young people to be able to do well in our world today and in the future. In our schools we are mostly focused on teaching the foundational skills such as reading, writing, mathematics, and ICT that are the beginning to preparing our learners.

Successful implementation of teaching foundational skills is that everyone learns differently. Although it is challenging to cater for every learner’s needs and individual personality when teaching, we can use various teaching methods to work towards quality education.



For a valuable resource that speaks to supporting learners differing needs, see **NIED’s Learning Support Teachers’ Manual**.

As we have learned in **Toolkit 1 – Environmental Knowledge**, we are faced with ‘wicked’ environmental challenges and an ever-evolving world that require us to think in new ways, work together and be prepared to act. Our learners are the innovators and leaders of tomorrow - let us practice ESD with this in mind and prepare our learners with 21st century learning skills and career guidance!

21ST CENTURY LEARNING SKILLS

We can focus on the four key **learning skills** of:

CREATIVE THINKING is developing new ideas and solutions by using an open-ended approach. It includes:

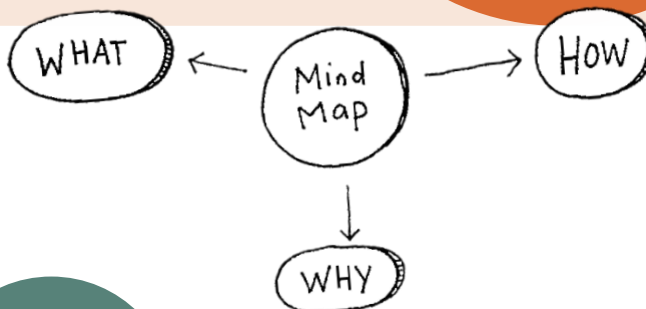


- Brainstorming and questioning existing and new ideas
- Imagining and designing without limitations to explore new possibilities
- Looking from new perspectives to redefine or explore from a different angle



MIND MAP

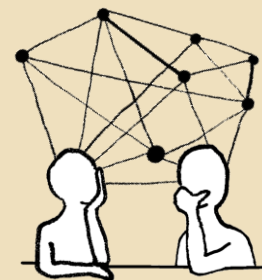
A non-linear learning tool to capture ideas, concepts, themes about a given topic. It can be helpful for brainstorming and to find new connections and perspectives.



CRITICAL THINKING is the analysis of information in order to better understand and evaluate it. It includes:



- Analyzing: breaking something down into parts, examine each part and understand how the parts fit together
- Using compare and contrast
- Understanding cause and effect
- Defining, describing, classifying

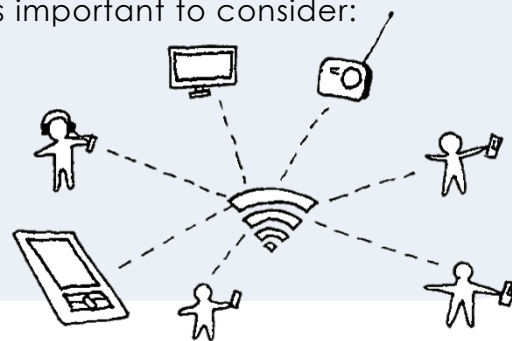


COMMUNICATING is the process of sharing or exchanging information.

In the communication process there is the sender of information, the message, the medium, the context and the receiver. Understanding how to adapt the message based on the medium, context and receiver of information is essential for good communication skills. Today we have access to so many new forms of communication that we can use to our advantage if used correctly. It is important to consider:



- Analyzing the situation
- Choosing the right medium
- Giving a clear message that fulfils the purpose of the sender
- Listening and comprehending



COLLABORATING is working together for a common goal. It normally applies critical thinking, creative thinking and communicating into a group setting. It includes:



- Teamwork and leadership
- Goal setting and focused deliberation
- Managing time, delegation of responsibility and resolving conflicts
- Evaluating and decision-making



"Alone we can do so little; together we can do so much."

HELEN KELLER

A large majority of the activities throughout **Toolkit 3 – Let's Get Practical** require us to apply 21st century skills in our teaching. We should therefore be aware and conscious of these complementary objectives and skills knowledge when implementing our ESD activities.



Use the six-part comic **Free Rangers** to explore with senior primary school students which 21st century skills the rangers need to use to solve the problem. See **Inquire: A Guide to 21st Century Learning Sampler** for good ideas to teaching and incorporating skills into ESD.

CAREER GUIDANCE

Together with developing learning skills, it is vital to help learners to discover possible jobs and careers. With the environmental and socio-economic challenges of the 21st century, come new, exciting and ever-evolving career opportunities. As ESD practitioners, we can assist our learners to make informed career decisions in the evolving green economy.

GREEN ECONOMY

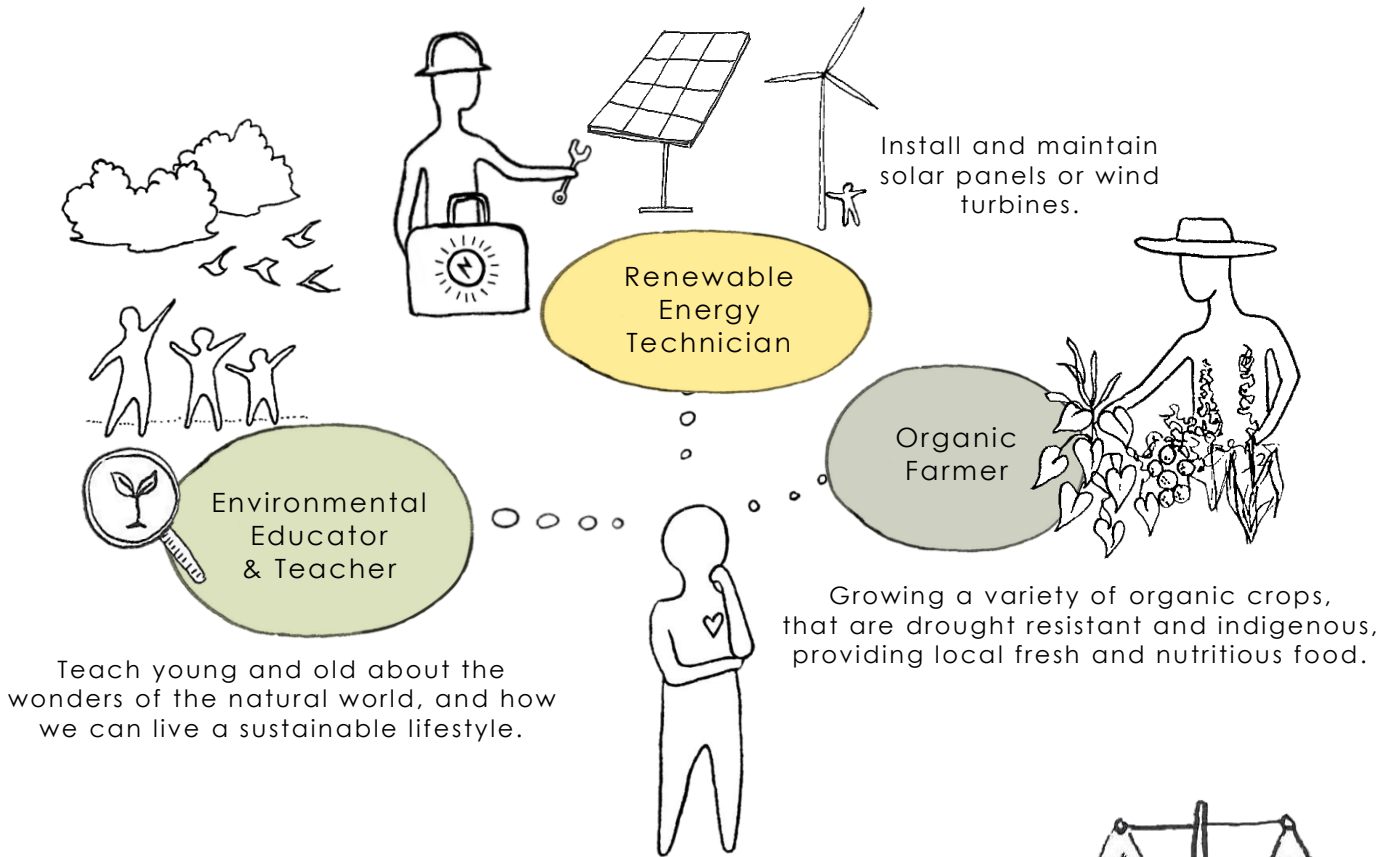
one that results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities.

UNEP

RESOURCE CHECK

Explore the green economy with your learners in the *YouthXchange: Green Skills and Lifestyles Guidebook*.

All jobs today are in some way connected to developing a green economy as a pathway to sustainable development. We can help our learners explore different types of jobs.



RESOURCE CHECK

Use *NaDEET's It's Time to Work* and the *MEFT Career Guide 2021* to explore possible green jobs with secondary school learners.

RESOURCE CHECK

The *Live your Passion* series from the *National Training Authority (NTA)* showcases many green jobs. Watch the videos and job profiles about **Water Treatment Technician**, **Solar Installation Technician**, **Tour Guide** and **Agricultural Technician** with your learners. Explore the *NTA's* website for more videos.

RESOURCES FOR 21ST CENTURY READINESS

Junior Primary

JP

Senior Primary

SP

Junior Secondary

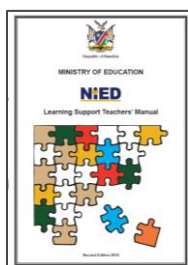
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Senior Secondary

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Teacher

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Learning Support Teacher's Manual

MANUAL: This manual from NIED, guides teachers on providing learning support through identifying needs, reasons for difficulties and organisation of support.

AUTHOR: The National Institute for Educational Development (2014)

Link: http://www.nied.edu.na/assets/documents/02Syllabuses/06InclusiveEducation/Learningsupport/IE_TeachersManual_Apr2015.pdf



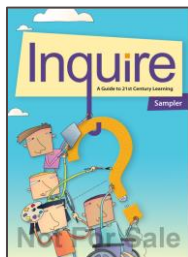
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JS

Free Rangers

COMIC: Through the stories of fictional characters ("free rangers") set in the future, this comic book series explores issues of environmental challenges that the youth, as custodians of the world, must overcome.

AUTHOR: N. Namises, N. Vyklicky (2018)



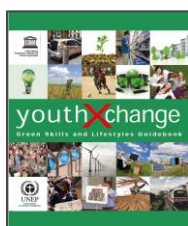
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Inquire: A Guide to 21st Century Learning

MANUAL: This sample manual guides teachers on activities that promote 21st century learning approaches.

AUTHOR: R. King, C. Erickson & J. Sebranek (2012)

Link: <https://k12.thoughtfullearning.com/products/inquire-elementary>



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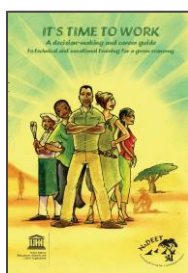
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Green Skills and Lifestyle Guidebook

BOOKLET: This guide focuses on the green economy, green jobs and sustainable life skills that protect and sustain the planet.

AUTHOR: UNESCO, UNEP (2016)

Link: <https://www.unep.org/resources/publication/youth-xchange-green-skills-and-lifestyles-guidebook>



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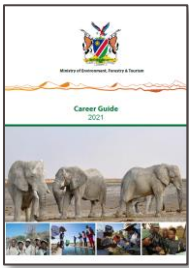
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It's Time to Work

BOOKLET: This guide on decision-making and career guidance, explores careers for a green economy by informing on various options through TVET. It includes practical guidance on career decisions.

AUTHOR: NaDEET (2013)

Link: https://nadeet.org/sites/default/files/pdf/educational_material/Its%20Time%20to%20Work.pdf



JS

SS

Career Guide 2021

BOOKLET: This career guide developed by the Ministry of Environment, Forestry and Tourism (MEFT) illustrates jobs and careers in the conservation sector. It outlines the job, its key responsibilities and potential employers.

AUTHOR: Ministry of Environment, Forestry & Tourism (2021)

Link: <https://n-c-e.org/sites/default/files/2022-03/MEFT%20Career%20Guide%20-%20Namibia.pdf>



JS

SS

Live Your Passion Series

VIDEO, PROFILE & WEBSITE: These videos and profiles provide in-depth information about green technical and vocational professions offered by NTA, such as agricultural technician, tour guide, solar installation technician and water treatment technician, by showcasing Namibians in their everyday work. The website contains more videos and profiles from the *Live Your Passion* series about various technical professions offered at NTA.

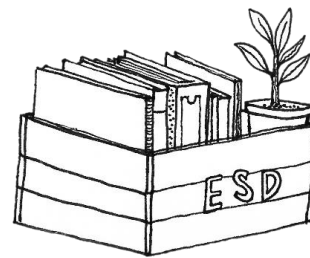
AUTHOR: NTA (n.d.)

Link: <https://careerportal.nta.com.na/>



TEACH for ESD

PROMOTE LEARNER WELL-BEING
is part of the **TEACH FOR ESD TOOLKIT**.



Improving ESD Teaching & Learning Experiences in Namibia