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SPROUTING ENTREPRENEURS

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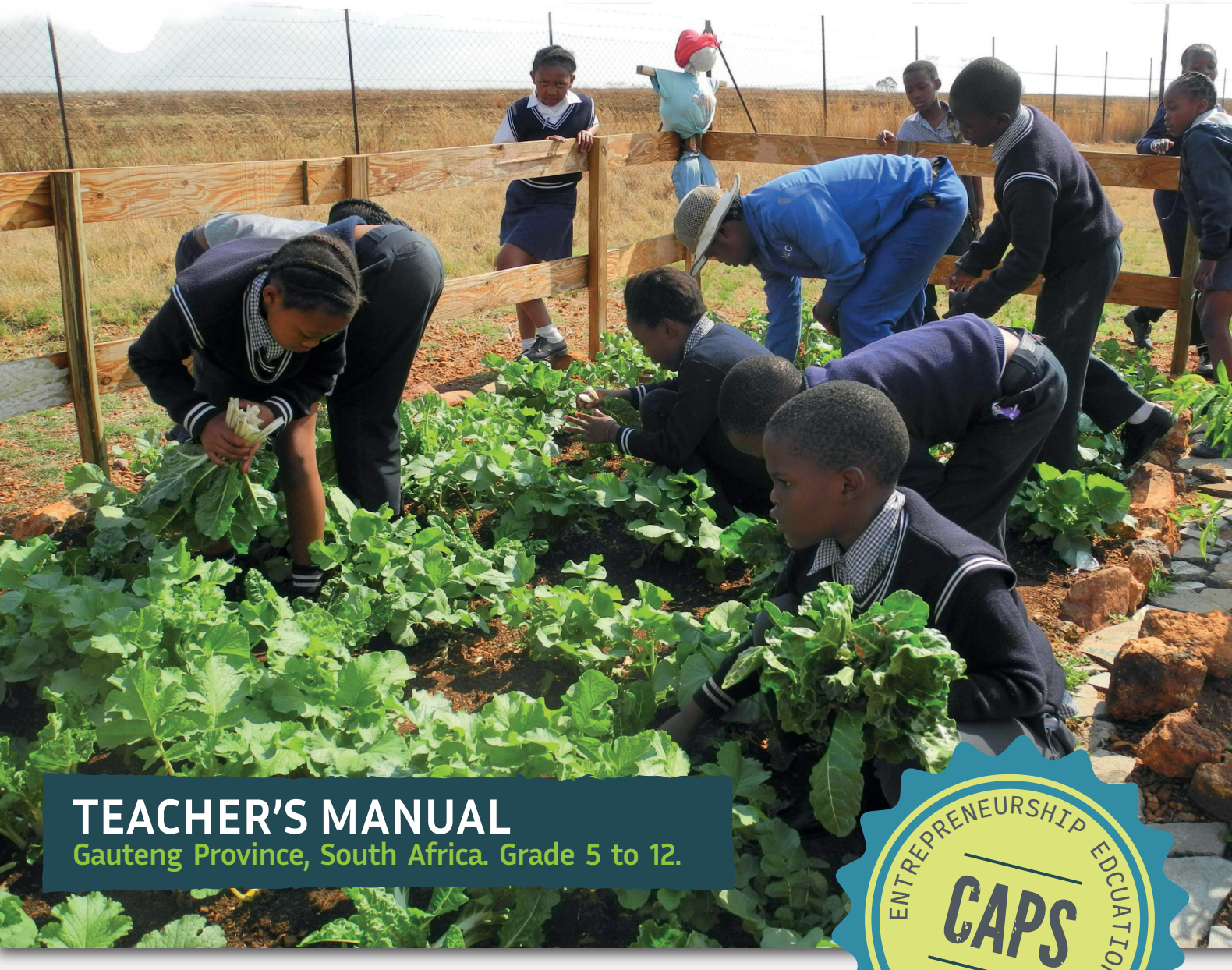

TEACHER'S MANUAL

Gauteng Province, South Africa. Grade 5 to 12.

ENTREPRENEURSHIP EDUCATION FOR CAPS

SUSTAINABLE DEVELOPMENT GOALS

On behalf of the Austrian Federal Ministry of Education, Science and Research (BMBWF)
In Partnership with the Gauteng Department of Education (GDE)

Federal Ministry
Education, Science
and Research

GAUTENG PROVINCE
EDUCATION
REPUBLIC OF SOUTH AFRICA

SPROUTING™ ENTREPRENEURS

growing change



Sprouting Entrepreneurs packaging their produce for market day (photo by participating teachers).

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Dr. Sabine Mahlknecht (BMBWF): *"I have been a teacher, trainer, lecturer, schoolbook author and have worked on projects in international development education and food education in Austria and South Africa. Working on Sprouting Entrepreneurs has been personally and professionally enriching, for which I feel very grateful."*

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SUSTAINABLE DEVELOPMENT GOALS

Sprouting Entrepreneurs supports the Sustainable Development Goals.

Matthias Forcher-Mayr

Sabine Mahlknecht

SPROUTING™ ENTREPRENEURS

TEACHER'S MANUAL, Gauteng Province, South Africa. Grade 5 to 12.



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List of acronyms

BMBWF	Austrian Federal Ministry of Education, Science and Research
CAPS	Curriculum and Assessment Policy Statement
DAFF	Department of Agriculture, Forestry and Fisheries
DBE	Department of Basic Education
EC	Eastern Cape
ECDoE	Eastern Cape Department of Education
EMS	Economic Management Sciences
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FET	Further Education and Training
GDE	Gauteng Department of Education
ISCED	International Standard Classification of Education
IVET	Initial Vocational Education and Training
PLC	Professional Learning Community
SAHANES	South African National Health and Nutrition Examination Survey
SDG	Sustainable Development Goals
SE	Sprouting Entrepreneurs
SGB	School Governing Body
SMT	School Management Team
TVET	Technical Vocational Education and Training
UN	United Nations
WHO	World Health Organization

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Young Sprouting Entrepreneurs presenting their bottle gardens.

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In 2019 the project was commissioned by the Gauteng Department of Education (GDE) and piloted in the Gauteng West District in the Magaliesburg area (2019-2020). We would like to thank the learners, teachers and principals of the following schools for their participation in the project:

Primary schools:

1. Brandvlei Primary School
2. Die Poort Primary School
3. Laerskool Hekpoort
4. Mablomong Primary School
5. Mphe-Thuto Primary School
6. Randgold Primary School
7. Setholela Primary School
8. Thuto-Bokamoso Primary Farm School

Secondary Schools:

1. Ithuteng Secondary School
2. Magaliesburg School of Specialisation for Agriculture

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Picture 1: The training group at Magaliesburg School of Specialisation for Agriculture (photo by participating teachers).

PART I: THE PROGRAMME



Picture 2: Explaining the Sprouting Entrepreneurs project.

1. Introduction

Sprouting Entrepreneurs is a programme that supports entrepreneurship education for the South African CAPS curriculum, as an extra-curricular programme (CAPS+) and through subject integration from grade 5 to grade 12. The programme is based on the concept of the Entrepreneurship Learning Garden at school. Learners assess opportunities and constraints, plan and work their garden creatively, overcome challenges, harvest, market and sell or share their products with others. They tackle key areas of entrepreneurship education, defined as spotting opportunities and turning ideas into action through which financial, social, cultural, civic or ecological value is created. Using the garden to create value leads to combined learning outcomes in the areas of agriculture, food and entrepreneurship education (AFE).

Sprouting Entrepreneurs' project goals

- To improve the quality of entrepreneurship education and 21st-century skills learning at schools.
- To develop basic vocational skills in agriculture, in connection with entrepreneurship.
- To support a positive notion of agriculture and vocational education as an alternative educational pathway.
- To build on and develop the strengths of rural schools.
- To improve the quality of food education and food provision at schools.

2. Methodology

Sprouting Entrepreneurs builds on a learning concept developed on behalf of the Austrian Federal Ministry of Education, Science and Research (BMBWF), to strengthen learners in marginalised urban and rural areas of South Africa. Its aim is to promote a culture of learning that focusses on challenges, action, inquiry, experience, problem-solving, etc. within the larger concept of project-based learning. The programme was piloted in the school section of Ithuba Community College in Katlehong, Johannesburg with the aim of enriching the national curriculum through a CAPS+ programme (extracurricular) and subject integration. In 2017, the Eastern Cape Department of Education commissioned an adaption of the agriculture, food and entrepreneurship (AFE) stream of the programme to be piloted in the Alfred Nzo East educational district of the Eastern Cape province, under the oversight of the TRINSET Teacher Training College in Mthatha. In 2019, the Gauteng Department of Education commissioned the implementation of a Sprouting Entrepreneurs pilot programme.

The content of this book developed over the period 2015-2019 and was later adapted for use in Gauteng province. It comprises modified teaching units that were designed and tested by the authors in Katlehong, together with learners. In addition, new material was developed for the current project. All content tries to reflect interaction and discussion with learners and fellow teachers, as well as the socioeconomic environment in which teaching and learning took place. The development of the first edition of this book was tied to a training cycle for participating teachers, principals and department officials that lasted 9 months. New material was developed between workshops. At each workshop, participating teachers received hard copies of draft chapters. They were invited to use the material in their lessons and give feedback in the following workshop. The current version of the manual includes changes of short sections, names and pictures of participating teachers.

3. The Sprouting Entrepreneurs training curriculum

A training cycle for teachers builds on the idea of a project in the school-based Entrepreneurship Learning Garden. Participating schools implement a project with learners as part of the Entrepreneurship Learning Garden challenge (see III/3.). The various steps of the school projects are facilitated and reviewed throughout the training cycle and school-based results are presented at the final event. A training group consists of 10-15 schools and 30-35 teachers. Over the course of 60 hours, the training focusses on the didactics of open and project-based learning, concepts and methods of basic agriculture, and food and entrepreneurship education, while drawing on the experiences of teachers throughout the project. A capability approach, informed by the work of Amartya SEN (1997), is used to critically analyse both the socioeconomic conditions in which opportunities present themselves and ideas evolve, and the idea of entrepreneurship education. Finally, entrepreneurship education is discussed from the perspective of school development. The properties of, and steps towards, an entrepreneurship school are laid out. An additional 18 training hours focus on the consolidation of the programme at schools and the formation of a PLC per training group.

As part of the training, schools are supported in sustainably implementing Sprouting Entrepreneurs through CAPS+ and subject integration. All participating schools are supplied with this manual in hard copy and in digital form. Training follows a planting cycle. A first harvest is possible before the December break.



Picture 3: Planning for the school-based Entrepreneurship Learning Garden.

A second and third harvest follows between January and April, depending on the plants chosen. However, the academic year (January – December) can be efficiently used for vegetable and seedling production.

ACTIVITY	DURATION	PARTICIPANTS	TRAINING HOURS
1. Basics/didactics of SE I	3 days/September	Teachers, principals, department officials	18
2. Distribution of Entrepreneurship Learning Garden starter pack to participating schools	September	Teachers, principals, department officials	-
3. Basics/didactics of SE II	3 days/October	Teachers, department officials	18
4. School visits to support induction phase of subject + 1 workshop day	3+1 days/February	Teachers, principals, department officials	6
5. Basics/didactics of SE III	3 days/March	Teachers, department officials	18
6. Revision of Sprouting Entrepreneurs teacher manual	throughout	Teachers, department officials	-
7. Final event: Entrepreneurship Learning Garden Challenge/ distribution of teaching manual	1 day/April	Learners, parents, teachers, principals, department officials, external stakeholders	-
8. Follow up on implementation/ formation of professional learning community (PLC)	3 days September – November	Teachers, principals, department officials	18
TOTAL TRAINING HOURS			78

Table 1: Sprouting Entrepreneurs teacher training curriculum.

4. How to use this manual

This manual is divided into four main parts. PART I introduces the programme, while PART II discusses key concepts of teaching Sprouting Entrepreneurs, its principal learning outcomes and links to CAPS. PART III supports implementation at school level. PART IV consists of teaching material for each of the three years of the programme. Each chapter is broken down into four sections, providing teachers with a chapter overview, topic-related knowledge, suggestions for learner activities and learner reflection. All the chapters state the relevant AFE combined learning outcomes. Entrepreneurship competences follow the Youth Start Reference Framework for entrepreneurship competences (YOUTH START 2019).



Figure 1: Structure of the teaching resources section.

- The project extends to both primary and secondary schools. As such, the book supports teachers of grades 5 to 12. The teaching section is designed to guide teachers through a process consisting of exercises and projects over the course of three academic years. The teacher should adapt the content to fit the age of learners and the teacher-learner ratio, as well as the specifics of the school and the surrounding community. While the book provides teaching content that follows the Sprouting Entrepreneurs curriculum, it is by no means exhaustive. Teachers are encouraged to draw on their subject-specific expertise and experience of teaching and learning in their communities to modify and enrich the book's content.

- The book supports the teaching of Sprouting Entrepreneurs as CAPS+ (extracurricular) and through integration with CAPS subjects. It is possible to use this resource for once-off projects or exercises. However, to foster the combined AFE learning outcomes, it is recommended that Sprouting Entrepreneurs be organised as a three-year CAPS+ programme, or through an integrated annual teaching plan composed by the relevant subject teachers (see III/1.2).

- Few additional materials are required in order to implement this book, and these should be possible for schools to obtain. Except in a few instances, the book does not require a copy machine. Where necessary, instructions can be copied onto the board or a poster. In general, most of the contact time should be consumed by learner-centred activities in or related to the Entrepreneurship Learning Garden.

- Where possible, flipchart paper (a stand is not needed) and masking tape (available at a hardware store) are good investments for group work. The paper is used in group exercises and for presentation, and can be cut in half to minimise the use of resources. Learners can also record their ideas on a concrete floor using chalk.



Picture 4: "Let's get to work!" – preparing for the Entrepreneurship Learning Garden.

(photo by participating teachers)

PART II: TEACHING CONCEPTS



Picture 5: Teacher training workshop, Magaliesburg, 2019.

1. Using Sprouting Entrepreneurs to build on the CAPS curriculum

Sprouting Entrepreneurs aims at addressing key societal challenges and is framed by the following learning areas and outcomes:

Agriculture: the approach taken to agriculture and gardening is grade-dependent. At a secondary school level, agriculture/gardening is regarded as a TVET qualification for the respective economic sector (i.e. FET level; blueprint CAPS 3 stream model – technical occupational stream). Sprouting Entrepreneurs looks beyond core vocational skills to address the creative and entrepreneurship properties of a professional profile. This can assist in boosting the attractiveness of agriculture as an occupational trade, which is a key property of every successful TVET system. Attractiveness is double-sided: Learners and legal guardians expect quality training and labour market relevance – i.e. the likelihood of finding employment in the field of training. Similarly, employers seek to employ graduates who have received quality training that is relevant to industry demands. Attractiveness also relates to how TVET is viewed by learners and society, either as a route to a highly skilled position or as a second choice non-academic educational pathway – a view that is a result of training quality and the labour market situation. From another angle, Sprouting Entrepreneurs helps to prepare learners for a reality in which the informal economy might offer the only possibility of income generation. While the informal economy consists of a large number of survivalist businesses created out of necessity, skilled entrepreneurs can build on the opportunities available and further develop their skills.

In the lower grades, Sprouting Entrepreneurs breaks with predominantly theoretical academic routine and introduces learners to initial vocational learning, in the form of basic agricultural knowledge and skills. As primary school learners practise basic agriculture in the Entrepreneurship Learning Garden, they can experience and reflect on a potential non-academic educational future pathway. Lastly, agricultural competence can improve household production as a source of additional food and income, and strengthen urban and rural livelihoods.



Picture 6: Food education – experimenting in the Entrepreneurship Learning Garden.

Food education: Only 45.6% of the South African population are food secure; the average diet is "*energy dense but micronutrient poor*", and 39.2% of females are obese (SHISHANA ET AL. 2013, p. 10, 35, 144). Food insecurity and its consequences affect people's level of activity and their overall health. Food insecurity spans a continuum from buying cheaper, less nutritious food to skipping meals and experiencing hunger from a lack of food. In turn, this can lead to micronutrient deficiencies, overweight, obesity and stunted growth in children, and can be accompanied by stress, which again affects eating behaviours (FAO ET AL. 2018). Food consumption is also a product of people's narratives and values around food, as well as the influence of large food corporations – i.e. "Big Food" (KROLL 2016). Practical evidence and research confirm the positive outcomes of garden-based learning regarding food behaviour (BLAIR 2009; HEIM, STANG & IRELAND 2009). Sprouting Entrepreneurs links to this challenge by addressing food education at the levels of knowledge, skills and attitudes. "Dealing with food and vegetables" is addressed as food production and entrepreneurship, nutritional value and the (de-)construction of narratives around food. Viewing food education from the perspective of creating a livelihood strengthens understanding of the effect of household production on expenses and income.

Entrepreneurship education: The concept of entrepreneurship education at a secondary, and more recently, primary education level is receiving growing attention internationally. Arguments for the importance of entrepreneurship education include high levels of youth unemployment, low levels of entrepreneurial activity, as well as the complexity of today's society, which calls for innovative problem-solvers. The 2011 CAPS curriculum includes entrepreneurial content from as early as grade 7, through the subject EMS. The DBE has issued a blueprint for the implementation of entrepreneurship education in schools. In entrepreneurship education, a general distinction can be made between a narrow and a wide definition. The former is more focussed on venture creation and financial value, while the latter emphasises the creative development and implementation of ideas as a means of sustainable societal development and includes the creation of non-financial value. Sprouting Entrepreneurs links to a wide definition. It looks at entrepreneurship as a transversal competence, which aims at supporting young people in successfully navigating the transition from school to work, and in contributing to society in a productive, solidary and sustainable manner. This approach to entrepreneurship education focusses on "real-world challenges". The garden as a medium of instruction provides a real setting for a challenge. From a young age, learners can experience entrepreneurial activity as a lively holistic process.

The learning areas of agriculture, food and entrepreneurship (AFE) consist of single and combined learning outcomes. For instance: the ability to produce vegetables can be regarded as an outcome of agricultural education. Planning which vegetables to grow to improve nutrition falls under the learning area of food education (what, how much and why?). The ability to start, creatively plan and manage a project, as well as the value-based handling of produce are outcomes of entrepreneurship education. Each of the three AFE learning areas becomes enriched in their combination, thus leading to integrated learning outcomes. AFE combined learning outcomes are based on learner-centred projects and case studies at a community level.



Figure 2: Sprouting Entrepreneurs – combined AFE learning areas and outcomes.

In addition to entrepreneurship education policy and the CAPS three-stream model, Sprouting Entrepreneurs links to the following policy initiatives:

- The Rural Education Policy (draft) aims at improving the quality of education in rural schools by drawing on local resources, knowledge systems, experiences and challenges. It refers to agricultural education from the perspective of the labour market and the environment. Sprouting Entrepreneurs' learning areas overlap with the draft policy as they contribute to its intended outcomes, such as "*mobilising rural resources*", strengthening rural identity and focussing on agriculture as a means of contributing to job creation and rural development (GOVERNMENT GAZETTE 2017, p. 17).

- The School Nutrition Strategy aims at improving learning capacity, food education, food production and food security at schools through the establishment of school gardens (DBE 2019). Sprouting Entrepreneurs supports all of the above and provides a pedagogy of school gardens. The Entrepreneurship Learning Garden emphasises the value of the garden as a medium of learning, as opposed to reducing it to a means of production. From the perspective of entrepreneurship education, school gardens can be a viable source of vegetable and seedling production not only for the school but also for external stakeholders. The school nutrition programme allows for investment in the garden, if this in turn is used to produce food for the school. Well-organised schools can run the garden as a mini-company, in which learners are realistically exposed to production, revenue and price calculation, marketing and sales. To secure stable outcomes, school-based Entrepreneurship Learning Gardens can be divided into different sections for production, innovation and learning.

- 21st-century skills have been the subject of debate, both at the DBE Lekgotla in 2019 and on global stages such as the World Economic Forum (WEF 2015). In an individualised and fragmented world, traditional structures and narratives have lost their significance, affecting young people's lives. The world of work is one route to becoming an adult, where young people are continuously challenged to navigate their paths and narrate their identities. Against this background, skills such as complex problem-solving, creativity, planning, communication and critical thinking are highlighted. Sprouting Entrepreneurs takes a project-based approach to learning, and centres on real-world challenges connected to the life-worlds of learners. 21st-century skills are thus fostered by engaging in projects in the Entrepreneurship Learning Garden.



Picture 7: Project work in the Entrepreneurship Learning Garden.

2. Learning for a sustainable world

In 2015, the UN 2030 Agenda for Sustainable Development was adopted by all United Nations member states, including South Africa. The 17 sustainable development goals (SDGs) are at the core of the agenda and describe the central challenges facing today's global society. The public education sector of each member state is called upon to contribute towards reaching the SDGs by 2030. Education for sustainable development must therefore engage with challenges relating to sustainability, as described in the SDGs. Learning for sustainable development includes three domains (UNESCO 2017, p. 11):

1. Cognitive: knowledge and understanding of the SDGs
2. Socio-emotional: attitudes towards the SDGs
3. Behavioural: action towards implementing the SDGs

Sprouting Entrepreneurs combines the learning areas of agriculture, food and entrepreneurship (AFE) and aims at educating changemakers for a sustainable world. It links to the following SDGs through the three learning domains described above (see Figure 3):

3. Introduction to entrepreneurship education

Over the last 25 years, many countries have developed strategies, programmes and projects focussing on entrepreneurship education. Entrepreneurship education is valued for its role in enabling countries to remain or become more competitive within the global economy; fostering social inclusion through employability; and providing young people with the relevant skills to navigate their personal and economic lives in increasingly complex societies. On the other hand, entrepreneurship education is criticised as being part of a neoliberal strategy that promotes less regulated economic competition, thereby favouring global corporations to the detriment of the poor and vulnerable. In the field of development cooperation, it has been criticised for emphasising the notion of the "enterprising self", flexibility and risk-taking, without considering the socioeconomic conditions that frame people's ability to take risks and seize opportunities (DEJAEGHERE & BAXTER 2014). The debate is nurtured by a broad range of theoretical, disciplinary and ideological approaches. However, there is still little guidance for practitioners as to how entrepreneurship education should be defined, and how it can be translated into teaching and learning approaches.

The development and implementation of a new idea are central to the concept of entrepreneurship. Entrepreneurship is not new to Africa, nor the rest of the world. "Entrepreneur" is a French term, describing a person who undertakes something. The popularity of the term stems largely from the work of the economist Joseph Schumpeter (1883-1950), who emphasised the importance of innovation in economic growth and highlighted the figure of the entrepreneur who implements an innovation (PIPER 2005). Many conceptions of entrepreneurship education have implicitly or explicitly built on Schumpeter's understanding of innovation in the context of economic development. In his effort to systematise different perspectives on entrepreneurship education, LACKÉUS (2015, p. 35) notes that the field is still "*in a quite early stage of development*", which causes "*much confusion amongst various stakeholders*". This applies particularly within primary education, where appropriate concepts and teaching materials are still scarce. At the level of tertiary education, KURATKO (2005) dates the emergence of entrepreneurship education in the U.S. back to the early 1970s. According to WILSON (2008), the concept gained popularity in European institutions of higher education during the 1990s. NORTH (2002) points out debates and initiatives around entrepreneurship education within the South African basic education system from 1990 onwards.

As in many other countries' national curricula, there is no comprehensive concept of entrepreneurship education to guide the CAPS curriculum requirements. The 2019 DBE Lekgotla stressed the importance of entrepreneurship education, with the minister announcing its rollout across all subjects as a priority. Entrepreneurship education is integrated within the South African CAPS curriculum and forms part of several subjects (e.g. Economic Management Sciences, Consumer Studies, etc. – for example, see DBE 2011). EMS introduces the concept in primary education (grade 7, ISCED 2). The DBE's blueprint for the implementation of entrepreneurship discusses the contents of entrepreneurship education (DBE undated). Regarding a working concept for entrepreneurship education, the DBE blueprint provides important properties. It emphasises employability, empathy, proactiveness, problem-solving and action-oriented mindsets, and it recommends action-oriented and project-based learning as the dominant teaching approach. Furthermore, it provides suggestions as to how entrepreneurship education can be integrated into several subjects of the CAPS curriculum. Suggestions include conducting interviews with entrepreneurs, writing newspaper articles in language subjects, and a focus on creativity and communication training in the subject Life Skills. In addition to CAPS and the DBE blueprint, external service providers offer entrepreneurship education programmes to the public education system based on their own working concepts (e.g. Junior Achievement South Africa). An ongoing cooperation project (since 2016) between the Gauteng Department of Education (GDE) and the Austrian Federal Ministry of

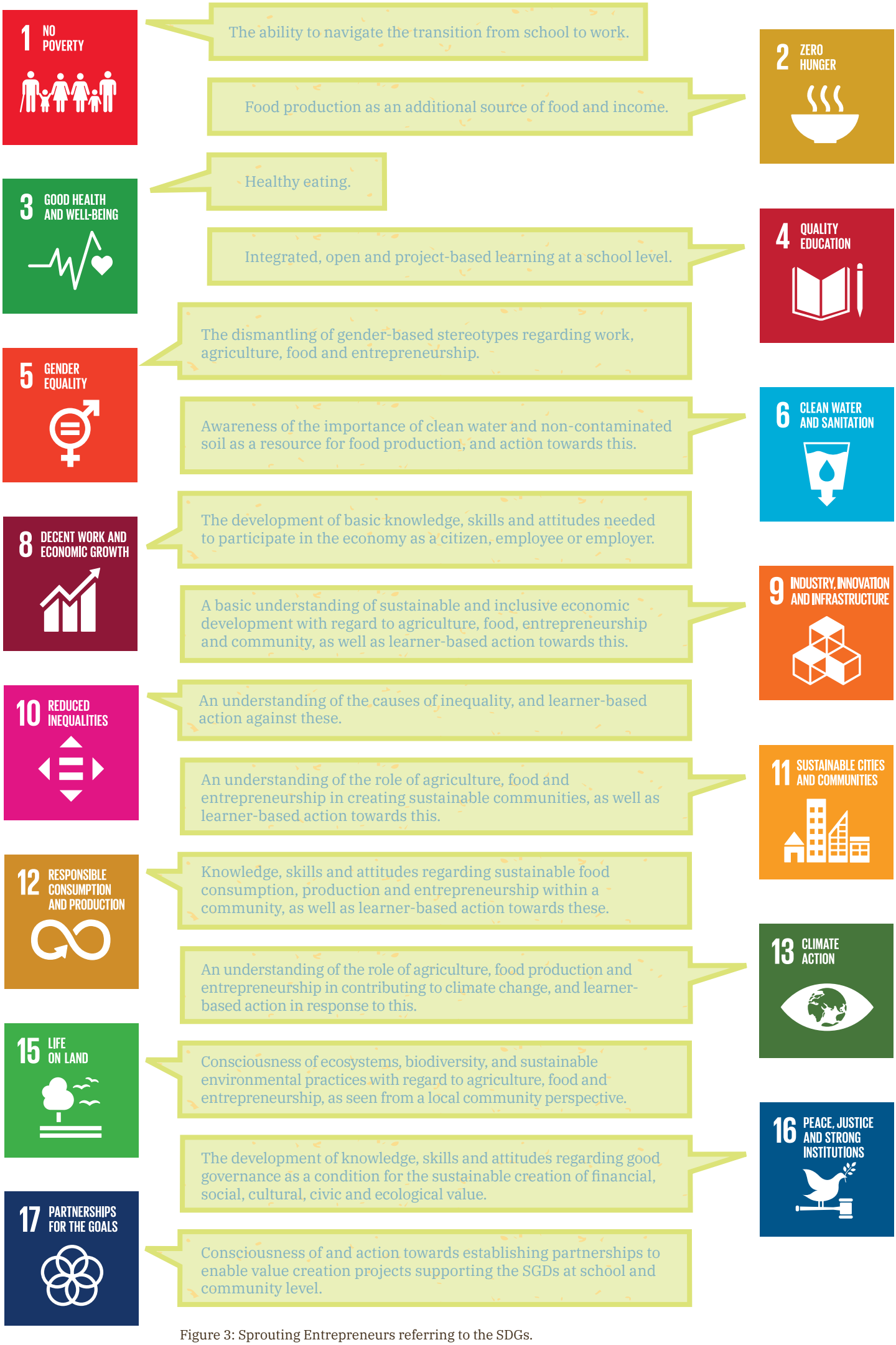


Figure 3: Sprouting Entrepreneurs referring to the SDGs.

Education Science and Research (BMBWF) aims at supporting the quality of teaching and learning in four Schools of Specialisation for Commerce and Entrepreneurship. The project builds on the TRIO model of entrepreneurship, which focusses on challenges (i.e. projects) and consists of three levels that address three different areas of competence (see Figure 4).

Core entrepreneurship education: knowledge, skills and attitudes that lead to the development of ideas and their implementation (e.g. planning and management).

Entrepreneurial culture: knowledge, skills and attitudes that support the process of idea development and implementation (e.g. a culture of empathy).

Entrepreneurial civic education: knowledge, skills and attitudes that centre around the idea of social responsibility in a society (e.g. embracing sustainability and social inclusion).

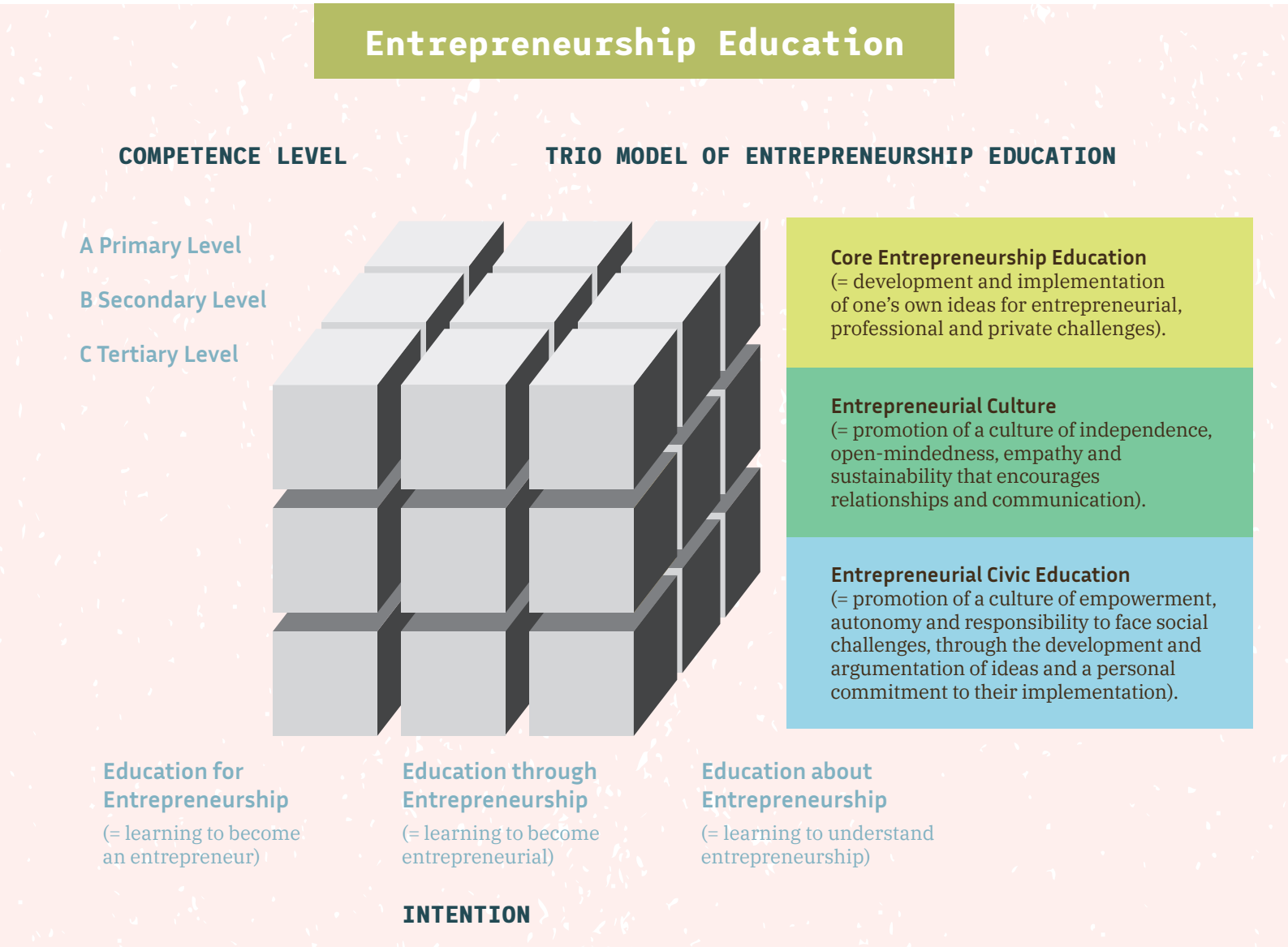


Figure 4: The TRIO model of entrepreneurship education (LINDNER 2018, p. 7).

The model provides a framework for planning, as it offers three levels of learning outcomes that should be addressed within a unit, project, syllabus or curriculum.

In his international review of approaches, LACKÉUS (2015, p. 6, 8) suggests the "*ability and willingness to create value for others*" as the basic shared property between differing concepts of entrepreneurship education. From a curricular perspective, he identifies a shifting focus as school grades progress. At primary and lower secondary school level, personal development is at the centre of teaching and learning. In upper secondary school and higher education, the focus of existing approaches shifts more towards business orientation. In addition, he identifies a "*narrow*" and a "*wide*" definition of entrepreneurship education. The former refers to business and the creation of financial value ("*entrepreneur*") whereas the latter refers to personal development ("*entrepreneurial*") and, in line with the underlying concept of this manual, the creation of value that is not necessarily financial.

Entrepreneurship education has been criticised for reinforcing gendered stereotypes. A study conducted by KOMULAINEN ET AL. (2011, p. 361) provides evidence for this view. It investigates the construction of entrepreneurship education amongst Finnish pre- and in-service teachers. In interviews, a gendered construction of the "*entrepreneur type*" - learner emerges as more likely to be male. Moreover, the type is associated with competitiveness, boldness, and a greater inclination towards risk-taking.

Entrepreneurship education has also been criticised for supporting a set of economic and political practices that are framed as neoliberal – an ideology that views development as a process that can best be achieved "*by liberating individual entrepreneurial freedoms and skills within an institutional framework characterised by strong property rights, free markets, and free trade*" (DAVIES & BANSEL 2007; HARVEY 2005, p. 2). This perspective criticises entrepreneurship education as a concept that gears learners towards individualism, flexibility and the embracing of uncertainty, without critically reflecting on the economic and political dynamics that aim for a neoliberal order. In contrast, a more critical conception of entrepreneurship education should investigate the role of assets, as well as the socioeconomic factors that influence individual opportunity and the willingness to take risks.

4. A capability approach to entrepreneurship education

This manual therefore adopts a capability approach to entrepreneurship, which reflects the livelihoods of learners' households in marginalised rural and urban areas of South Africa and considers the above criticisms regarding underlying neoliberal values. It draws on an emerging body of literature that looks at entrepreneurship (education) from a capability perspective (DEJAEGHERE & BAXTER 2014, GRIES & NAUDÉ 2010, OUGHTON & WHEELOCK 2005). Furthermore, it builds on the EntreComp Entrepreneurship Competence Framework, which follows a wide definition of entrepreneurship education and highlights social and cultural value as a product of entrepreneurial action (BACIGALUPO ET AL. 2016). In addition, this manual follows SEN (1997) and defines human development as a process of enlarging the ability or freedom of people to make choices. It operationalises capability as a competence area and includes the creation of civic and ecological value as listed entrepreneurial outcomes. It asks what people can do, what they want to do, and how entrepreneurship education can contribute to the enlargement of people's freedoms.

4.1. The EntreComp framework

In 2006, the European Union published a reference framework for lifelong learning, comprising eight key competences including "*sense of initiative and entrepreneurship*". The definition of this competence is wide and includes the notions of active citizenship, social entrepreneurship, venture creation and employability.

"*Sense of initiative and entrepreneurship refers to the individual's ability to turn ideas into action. It includes creativity, innovation, risk-taking, as well as the ability to plan and manage projects in order to achieve objectives. This supports individuals, not only in their everyday lives at home and in society, but also in the workplace in being aware of the context of their work and being able to seize opportunities, and is a foundation for more specific skills and knowledge needed by those establishing or contributing to social or commercial activity. This should include awareness of ethical values and promote good governance*" (OJEU 2006, p. 17).

This definition offers a concept of entrepreneurship education as it refers to concrete learning outcomes. It was further refined by the introduction of the EntreComp Entrepreneurship Competence Framework (BACIGALUPO ET AL. 2016). The framework defines entrepreneurship education as a transversal competence that can be applied to all sectors of society, from technology to social development and education. Entrepreneurship is:

"(...) when you act upon opportunities and ideas and transform them into value for others. The value that is created can be financial, cultural or social" (FFE-YE 2012, p. 11).

This concept is wide in the sense that it reaches beyond the creation of financial value to include cultural and social value. Therefore, all three aspects of value creation must be placed at the centre of the teaching and learning process. Two opposing examples illustrate this: The establishment of a temporary tuckshop at school offering healthy and competitively-priced snacks creates financial and social value, and is a classic example of entrepreneurship education; whereas a school project that organises a community cleaning day creates ecological and social value, as the people who live in the community benefit.

The EntreComp framework is made up of three competence areas ("*ideas and opportunities*", "*resources*", and *"into action"*). Each competence area consists of 5 interrelated competences. In total, the framework consists of 15 competences (see Figure 5). Although the framework states that there are no core competences and no hierarchy, it follows the notion of putting ideas into action. The three areas overlap and build on each other. The competence area of "*resources*" demonstrates this. "*Ideas and opportunities"* emphasises the process of idea creation, but relies on resources. Similarly, putting ideas "*into action*" is closely linked to resources, which can be personal or (non-)material. The fact that "*financial and economic literacy"* is only one of 15 competence areas speaks to the wide definition of entrepreneurship education, where financial and economic literacy is a means to develop and implement ideas that create (non-) financial value for others.



Picture 8: Creativity training through developing bird-scarers.

4.2. The capability approach

The capability approach was originally introduced by Amartya SEN (1997) and others as a framework for the analysis of wellbeing in society. It has been applied in different fields ranging from the economic sciences to social work and education. It inspired the Human Development Index, which is featured in the United Nations' annual Human Development Report. The report looks at human development as "*a process of enlarging people's choices*" or enlarging people's freedoms. The freedom to enlarge one's income is one aspect, but the end goal of human development is an "*enabling environment for people to enjoy long, healthy and creative lives*" (UNDP 1990, pp. 9-10). The capability approach is relevant to entrepreneurship education because it allows for consideration of people's actions and the factors that shape them. Due to its conception as a broad analytical framework, the capability approach has been used and operationalised in different ways. It is "*primarily and mainly a framework of thought, a mode of thinking about normative issues; hence a paradigm – loosely defined – that can be used for a wide range of evaluative purposes*" (ROBEYNS 2005, p. 96). It consists of the following sub-concepts, which shall be explained using the example of healthy eating (based on ROBEYNS 2005).

1. **Capabilities** can be defined as the freedoms or potential choices that people can opt for. The choice to eat a healthy diet is one that should be available to all. However, people may decide to eat unhealthily.

2. To be able to make the choice to eat healthily, a person or a household must have the **endowments** that enable this capability – for example, enough land, capital and labour to produce healthy food or enough money to buy it, if subsistence farming is not an option. Table 2 lays out types of capital assets available at a household and (extra-) community level. They help to analyse the inputs of an individual or household and the level of risk that is involved in a project of value creation. The risk and opportunity associated with growing food for home consumption and sale are not the same for every individual or household. If capital assets such as land, water, tools, transport, knowledge and a nearby market are mostly available, the

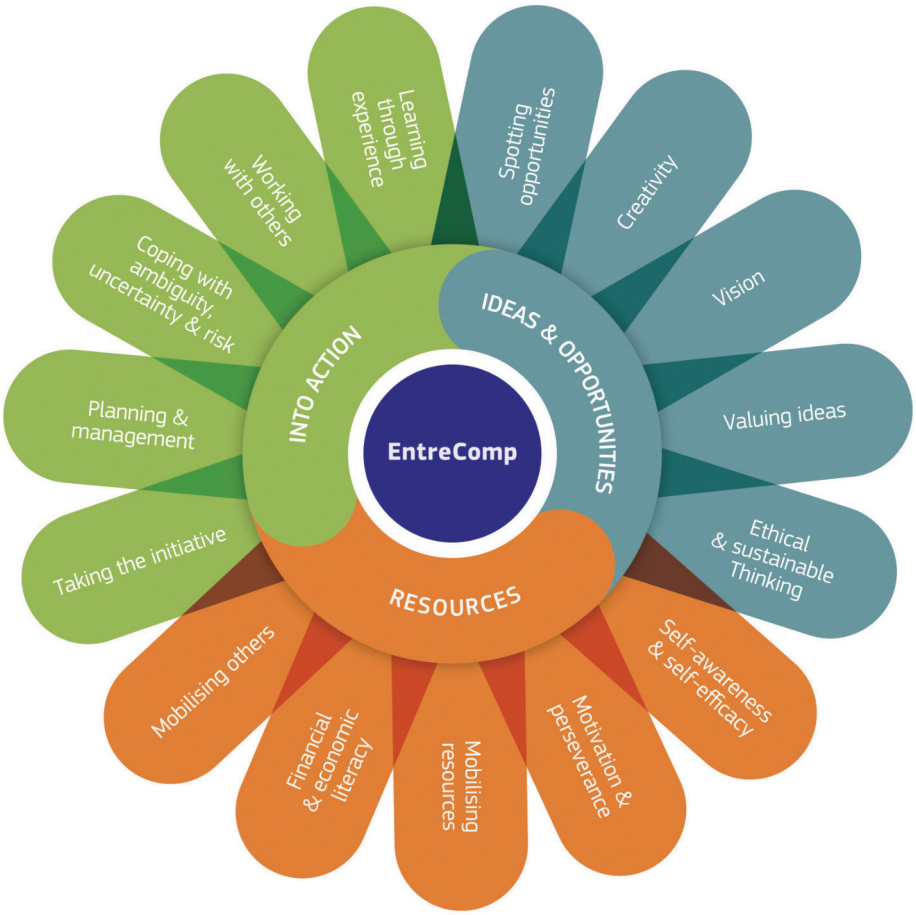


Figure 5: The EntreComp Framework for Entrepreneurship Education (MCCALLUM ET AL. 2018, p. 14).

investment needed is low – as is the risk entailed. If few of these resources are available, then the idea might become impossible to implement or involve a higher risk of loss.

3. These endowments are transformed by **conversion factors** or structures of opportunity or constraint. For example, policies that either encourage or discourage the production or purchase of healthy food will in turn positively or negatively affect the capability to follow a healthy diet.

4. The actual choice to eat healthily is informed by a person's **values** and her/his **agency**. While some people believe in the value of healthy eating, some might not. Moreover, a person's values can be influenced by a community's shared values. In addition, some people might have the discipline to follow a healthy diet, while others do not.

5. A person's **choice** leads to a functioning or the achieved freedom – in this case, eating a healthy diet.

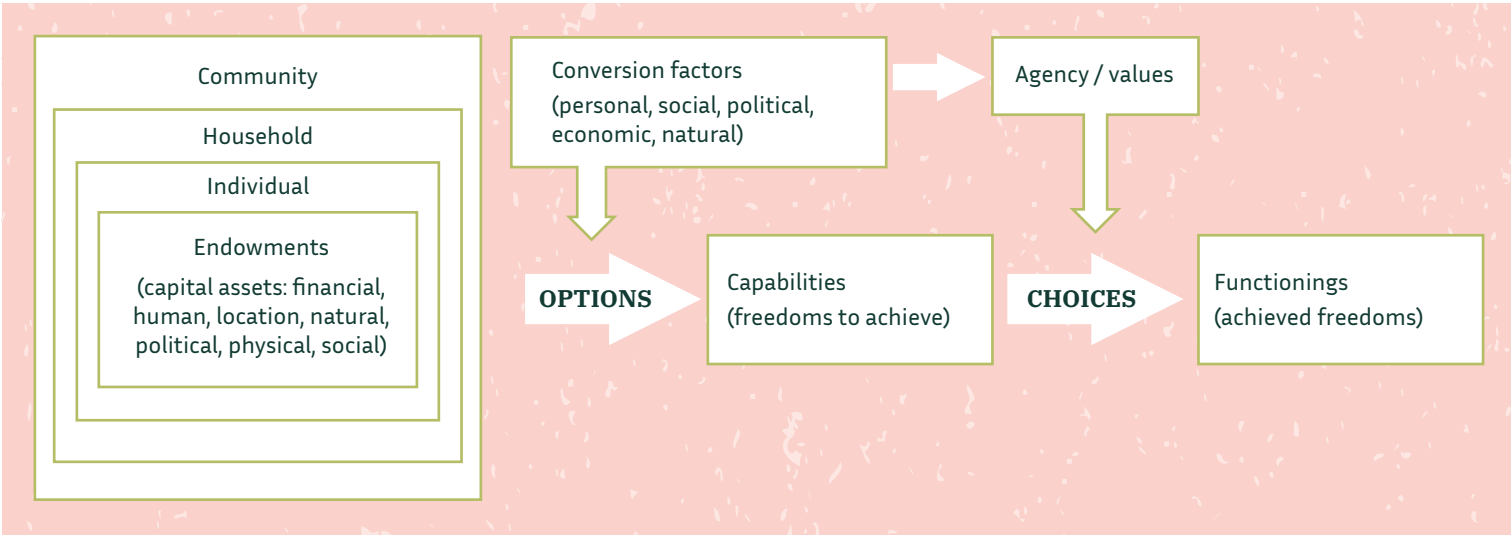


Figure 6: The capability framework (based on DEJAEGHERE & BAXTER 2014, p.70 in addition SIEGEL & ALWANG 1999, ROBEYNS 2005, OUGHTON & WHEELOCK 2005, with modifications by the authors).

Figure 6 shows the sub-concepts and their interrelation. Endowments are split up into capital assets which form the capability input. These capital assets can play out on different levels, ranging from the individual to the community. They are the means to achieve a certain functioning. However, the conversion of assets into a capability is influenced by factors that range from the person herself to her socioeconomic conditions. For instance, if a household possesses all the assets needed for small-scale agricultural production, but market policies do not support this, then small-scale production is not an available choice. If small-scale production is supported through a rural development programme, then the choice to produce and sell is left with the household – depending on its agency and preferences.

Capital assets / levels	Household level	Community level	Extra-community level
Natural	"Private" land, pasture, forests, fisheries, water (quality and quantity)	"Common" land, pasture, forests, fisheries, water	National and global commons, rivers and watersheds, lakes, seas, oceans, air
Human	Household composition and size, health and nutritional status, education and skills	Labour pool	Labour market
Physical	Productive assets (tools, equipment), household assets (housing, household goods and utensils)	Productive assets (communal and private), stocks (e.g. livestock, food)	Productive assets (rental markets), stocks (e.g. buffer stock)
Financial	Stocks (e.g. livestock, food and jewellery)	Cash, savings, access to credit and insurance markets	Finance and insurance systems
Social	Household ties and networks, intra-household dynamics	Community social ties and networks	Extra-community social ties and networks
Location and infrastructure	Proximity and access to water and sanitation, education and health, marketplace, storage, roads	Water and sanitation, schools, health centres, marketplace, storage facilities, roads, proximity to transport and communication infrastructure	Distance to markets, transportation, communication, information systems, health and education infrastructure
Political and institutional	Participation in household decision-making (including relationships related to gender and age)	Participation in community decision-making, governance, security of person and property	Political stability, political participation, effectiveness of collective action, governance, human rights and security of person and property

Table 2: Household-level assets and links to other levels (SIEGEL & ALWANG 1999, p. 11).

GRIES & NAUDÉ (2010, p. 4) debate entrepreneurship in terms of the capability approach. They argue that the capability to be an entrepreneur depends on resources that include entrepreneurial capital and opportunities. In addition, entrepreneurial competences can be an endowment, as given the availability of resources and supporting structures, they are potentially transformed into a capability. Successful entrepreneurial activity can also be a resource that leads to other capabilities. At the same time, the capability to be an entrepreneur can be influenced by structures such as policies that enable or constrain entrepreneurial activity. The valuing of entrepreneurship and the agency to pursue it, make it a functioning or achieved freedom. Agency itself can be influenced by entrepreneurial properties such as commitment and focus. The authors point out that the presence of other forms of income, such as employment or pension, can make entrepreneurship less valued, whereas the absence of any form of income leads to entrepreneurship as a strategy for survival. In this case, entrepreneurship is hardly a product of choice but of necessity. The authors argue that disadvantaged individuals and communities might decide against entrepreneurial activity, partly because of the disproportionately high risk of working on an idea that consumes resources with an uncertain prospect of success. From an endowment perspective, embarking on an entrepreneurial venture risks consuming resources necessary for survival. From an agency perspective, the high level of risk entrepreneurs face affects their confidence and motivation to complete their project.

4.3. Combining EntreComp and capability competences

A capability perspective looks at entrepreneurship education in terms of people's freedoms to achieve. It is critical of the neoliberal notion of entrepreneurship, which emphasises creativity, initiative, determination, etc. but fails to consider the material, economic, social and political conditions that enable or challenge entrepreneurship. A capability-based perspective focusses on the ability of individuals or communities to make certain choices. It can be used as a lens for the analysis of poverty and inequality, and how they relate to entrepreneurial activity, i.e it can be used to analyse and debate entrepreneurship as a human capital, as capability or as a functioning, as well as to examine influential structures and resulting values and agency.

Sprouting Entrepreneurs employs this approach regarding teaching and learning. It incorporates the general aim of a "*critical approach to learning*", as stated in the CAPS curriculum (DBE 2011, p. 4). The capability approach looks at how, and under what circumstances entrepreneurship can enhance people's freedoms and wellbeing. Thus, it highlights the importance of economic, political and social support for entrepreneurial activity as opposed to "*political economic practices that advocate flexible forms of production in which individuals must become more entrepreneurial to respond to market changes and demands and bear the associated risks*" (DEJAEGHERE & BAXTER 2014, p. 63). The approach is intended as a practical framework for teachers that guides a project-based learning process all the way from idea to product. It builds on the EntreComp framework by employing its three competence areas and 15 competences. The competences are interconnected and are therefore not be understood as hierarchical or sequential. This understanding applies to the approach as well. However, it follows a perspective in which every learning activity is located within the logic of a project, as a process with a clear start and end point. From a project-based learning perspective, the ideas, opportunities and – depending on the scale of the project and the age of the learners – the analysis of social and material conditions typically come at the beginning of a project. Entrepreneurial learning takes place within the context of a learner-centred project that is connected to a real-world challenge and creates value related to it. The competence areas "*ideas and opportunities"* and "*capabilities*" stand at the beginning of a process of value creation (MCCALLUM ET AL. 2018, p. 14). This double perspective looks at ideas and opportunities for value creation in relation to the socioeconomic environment of individuals and communities, and within the context of capabilities. This may mean that certain ideas and opportunities cannot be recognised, as there are no means of implementing them. It may also mean that learners are able to analyse how and why a livelihood is not adequately supported, and further, that they are able to develop ideas of how to challenge socioeconomic structures (see Figure 7).

Thus, capability competence can be used to scrutinise the neoliberal idea of individual entrepreneurial freedom, because it demonstrates how freedom is a product of resources and supportive social, political and economic structures. Following this, a capability approach to entrepreneurship education incorporates civic and ecological value, in addition to financial, social and cultural value. Civic value refers to the analysis of endowments and structures that shape the development of ideas and opportunities and the process of acting upon a specific interest that leads to a greater good. It builds on a rights-based approach and invites learners to scrutinise their lives against the background of their rights. For example, a learner project promoting Entrepreneurship Learning Gardens in neighbouring schools creates civic value. As the gardens feed into the school nutrition programme, more healthy food becomes available to more learners. Thus, their right to a healthy diet has been addressed. Ecological value refers to sustainable human interaction with the natural environment. Projects related to organic agriculture, clean soil and water, the sustainable use of natural resources or to cleaner and thus safer communities create ecological value. Often, one activity can address several types of value creation. For instance, a community-based cleaning campaign can reach beyond environmental value, as it improves the living conditions in a community (social value) and tackles the question of waste management (civic value).

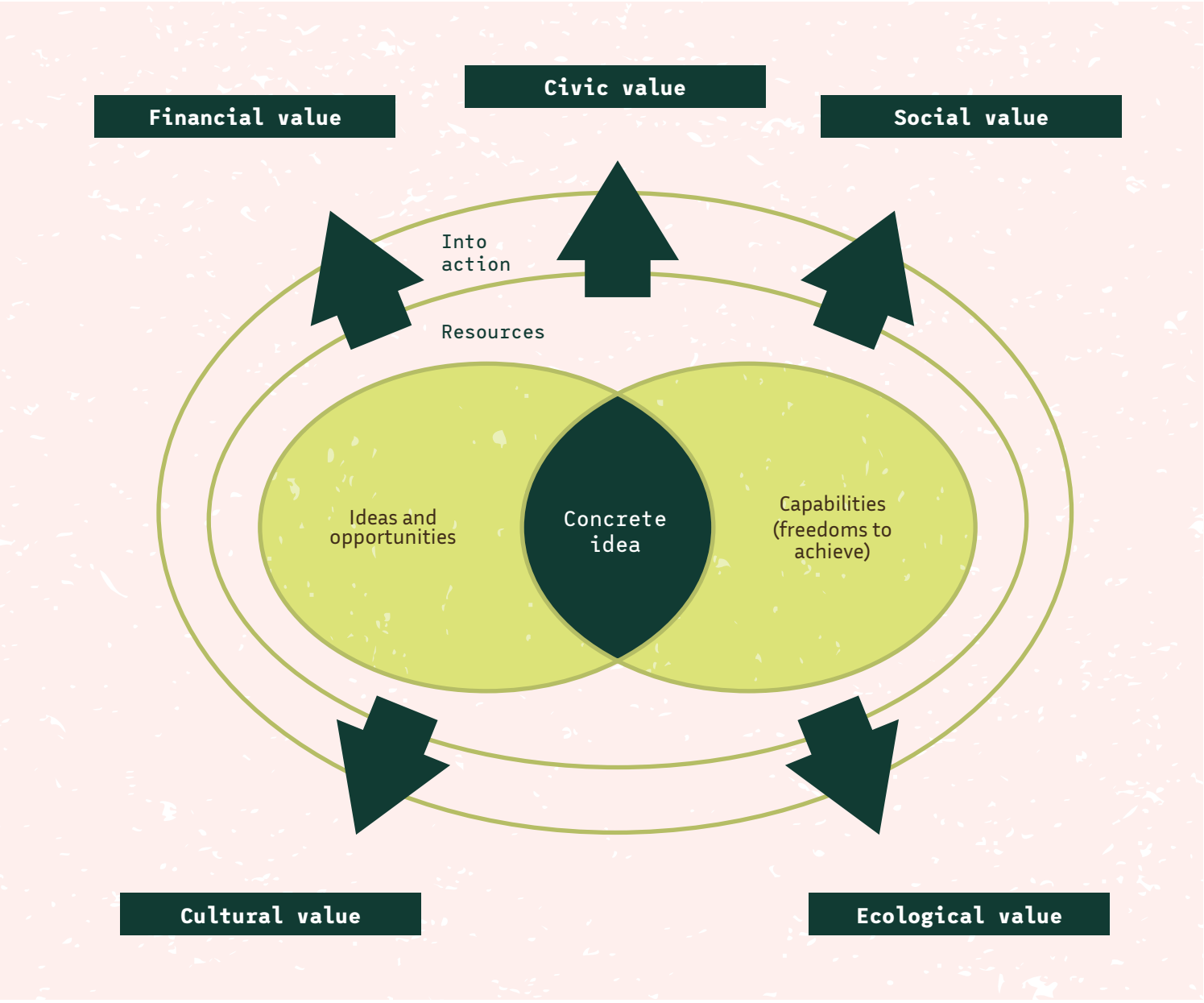


Figure 7: The EntreComp framework and the capability approach – a capability approach to entrepreneurship education.

A concrete idea develops at the intersection of capabilities, opportunities and ideas. Figure 7 illustrates the attempt to translate the capability approach into a competence based on the EntreComp framework categories. The implementation of a concrete idea follows the competence areas of "*resources*" and "*into action*".

There is some debate regarding the definition of competence vs. competency. This model uses the term "competence" in line with the terminology of the EntreComp framework and defines this as the combination of knowledge, skills and attitudes or more broadly as "know", "can" and "do / want" (KOMARKOVA ET AL. 2015; WINTERTON ET AL. 2006). Capability as competence is broken down into competence, hint, and descriptors, as well as guiding questions and overall learning outcomes. Table 5 offers a concrete example based on the guiding questions of Table 4.

Value creation for external stakeholders based on real-world challenges	Examples
Financial value	*"Members of the community are reluctant to grow vegetables from seed. The nearest nursery is far away. We set up a nursery and sell seedlings to community members."*
Cultural value	*"There are no cultural activities for the youth in my community. I motivate for and organise a youth theatre group."* *"Through our generations gardening event we exchange stories and knowledge of food production with the elderly in our community."*
Social value	*"Members of our community consume a lot of starch and sugar and rarely buy quality food. We put together a workshop in the community hall to educate people about nutrition and home gardening."* *"Through our ubuntu bundle project we distribute fresh vegetables to the poor and vulnerable in our community".*
Civic value	*"Learners deserve high quality food. Therefore, we present and promote our Entrepreneurship Learning Garden project to other schools in the community."* *"The challenges facing youth need more attention within our community and beyond. We motivate for and establish a youth club that organises activities and advocates for local government initiatives in the youth sector."*
Ecological value	*"Community members use too many chemical fertilisers. We invite them to a composting workshop. Every participant receives a free ubuntu bag of compost."* *"Waste management is a challenge in our community. We motivate for and organise a community cleaning day. The event should be supported by local government and businesses."*

Table 3: Types and examples of value creation.



Picture 9: School and community cleaning day project – creating ecological value.

Area	Competence	Hint	Descriptors	Guiding questions	Overall learning outcome
Capabilities	Capability: mapping your freedoms and acting upon / ability to do and to be	Analyse/act upon what you can potentially achieve	1. Endowments: which resources enable you to realise a specific idea and create value for others? Which are missing?	What resources (financial, human, political, physical, social, natural) are available at an individual/ household/community level? How are they created? How are they accessed? (e.g. access to money, education, social and political networks, land, machines and infrastructure)	I understand and can act upon the factors and dynamics that affect the ability of individuals, households and communities to see, value and pursue ideas and opportunities.
			2. Structure: what supports/constrains you in realising an idea?	What are the effects of social, political, economic and/or environmental structures? What/ who drives these structures? (e.g. support programmes for small-scale farmers, support from local government, agro-food system)	
			3. Capability (freedoms): what can you potentially achieve based on available resources and structural support/challenges?	What are the valuable options you are free to achieve? Which options arise from existing capitals and supportive structures? Which desirable options are unachievable and why? (e.g. open a nursery, study on a bursary)	
			4. Agency/value: why do you choose one idea over others?	To what extent are you able to pursue and realise the achievable goals you value? Why do you value one choice over another? What do you choose to achieve? (e.g. start a farming business, leave the rural area, enter the service sector, gain tertiary education)	
			5. Functioning: what have you achieved so far?	What did you choose to do? Which idea did you pursue? (e.g. small-scale farming, service sector, tertiary education, unemployment)	
			6. Acting upon: what can you do to expand your capabilities (freedoms)?	How can you contribute to the expansion of capabilities (3) and functionings (5) through improving endowments (1), structures (2) and agency (4)? What needs to be improved? How can it be improved? (e.g. formation of cooperatives, youth clubs, NPOs, dialogue on local development)	

Table 4: Capability as a competence.

CAPABILITY ANALYSIS

Young farmers in a rural area (GP): Small-scale profit-oriented crop production

ANALYSIS STEP 1: WHAT MEANS DO POTENTIAL ENTREPRENEURS HAVE TO CREATE VALUE FOR OTHERS?

Endowments (+):
- *"I have got seeds, good soil, access to land, business and farming knowledge."*

Endowments (-):
- *"I have no money, housekeeping responsibilities, no access to water, no fencing material."*

ANALYSIS STEP 2: WHICH STRUCTURES SUPPORT OR CONSTRAIN THE CREATION OF VALUE FOR OTHERS?

Structures (+):
- *"We cannot supply to large supermarkets. Our production volume is too small and inconsistent. However, we can sell at the local market at competitive prices."*
- *"We intend to support small-scale farmers and to focus on rural development. We are not sure if this will materialise, but we are hopeful."*

Structures (-):
- *"Small-scale farmers find it hard to penetrate the agro-food system and are confined to low-profit informal markets."*
- *"The communal land system does not cater for owning land. Using shared land limits our production."*

ANALYSIS STEP 3: WHAT POTENTIAL CHOICES DO YOUNG FARMERS HAVE IN REGARD TO CREATING VALUE FOR OTHERS?

Capabilities (+ / -): Entrepreneurial small-scale farming with small profit margins.
- Case study: "*The distribution of production factors makes the input of small-scale farmers less productive. It is a business where profits are possible but small."*
- Case study: "*An entrepreneur grows his own spinach. In addition, he collects the neighbours' harvest which he then sells at the market in Johannesburg. He makes a good profit. His key asset is a bakkie (pick-up truck) to transport the produce."*
- Case study: "*People in Johannesburg operate micro-green farms on small spaces. Restaurants buy from them. But it is there, not here."*

ANALYSIS STEP 4: WHAT CHOICES DO YOUNG FARMERS VALUE? WHAT CAN THEY DO, AND WHAT DO THEY WANT TO DO?

Agency/choice (+): "*This venture will be a good learning exercise and helps to save money for future ideas."*

Agency/choice (-): *"I would rather seek work in the rural/urban service sector. Agriculture is a backward sector."*

ANALYSIS STEP 5: WHAT CHOICES HAVE YOUNG FARMERS MADE?

Functionings (+):
"*I run a small vegetable supply. It is a personal learning space and makes R5 000 profit each month."*
- *"I practise subsistence farming, so I do not rely on the shops for buying fresh produce, which reduces our household expenses on food."*
- *"I have the right to food since I produce my own organic food."*

Functionings (-):

[choice against it]

ANALYSIS STEP 6: WHAT CAN YOUNG FARMERS DO IN ORDER TO ENLARGE THEIR CHOICES?

Acting upon (+):
- *"The formation of a cooperative would increase the production volume and make us more attractive to large commercial buyers."*
- *"The strengthening of local markets is in part a government responsibility. Let us form an interest group that advocates for the support of local markets."*

Acting upon (-):

[choice against it]

Table 5: Capability competence as a combination of knowledge, skills and attitudes.

4.3.1. Ubuntu – value for others

Decolonisation aims at provincialising the West. Teaching and learning in the context of decolonisation should focus on epistemologies, structures and processes rooted in colonialism and strategies to disrupt and replace them (MSILA 2019). Through exercises and projects in which learners engage with their communities, alternative and indigenous knowledge and narratives can be researched and put into practice. Sprouting Entrepreneurs' capability-based approach provides a lens through which to analyse the socioeconomic conditions in which the legacy of colonialism and apartheid is still visible, and which influence the process of value creation.

From the perspective of teaching and learning, the capability approach allows for a critical analysis of why certain individuals, groups or communities are able to carry out certain projects while others cannot. It reaches beyond individualistic approaches that simply explain entrepreneurial success through motivation, perseverance, risk-taking, etc. and examines the relevance of societal structures. While the capability approach is already normative, the values and principles of ubuntu can provide an additional ethical lens through which to view entrepreneurship education and developing the economy in society. Ubuntu has been described as a "*human quality*", a way of looking at the world, and a philosophy. The Nguni proverb "*umuntu ngumuntu ngabantu* (…) *a person is a person through other people"* is often referred to when defining ubuntu (GADE 2011, p. 302). Ubuntu emphasises our consciousness of and our responsibility for the "other". In contrast, *"settler colonialism and neoliberal capitalism depend on the exclusion of 'the other' for their untroubled operation* (…)" (NKONDO 2019, p. 6). At school, ubuntu can guide discussion on the morality of sustainability, or how one carries out an entrepreneurial project and ethical behaviour in conducting business (i.e. it can provide a value creation perspective). As young entrepreneurs work in a team and learn to communicate, negotiate or market their idea, ubuntu can provide a guide to how they engage truthfully with other people and how they reflect on their learnings through these interactions (i.e. a personal development perspective). Finally, the concept of ubuntu can support the realisation that the community holds knowledge and experience that may benefit learners' entrepreneurial projects, which in turn might benefit the community (i.e. a resource perspective). By engaging in learning projects focussed on creating sustainable value for others, learners deal with the self in relation to the other, as well as with their local community and society at large.

4.3.2. Project-based learning

The methodical approach has a long tradition in education and gained popularity in the first third of the 20th century. Its theoretical development is strongly connected to the works of representatives of reform pedagogy such as John Dewey, Célestin Freinet or Maria Montessori. They argued that teacher-centred instruction should make way for a more open learning environment organised by teachers, in which learners can actively conduct their own research based on real, relevant and pre-defined challenges. This "openness" applies to the content, method, organisation of the learning process and the interaction between teachers and learners. In this process, teacher and learner select a challenge and plan activities and outcomes (GRÜNKE 2009). The extent of the teacher's involvement depends on the properties of the learning group and the environment in which learning takes place. Project-based learning spans a continuum from project-oriented learning (high degree of teacher involvement) to project-learning (low degree of teacher involvement). Factors that determine the level of project-based learning include age, class size, experience of teacher and learners, culture and location of the school, the curriculum, time and resources available. Based on SAVERY & DUFFY (2001, p. 3) the following key principles of project-based learning can be identified:

1. Learning should be connected to a challenge
(e.g. "produce seedlings for sale").

2. Learners should develop ownership of the project
(e.g. "learners run the nursery themselves").

3. The project and its activities should be authentic
(e.g. "a real nursery that produces and sells").

4. The project and its activities should reflect real complexity
(e.g. "we operate a micro-business in the community").

5. Learners should be supported and challenged at the same time
(e.g. "our teacher points out micro-challenges and gives us directions to solve them ourselves").

6. Encourage the testing of ideas and discussion
(e.g. "every decision is based on discussion amongst the learners as the leaders of the project").

7. Learners should be encouraged to reflect on the content and the process of learning
(e.g. "throughout the project we discuss what we learn and enter this into a learning diary").

A school-based project should have the following properties (LECHMANN ET AL. 2005):

1. a clear beginning and end, and stretches over a pre-defined period
2. is based on a challenge (project goal)
3. includes interdisciplinary thinking/spans multiple subjects
4. includes a timeline, activities and outcomes
5. consists of phases
6. needs management in order to reach goals and outcomes
7. includes phases of reflection on learning content and process



Picture 10: The principal leading by example (photo by participating teachers).

The Entrepreneurship Learning Garden is a medium of instruction in which project-based learning can be applied easily and effectively. The garden can be tied to challenges at school, within the community and beyond. The process of production in the garden (i.e. the tasks related to it) suggest a natural lifespan for a garden-based project. Activities in the garden require planning, problem-solving and communication. They nurture discussion, conflict and resolution and finally, evaluation and reflection on what has been achieved. Learning in and through a project is close to how we navigate our personal and working lives, in that it requires creativity, complex problem-solving, communication, etc.

These so-called 21st-century skills cannot be fostered by listening, remembering and reproducing knowledge. Higher-level educational objectives such as analysing, evaluating and creating, call for an active, enquiring and processual learning approach (ANDERSON 2005). This approach requires a mindset that differs from that of a "chalk and talk" approach to teaching. Entrepreneurship education projects are likely to be more successful if teachers embrace the associated set of competences themselves and act as entrepreneurial teachers.

An entrepreneurial teacher:

- has a passion for teaching
- looks for opportunities
- develops new ideas
- is self-confident
- embraces failure as a learning experience
- sees problems as challenges and takes them on
- is conscious of her/his agency and (un-) supportive structures
- is open-minded and confident
- is flexible and responsible
- uses a learner-centred approach
- employs action-oriented teaching methods
- focusses on the real-world experiences of learners
- can integrate economic aspects within a topic
- regularly initiates project-based learning
- is a lifelong learner and eager to understand the world
- cooperates with colleagues and external stakeholders
- embraces new media
- is an education activist and change-maker
- is a creative, out-of-the-box thinker

Table 6: Properties of an entrepreneurial teacher (adapted from EU 2014, p. 9).

4.4. A capability approach to entrepreneurship education within the local context of the project

This pilot project and manual were developed in the Alfred Nzo East education district, part of the former homeland of the Transkei – a rural area previously subject to the racist and oppressive policies of colonial and apartheid administration. 25 years after the end of apartheid, former homelands are still burdened by poverty, unemployment and economic exclusion. The project area of Gauteng West Education District on the West Rand is a rural area. In contrast to the project area in the Eastern Cape, commercial farming dominates. Two high schools with a focus on agriculture exist in the area. Like elsewhere, the capability to farm is significantly determined by assets and the structural support available. This manual's approach to "rural education" is to connect competence-based teaching and learning with the places and spaces that form the learners' life-worlds. Learning should therefore respond to local challenges and emphasise transversal competences that reach beyond the context of such challenges.

A focus on agriculture must take the complexity of the sector into account. Research on land reform and the potential of agriculture for inclusive economic development highlights several structural challenges facing the expansion of the small-scale farming sector. According to NEVES (2017, p. ix), rural development as a political response has so far "proved largely ineffective" due to an overemphasis on agriculture "despite the reality of the modest and uneven contribution of agriculture to rural livelihoods". Thus, agriculture's potential to significantly improve the livelihoods of poor households appears to be limited. According to COUSINS ET AL. (2018, p. 4) the primary sector (including farming) in South Africa contributes to 5% of total employment. The bulk of agricultural production is supplied by roughly 30 000 commercial farmers (including 5 000 black farmers). A minority of black farmers produce on a small scale for the informal economy, whereas most black farmers produce on a subsistence level. Small-scale farming is identified as a sub-sector with the potential for job creation. However, this is complicated by the challenges of land reform, scepticism towards small-scale farming, strengthening of local informal markets, "highly concentrated and tightly integrated" value chains in food production, and government capacity regarding the development of the agricultural sector. At the same time, income prospects from developing small-scale agriculture are low (COUSINS ET AL. 2018, p.4). This is supported by a study by LOUW & JORDAAN (2016) for Gauteng Province, which highlights the risks faced by small-scale farmers in the formal agricultural value chain. As a result, many farmers have resorted to informal markets where profits are lower. According to ROGAN & REYNOLDS (2017), there is ongoing debate regarding the potential of agriculture in marginalised rural areas, i.e. the extent of existing (small-scale) farming and its outcomes to contribute to food security and poverty reduction. Their study focussed on EC households and finds that most households in areas under tribal authority engage in some form of agricultural production, largely performed to produce additional food for the household (90%). This means that subsistence production is not the main source of food for the household and that it is also not sold to generate additional income. The results show that production for sale is limited (6%) whereby most households reported this activity as an additional income. The authors conclude that household food production reduces the risk of hunger where wage labour is limited. At the same time, the findings point towards the risk facing households where small-scale commercial farming is a main source of income. These households showed a significantly higher risk of hunger. The authors conclude that "we should take seriously the role of household production in supporting household food security among rural poor households in South Africa" (ROGAN & REYNOLDS 2017, pp. 39-43).

Rural education must address this evidence and incorporate it into a syllabus that looks at agriculture with regard to the skills needed for the agricultural industry, household and surplus production and entrepreneurship. The latter must accommodate all forms of agricultural activity. In the most basic sense Sprouting Entrepreneurs starts in the Entrepreneurship Learning Garden, where learners can experiment with a limited number of assets within carefully defined learning outcomes. In a second step, the garden offers the opportunity to transfer knowledge and insights into households and the broader community, including small-scale farms and the agricultural industry. This step, however, offers and demands a more complex and critical perspective, which can be facilitated through the capability approach. Educators should critically challenge the assumption that opportunity, ideas, risk-taking and successful value creation take place on an equal playing field. The factors laid out in the capability approach help to position oneself, as well as the community within the landscape of opportunity, ideas and action.



Picture 11: Smallholder farming in a rural area.

Competence area	Competence	Type of value creation
Capabilities	Mapping freedoms and acting upon them	**Financial**
Ideas and opportunities	Spotting opportunities	
	Creativity	
	Vision	**Social**
	Valuing ideas	
	Ethical and sustainable thinking	
Resources	Self-awareness and self-efficacy	
	Motivation and perseverance	**Cultural**
	Mobilising resources	
	Financial and economic literacy	
	Mobilising others	**Civic**
Into action	Taking the initiative	
	Planning and management	
	Coping with ambiguity, uncertainty and risk	**Ecological**
	Working with others	
	Learning from experience	

Table 7: A capability-based extension of the EntreComp framework (authors' own, based on ROBEYNS 2005, MCCALLUM ET AL. 2018).

PART III: IMPLEMENTATION AT SCHOOL LEVEL



Picture 12: Implementing Entrepreneurship Learning Gardens at school (photo by participating teachers).

1. The Sprouting Entrepreneurs curriculum and its implementation

The Sprouting Entrepreneurs programme aims at contributing to the quality of teaching and learning in the rural and urban schools of Gauteng. The combined AFE learning outcomes link to societal challenges that are represented across the CAPS curriculum, as well as national and provincial education policies. We see this manual as a compilation of teaching content that follows a methodical red line of project-based learning in and connected to the Entrepreneurship Learning Garden. A dedicated colleague can draw on this resource and compile tailormade learning arrangements that serve the needs of her/his learners.

The curriculum consists of content laid out across three consecutive years/grades in the teaching and learning section of this book (see IV). Each chapter starts with a detailed description of AFE teaching content and combined learning outcomes connected to it. The programme was originally designed for primary schools; interest from secondary schools led to the adaptation of the programme for grades 5 to 12. The teacher should translate the content provided in the manual into a project-based learning arrangement suited to her/his learners' ages, the ratio of learners to teacher, and so on. Thus, the programme can be implemented as early as grade 5 (5-7) or as late as grade 10 (10-12).

Sprouting Entrepreneurs should ideally be implemented as a process of school development that includes (1) staff, (2) organisation as well as (3) teaching and learning (ROLF 2012).

(1) Staff: It is suggested that teachers who have completed their training in turn initiate school-based training to familiarise fellow teachers with the approach. In this way, the Entrepreneurship Learning Garden can be used across CAPS to achieve combined AFE learning outcomes and beyond.

(2) Organisation: A school should review its mission statement and development plan regarding the AFE learning outcomes. In addition, questions of integration vs. CAPS+, involved grades, classes and teachers, the role of support staff and their responsibilities all need to be addressed. The SGB and wider community should be included in the process as stakeholders. Experience has shown that sourcing produce from the Entrepreneurship Learning Garden for the school nutrition programme needs to be managed carefully.

(3) Teaching and learning: The programme strengthens a culture of open, project-based learning within a school. In order to develop this approach as a school, teachers need to work within an organisational and curricular structure that meaningfully embraces project-based learning. A list of activities/year/grade (e.g. market day) per school should be developed (e.g. a roadmap of entrepreneurship education activities, III/1.2.).

The school-based implementation of Sprouting Entrepreneurs across all three fields of school development requires ownership, creativity and commitment from the school management in supporting expert teachers who have completed the training. Teachers should be supported in developing a concept and plan for implementation. Having an Entrepreneurship Learning Garden coordinator at the school is helpful in managing efforts across all three fields of school development. Sprouting Entrepreneurs can be implemented within a school in three different ways: through CAPS+; through integration; or using a combination of CAPS+ and integration.

1.1. CAPS+

This approach treats Sprouting Entrepreneurs as an extracurricular activity, a "+" extension that builds on the existing CAPS curriculum. The content of this manual is designed to be implemented over a period of three academic years, with two periods (50-60 minutes) available per week. This time can be integrated into a school's extracurricular programme. In some instances, schools have reduced their double periods from 60 to 50 minutes in order to gain extra time in which to implement the programme (see Table 8).

The curriculum follows the idea of a learning spiral, whereby the combined AFE learning outcomes are addressed every year with increasing complexity and learning builds on previous content (BRUNER 1960). The first year introduces basic concepts and techniques. The second year offers several learning challenges (i.e. projects) to deepen understanding of the AFE learning areas. The third year builds on the combined learning outcomes of the two previous years and offers a guideline for a learner-driven project spanning an entire academic year. While teachers offer strong support to the project teams in the first year, they gradually withdraw to become facilitators who carefully scaffold the learning process, as learners take control of the project. We understand the curriculum as "open", in the sense that teachers are encouraged to include additional content (personal, local, indigenous, other resources, etc.) that leads to the combined AFE learning outcomes.

Curriculum framework: Sprouting Entrepreneurs (3 years, 2 periods per week)

Academic year	No. of periods (minimum)	Recommended grades	Chapters to build on	Progression	Content	Outcomes
1	2 (50-60 min/week)	5-10	Mini-garden challenge	Focus on basic concepts and techniques.	- Creative mini-gardens. - Microgreens. - Seed market. - Reflection on learning.	- I understand the basics of sustainable organic vegetable farming / gardening. - I understand the nutritional value of vegetables, their contribution to a healthy diet and the impact that growing them has on a household budget. - I can grow them in a small garden, which I can take care of together with others. - I develop innovative ideas to implement a task. - I can reflect on my learning process.
			Go green challenge		- Creative school-based Entrepreneurship Learning Garden. - Garden practice, equipment and materials. - Vegetables as part of a healthy diet. - Food costs for households. - Reflection on learning.	
			Compost challenge		- Compost in the Entrepreneurship Learning Garden. - Ecological, biological and financial aspects of compost. - Reflection on learning.	
2	2 (50-60 min/week)	6-11	Entrepreneur-ship Learning Garden challenges	Focus on creating financial, social, cultural, ecological or civic value for others.	- Food consumption and home-based gardening. - Food gardening in the community. - Thinking of vegetable business ideas. - Production and marketing of seedlings. - Landscaping and gardening. - Communication of learnings in the Entrepreneurship Learning Garden. - Peer training: Sprouting Entrepreneurs. - Cleaning campaign – upcycling and gardening. - Mini-company for school nutrition programme. - Agriculture with elderly community members. - Vegetable pop-up market. - Ubuntu vegetable bundles for community members in need. - Reflection on learning.	- I can analyse and act upon food insecurity. - I can develop a business idea. - I can organise and promote an initiative. - I can market and sell a product. - I can explain and pass on knowledge and skills to others. - I can organise and run a mini-company. - I understand and value community-based knowledge. - I understand and act upon the principle of caring for the community. - I can reflect on my own learning process and build on it.
3	2 (50-60 min/week)	7-12	Garden value challenge	Focus on creating financial, social, cultural, ecological or civic value for others.	- Entrepreneurship Learning Garden project from idea to product. - Reflection on learning.	- I can analyse opportunities/ constraints affecting my ideas on different levels. - I can plan, implement and maintain my own Entrepreneurship Learning Garden project. - I can manage the finances of an Entrepreneurship Learning Garden and calculate the cost of a product. - I can develop my own idea, implement it and communicate it to others. - I can reflect on my own learning process and build on it.

Table 8: Curriculum framework – Sprouting Entrepreneurs (3 years, 2 periods per week).

1.2. Integration

Ideally, the Entrepreneurship Learning Garden is run as a three-year CAPS+ programme. In addition, it attracts a wide range of CAPS subjects that focus on AFE combined learning outcomes and beyond. If neither this combination nor a standalone CAPS+ approach can be implemented, then schools can opt for an integrated approach. This should be implemented using a roadmap to ensure that a minimum of outcomes is addressed and prevent the programme from falling through the cracks. Table 10 shows a matrix of AFE combined outcomes across CAPS subjects. Schools can use this matrix as a basis for integrating the Entrepreneurship Learning Garden into their subjects. It is by no means complete, but provides leads with which teachers can develop ideas for their subjects. Table 9 provides a structure that schools can use to develop an integrated Sprouting Entrepreneurs curriculum based on CAPS. In order to complete the roadmap, we suggest holding a workshop with all teachers/grades. Once completed, the matrix offers an action plan to guide and monitor implementation.

Sprouting Entrepreneurs: Roadmap for integration

Compulsory (Y/N)	Grade	Subject	Time	Activity/ content	Learning outcomes	Documentation	Material	Garden-based (Y/N)	Support
Y	5	Life Skills	4h	Planning and preparing beds	Ability to plan and prepare a garden bed	Garden bed	Entrepreneur-ship Learning Garden starter pack	y	Ground staff
-	-	-	-	-	-	-	-	-	-

Table 9: Roadmap for integrating Sprouting Entrepreneurs across CAPS – proposed structure (LINDNER 2018, authors).

CAPS Integration (5-12): SPROUTING ENTREPRENEURS

Subjects	Integrating entrepreneurship education into CAPS subjects (5-12) through Sprouting Entrepreneurs	Focus for lesson planning	Examples	Methods and assessment
Agri-cultural Subjects	Focus on innovative products and value creation in agriculture.	- Focus on the development of creative products in agriculture beyond the production of crops. - Focus on alternative production methods. - Discuss the concepts of "local", "organic" and "sustainable" food production. - Analyse assets needed for agricultural production. - Analyse supportive/ constraining structures for agricultural production. - Deconstruct the concept of agriculture (i.e. commercial, small-scale, subsistence (incl./ excl. surplus sale).	- Learners develop a booklet for the establishment of community gardens. They run workshops and act as consultants to the community. - Learners form a training company and act as suppliers to school, creches and the elderly. - Learners establish a nursery. - Learners conduct interviews with farmers and research opportunity and constraints.	Create assignments that are framed as real-world challenges. Learners must tackle them through inquiry, creativity, idea development, project management and presentation of results. Project-based learning leads to higher-order knowledge dimensions and cognitive levels, which cannot be accessed at the level of factual knowledge only. Scaffold the learning process so that learners embrace mistakes as an opportunity to learn and improve. Therefore, assessment must focus on the process and on how learners have managed the various phases of their project. Assessment elements (portfolio): - Self assessment - Peer assessment - Final presentation - Individual project documentation - Individual project abstract (one-pager)
Consum-er Studies	Reflect on consumer's needs and wants and develop and implement an idea for small-scale production (practical option: food).	- Apply the topics of "*consumer*", "*food and nutrition*", "*design – elements and principles*" and "*entrepreneurship*" in the Entrepreneurship Learning Garden.	- Learners conduct market research in their community to discover what demand there is for vegetables. - Learners develop a product based on market research and their knowledge of basic concepts of consumer studies.	
Creative Arts, Design Studies, Visual Arts, Dramatic Arts	Reflect on design as a concept that markets a product and adds value to it. Discuss the design of working/learning spaces. Debate visual arts as a medium of expression and reflection and relate it to the processes of idea development and learning. Focus on drama as a means of idea development, reflection and communication.	- Integrate the idea of art/ drama/design into developing new ideas and think of new ways of presenting a product or service. - Frame art/design as a product or service and work on innovative ideas. - Use art and drama to reflect on the learning process. - Frame the Entrepreneurship Learning Garden/the school grounds as a medium through which artistic expression can be realised (e.g. land art).	- Learners develop a logo, packaging, tags, flyers, banners. - Learners design Entrepreneurship Learning Gardens. - Learners produce land art in the Entrepreneurship Learning Garden, on the school premises or in a designated space in the community (e.g. a taxi rank). - Learners exhibit their drawings in which they reflect on their experiences in the Entrepreneurship Learning Garden / their nutrition patterns. - Learners organise a play to educate members of the community regarding a healthy diet.	Assessments can be based on various elements (learning portfolio) and should focus on the learning process. It is important that teachers and learners agree on assessment elements and criteria before the start of the project.
Eco-nomic Manage-ment Sciences,	Use the Entrepreneurship Learning Garden as a medium and practical application for commercial subjects.	- Explore the concept of entrepreneurship education in the context of the Entrepreneurship Learning Garden.	- Learners organise an Entrepreneur's Day using produce from the garden. - Learners calculate a selling price for their product.	

Accounting, Business Studies, Economics		- Use the Entrepreneurship Learning Garden as a tangible real-world example of the basic concepts of your commercial subject. - Frame the Entrepreneurship Learning Garden as a training company and relate the content of your commercial subject to a "class-based garden company".	- Learners create a business plan. - The accounting cycle is based on the "class-based garden company". - Learners establish a mini-company and sell to the School Nutrition Programme.
Geography, History, Social Sciences	Reflect on agriculture and entrepreneurship from a social, political, geographical and historical perspective. Develop ideas to bring about sustainable change.	- Discuss landscape, soil and climate formations from the perspective of agriculture and entrepreneurship. - Use maps for entrepreneurial analysis and presentation. - Analyse how natural, social, political and economic factors have shaped agriculture and entrepreneurship in South Africa, from the pre-colonial to the post-apartheid era. - Analyse the food system and food value chain, as well as "Big Food" and its impact on agriculture and entrepreneurial opportunity. - Analyse how the distribution of natural, social, human, political, financial and physical capital at the individual, household and community level affects the ability to spot opportunities and put ideas into action. - Build on learner's experiences of food production, consumption and security. Integrate the concepts of "power", "capitalism" and "inequality" into your analysis of entrepreneurial opportunity and constraints.	- Learners conduct and analyse interviews and learn about the opportunities and constraints of small-scale farming. - Learners develop solutions for home-based gardening in urban informal areas. - Learners research and plant traditional crops and herbs and educate community members about this. - Learners map home-based food gardens in their community. - Learners think of a way to strengthen food security within a household. - Learners investigate local changes facing entrepreneurial activity, food production and consumption over time. They link their findings to regional, national and global developments.
Hospitality Studies	Integrate the concept of organic and locally produced vegetables within the topics "*sectors and careers*", "*nutrition and menu planning*" and "*food commodities*".	- Build on the idea of local, fresh and organic food and explore ideas, opportunities and constraints based on experiences with the Entrepreneurship Learning Garden.	- Learners develop hospitality concepts using garden-supplied vegetables as a resource.
Languages (first, additional)	Reflect on language as a medium of developing and implementing ideas and of promoting value creation for others.	- Use creative writing to develop ideas. - Create a story/narrative around an idea, product or brand. - Write about ideas and entrepreneurship.	- Learners write the story of their Entrepreneurship Learning Garden to use when marketing or selling products to their customers. - Learners critically analyse the marketing narratives of existing brands and their effect on customers. - Learners develop educational material with AFE combined learning outcomes for members of their community. - Learners develop a newspaper supplement on agriculture in their area. - Learners conduct interviews with entrepreneurs and compile entrepreneurship stories.

Life Skills, Life Orientation	Discuss learning for personal development and nutrition in the Entrepreneurship Learning Garden.	- Discuss the personal and social benefits of (community) gardening. - Reflect on the benefits of healthy eating. - Reflect on agriculture/landscaping as a potential career option. - Learn to reflect on your personal learning process during the year-long garden project.	- Learners are introduced to the concept of good nutrition. - Learners create and present a concept for a community garden that supports food security, healthy eating, as well as interaction and solidarity amongst community members. - Learners systematically reflect on their personal knowledge and skills progression after working in the Entrepreneurship Learning Garden for a full academic year. - Learners make decisions, communicate and deal with conflicts in teams.
Natural Sciences and Technology, Natural Sciences	Understand ecological, biological, chemical and physical processes related to ideas and products.	- Reflect on the structure of plants, soil, growth, water, energy, ecology, food groups, diets, ecosystems, and the environment. Enable learners to develop and narrate innovative ideas regarding sustainable food and plant production.	- Learners produce and sell organic compost. - Learners develop and conduct events that provide information on organic fertiliser, companion planting, permaculture and conservation agriculture in their community. - Learners initiate an alien plant control programme in their community.
Technology Subjects	Apply discipline-specific approaches, techniques and materials in the design of spaces for agricultural food production.	- Discuss innovative ideas regarding the design of spaces for food production (small-scale agriculture, school gardening, urban/rural subsistence farming, home gardening, rooftop gardening).	- Learners plan, build and sell raised beds out of different materials. - Learners create an Entrepreneurship Learning Garden comprising walkways, benches, shading, irrigation system, fencing, etc. They offer garden planning and landscaping services to potential customers.
Tourism	Reflect on the value of entrepreneurship and agriculture for tourism.	Reflect on the value of organic, local food production, ecotourism and agriculturally structured countryside for tourism.	- Learners create a regional tourism concept based on local agriculture and dishes. - Learners negotiate and realise a pop-up market with their produce at a local hotel. - Learners research and compile a report that assesses the opportunities and constraints facing local agricultural tourism.

Table 10: AFE combined learning outcomes per CAPS subjects.

2. Starting a school-based Entrepreneurship Learning Garden

As a medium for action-oriented, explorative and open learning, the garden can serve as a focal point for a school wanting to prioritise project-based learning and entrepreneurship education. The success of the Entrepreneurship Learning Garden depends on how well the garden is integrated into the school's system. While ownership and action should largely remain with the learners, it is the responsibility of the academic staff to facilitate the learning process (teachers) and ensure an ecosystem (principal) in which the learners and garden can sprout and flourish. The ecosystem comprises various stakeholders including learners, parents, teachers, principal, SMT, SGB, district officials, non-academic staff and the broader community. After establishing a potential garden site, it is important to liaise with stakeholders in order to provide information and secure their support. Central points for consideration include garden maintenance especially during term-break, storage of tools and materials, sourcing of produce for the School Nutrition Programme, and the integration of the garden as a medium of instruction across CAPS subjects. It is suggested that a coordinator be appointed at the school. Academic and non-academic considerations should be addressed in separate meetings, as curricular considerations need a fair amount of attention. However, it is important that all stakeholders understand and embrace the concept of open and action-based learning within a school-based garden. Table 12 provides a planning matrix for implementation.

2.1. Organising garden maintenance

Entrepreneurship Learning Garden starter pack	
Tools	**Units per school**
Wheelbarrow	1
Hand fork	20
Hand spade	20
Garden rake	5
Garden hoe (head)	6
Garden hoe (handle)	6
Garden fork	7
Garden shovel	7
Garden hosepipe plus accessories	1
Watering can	5
Pruning shears	1
Materials	
Compost 30 dm^3	50
Seeds	60

Table 11: Materials/tools per garden.

Participating schools are supplied with an Entrepreneurship Learning Garden starter pack (see Table 11). This serves groups of 35-40 learners. Schools are encouraged to keep good records of the tools and to organise for their safe storage. Dedicated grounds staff should assist learners in storing tools. Tools, compost and seeds can be replaced using profits made.

Additional compost can be produced as part of the project. The amount of compost provided in the starter pack should be enough to begin the project in most soil qualities. However, if the soil is poor, the garden will need to be smaller. Self-produced compost can be used to extend the garden at a later stage. Local DAFF extension officers can be contacted for soil analysis and support. In addition, resources supporting the School Nutrition Programme can be used, if the produce grown is used to supply the programme.

While the Entrepreneurship Learning Garden is a medium for learning through challenge, action, exploration and reflection, external input may be required to maintain it. This can be secured in various ways: Members of the SGB, parents or ground staff may be willing to assist with weeding, watering and general maintenance, especially during term breaks. Alternatively, volunteers may be offered a space in the garden for personal production – along with the use of school resources such as water and tools – in exchange for their help in maintaining and monitoring the garden as a whole.

At Ithuba Community College in Katlehong, "Malume" Sfiso Kunene works as a groundsman. He is passionate about education and gardening and supports learners and teachers in the Entrepreneurship Learning Garden during school hours. He manages the gardening tools, seeds and compost and ensures that equipment is transported safely to the garden and back. He also assists learners and teachers in the garden as they prepare the soil, weed, plant, water and harvest. During term break, he takes care of the garden.



"I enjoy working with learners. After all, I work for the school and the Entrepreneurship Learning Garden is part of the school grounds, which I am responsible for. I take pride in properly managed grounds, which are part of the learning environment of a school!"

Picture 13: Malume Sfiso supporting the Green Team.

3. Sprouting challenge in the Entrepreneurship Learning Garden

The challenge is a friendly competition between participating schools, held during each training cycle. It looks at how schools manage the implementation of Sprouting Entrepreneurs, with a strong focus on the quality of learner involvement. It aims at sharing best practices within training groups and beyond. At the final event, learners and teachers present their experiences throughout the project cycle. Criteria for selecting the best schools can also be used as a checklist during the academic year. These include:

1. Variety: How many different plants does the garden contain? Why were they selected (nutritional value, customer demand, seasonality, traditional knowledge, taste, etc.)?

2. Garden style: How is the garden organised? Is it one large bed? Does it include single plots for learner gardening teams, tyres, raised beds, upcycled materials, etc.?

3. Value creation: How many kinds of value are created in the Sprouting Entrepreneurs programme? To what extent has the project contributed to:
   - the School Nutrition Programme?
   - the discovery of indigenous knowledge around agriculture, food and the creation of value for others?
   - the education and support of the community (social, cultural, civic and ecological value)?
   - the organisation of value-creation events such as market days, etc.?

4. Marketing: How does the garden present itself to external stakeholders (name, marketing story, etc.)?

5. Learner involvement: To what extent has the project been driven by learners? How have structural and organisational challenges been managed?

6. Cross-subject collaboration/integration: To what extent is the school-based garden used by CAPS subjects?

7. CAPS+: How many classes/grades are engaged in the Sprouting Entrepreneurs programme, and for how many periods per week?

8. Entrepreneurship school: To what extent has the principle of open, active enquiry and challenge-based learning through projects been realised in the context of the Entrepreneurship Learning Garden and beyond?

9. Reflection: how, and to what extent did learners reflect on their learning process throughout the project? What methodical approach has been used?

4. Conclusion

Project-based learning assumes that deep learning is the product of challenge, open inquiry, action, and reflective thought. Entrepreneurship education aims at innovatively creating value for others.

- The Entrepreneurship Learning Garden is a realistic learning environment as it produces a real output that can be connected to real-world challenges. While it is tempting to focus on production and to ensure a presentable and well-managed garden, the reality of project-based learning is one of trial and error. Success is rarely quick and easy, and problems must be overcome. As learners actively pursue and reflect on their entrepreneurship project in the garden, they learn and develop competences. Therefore, the quality of the process is more important than the quality of the product.

- The Entrepreneurship Learning Garden offers learning fields that enrich each other in their combination. These combined learning outcomes – agriculture, food and entrepreneurship – reflect key aims of the CAPS curriculum, as well as some of the challenges facing South Africa.

- Innovation and value creation are not restricted to the pursuit of financial profit. The programme reaches beyond a narrow definition of entrepreneurship education and emphasises activities that focus on the creation of social, cultural, civic and ecological value for others. Community-related challenges range from improving the nutrition of learners (who are also community members), to food-related education projects and the analysis of socioeconomic conditions in the community connected to the AFE combined learning outcomes.

- The capability approach in entrepreneurship education looks at opportunity, risk-taking and idea development and asks what people are free to achieve in a specific socioeconomic setting. It points towards inequality and asks “innovators of society” to develop ideas that lead to the expansion of people’s choices or freedoms.

Facilitation matrix for the school-based Entrepreneurship Learning Garden

AREA	ACTIVITIES	TIME						STRATEGY	HUMAN RESOURCES		FINANCIAL	
		Now	Soon	In a while	Let's see	Duration	Frequency	How	Coordinator	Team	Cost/item	Budget
SCHOOL MANAGEMENT	Permission											
	Location (bed)											
	Total size (bed)											
	Size per learners											
	Security (bed)											
	Colleagues/district											
	Parent information											
	Grounds staff training											
	Parent involvement											
	School kitchen											
	Tools storage/security											
COMMU-NITY	Community support											
	Stakeholder involvement											
	Customers											
PEDAGOGICAL	Classes/grades											
	Timeline											
	Entrepren. edu. roadmap											
	Subject collaboration											
	Subject integration											
	Mission statement											
GARDENING	Compost											
	Seeds											
	Seedlings											
	Fencing											
	Pest control											
	Year plan (planting)											
PRODUCTION & VALUE CREATION	Nursery											
	Seeds											
	Seedlings											
	Compost											
	Marketing											
	Sales											
	School Nutrition Programme											
	Community event											

Table 12: Guiding structure for setting up an Entrepreneurship Learning Garden.

PART IV: TEACHING RESOURCES



Picture 14: Presenting the indoor mini-garden.

Module: **MINI-GARDEN CHALLENGE**

Grade 5+ (recommended)

MODULE OVERVIEW

INTRODUCTION: Gardening in the smallest of spaces is possible, and may be the only option when space and/or resources are limited. The mini-garden with its fast growing mini-plants introduces learners to gardening and prepares them for similar activities on a larger scale.

CHALLENGE: Learners set up a mini-garden. They grow their own microgreens, follow the growth of a plant from sowing to harvest, market their own products and promote healthy eating at home.

COMPETENCES: WHAT IS THE LEARNING OUTCOME?

AGRICULTURE

Learners:
- I know the characteristics of a plant and understand how it grows
- I am able to produce microgreens, adult plants and seeds
- I feel responsible and know how to take care of my garden and plants

FOOD

- I can identify nutritional benefits of microgreens
- I am able to talk about taste experiences
- I can prepare healthy snacks
- I can introduce others to healthy eating

YOUTH START - ENTREPRENEURSHIP COMPETENCES LEVEL A1 / A2

Learners:
- I can develop creative ideas and recognise their value
- I can undertake simple tasks and focus on completing them successfully
- I can work with others
- I can generate added value from available resources
- I can identify my strengths

BUILD ON: HOW TO CONNECT TO CAPS	Natural Sciences and Technology / Life Skills
TIME ALLOCATION	8 hours

OVERVIEW: WHAT IS THE LEARNING CONTENT OF THE MODULE?

STEP 1: THE MINI-GARDEN	STEP 2: GROWING MICROGREENS	STEP 3: TESTING AND GROWING FROM MICROGREENS	STEP 4: HARVESTING SEEDS FROM PLANTS
Brainstorming / teacher input: Going small – mini-garden **Group work:** Pros/cons of mini-gardens **Experiment:** Mini home garden	**Teacher input:** Microgreens **Quiz:** Seeds for green dwarfs **Experiment:** How to grow microgreens	**Sensory exercise / school event:** Tasty greens **Game:** Sun flower race	**Experiment 1:** Tomato treasure **Experiment 2:** Sun power **School event:** Seed market day

STEP 5: SELF-REFLECTION

MATERIALS AND TOOLS: WHAT DO I NEED?

STEP 1: THE MINI-GARDEN	STEP 2: GROWING MICROGREENS	STEP 3: TESTING AND GROWING FROM MICROGREENS	STEP 4: HARVESTING SEEDS FROM PLANTS
Paper/poster, pens, milk bottle or tetra pack, scissor, soil, cress seeds, watering can	5 different seed bags, old containers (e.g. tetra-packs cut in half), sunflower seeds, soil (5L), yogurt cup, needle, lighter, Learner copy: "how to grow micro-greens step by step"	Plates, scissor, bread, knife, margarine, table, tissues, garden tools, support sticks, watering can, measuring tape	Ripe tomatoes, jar, knife, old newspaper, paper, scissor, glue, pens, tomato/ sunflower seeds, tables, paper/ pens, poster, seed bags, decoration material

STEP 5: SELF-REFLECTION — **Paper/poster, pens and garden diary**

Grade 5+ (recommended)

KNOWLEDGE

THE MINI-GARDEN

What is a mini-garden?

The mini-garden is any garden of a very small size where growing on a tiny scale takes place. Mini-gardens can be arranged horizontally or vertically (hanging) using dwarf plants; for example microgreens, baby vegetables and herbs. They can be set up indoors at home or at school, as well as outdoors.

Pros and cons of a mini-garden

Many plants grow well outside the traditional garden, in containers. The mini-garden allows for proper gardening even where resources are limited. This means that producing healthy food is always possible, as mini-plants can be a very rich source of nutrients (vitamins, minerals, proteins). They grow easily in many places, throughout the year and do not need much space. A mini-garden does not require a big budget and is not work-intensive. On the other hand, the variety of plants and amount of food that can be grown in a mini-garden is limited.

MICROGREENS

Microgreens: powerful green dwarfs

Microgreens require soil and sunlight to grow. They are young, tender plants, smaller than baby vegetables, and harvested later than sprouts. The term “micro” refers to the size of the plant when it is harvested. Microgreens grow in a very short time and are ready to eat within 2 to 4 weeks (e.g. sunflower greens) when they reach a height of 5 cm, depending on the type. They are ready to eat as soon as their stem and the first two baby leaves are fully expanded.

GROWING CYCLE:

SEEDS > SPROUTS > MICROGREENS > BABY VEGETABLES > ADULT PLANTS

Common types of edible microgreens

There are many possible microgreens to choose from. The following seeds can be used to grow microgreens and can be easily found: broccoli, celery, cress, radish, sunflower, cabbage.

Nutritional value of microgreens

Microgreens are full of nutrients and flavour. It is not yet clear why they seem to have more nutrients (e.g. vitamins) than their adult versions, but it seems that the early stage of the growing process influences the nutritional density of the little green leaves.

Microgreens and hygiene

Like all vegetables that are eaten raw, microgreens need to be carefully washed before they are eaten.



Grade 5+ (recommended)

ACTIVITIES

BRAINSTORMING: Going small

Not all people who are interested in gardening have big yards at home. Still, anyone can grow leafy greens, herbs or fruits. Ask the learners to think of different ways to grow plants. How many ways of gardening on a very small scale can they think of? What do these mini-gardens look like? Encourage them to produce as many examples as possible, collect their ideas on the board and explain the idea of a mini-garden at the end of the activity (see KNOWLEDGE).

GROUPWORK: Pros and cons of mini-gardens

Divide the class into groups of 4. Each group of learners gets an A4 paper, which is folded lengthwise, dividing the paper into two columns headed “pros” and “cons”. Learners discuss the pros and cons of a mini-garden based on their earlier examples and list their results. Give them 15 minutes, and then let them present their answers. Collect all opinions on the board, complete the results if needed (see KNOWLEDGE) and ask the learners to copy them into their diaries.

EXPERIMENT: Mini home garden

Do it yourself! In order to practice and apply knowledge the learners set up a mini cress garden at home.

Write the following instructions on the board and ask the learners to copy them:

1. Take an empty milk bottle or tetra pack and ask an adult to cut off the top part (horizontally).
2. Fill the milk container with soil and sprinkle cress seeds onto it.
3. Put the mini-garden on a windowsill or sunny place inside your house.
4. Water the mini-garden carefully and regularly.

When the cress is ready for eating (5 cm high) prepare a healthy green snack for your family: Spread margarine on bread and sprinkle cress on top!

A mini-garden



QUIZ: Seeds for green dwarfs

There are many different seeds used to grow plants. Not all of them can be used to grow microgreens. The following exercise works with a small selection of seeds. Learners study the different characteristics of seeds and figure out how to recognise a few of them.

Bring a handful of seeds from 5 different vegetables (e.g. sunflower, pumpkin, radish, cress, cabbage) to school, packed in transparent containers (e.g. glass) or bags. Write the names of the seeds/plants on the board, read the seed information to the learners and ask them to write them down in their exercise books. Then divide the class into groups of 4.

Each group receives 5 seed packets. Give them 10 minutes to look at these carefully. What is the shape, texture, size and colour of the seeds? What vegetables grow from these seeds? Ask learners to match the vegetables listed on the board with the seed packets. Give learners feedback and the right answers.



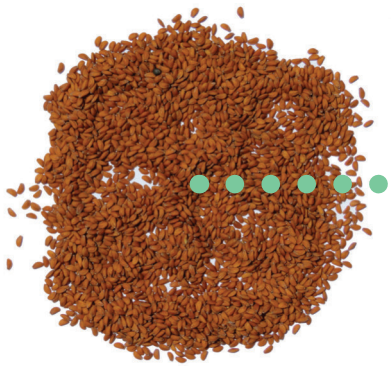


The unshelled seeds of the pumpkin, which is a fruit, are flat, oval and nutritious. They are a popular snack, and can also be sprinkled into soups and salads.

The flat, oval, reddish-brown seeds come from the radish, a root vegetable grown and eaten throughout the world. Radish seeds are added to salads. They germinate quickly, in 3 to 4 days.

The sunflower seed is the fruit of the sunflower. There are different types of seeds, recognisable by the pattern of their husk. The black and white striped seed is primarily used for food. The seeds are a rich source of nutrients.

Cabbage seeds are tiny, round, dark-brown balls. Cabbage is a very popular vegetable with dense green leaves.



Garden cress is a fast-growing herb, edible 1 to 2 weeks after planting, when they reach a height of 5-10 cm. Garden cress seeds are tiny, orange-brown coloured ovals.

Note: Some seeds may be chemically treated and should therefore not be eaten as seeds. Check the packet.

EXPERIMENT: How to grow microgreens step by step



YOU WILL NEED:

1 plastic plate
soil
sunflower seeds
yogurt cup sprayer*

*Make your own water sprayer: Take a yogurt cup and a thick needle. Heat the needle with a lighter and make holes in the bottom of the yogurt cup. Water with the cup.



IN THE CLASSROOM

Soak sunflower seeds in water for 6-8 hours. In the water the seeds soften and germinate quicker.

1



IN THE CLASSROOM

Fill the plates with soil. Spread out the seeds evenly. Cover them with a thin layer of soil, water them and put the plates on a windowsill in the sun.

You can also use fruit or veggie punnets instead of plates.
(These make perfect "glasshouses".)

2



IN THE CLASSROOM

The seeds will germinate after a few days (sprouts). Keep on watering them but be careful not to overwater the young sprouts, because they rot easily. After 10-14 days, when the microgreens reach a height of 5 cm, they are ready for eating. Water them and put the plates on a windowsill in the sun.

3



SENSORY EXERCISE AND SCHOOL EVENT: Tasty greens

After about two weeks the microgreens will be ready for picking. Ask learners to cut some microgreens (stem and leaves) at soil level, using sharp scissors. Invite them to taste the greens. Can they describe the different tastes? Do the microgreens taste sweet, salty, bitter, nutty, spicy?

Ask the learners to sprinkle the rest of their microgreens on sliced bread with margarine/spread. Help them to set up a table outside the class during break. Here they can present a poster giving information about microgreens and their healthy properties, before inviting learners and teachers to try out their green snack.

GAME: Sunflower race

The following exercise introduces learners to the growth process of a plant. Microgreens not only serve as flavourful and nutritious power food but also as connecting points for gardening activities.

Sunflower race: find a place at school where learners can plant sunflowers. Wait until the sunflower microgreens have grown into stronger seedlings. Ask the learners to water the plants regularly. Once they reach a height of 10 cm, show learners how to transplant the seedlings.

Each learner chooses one seedling, puts his/her name tag on the plant and observes it for 3 or more weeks. All learners record the growth process (date/height) and learn how they can influence it by taking good care of the flower (e.g. adding soil, watering). The learner whose plant is the first to grow as tall as him/her is the winner! Organise a pack of seeds for her/him.

EXPERIMENTS: Sun-power and tomato treasure

In order to learn about the whole life cycle of a plant, learners produce new seeds using tomatoes and sunflowers.

Experiment 1: Tomato treasure

Give each learner one or two tomatoes and ask him/her to cut them in half. Show the learners how to take out the fruit pulp and seeds. The seeds should be soaked in water for 1-2 days to remove the jelly-like mantle covering them. When the seeds sink to the bottom of the container, the learners take them out of the water and place them on old newspaper to dry in the sun.

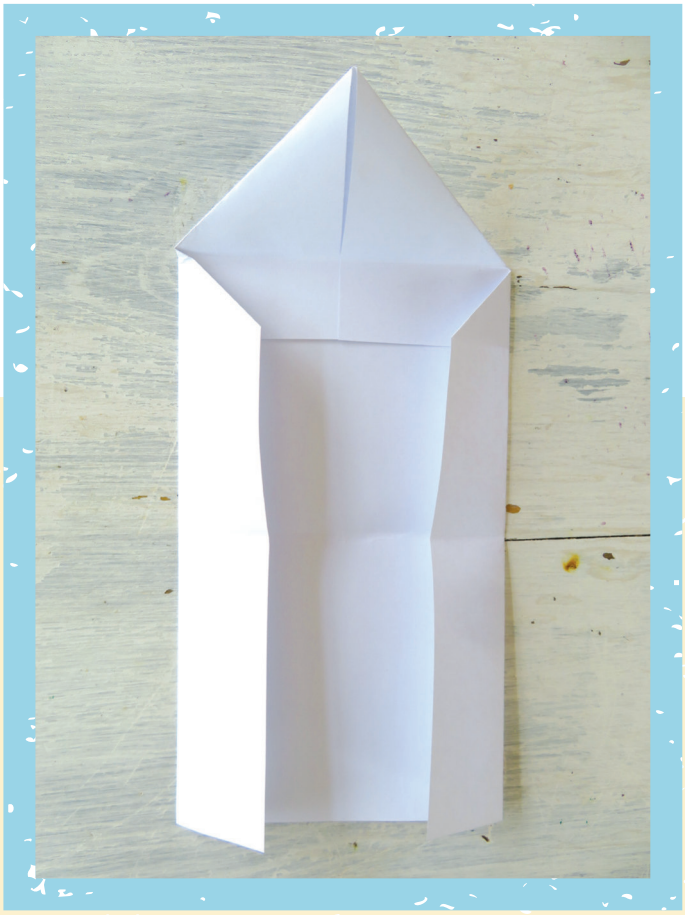
In the meantime, learners can make their own seed packets using the template on the next page. Show them how to fold and glue the seed packet. Learners will have to make more of these when they prepare to hold a sale (see “seed market”).

Experiment 2: Sun-power

While the learners prepare their tomato seeds, they also wait for the sunflowers to dry (see “sunflower race”). They will also sell the sunflower seeds.

The sunflowers should lose at least half of their yellow petals. When the flower heads become brown and completely dry, the seeds must be checked every other day: how do they look? Do they slowly come off?

When the flower heads are ready, show the learners how to cut them (together with 30 cm of stem). Learners should shake the seeds out of the flowers, before collecting and keeping them for the “seed market” exercise.




Name:
date of harvest:
My Tomato
seedlings
R...

SCHOOL EVENT: Seed market

With this activity, learners go into business on a small scale. Having successfully grown and packaged their own products, they can now boost their entrepreneurial skills by finding ways to market and sell their tomato and sunflower seeds.

To keep it simple, learners could try selling their seeds to teachers and staff at a seed market stand in the school. Use the following guideline for the preparation of this event:

SALES PRODUCT	How many seeds did the learners produce? Are there enough to sell, and can learners divide them up nicely?
VENUE AND DATE OF THE SALES EVENT	Where and when can the seed market take place? Let the learners make suggestions. They will need to discuss these with the principal, in order to set a date. Alternatively, they can plan an activity out of the school.
MARKETING	How and where will the class advertise the event? Discuss this with the learners. Ask them to make leaflets or posters. They will also have to prepare enough seed packets and decorate these in order to attract customers.
EQUIPMENT	Organise tables and decoration materials for the event
TEAMWORK	Divide the class into groups and assign different tasks to each team.
FINANCES	How much should each packet of seeds cost? Who is going to count the money at the end of the day? How will they use the money? Discuss and decide together with the class.

Grade 5+ (recommended)

REFLECTION

GROUPWORK: Self-reflection

Ask the learners to evaluate what they have learned. Prepare 5-6 posters (depending on class size). Draw the shape of a tree with 4 branches and 6 to 8 leaves on each poster. Write one question into the outline of each branch:

1. What did we learn?
2. What did we like?
3. What were our challenges?
4. Why is it important for us and others?

Divide the class into 5 or 6 groups. Each group discusses the questions and writes their answers in the leaves. Give them 30 minutes to complete this, before they present their answers to the class.



Becoming more conscious of what I have learned.



Taking care of seedlings.

Grade 5+ (recommended)

MODULE OVERVIEW

INTRODUCTION: In this module, learners engage with the idea of starting their own Entrepreneurship Learning Garden at school. Step-by-step, they put this idea into practice and become gardeners as they set up and maintain their vegetable beds and carry out gardening routines from the time of sowing to harvest.

CHALLENGE: Learners grow their own garden. They engage in teamwork, joint decision-making and the daily sharing of tasks and responsibilities, in order to harvest the fruits of their own work.

COMPETENCES: WHAT IS THE LEARNING OUTCOME?

AGRICULTURE	FOOD
Learners: • I can identify the right place for a garden • I know how to use gardening tools and materials • I can plan and prepare for gardening • I have experience in growing plants	• I am acquainted with healthy food • I am familiar with a number of vegetables and their nutritional value.

YOUTH START - ENTREPRENEURSHIP COMPETENCES LEVEL A1 / A2

Learners: • I am able to fulfil simple tasks • I can develop and record ideas • I can present my own ideas • I can work with others	• I can explain and compare the price and value of products • I can apply simple planning skills and show an understanding of limited resources

BUILD ON: HOW TO CONNECT TO CAPS	Natural Sciences and Technology / Life Skills
TIME ALLOCATION	15 hours

OVERVIEW: WHAT IS THE LEARNING CONTENT OF THE MODULE?

STEP 1: WORKING ON GARDEN IDEAS	STEP 2: GARDENERS GETTING READY	STEP 3: GARDENING STEP-BY-STEP	STEP 4: REFLECTING ON PRACTICE
Collage, pair interview, class discussion: My dream garden **Class discussion, poster design and presentation:** Our school garden	**Quiz, class discussion:** Garden tools **Picture story:** Garden practice on paper	**Learning by doing:** The ABC of garden practice **Research:** Food facts and gardening	**Learning journal:** Garden diary

MATERIALS AND TOOLS: WHAT DO I NEED?

STEP 1: WORKING ON GARDEN IDEAS	STEP 2: GARDENERS GETTING READY	STEP 3: GARDENING STEP-BY-STEP	STEP 4: REFLECTING ON PRACTICE
Magazines, coloured paper, pencils, scissors, glue sticks, paper for a poster, sticks, garden line Factsheet: "Veggie facts"	Garden tools (↠ Quiz), Learner copy: "Garden practice on paper"	Diary, garden tools, 50 compost bags, 5/6 seed bags (↠ "Veggie facts")	Poster/marker, diary

Grade 5+ (recommended)

KNOWLEDGE

CHECKLIST: ENTREPRENEURSHIP LEARNING GARDEN

Setting up a school garden is challenging. The following hints will help learners to create manageable and fruitful projects.

LOCATION OF THE GARDEN	Identify a place far enough from classrooms (noise/distraction), close to a water supply and away from septic systems and waste bins.
SIZE OF THE GARDEN	The garden should be big enough for 30 people to work in – at least 5x10 m.
SIZE OF GARDEN BEDS	Do not make garden beds too big. Learners should be able to reach the centre of a bed easily, without stepping into it.
STORAGE OF GARDENING TOOLS	Keep gardening tools and materials in a secure storeroom that is easily accessible during Sprouting Entrepreneurs and close to the garden.
WATERING	Water the garden and plants using watering cans. Using a hosepipe will not give learners the right feel for adequate watering and cannot be managed properly without external help.
CROP ROTATION (LONG TERM PROJECTS)	Once the garden becomes a permanent project, you will need to alternate the planting of vegetables in garden beds to discourage pests and maintain good quality soil.
SUN PROTECTION	Gardening often means working in the sun. Remind learners to wear a sun hat or headscarf to prevent sunburn.
DIRT PROTECTION	Ask the learners to wear an old t-shirt over their school uniforms to keep them clean.
BE ACTIVE	Participation rather than observation. Learners must get involved, work together with others and share tasks.
SCHOOL HOLIDAYS/ WEEKENDS	Arrange for the staff / groundskeeper to water plants during school holidays, to prevent plants from drying out.
RECORDS - GARDEN DIARY	Learners should record the learning process and its results.
COMMUNICATION/ INFORMATION	Allow parents/guardians to follow what is happening in the school garden. Update them on the project from time to time, or invite them to observe or take part in some gardening activities.
HYGIENE	Always remind learners to wash their hands after gardening, as well as the fruit and vegetables they harvest.

Veggie garden – Colourful variety

This manual is based on a selection of vegetables that allow for all-year-round gardening activities. This is a mix of easy-to-find leafy greens, legumes, bulbs and root vegetables of different shapes and colours. Learners who already know some of the vegetables will learn more about these crops through their practical work.

VEGGIE FACTS

VEGETABLE	CHARACTERISTICS
DWARF BEAN	Dwarf beans (also called French beans) are legumes. They are easy to grow, not too sensitive to dryness and therefore a popular vegetable for home gardens. Their roots produce nutrients that help to improve soil quality. Dwarf beans must be cooked, and can be eaten both hot and cold. They go well with many kinds of food.
CARROT	The carrot is a root vegetable that can be eaten raw or cooked. They can tolerate cold and frost, which makes them an ideal crop for the whole year, although they grow best at 18 - 23°. Many people are surprised to discover that carrots are not always orange, but can also be black, purple or white.
BEETROOT	Beetroot and spinach belong to the same vegetable family. The bulb is well known for its bright purple colour and sweet taste. People often do not know that the leaves can also be eaten; they can be prepared just like spinach.
LETTUCE	Lettuce is an indispensable salad vegetable throughout the world. There are hundreds of different types, although many people only know 3 or 4 – usually Iceberg, Batavia, Romania or Butterhead. Lettuce is an annual plant that likes low temperatures. It has fewer nutrients than most other green vegetables.
TOMATO	The tomato originates from South America and is cultivated as an annual (a plant that grows for only one year). It is a berry and therefore a "vegetable-fruit". It has a weak stalk and has to be grown using a stick or similar supportive structure. The tomato is a popular ingredient in sauces and salads.
CABBAGE	Cabbage is an annual crop known for its densely-leaved heads. It is a popular and widely grown low-cost vegetable. It can be planted throughout the year in almost all soils and in different climatic conditions. Cabbage can be eaten raw, chopped into very thin slices as a salad, or eaten cooked as soup or a side dish.
SWISS CHARD	Swiss chard is an easy-to-grow vegetable and a member of the beet family. Its leaves and stems are best eaten while still young and tender, either raw as salad or cooked as a side dish. Swiss chard can be harvested throughout the year as it keeps producing fresh leaves. It grows in most places, tolerates frost and can be a colourful vegetable with its stems that range from white to purple or yellow. In South Africa it is often wrongly called spinach, although it has much bigger and thicker leaves.
RADISH	Radishes can be found in many home gardens, probably because they grow quickly, easily and almost all year round. While the skin colour of the bulb varies (white, red, pink, purple) the flesh is always white. Radishes are commonly used as salad vegetable.

VEGETABLE	NUTRITIONAL VALUE	COMPANION PLANTS – PROMOTE GROWTH AND OFFER PROTECTION FROM PESTS
DWARF BEAN	All vegetables are a rich source of nutrients that promote good health and energy. They contain vitamins, minerals and fibre while they are fresh, and are low in fat, salt and sugar.	Lettuce, spinach, beetroot, carrot, radish, cauliflower, potato, cabbage
CARROT		Lettuce, tomato, dwarf bean, radish, onions
BEETROOT		Lettuce, cabbage, dwarf bean, onion, spinach
LETTUCE		Dwarf bean, carrot, beetroot, onion, cabbage, broccoli
TOMATO		Carrot, pea, radish, lettuce, onion
CABBAGE		Beetroot, dwarf bean, onion, potato
SWISS CHARD		Dwarf bean, cabbage, cauliflower, onion, broccoli
RADISH		Dwarf bean, carrot, lettuce, pea, tomato

VEGETABLE	SOWING: METHOD AND TIME	GERMINATION	HARVEST
DWARF BEAN	Direct to soil, year-round, best in summer, August to February	8-10 days	7-10 weeks
CARROT	Direct to soil, no transplanting, year-round, best in cooler seasons, August to April	10-14 days	12-15 weeks
BEETROOT	Direct to soil, year-round, best in spring/autumn, August to April	7-10 days	11-16 weeks
LETTUCE	Direct to soil or grown from seedlings, year-round, best August to April	4-10 days	11-12 weeks
TOMATO	Direct to soil or grown from seedlings, year-round, best in spring, August to November, staking is recommended	7-14 days	12-15 weeks
CABBAGE	Direct to soil or grown from seedlings, year-round, best August to April	7-10 days	12-13 weeks
SWISS CHARD	Direct to soil or grown from seedlings, year-round, best in spring and August to April	7-14 days	8-12 weeks
RADISH	Direct to soil, year-round, best February to November	5-10 days	3 weeks

Further information:
http://www.arc.agric.za/arc-vopi/Leaflets%20Library/Production%20Guideline%20for%20Winter%20Vegetables.pdf
http://www.arc.agric.za/arc-vopi/Leaflets%20Library/Production%20Guideline%20for%20Summer%20Vegetables.pdf

Grade 5+ (recommended)

ACTIVITIES

COLLAGE, PAIR INTERVIEW, CLASS DISCUSSION: My dream garden

This activity helps to create, capture and discuss ideas for gardening, starting with learners' views and experiences. It aims at stimulating creativity and participation.

STEP 1: Start with own ideas
Ask learners to draw a picture (or alternatively create a collage) of their dream garden and its crops. Provide old magazines, coloured paper and pencils, posters and glue sticks. Challenge the learners to "think out of the box" and come up with a unique idea.

STEP 2: Compare ideas
In the next lesson learners pair up, study their partner's picture and interview each other about the features of their garden for 20 minutes. As they compare their plans, they look for similarities and differences.



STEP 3: Summarise ideas
Call learners for a class discussion immediately after the pair interviews and facilitate it with the following questions. Ask one of the learners to write all answers on the board.

1. Do the garden pictures have anything in common? Do you see any differences?
2. What are the class's top 5 favourite vegetables?

CLASS DISCUSSION, POSTER DESIGN AND PRESENTATION: Our school garden

STEP 4: Concretise and negotiate ideas
It is time to move from dream to reality and start talking about a school garden. After they have shared and compared their ideas about gardening, learners suggest ideas for setting up their garden at school. Ask them to discuss the following topics in groups of 4 and to illustrate their decisions on a poster:

1. Location and size – number of beds to be installed
2. Crops – seasonal vegetables to be planted
3. Responsibilities – garden rules to be followed

STEP 5: Present ideas
Lobbying for a project is at the core of this exercise. Learners illustrate and present ideas and look for support. Go with the learners to the yard. Ask them to identify a good spot for the garden, and to size and mark it with stones or sticks and garden line. Back in class, review the Entrepreneurship Learning Garden checklist with the learners, and check whether they have taken these points into consideration in planning the garden. Based on the information in "Veggie facts" (see "KNOWLEDGE", learners should also check if they have chosen the right vegetables for the season.



Discussing the size of the Entrepreneurship Learning Garden.

Learners then prepare a short presentation of their future gardening project and invite the principal of the school to watch it. By creatively illustrating their ideas and plans, they will convince the principal and start their garden venture. Ask them to use the board or prepare posters for their presentation.

QUIZ – CLASS DISCUSSION: Garden tools

Learners prepare themselves for practical work on the ground. To be able to carry out tasks independently and efficiently, they need to know the relevant tools and procedures (see also activity: “Garden practice on paper”).

Place the garden tools outside and ask learners to name them. Do they recognise all the tools?



Basic garden tools

(left to right – front row)

1. Garden hand fork
2. Garden hoe
3. Garden rake
4. Garden shovel/spade
5. Garden fork
6. Garden rake 2

(left to right – back row)

7. Wheelbarrow
8. Garden shears
9. Watering cans

Discuss the purpose of each tool, how to use it correctly, and the risk of injuries.

PICTURE STORY: Garden practice on paper

These pictures show how to set up a garden, step-by-step. Read the explanations in the list below and fill in the matching numbers. Keep the picture story. It will serve as guideline for creating your garden.



1



2



3



4



5



6



7



8



9

_ Level the garden, make beds. Make sure the beds are not too big. Can you reach the centre of the bed without stepping into it? Make little paths between the beds so that it is easier to work them.
_ Cover the beds with a thin layer of mulch. This reduces evaporation and weeds, and keeps the seedlings moist.
_ Start planting. Sow the right vegetables for the season. Choose companion plants. Give each plant enough space.
_ Water the garden in the morning to keep plants moist. Plants need enough water to sprout and grow.
_ When the seeds have germinated and grown into seedlings, move the ones that need more space (e.g. tomatoes), so that little greens/veggies can grow nicely into adult plants.
_ Find the right place for your plot. Check the soil and other conditions (e.g. distance to classrooms, water supply).
_ Dig the plot. As you loosen the soil you add air. Take out any stones, grass or weeds.
_ Fence your garden to stop animals coming in, or mark a “no-go” area to keep people out.
_ Add compost, dig it in to improve the quality of the soil. Make the foundation 20-25 cm deep.

LEARNING BY DOING: The ABC of garden practice

All learners should now be prepared for practical work. The following exercises guide and help them to work together in groups and build their own Entrepreneurship Learning Garden.

A – ARRANGEMENTS FOR GARDENING
A successful project starts with a detailed plan. This lets project members manage single tasks, control the process and work efficiently towards defined goals.

STEP 1: Draw a detailed garden activity plan
Learners use their initial garden plan to make a detailed list of gardening activities. Remind them of the steps that need to be completed (see picture story: "Garden practice on paper"). Learners should estimate how much time each task will take, and define responsibilities (see example). Facilitate this process and help learners draft a final plan. Use the board and ask them to copy the plan into their exercise books.

GARDEN ACTIVITY/TASK	DURATION	TEAMS
LOCATING AND SIZING THE GARDEN	1 hour	all learners
DIGGING AND CLEANING THE PLOT		
LEVELLING THE GARDEN, MAKING BEDS AND PATHS		
FENCING THE GARDEN (OPTIONAL)		
SOWING/PLANTING VEGETABLES		
MULCHING		
WATERING THE GARDEN		
SPACING/TRANSPLANTING SEEDLINGS		
ADDING COMPOST		
WEEDING		
HARVESTING		

B – BECOME A GARDENER
There are many different tasks to be carried out in order to install and maintain a garden. Help the learners to grow into their duties, while leaving them space to find their own ways of dealing with challenges. Keep using the garden activity plan and edit it together with the learners whenever necessary.

STEP 2: Prepare the garden
Before starting work in the garden, always ask learners the following questions: "What are we going to do? What do we need for this?" Accompany them to the storeroom to fetch tools and materials for specific gardening activities. Moderate the process, allowing learners to independently discover what they need to do on the ground. Assist and show them how to carry out tasks correctly (e.g. seeding) and give them feedback on their performance. Close each lesson with the question: "What needs to be done next time?"

C – CULTIVATE OWN VEGETABLES
The success of a garden project is best shown through its results. Facilitate the process of planting and help learners to choose a good mix of seasonal plants.

STEP 3: Produce edible results
Bring the selected vegetable seed packets to the garden. Divide the class into groups of 4 learners and give each group one packet*. Show the learners how to read the instructions on the back, and ask them to sow seeds following these instructions.

* You can find more seeds plus specifications on the supplier's webpage.
For instance: http://www.starkeayres.co.za/vegetable-seed-varieties-guide.php

RESEARCH: Food facts and gardening

The following activity encourages learners to explore eating habits and deal with food expenses.

STEP 1: Our daily diet
Ask learners to copy the following template into their diary and record what they ate throughout the past week.

WEEKDAYS MEALS	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
BREAKFAST	bread, milk…						
LUNCH	pap, …						
DINNER							

STEP 2: Do we eat what we need to eat?
Fruit and vegetables play a crucial role in our daily diet because they contain many nutrients. One should eat at least 5 portions per day: ideally two portions of fruit and three of vegetables (where a portion is about the size of a fist).

Ask the learners to check their table once completed and discuss the following questions with them:

1. How often do they eat vegetables or fruits? Is this enough?
2. If they do not eat enough: why?

STEP 3: Shopping list
Once they have completed step 1 and step 2, learners engage in research: They should ask their parents or guardians about food expenses, specifically the money spent on greens and fruits every week.

FOOD ITEMS VEGETABLES AND FRUITS	PRICE PER UNIT	HOW MUCH DOES OUR HOUSEHOLD SPEND PER WEEK ON THIS ITEM?	DO YOU GROW IT IN YOUR GARDEN? YES	NO
e.g. tomatoes	R 30	R 60		✓
TOTAL COST FOR VEGETABLES PER WEEK				



Ask them to copy the template above into their diaries, collect the information and write it into the table.

After completing the task above, ask the learners the following questions:

1. How much can the household save per month by growing their own vegetables?
2. What vegetables would the learners like to grow at home?

Proud Sprouting Entrepreneurs!

Grade 5+ (recommended)

REFLECTION

LEARNER COPY

LEARNING JOURNAL: Garden diary

At the beginning of the Sprouting Entrepreneurs curriculum learners receive a learning journal, their garden diary. Gardening activities should be documented in this on a weekly basis (see example).

DATE	WHAT I HAVE LEARNED	WHAT I LIKED	WHAT I DID WELL	WHERE I NEED TO IMPROVE
25 March 2018	"Today I learned why we need to loosen the soil before planting..."	"I liked the fact that we worked together as a team. That was fun!"	"Digging is difficult. Although being the youngest in class I managed and did quite well."	"I get easily distracted. I should listen more carefully when the teacher explains what we need to do."

After completing all the activities, ask learners to review their entries for the "Go green!" module. As they go through their records, they should select and summarise information. Ask them to write answers to the following questions in their diary:

1. What did I learn about gardening? (knowledge and skills)
2. What is important for me to know?
3. Have I practiced gardening at home? Why or why not?



Learners presenting their skilfully prepared plots.

Module: **COMPOST CHALLENGE**

Grade 5+ (recommended)

MODULE OVERVIEW

INTRODUCTION: Good soil makes better food. This module shows how composting can lead to better and more sustainable gardening by reducing waste, saving money and creating plant food that serves nutrient-poor school gardens.

CHALLENGE: Learners improve the quality of both their garden and its produce. They make and use compost in order to boost healthy vegetable growth. By promoting their natural fertiliser at home and in the community, they create awareness of basic gardening practices and raise funds for their school garden.

COMPETENCES: WHAT IS THE LEARNING OUTCOME?

AGRICULTURE

Learners:
- I know how to creatively reuse waste for gardening purposes
- I know which materials to use for compost
- I can make my own compost
- I understand that a nutrient-rich soil is necessary to grow healthy crops

FOOD

- I know how to reuse food scraps for the production of nutritious vegetables
- I know that healthy crops need nutrients to grow

YOUTH START - ENTREPRENEURSHIP COMPETENCES LEVEL A1 / A2

Learners:
- I can develop creative ideas and recognise their value
- I can undertake simple tasks and focus on completing them successfully
- I can see the importance of economic, ecological and social issues in our lives
- I can work with others, agree on responsibilities and deal with possible problems
- I can generate added value from available resources
- I can present my own ideas
- I can identify things that I am good at

BUILD ON: HOW TO CONNECT TO CAPS	Natural Sciences and Technology / Life Skills
TIME ALLOCATION	9 - 10 hours

OVERVIEW: WHAT IS THE LEARNING CONTENT OF THE MODULE?

STEP 1: RECYCLING WASTE	STEP 2: PREPARING COMPOST	STEP 3: REFLECTING ON COMPOST-MAKING
Research: Reuse and reduce **Creativity and ideas:** Recycling and gardening **Quiz:** Compost guide	**Demonstration:** Compost in a bag **Learning by doing:** Composting step-by-step **Role play:** No composting here!	**Self-Assessment:** What I learned about composting

MATERIALS AND TOOLS: WHAT DO I NEED?

STEP 1: RECYCLING WASTE	STEP 2: PREPARING COMPOST	STEP 3: REFLECTING ON COMPOST-MAKING
Black rubbish bag, pens, paper for poster Recycling materials: toilet rolls, plastic bottles, egg cartons, yoghurt cups, tetra packs Plastic bags, old newspaper, old t-shirt, trousers, hat, piece of white cloth, 2 wooden sticks, garden line Learner copy: "Compost guide" brown/green colours	Clear filing sleeves or glass jar Compost materials: dry leaves, brown paper, grass clippings or green leaves, coffee grounds or tea bags, fruit and vegetable scraps, tissues or toilet paper, wooden sticks/branches, ash or soil 150 cm wooden stick, garden fork, old plastic bags, paper, coloured paper/ pens, glue sticks, scissors Learner copy: "No composting here!" (role cards)	Learner copy: "What I learned about composting"



Compost allows for bigger gardens and faster growth.



WHAT IS COMPOST?

Compost is humus, organic materials broken down by microorganisms (fungi and bacteria) transforming them into a natural, nutrient-rich fertiliser for the garden.

MISCONCEPTIONS ABOUT MAKING COMPOST

"Difficult to make, it smells, attracts animals, it takes a lot of time and work" – these are some of the prejudices people have against compost. However, with a little know-how and proper maintenance, none of them need be true. Unlike other gardening activities (e.g. digging, weeding) compost-making is a simple exercise, which does not take a lot of time and effort. The right selection, mix, and proportion of organic matter prevents the compost from smelling, and deters unwanted visitors like rats or dogs. A little maintenance work can reap rewards in terms of soil improvement and waste reduction.

THE ART OF MAKING COMPOST

There are different ways of making compost. Organic matter can be arranged as a free-standing, enclosed or open heap above ground, or collected in compost bins. Free-standing compost heaps are accessible – learners can easily observe the process of decomposition, and water or turn the compost when needed. Compost does not have to be arranged in layers. All organic scraps will break down sooner or later. However, the right mix and proportion of materials can promote quicker decomposition. If bigger compost materials (i.e. trimmings) are shredded, the breakdown will happen faster.

Adding air and new scraps: Turning compost with a fork feeds oxygen to the organisms responsible for decomposition. This will speed up the breakdown of organic waste and prevent the compost from rotting. At the same time, additional green materials can be worked into the centre of the pile. This will feed the microorganisms and further boost decomposition. By turning the heap, all materials finally move to the centre of the pile, where the complete breakdown of scraps occurs due to heat. Compost turned once a week will quickly become humus.

Adding water: Keeping the materials moist is another secret to composting. Avoid watering the compost heap too often to protect it from rotting and smelling, and cover it with a plastic sheet during rainy seasons.
The materials should be as moist as a wrung-out sponge.

Mixing brown (dry) and green (wet) materials: Decomposition is based on two ingredients, carbon and nitrogen. All organic materials contain both. Balancing carbon and nitrogen is necessary for composting. We need more carbon than nitrogen in the compost. While carbon provides the microorganisms responsible for decomposition with energy, nitrogen supports the production of proteins that promote the growth of microbes. The right diet keeps microbes strong enough to break down waste scraps.

The right mix/proportion creates the right environment for decomposition. If there is too much carbon, the process will slow down; if there is too little, the compost heap will smell bad. Mixing 2 to 3 parts of carbon-rich (brown/dry) materials with 1 part of nitrogen-rich (green/wet) promises good results.After 7 to 10 days, check if the compost is "cooking": Insert a stick into the centre of the heap to check the temperature. The stick should be warm when you pull it out.



Finding the right place for a compost heap: There are a few things to consider when planning a compost heap. It should not be too far from the garden or from your waste sources. Establish it on the ground – it must be in contact with the soil, as this provides microorganisms for decomposing. Locate the heap far away from neighbours or activities that could be negatively affected, in case problems arise (e.g. your compost starts to smell). Build the compost heap in the shade so that it does not dry out,and make sure that it is within reach of water. Enclose it with a loose ring of chicken wire to protect it from animals.

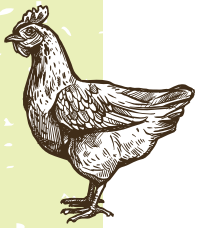
Identifying compost materials: There are many waste scraps that can be used for compost. There are also some that should be left out, as they negatively affect compost and gardening activities.

WASTE SCRAPS TO USE	BROWN/DRY	GREEN/WET
Fruits/fruit scraps		X
Vegetables/vegetable scraps		X
Coffee grounds/tea bags	X	
Wood ash	X	
Egg shells	X	
Grass/flower clippings		X
Green leaves		X
Newspaper/brown paper	X	
Brown leaves	X	

WASTE SCRAPS TO AVOID
Meat/fish/bones: attract pests, smell
Glossy paper: contains chemicals, breaks down slowly
Oil, grease, fat: attract pests, smell
Diseased plants: transfer diseases to compost soil
Seeded weeds: spread weeds in compost
Animal excrement(meat-eating animals): health risk
Dairy products: attract animals, smell

Manure and Compost:
Manure from plant-eating animals (livestock) is often used for composting as it is rich in nitrogen. It supports the heating of the compost pile and accelerates decomposition.

In this manual we do not use manure, as handling it can carry a risk of contamination by microorganisms harmful to humans.



Compost and Sustainability:

Composting is a sustainable practice and comes with various benefits. It reduces the amount of garbage in landfills. Many materials can be reused or recycled, either for compost or for other gardening purposes. Compost also promotes health. As it improves and nourishes the soil, it promotes the growth of healthier plants and better food. Composting also promotes self-sufficient gardening. Processed organic materials result in humus, which is a natural alternative to expensive, mass-produced fertilisers. The latter often contain pollutants and chemicals. Composting is a low-cost activity that creates social and ecological value.

Grade 5+ (recommended)

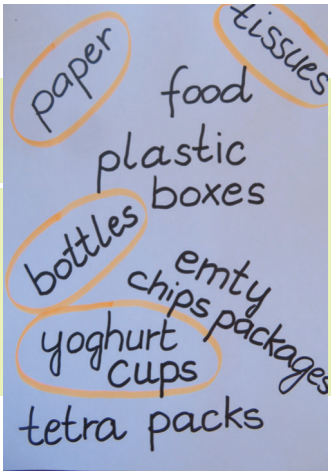
ACTIVITIES

RESEARCH: Reuse and reduce

Both at home and at school, learners see how many things end up in the garbage. As they analyse and recycle some of the scraps, they learn how to reduce the amount of waste and understand how creativity can produce value.

Take the learners to the garden. Bring an empty black rubbish bag, a poster, pens and one full school dry-waste bin. Cut the black rubbish bag open, lay it out and empty the school dry-bin on top of it. Ask the learners the following questions:

1. What kind of materials can you find in the waste bin?
(Learners must identify the materials and write them on a poster).
2. Which materials can be reused or recycled?
(Learners circle at least 5 materials on the poster and produce ideas for recycled products. Ideas can be added to the poster).



CREATIVITY AND IDEAS: Recycling and gardening

Waste scraps make good materials for arts and crafts. This activity shows how to create objects that can help keep unwanted visitors away from the garden.



Waste sculptures

Ask the learners to collect old materials like toilet rolls, plastic bottles, egg cartons, yoghurt cups and tetra packs from home, and bring them to school. Prepare watercolours, scissors, glue, tape and string. Encourage the learners to be creative and make sculptures using the recycled materials. Place the artwork in the garden. The sculptures serve as short-term decorations and keep birds away from the plants.



Scarecrow

Instead of sculptures, learners can make a scarecrow using waste materials. Ask the learners to collect plastic bags and old newspapers. Find an old, torn or no longer used T-shirt and trousers, an old hat or piece of white cloth, a marker, two wooden sticks and some garden line. The learners tie the sticks into a cross, and insert one end into a trouser leg with the end tied. Also tie the end of the other trouser leg, which is still hanging loose. The trousers need to be stuffed with bags and paper and tied at the top when full. Learners then do the same with the T-shirt. Finally, learners fill one plastic bag with paper, form a ball, wrap it with the white cloth and tie the ball to the top of the stick. They can then paint a face on the ball and put the old hat on the scarecrow's head. Ready! The scarecrow will chase unwelcome visitors away from the garden.

QUIZ: Compost guide

Making compost is simple. You are merely speeding up a natural process with air, warmth and moisture so that organic materials break down faster to become a nutrient-rich fertiliser for the garden.

Start the compost experiment with exercises that help learners put theory into practice.

STEP 1: There are plenty of materials that can be used for composting.

1. Brainstorm and record answers on the board: What kind of waste scraps can be used for composting? Explain why certain scraps (e.g. faeces of meat-eating animals, glossy paper etc.) should not be used (see "KNOWLEDGE").
2. Ask the learners to copy the following matrix "What to compost"into their book.
3. They then have to mark those materials that are not good for composting with a cross (e.g. glossy paper).
4. Give feedback: check and correct the results.

MEAT SCRAPS	BANANA PEELS	FRUIT SCRAPS (GREEN)	PAP	GRASS CLIPPINGS
EGG SHELLS	TREE LEAVES	GLOSSY PAPER	BROWN PAPER	FLOWER CUTTINGS
COFFEE GROUNDS	TEA LEAVES/BAGS	CHICKEN MANURE	WOOD ASH	CORN COBS
TOILET ROLLS (BROWN)	BONES	FISH SCRAPS	LEMON RINDS	EXCREMENT (MEAT-EATING ANIMALS)
VEGETABLE SCRAPS	CHIPS	BREAD	CEREALS	TISSUES

STEP 2: It is not only about the "right" materials, but also about the "right mix" of materials.

1. Explain to the learners how to build a compost heap by arranging waste materials correctly. The section "KNOWLEDGE" provides information on how dry (brown) and wet (green) materials should be added in layers.
2. The learners have to distinguish green (wet) compost materials from brown (dry) waste scraps. Ask them to colour in the boxes using green or brown. Check their results and give feedback. Did they mark all organic scraps correctly?

DEMONSTRATION: Compost in a bag



This exercise prepares the learners to make compost. Miniature compost is a playful activity that invites them to choose and arrange organic waste materials in a 3:1 ratio, in order to learn how to layer compost.

STEP 1: Organise the following materials and go to the garden.
Transparent filing sleeve or jar
Dry leaves or brown paper
Grass clippings or green leaves
Coffee grounds or used tea bags
Vegetable and fruit scraps
Toilet rolls
Twigs/branches
Ash or soil

STEP 2: Ask the learners to stuff the transparent bag or jar to the brim, putting the materials in layers.

STEP 3: Check the bag and give the learners feedback. The transparent container shows the different layers of waste materials. Is the ratio of wet to dry materials right for composting?



In charge of the compost.

LEARNING BY DOING: Composting step-by-step

Once the learners know what materials to use, they are ready to build a compost heap on their own – with a little help from the teacher and other staff members.

STEP 1: Getting ready – collecting compost materials
What kind of waste scraps can be found at school? Ask the learners to talk to the school groundskeeper. Can she/he help to collect organic materials like grass clippings, leaves, tree or hedge trimmings? Visit the school kitchen. Ask learners to introduce the cook to the compost project, too. Can she/he regularly provide vegetable or fruit scraps for the compost heap? The learners have to plan: when and where do they have to collect the scraps? Who is in charge?

STEP 2: Laying a foundation for composting
Go to the garden. Ask the learners to identify the best place for the compost heap. Discuss the pros and cons of possible locations for the compost heap and set its size (see “KNOWLEDGE”). Ask the learners to collect twigs or hedge and branch trimmings. They have to build the first layer to allow for good aeration, as oxygen is an important driving force in decomposition.

STEP 3: Building the heap layer by layer
After collecting organic materials, the learners establish the compost heap by adding layers of material until it reaches a height of 90 to 150 cm. Make sure that the learners use the right proportion (3:1) of dry (brown) and wet (green) organic waste materials, which they shred or cut into small pieces with the help of the grounds staff. This allows for a faster breakdown of the compost. Let them add a thin layer of soil here and there in order to introduce soil microorganisms that help the compost to mature faster.

ROLE PLAY / DISCUSSION: No composting here!

This exercise reflects on what the young gardeners have learned. Besides discussing the benefits and risks of composting, learners practice their discussion skills. As they present their ideas and arguments, they learn to become effective listeners and active contributors.

Provide the learners with general information, and cut and distribute the role cards below. Learners should form groups. Each group receives a role card and prepares their arguments. Give ample time for this. Each group needs to prepare their position, which is later presented by a chosen group leader.

General information: The counsellor of XY invites all members of the community to the following event: "Compost-making and gardening in our community"

Background: A home farming cooperative has been growing vegetables for their own consumption and business purposes for a few years. They have installed compost heaps. At first, the neighbours did not mind, but over time they have turned against this. Due to some complaints (i.e. smells, pests) community members have asked the counsellor to look into the matter.

Event: The counsellor invites representatives from different interest groups to a discussion in the community hall, to find a solution.The representatives make their statements and discuss possible ways to move forward with the audience.

Role cards:

GROUP ROLES	DESCRIPTION
GARDENER/ VEGETABLE SELLER	No doubt, composting is a vital part of gardening. It is easy for you to point out all the benefits of this money-saving and environmentally friendly practice.
HEALTH PRACTITIONER	You are sceptical. If composting is not done correctly, some serious health risks could arise. It is your responsibility to warn people of possible problems.
UNHAPPY NEIGHBOURS	You are not happy. The compost heap in your neighbour's garden has brought negative effects that worry and upset you. Mention at least 3 of the problems caused.
HAPPY NEIGHBOURS	Your neighbour was the first person to install a compost heap. That was two years ago. You haven't had any problems so far. On the contrary: you can easily explain the benefits of composting.
COUNSELLOR	In densely populated areas like the township, people must respect the rules. This is also true for composting. You explain what can or can't be done when composting.
TUCKSHOP OWNER	You are neutral. Customers like fresh, affordable local vegetables. Veggie sellers need to keep their costs low. Composting serves both of these purposes. Explain why.
MODERATOR	You are the key person in the debate. The following step-by-step guide should help you to lead the discussion: 1. Invite all representatives to share their views on composting. 2. Invite the audience to comment on perspectives given by the different stakeholders. 3. Wrap up and summarise the pros and cons of composting mentioned so far. 4. Ask the guests on the podium how problems in relation to composting could be addressed or resolved. Invite the audience to propose solutions for the challenges mentioned. 5. Ask for a final vote: Is composting a sustainable and good practice for the community? Who supports it? Who disapproves of it?

Grade 5+ (recommended)

REFLECTION

LEARNER COPY

SELF-ASSESSMENT: What I learned about composting

Ask learners to mark the smiley that best reflects how much they have learned through the Compost Challenge.

NO.	CONTENT & COMPETENCES			
1	I know what to use for composting. I can also list some scraps that shouldn't be used.			
2	I feel able to build my own compost heap. I know how to prepare for it and how to start it.			
3	I can maintain a compost heap. I know what to do in order to make my own nutrient-rich soil.			
4	I can tell my family what the pros and cons of composting are. I'm aware of the risks and benefits.			
5	I can explain why compost is a good, nature-friendly practice.			
6	I can recycle waste and creatively transform it into useful things			



Sprouting Entrepreneurs planting trees at their school.

Grade 6+ (recommended)

MODULE OVERVIEW

INTRODUCTION: The following real-world challenges build on competences learners have developed over the previous year. The Entrepreneurship Learning Garden serves as a medium in which ideas can be creatively developed and implemented. Projects start at school and expand into the community. Teachers are encouraged to select challenges together with learners and compile an annual teaching plan.

Food at home

The seedling project

Sprouting Entrepreneurs: Teaser workshop

Ubuntu bundles for the community



Smart landscape gardening

Local VeggiePreneurship: Case study and business idea development

Newsletter: Tell the story of your project

Pop-up market project

Mini-company challenge

Food security and us

Sharing knowledge with elderly community members

Workshop challenge: Sprouting changemakers

CHALLENGE: Learners work on ideas that combine the learning areas of agriculture, food and entrepreneurship. The projects aim at creating financial, social, cultural, ecological and civic value within the school and the broader community.



After preparation: Discussing the next steps.

COMPETENCES: WHAT IS THE LEARNING OUTCOME?

AGRICULTURE

Learners:

- I know how to establish and maintain a garden
- I am able to grow different vegetables from seed
- I can use gardening tools and materials purposefully
- I am able to use my gardening knowledge and skills to create attractive living and learning spaces
- I can achieve positive results by combining gardening activities and creative methods
- I can pass on gardening knowledge and skills to my peers
- I know of agricultural practices from the past and can apply them
- I can use my gardening skills for the wellbeing of others

FOOD

Learners:

- I know which foods are healthy
- I am aware of food consumption patterns at home, at school and in the community
- I know how to positively influence dietary habits at home, at school and in the community
- I can respond to the problem of food insecurity within my household and my community

YOUTH START - ENTREPRENEURSHIP COMPETENCES LEVEL A1 / A2

Learners:

- I can work with others, agree on responsibilities and deal with possible problems
- I can develop creative ideas that solve problems and recognise opportunities in the market and in society
- I can present my own ideas
- I am aware of economic and societal issues we face and have considered how I can contribute to their solution
- I can generate value from available resources
- I can identify risks in everyday life and reflect on how to avoid them
- I can apply simple planning skills and show an understanding of limited resources

BUILD ON: HOW TO CONNECT TO CAPS TIME ALLOCATION	Variable: depending on challenges selected (see "ACTIVITIES")

OVERVIEW: WHAT IS THE LEARNING CONTENT OF THE MODULE?

The module consists of a selection of twelve Entrepreneurship Learning Garden challenges:

1. Food at home
2. Food seccurity and us
3. Local VeggiePreneurship
4. The seedling project
5. Smart landscape gardening
6. Newsletter: Tell the story of your project
7. Future Sprouting Entrepreneurs: Teaser workshop
8. Sprouting changemakers create awareness
9. Mini-company project
10. Sharing knowledge with elderly community members
11. Pop-up market project
12. Ubuntu bundles for the community

MATERIALS AND TOOLS: WHAT DO I NEED?

(See challenges)

Grade 6+ (recommended)

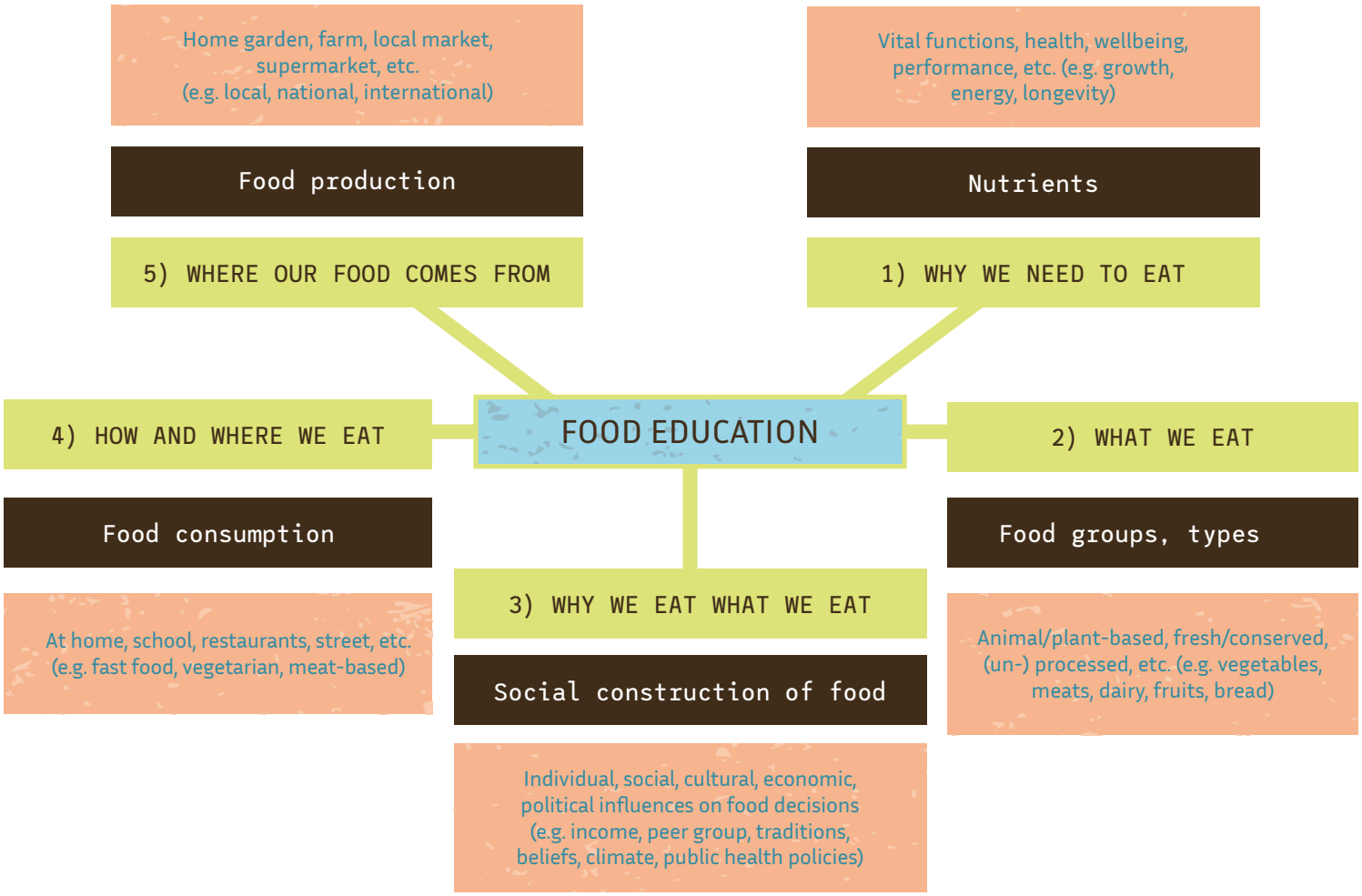
KNOWLEDGE

FOOD EDUCATION

The Entrepreneurship Learning Garden addresses the combined agriculture, food and entrepreneurship (AFE) learning outcomes. For one, food is a material outcome of learner activities in the garden. "*Tell me what you eat and I will tell you who you are*" is a quote by the French lawyer Jean Anthelme Brillat-Savarin (1755-1826). It invites us to reflect on the significance of food beyond the physiological need for it, towards questions of identity and recognition. For instance, the "right to food" is an internationally recognised human right and refers to the ability to feed oneself in dignity (FAO 2005). The South African constitution states the right of access to "*sufficient food and water*" and the right to "*basic nutrition*" for every child (RSA 1996, p. 1).

Food presents a twofold South African "real-life challenge". According to the SANHANES report, less than 50% of the South African population are food secure and almost 40% of the female population is obese. 30% of Africans are affected by food insecurity, making them the most affected population group (SHISANA ET AL. 2013, p. 10). Food security is defined as "*a situation that exists when all people at all times have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life*". Food insecurity ranges from uncertainty, reduced quality, lack of variety and quantity of food, to no food, and can result in overweight, obesity and undernutrition (FAO ET AL. 2018, p. 159).

Food education is a cross-curricular approach that looks at biological, social, cultural, geographical and economic aspects of food consumption and production from a pedagogical perspective. Food consumption is determined by what we like, have learned, observed and what is made available to us. What we eat is the result of a life-long learning process that is influenced by the above-mentioned factors. For this reason, and against the background of its impact on "who we are" (health, wellbeing, identity), food competence is an important element of formal education. As learners become garden-based entrepreneurs, they should be aware of the various dimensions of food and how they – as changemakers – can contribute to a greater range of opportunities and freedoms for food consumers. The better we understand food, the more informed our food decisions and actions are.



1. Why we need to eat: Eating and drinking provide humans with what they need in order to grow, develop and reproduce. Different foods and their nutrients (e.g. vitamins, proteins, minerals, etc.) help to steer and regulate processes that are vital for physical and mental health, functioning and wellbeing (e.g. metabolism, immune system, muscle activity etc.). Food is a basic human right. Where the need for it cannot be met, serious consequences (e.g. malnutrition, hunger, etc.) follow, preventing people from leading active, healthy and productive lives.



2. What we eat: Food can be divided into different food groups (e.g. vegetables, fruits, grains, dairy, meat), which are plant and animal products and contain a range of nutrients (e.g. carbohydrates, fats, vitamins, minerals, etc.) in different amounts. To live a healthy life, one needs to follow a balanced diet, which is a daily mixture of fresh (e.g. fruits, vegetables etc.), unprocessed (e.g. maize) and processed foods (e.g. cereals, bread, etc.). Eating healthily means regularly eating a variety of nutritious foods. The World Health Organisation (WHO 2018) recommends the following elements for a daily healthy diet (excl. infants and young children):

- Vegetables and fruits (5 portions per day).
- Legumes, nuts and whole grains.
- Less than 10% of free sugar intake. This includes sugar in soft drinks, sugar in tea or coffee and sugar in fruits, juices.
- Less than 30% intake from fats (unsaturated fats: e.g. fish or sunflower oil; saturated fat: e.g. butter; trans-fat: e.g. fried food etc.). Unsaturated fats should be chosen over saturated and trans-fats.
- Less than a teaspoon of salt.

3. Why we eat what we eat: We start to eat before we are born. It is the basis for development and a natural reaction to hunger and thirst. Later in life, other factors beyond hunger and thirst also start to shape our food decisions.

3.1 Individual and social aspects: Our food decisions are the result of an ongoing learning process. What we eat is influenced by individual preferences, our home, school, friends, community and other sources, such as social media.

- Individual aspects: our liking for certain foods is influenced by our senses. We eat and drink what tastes nice, looks good, smells delicious or has a pleasant texture, and this may vary from one person to another, as consuming food is both a physical process and an emotional experience. A person's openness towards trying out new foods will also affect her food preferences. Individual aspects of food decisions are linked to social aspects, as we are influenced by other people in what we eat.

- Social aspects: Eating and drinking takes place in specific contexts. Our first food experiences take place at home and then within our wider social environment (friends, community) as well as educational, recreational or working environments. For instance: acceptance within a social group might be determined by the (non-) consumption of foods (e.g. alcohol), peers might bring different snacks to school, and so on.

The social institution of the school provides an example of how food decisions are shaped. Schools can have a significant impact on learners' food decisions:

- Policy: is there a policy regarding the quality of food provided and composition of meals?
- Curriculum: is food competency recognised as an important life-skill?
- Time: how does the school timetable set/limit mealtimes?
- Social space: are there designated areas where learners can eat together (e.g. a canteen, benches, etc.)?
- Stakeholders: is the tuckshop allowed to sell soft drinks and low-quality foods?
- Programmes: is there a school nutrition programme that provides "brain food" for learners?
- Teaching and learning: are food-related learning projects such as a school garden in place?
- Staff: has teacher training on food education taken place?
- Outreach: are parents/legal guardians included in food education projects?

3.2 Economic aspects: Financial resources determine what an individual, a household or community eats. The less food is produced by consumers, the more they become dependent on purchasing food and food prices. Location, size of households, sources of income and budget influence:

- whether or not people eat certain foods (access, availability, affordability)
- how often people eat certain foods (frequency)
- the composition in which people eat certain foods (variety, quantity, quality)

Low-income households spend a greater share of their income on food. They consume a smaller variety of foods and must often resort to a lower quality of food (KROLL 2016, STATSSA 2014). Food-related measures, regulations, public health initiatives, etc. are a result of political decision-making processes based on stakeholder interests. For instance, the National School Nutrition Programme is a governmental effort to realise the "right to food".

3.3 Religious and cultural aspects: the meanings people share regarding food influences how it is produced, prepared and consumed. E.g.: specific foods can symbolise properties such as "wealth", "coolness", "health", etc. Subsequently, its consumption supports our self-performance as "rich", "modest", "responsible", "hip" or "fit", etc. In addition, some religions include rules regarding food preparation and consumption.

3.4 Geographical and environmental aspects: Agricultural factors (e.g. climate, soil), settlement patterns (e.g. urban centres, rural areas) with their specific economic structures (e.g. markets, industries) all affect the production and consumption of food. E.g.: foods can be more easily purchased in urban areas; subsistence farming is more dominant in rural areas. In 2017 the predominantly urbanised province of Gauteng showed the lowest percentage of households engaged in agricultural production and the highest percentage of households that experience hunger (STATSSA 2019).

4. How and where we eat

Food decisions are subject to social change. What and how we eat changes over time in response to social, economic, political, and environmental changes (e.g. household structures, gender roles, social mobility, labour markets, technological progress, food prices, etc.). Different eating strategies (e.g. home cooked meals, eating out, take-aways, meals on wheels) require different amounts of time for preparation and consumption, and are a result of people's decisions based on their circumstances.











Different foods and food sources in the community.

5. Where our food comes from

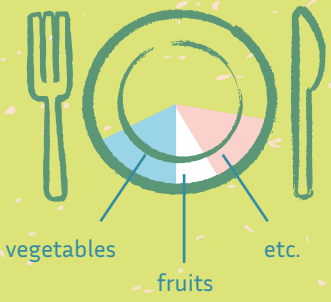
Foods are usually self-produced, exchanged or purchased. People may produce and exchange food to reduce their food-related expenses, support their household livelihood, or to grow high quality food – or simply because they have the resources, knowledge, skills or passion to do so. Food is purchased from a range of suppliers, from local farmers to multinational retailers. The food industry caters for a range of demands and creates competition regarding variety, quality and prices. It influences consumption through advertising, pricing and supply. In turn, consumption patterns influence production and economic, ecological and social sustainability. The freedom to choose one's food is ultimately the result of socioeconomic structures and should be an end of human development (SEN 1997).

Directions for food education

As consumers and potential producers, learners should understand the various properties of food and be able to act upon them. "Food competency" should comprise knowledge, skills and attitudes regarding sustainable production and consumption. It includes the analysis of where our food comes from and how it is produced. It should sensitise learners to the critical interrogation of food narratives (e.g. fast food advertisements; super-foods) and the interests that stand behind the different narratives that seek to influence consumers' food decisions. Ultimately food education aims to enable learners to contribute to the healthy and sustainable production and consumption of foods.

Food at home

CONTENT	- Healthy eating - Food security and home gardening
LEARNING OUTCOMES	- I can discover patterns of food consumption within a household - I know about healthy eating and can follow a sustainable diet - I know of ways to improve food security at home and can implement them
ACTIVITIES CLASS DISCUSSION INDIVIDUAL WORK AND CLASS DISCUSSION MINI-PROJECT	**Outline: Healthy eating and patterns of food consumption** Healthy eating starts at home. It is about more than just the right foods or ingredients. Different factors influence individual food choices and lead to certain patterns of consumption. The following exercises deal with these two aspects of healthy eating. **STEP 1: Eating a variety of foods** Write the following food groups on the board: 1) Fruits 2) Dairy 3) Grains 4) Vegetables 5) Meat and alternatives What do learners know about the various food groups and their nutritional value? Give examples of the food groups, and ask learners to share their knowledge: 1. Fruits (e.g. apples, bananas = vitamins, etc.) 2. Dairy (e.g. milk, cheese = calcium, etc.) 3. Grain products (e.g. pap, bread = carbohydrates, etc.) 4. Vegetables (e.g. tomatoes, carrots = vitamins, etc.) 5. Meat and alternatives (e.g. fish, eggs = proteins, etc.) **STEP 2: What I usually eat at home** Learners reflect on the types of food they typically consume: 1. Learners list the foods they usually eat for breakfast, lunch and dinner during the week, and allocate these to the five food groups. 2. Learners describe what they usually eat in a week (e.g. mainly pap, spinach twice a week, chicken once a week, etc.). 3. Draw an empty plate on the board and divide the plate according to food types (1-5). 4. Ask the learners to copy this. They draw a “dinner plate” showing what they usually eat during the week. After presenting some individual results, ask the learners to answer the following questions: 1. Does their weekly diet include all five food groups? 2. Why do their families choose to eat these foods, rather than other foods? 3. How important are vegetables, compared to other foods? 4. Are there any changes they could make, to ensure a more balanced diet at home? 5. What changes would they make? **STEP 3: Home gardens for food security and healthy eating** Start a small project that contributes to healthier eating at home. Learners grow seedlings of five different kinds of vegetable and then transfer these to their home gardens. If they do not have enough space in their gardens, they can transfer the seedlings to containers and create a mobile garden. After they have installed their home gardens, ask each learner to plan a nutrient-rich diet and introduce this at home (see Figure).
TIME	6-10 hours
MATERIALS	Paper, pens, 5 packs of vegetable seed, garden tools/materials, containers





Seedling nursery at school.



Establishing a home garden.

FOOD/DAYS	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
BREAKFAST	e.g. porridge, tea.						
LUNCH	e.g. pap, spinach, chicken.						
DINNER	e.g. rice, beans.						
SNACKS	e.g. banana, bread, Rama.						

Diversified household diet plan.

Food security and us

CONTENT	- Growing vegetables at home and in the community - Food security in the community - Mapping gardens
LEARNING OUTCOMES	- I can contribute to sustainable food production within my household and my community - I can act upon my understanding of the link between gardening and food security

ACTIVITIES

Outline: Home gardening and food security

Many people grow vegetables in their gardens. This contributes to a supply of food throughout the year. It allows people to save money and supports food security within the household and the community. The following exercise invites learners to investigate and promote food gardening within their community.

POSITIONING EXERCISE

STEP 1: Home gardens and food security in the community – take a stand

Does growing vegetables at home improve food security and nutritional wellbeing? Encourage learners to express and discuss their views. Go to the garden and draw a line. Ask learners to position themselves along the line, depending on whether they think growing vegetables helps a lot, a little, or not at all.

Go-greeners: Household vegetable production makes a huge difference to members of the community!
No-greeners: Household vegetable production makes no difference to members of the community!

(Explanation: Positioning yourself on the far left or far right means that you agree completely with that position. Standing in the middle suggests that you are neutral or have no opinion.)



MAPPING

STEP 2: Home gardens in the community – analyse your community's situation by drawing a map.

Learners walk around their neighbourhoods and make a map of the gardens along their own and two neighbouring streets. As they go along, they should explain their project to their neighbours, and interview them about their gardens.

The map must reflect:

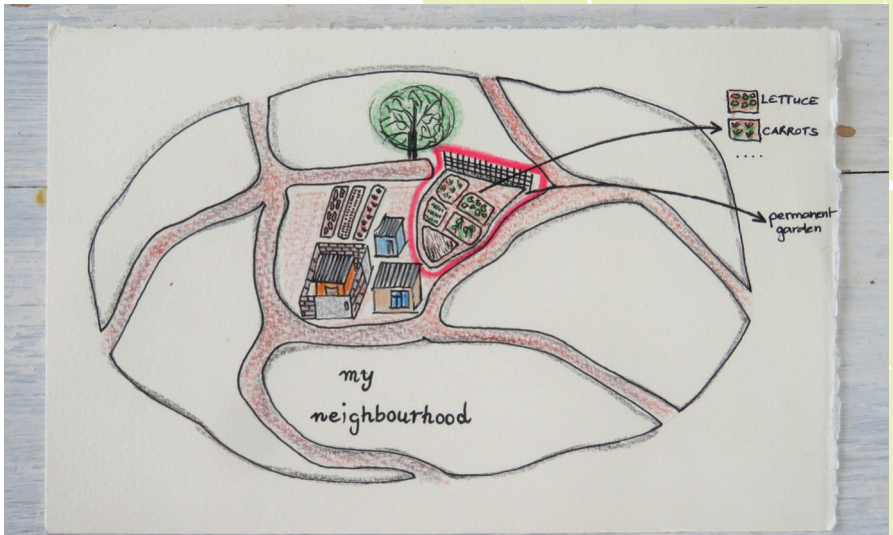
1. the number of gardens in the neighbourhood
2. the types of vegetables being grown in each garden
3. whether each garden is permanent or seasonal

Learners should create a legend for their maps, with symbols to represent different vegetables. Consider working with the social sciences/geography teacher on this exercise.

CLASS DISCUSSION	**STEP 3: Home gardens for food security and healthy eating** Back in class, create a gallery of learners' maps. Ask the learners to compare their maps. Discuss the following questions: 1. Do many people in the community grow gardens? 2. What is the ratio of households with gardens to those without? 3. Do most gardens produce vegetables throughout the year? 4. What kinds of vegetables do people in the neighbourhood grow? 5. Are you happy with the gardening in your community? Explain your position.
POSITIVE ACTION / AWARENESS CREATION	**STEP 4: Public debate on home gardens and food security – engage with community members** 1. Learners set up a stand in the community (e.g. in a community hall, church, or at school on Parents' Day). 2. They prepare a poster stating the subject of their debate. (For example: "How can homestead gardening for food security be encouraged in the community?") 3. Learners display their maps and invite community members to view them. 4. Learners discuss the subject with community members, and record any opinions, ideas or suggestions made. 5. As a class, analyse and debate this feedback. 6. Record future project ideas for the Entrepreneurship Learning Garden.
TIME	6-10 hours
MATERIALS	Paper, pens/colours, tape or reusable adhesive, washing line and pegs



Home garden in the community.

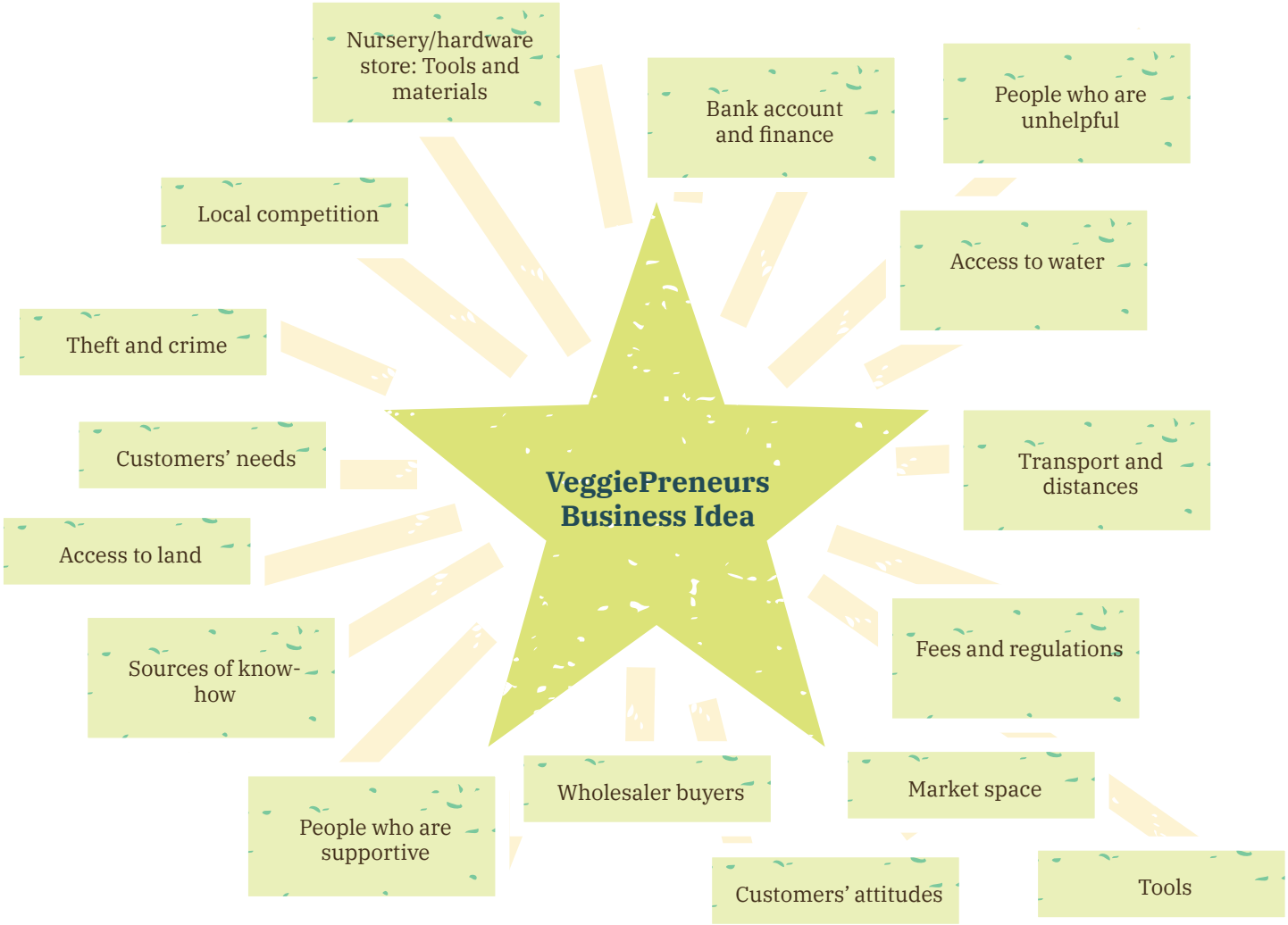


Map of gardens in the community/ neighbourhood.

Local VeggiePreneurship: Research and business idea development

CONTENT	- Local food supply: vegetable markets/businesses in the community - Local food consumption: household food shopping habits - A business idea based on an analysis of supply and demand
LEARNING OUTCOMES	- I can analyse and understand the opportunities and challenges vegetable businesses face in my community - I can analyse and understand the needs and demands of people who buy vegetables in my community - I can develop a business idea based on an analysis of needs, assets, opportunities and challenges
ACTIVITIES	**Outline: Ideas and real-world challenges** Entrepreneurs develop and implement ideas depending on the resources and opportunities that are available. Learners investigate what resources and opportunities are available by interviewing people who sell vegetables and possible customers.
INTERVIEW 1	**STEP 1: Buying vegetables – household food shopping habits** Where do most households get their vegetables: supermarkets, local shops or street markets? Ask the learners to carry out a survey in their community. Every learner should ask five households the following questions: 1. Where do you buy vegetables? 2. How often do you buy vegetables? 3. Are you satisfied with the supply of vegetables in your community – what is missing? 4. Why do you purchase vegetables the way you do – i.e. where and how often? Learners should analyse and compare their findings: where do people most buy their vegetables, and how often? Why do they buy their vegetables in this way? Ask learners: 1. What household shopping patterns can you identify (e.g. households that shop locally every day; those that shop once a week at the mall, etc.) 2. Which shopping patterns are more/less common?
INTERVIEW 2	**STEP 2: Selling vegetables in the community – experiences** Find people who sell vegetables locally. What challenges, opportunities and demand for business have they experienced? Ask the learners to think of questions for an interview and agree on a standardised list of questions. These should cover needs, opportunities, resources and constraints (see STEP 1) Every learner should conduct one interview. In groups, learners should analyse the interviews and write their results on a poster. Each group has 5 minutes to present their results. Discuss the results, and write the main conclusions on the board for learners to copy.
BRAINSTORMING	**STEP 3: Idea creation** Compare the results of STEP 1 and 2. Can learners see any opportunities for a vegetable business? Ask teams to brainstorm creative ideas for a school-based vegetable business. Vote for the best idea.
MAPPING	**STEP 4: Connecting assets, opportunities and constraints** What assets, opportunities and constraints need to be considered, in order to realise this idea? 1. In groups, learners list the assets they need to realise the idea (e.g. access to water, etc.). 2. The learners start planning by drawing a web of assets, opportunities and constraints that are relevant to their business idea. They can do this on a poster, or using chalk on a wall or concrete floor. As groups draw, they discover the connections between idea, assets, opportunities and constraints. Discuss the results (see Step 1 on following page).

BASIC BUSINESS PLAN	**STEP 5: Developing the idea further** In groups, learners start planning their new business. Ask them to consider the following questions: 1. Why will the idea appeal to customers? 2. Do we have what we need to realise the idea? 3. Do we have the skills to implement the idea? Who could help us? 4. What constraints are we facing? How can we manage these? 5. Are there any opportunities that we could take advantage of? 6. Are there people/organisations/businesses that could support us?
POSTER DESIGN	Each group must design a poster outlining their plan. Allow each group 5 minutes to present their poster.
NEXT STEPS	**STEP 6: Congratulations – groups have developed solid business ideas!** These ideas can be implemented at school in the current year or used for the year-long project in the following academic year ("Garden Value Challenge").
TIME	8-12 hours
MATERIALS	Chalk, paper, pens.



Step 1: Brainstorming assets, opportunities and constraints.



Step 2: Clustering assets, opportunities and constraints.



The seedling project

CONTENT	- Mini-business project: growing seedlings for sale
LEARNING OUTCOMES	- I can develop ideas and products based on my entrepreneurial and agricultural competences - I understand the value of food security and healthy eating and can contribute to these at home
ACTIVITIES	**Outline: Selling our seedlings!** Using whatever resources are available, competing teams of learners grow seedlings in the Entrepreneurship Learning Garden. They transplant the seedlings into used toilet rolls, and market and sell their product at a school event (e.g. Parents' Day, prizegiving, etc.). The group that sells the most seedlings is the winner of the challenge.
GROUP WORK	**STEP 1: Start a nursery in the Entrepreneurship Learning Garden** Divide the class into groups. Ask learners what their favourite vegetables are. Each group needs to choose three different vegetables, and grow into seedlings these from seed. (If a pack of seeds costs about R20, this exercise should cost about R60 per group).
PLANNING/GROUP WORK	**STEP 2: Making a profit** Each group contributes R60 to the project. This money forms the start-up capital for their project. The learners should earn more from selling the seedlings than they have spent in growing them. To achieve this, learners should list all their expenses in growing and marketing the seedlings. Help them with this task. Ask them to set a selling price and calculate the number of seedlings they need to sell in order to make a profit. (Comment: As the project uses school resources, the learners should only spend their money on the seedlings).
CREATIVE ART/ RECYCLING	**STEP 3: Create eco-friendly packaging** While the seeds are growing, learners design packaging for their product, and decide how to market it. Draw their attention to the use of affordable and recycled materials (e.g. toilet rolls, egg boxes) to save money. 1. Recycle toilet rolls: close off one end, decorate the rolls and use these as seedling containers. 2. Create a sticker, leaflet or label that tells an interesting story about the seedling.
EVENT PREPARATION/ ORGANISATION	**STEP 4: Market presence** 1. Transplant seedlings into the prepared toilet rolls (do this in the morning before the seedling sale). 2. Learners prepare for the event: Each team decides how they will sell their products (e.g. from a stall, using a hawker's tray, etc.) and prepares/ decorates the equipment they need for this. 3. On market day, the teams sell their seedlings. They should also motivate customers to grow their own vegetables at home, and encourage healthy eating.
CONTEST	**STEP 5: The winner shares it all!** After the event, the groups compare their results. How many seedlings were sold, and how much profit did each group make? The winning team decides how the profit should be spent, with one condition: everyone must benefit!
TIME	6-10 hours
MATERIALS	Recycled toilet rolls, paint, soil, seeds, paper, pens, tables, copies of leaflets/ stickers/labels









From cultivation to creative packaging, marketing and sale.

Smart landscape gardening

CONTENT

- Landscaping school grounds
- Learners contribute creatively to their learning environment

LEARNING OUTCOMES

- I can plan and create an attractive school environment and understand the value of this
- I can contribute positively to the quality of shared social spaces

ACTIVITIES

Outline: Learning spaces and wellbeing

People shape their environment, and the environment, in turn, influences people's behaviour. An attractive learning environment encourages creativity, motivation, and a sense of belonging. It increases the wellbeing of learners and teachers alike. Young entrepreneurs can use creative ideas to improve their learning environment.

MAPPING

STEP 1: Map the site

In groups, learners walk the school premises and draw a map on a sheet of paper. Their map should include natural and man-made features (e.g. buildings, trees, playground equipment, etc.). Draw their attention to all signs of gardening (e.g. flower beds, school garden). Each mapped object should be represented by a symbol, which is explained in the map's legend. Consider working with the social sciences/geography teacher for this exercise.

CLASS DISCUSSION

STEP 2: Analyse the maps

Learners display their maps. Ask them to describe their learning environment. If their descriptions differ, discuss this. Does the quality of their surroundings affect how they feel when they are at school? Alternatively: ask learners to imagine their dream school grounds. This exercise can be used to support discussion around the current school grounds and how they could be improved (see STEP 3).

BRAINSTORMING

STEP 3: Idea creation

Brainstorm ideas for a more attractive learning environment outside the classroom. Encourage innovative approaches to landscaping (e.g. upcycling waste materials). Aim at making the school grounds more colourful by changing the existing environment or adding new features. All ideas should be recorded on posters.

Some ideas:

- install an edible garden by the tuckshop	- create sculptures or a sitting area out of branches, rocks, etc.
- use painted tree trunks as benches	- make a growing tunnel out of used bottles
- paint the Jojo tank	- add flower beds
- fence an area creatively	- plant a temporary sunflower "fence"
- build a hanging garden or bottle garden	- build and paint dustbins

MINI-PROJECT

STEP 4: Positive action

After 30 minutes of brainstorming, learners present their ideas. Let them choose some of these, and implement the ideas as follows:

1. Plan: define goals and activities, decide what materials are needed, and estimate the required time.
2. Present: prepare a poster, present ideas to the principal and ask for permission and support.
3. Realise: organise the necessary materials and put the ideas into practice.

ORGANISATION OF SCHOOL TOUR/ FEEDBACK/ REFLECTION	**STEP 5: Walk and talk** When the projects are finished, introduce other learners and school staff to the new school environment through a school tour. Consider inviting a group made up of learners, academic staff and external stakeholders. The project team prepares for the school tour. They act as guides, explaining their work to their audience. Learners should ask the people taking the tour for feedback: 1. What do they think about the changes? 2. Do they have any other ideas on how to improve the school grounds? 3. What did they learn from the tour? Ask one learner to record the audience's comments. After this discussion, give each guest a piece of paper and ask them to vote for their favourite creative intervention.
SELF-REFLECTION	**STEP 6: Learning spaces – self-reflection** Review the feedback from the audience and ask the learners to look at their project plans. Did they achieve their goals? What lessons did they learn from this experience? Will they apply what they have learned at home?
TIME	10 hours
MATERIALS	Paper, colouring pens, gardening equipment and materials



School buildings, but not much else: Learners imagine spaces that support creativity and learning.



Planting vegetables on the school's wall (photo by participating teachers).









Step 1: Brainstorming ideas.
Step 2: Collecting ideas in the idea-box.
Step 3: Implementation – planting trees and making creative dustbins.

Newsletter: tell the story of your project

CONTENT	- Communicating own ideas and activities and informing others about a project
LEARNING OUTCOMES	- I can communicate ideas and information about projects to others, and understand the value of doing so - I can create a newsletter
ACTIVITIES	**Outline: A newsletter as a marketing tool** Writing a newsletter is a common and simple way to market ideas or activities. It keeps other people informed and draws their attention to new projects. A newsletter about projects in the Entrepreneurship Learning Garden provides insight into practical activities and shares experiences with fellow learners, parents, and others.
GROUP WORK/ BRAINSTORMING AND GROUP DISCUSSION	**STEP 1: Discussion** Divide the class into two groups: Group 1 represents those who will read the newsletter (i.e. other learners and teachers). Group 2 represents the project group who want to communicate news to their readers. Ask both groups to brainstorm possible content and features to go in their garden newsletter: Group 1: What would people outside the project like to read in the newsletter? Group 2: What do the project members think should be communicated? Stop the discussion after 20 minutes and compare the groups' ideas. Is there content that both groups think should be included? Facilitate the discussion, and help the class decide what information should be included.
GROUP WORK/ CREATING TEXTS 1	**STEP 2: Creating interesting content** Encourage the class team to consider different ways of presenting content – for example, as interviews, comic strips, etc. Varying the type of content will make the newsletter more interesting.
GROUP WORK/ CREATIVE DESIGN	**STEP 3: Design** The newsletter should be attractive and informative. Form smaller groups, and ask each group to design a template for a monthly newsletter. Teams present their ideas. By using a different group's template each month, all the templates can be used. This makes for variety and helps make the newsletter more interesting.
GROUP WORK/ CREATING TEXTS 2	**STEP 4: First edition** Learners produce their first newsletter using a sheet of flipchart paper and several sheets of A4. They should use the content chosen in the previous class discussion (STEP 2). In groups, learners produce blocks of text. The newsletter does not have to be typed – handwritten text illustrated with learners' drawings will give the newsletter a unique look.
PRESENTATION	**STEP 5: Publication** How can the newsletter be made public? Ask the librarian to display it, so that people can come and read it in the library. Alternatively, ask the principal to display it on the wall next to the administration clerk's office.
FEEDBACK	**STEP 6: Feedback box** Install a box for feedback. Readers can respond to what they read in the newsletter, and contribute ideas to future editions. Respond to the readers' comments in the following newsletter.

GROUP WORK/ CREATING TEXTS	**STEP 7: Produce a newsletter each month** Make sure the information keeps flowing. Each month a different team should produce a newsletter, reporting on the garden and related activities.
TIME	10 hours
MATERIALS	Paper, colouring pens, gardening equipment and materials



WHY START A GARDEN NEWSLETTER?

1) To regularly inform peers, teachers, parents and external stakeholders about activities in the Entrepreneurship Learning Garden.

2) To share what you have learned with others.

3) To reflect on what you have learned, while explaining the project to others.

4) To introduce others to gardening and motivate them to start their own gardens.

5) To document your experiences and record activities in the Entrepreneurship Learning Garden.

6) To create awareness at school, at home and in the community.

GARDEN NEWS 21 APRIL 2019

Our project is about _____

Winter is coming: what has happened so far?

Our highlights…

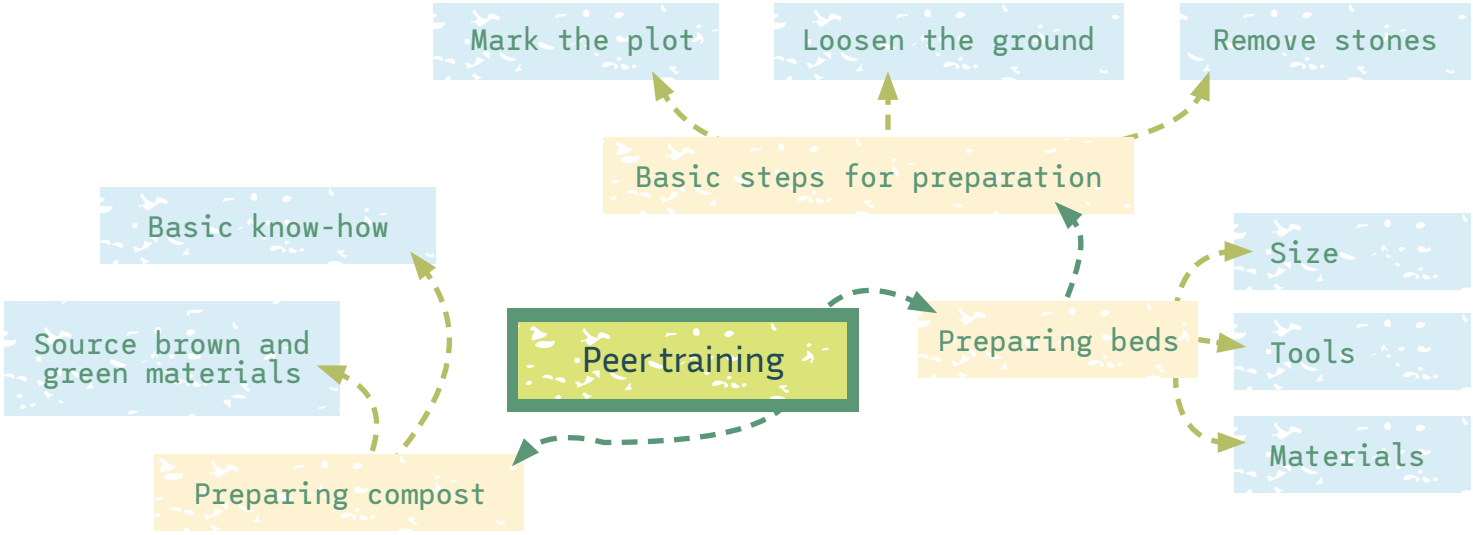
What's coming next?



Creating a newsletter about the Entrepreneurship Learning Garden.

Future Sprouting Entrepreneurs: Teaser workshop

CONTENT	- Peer learning in the Entrepreneurship Learning Garden - Basics of entrepreneurship and gardening for peers
LEARNING OUTCOMES	- I can facilitate a small training exercise for other learners - I understand and can communicate the key properties of entrepreneurship and school-based gardening - I can express my opinion regarding the quality of my education (i.e. a programme)
ACTIVITIES REFLECTION / MIND MAP MINI-PROJECT: PEER TRAINING POSITIVE ACTION / CREATING AWARENESS	**Outline: Peer training** Learners have gained various competences since the start of the Sprouting Entrepreneur project. By conducting workshops for peers, they learn how to train fellow learners and become Sprouting Ambassadors. As they share what they have learned with others, they reflect on their own learning process. **STEP 1: Learning curve** Groups of new learners are best trained by groups of experienced learners. Form groups of five future trainers and aim for a 1:1 trainer-to-learner ratio (one trainer per learner). Each group must draw a mind-map showing what they have learned (see next page). A basic structure can be provided (i.e. “bed preparation”, “planting skills”, “composting skills”, “marketing & sales” etc.). **STEP 2: Planning the training** Learners use their mind-map to structure their planning. Ask the learners to select a class they would like to work with. Help them to get permission from the principal and make the necessary arrangements with fellow teachers. Learners should plan a 1-2 day training event. When planning, learners should: 1. Select content (e.g. basic steps for setting up an Entrepreneurship Learning Garden). 2. Define outcomes (e.g. knowing how to prepare a bed). 3. Prepare exercises (e.g. compose a mini compost-heap in a plastic bag). 4. Prepare a schedule with estimated times (e.g. bed-preparation takes 120 minutes). 5. Consider what resources they will need (e.g. a venue, tools, materials, time). **STEP 3: Sprouting Ambassadors** After learners have successfully conducted a teaser workshop for learners from their own school, they can take their skills to the next level and hold a workshop for learners from neighbouring schools. This gives other schools a chance to experience Sprouting Entrepreneurs too. This step requires communication between the principals and teachers of cooperating schools.
TIME	5 hours preparation + workshop time
MATERIALS	Paper and pens, selection of garden tools/materials for demonstration and practical use



Example of a mind-map used to structure peer training.



Peer-training 1:1

Sprouting changemakers create awareness

CONTENT	- Campaign to clean up the community - Upcycling of waste materials - Development and implementation of a campaign against littering
LEARNING OUTCOMES	- I understand the challenge of dealing with litter in the community - I can plan and start community initiatives
ACTIVITIES	**Outline: Addressing the problem of litter through recycling** Littering harms communities and can threaten public health. It also affects the quality of soil and water used for gardening. The following activities invite learners to confront the challenge of reducing litter, by campaigning against littering and learning to creatively reuse waste materials for gardening.
POSITIVE ACTION / CREATING AWARENESS	**STEP 1: Community clean-up** Learners define a perimeter around the school, within which they run a cleaning campaign. Provide them with rubbish bags and ask them to collect any litter they find. Encourage them to look out for bigger items (e.g. bags, containers, boxes, or bottles). They should bring all the litter they collect back to the school.
CREATIVE ARTS/ UPCYCLING 1	**STEP 2: Waste art** Learners sort through the collected materials. What can be reused for creative purposes? Encourage learners to think about different artworks. What can they create with the materials they have found? Provide a variety of craft supplies that can be used to make art from recycled items. Give learners enough time to generate ideas and create new items using old materials.
CREATIVE ARTS/ UPCYCLING 2	**STEP 3: Seedlings** Learners select containers that can be used for planting (e.g. bags, boxes, or bottles). Clean the containers. The learners must ensure that the containers are strong enough to hold soil, and that water can drain away. Supply packs of seeds, and let learners plant vegetables, flowers or herbs in their containers. Ask them to decorate the containers with small waste materials (e.g. paper or plastic).
CREATING TEXTS	**STEP 3: Green stickers** Motivate learners to write short messages. These should address the problem of littering and introduce the idea of re- and upcycling in the community. Messages should be written on small pieces of paper and pasted onto the plant containers.
POSITIVE ACTION/ CREATING AWARENESS	**STEP 4: Awareness spots in the community** Learners organise an awareness event in the area where the litter was collected. They install a pop-up stand and put up posters to inform people of their campaign. Learners engage with passers-by to explain the ideas of reducing waste and upcycle-gardening. They give the seedlings in containers away, to spread their message to the community.
TIME	6-10 hours
MATERIALS	Recycled waste materials, soil, seeds, paper, pens, craft materials (scissors, paints, glue, tape, strings, etc.)

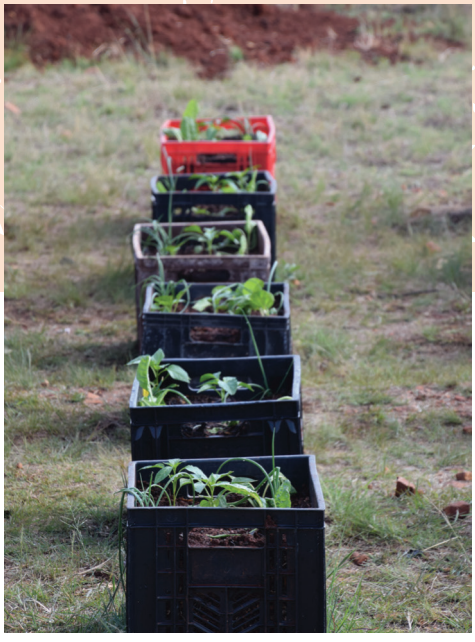












Cleaning up the school and gardening with upcycled materials.

Mini-company project (for schools participating in the National School Nutrition Programme)

CONTENT	- Learners set up a school-based mini-company that supplies greens to the School Nutrition Programme
LEARNING OUTCOMES	- Working with a team. - I can produce more vegetables than one household needs - I can plan a project and manage its finances
ACTIVITIES	**Outline: Healthy eating at school – the School Nutrition Programme** Learners form a school-based mini-company, which grows vegetables to sell to the School Nutrition Programme. This project can be developed in conjunction with the module "Garden Value Challenge".
SURVEY/ RESEARCH	**STEP 1: Need for vegetables** Form groups and ask learners to write down questions to establish whether their business is viable. These should include: 1. What vegetables does the school's nutrition programme offer? 2. How many kilograms of each type of vegetable is consumed per week? 3. How much does the programme pay per kilogram for each type of vegetable? 4. How often do learners in the programme eat vegetables in a week? 5. Which of the vegetables on offer do learners like most? 6. Which vegetables would learners most like the programme to offer in future? Answers to questions 1. – 2. must be sourced for the learners. Questions 3. – 6. should be researched by learners in teams. Analyse the findings in class and develop a proposal (STEP 2).
PROJECT PLANNING 1	**STEP 2: Develop a proposal for the School Nutrition Programme** Groups work on the following questions: 1. What product do we want to offer the programme (e.g. spinach as it grows easily and is popular)? 2. How long do we want to run the mini-company for? 3. What is our name? What are the different roles and responsibilities within our company? 4. How much can we contribute? 5. Can we match or beat the current selling price of our competitors? Comment: It is best to start with small quantities. Once the project is established these can be increased. For higher grades, it's a good idea to introduce a basic cost calculation (see "Garden Value Challenge"). Summarise the results in class and develop a basic business plan (see "Garden Value Challenge").
PROJECT PLANNING 2	**STEP 3: Define your project** Ask the learners to summarise their ideas in a one-page project plan. Choose the best plan and use this as a project proposal. Learners should consider the following questions: 1. What does the project aim to achieve? 2. How are we going to achieve this? List the activities needed. 3. How long will each activity take? 4. What is the expected result of each activity? 5. When, and for how long, will the project run? 6. What resources do we need to carry it out?
PROJECT PRESENTATION	**STEP 4: Present your project to the principal** Learners present the project to the principal. They ask her/him: 1. Is the school interested in the project? Do any changes need to be made? 2. How can the school financially assist/compensate the mini-company project for its efforts?

PROJECT IMPLEMENTATION	**STEP 5: Start the mini-company project** Assist the learners in starting their mini-company. Build on the content produced by learner groups in STEP 2 and STEP 3. In addition, consult the chapter “Garden Value Challenge” for additional guidance. Suggestion for basic implementation: The school provides learners with money to purchase seeds. This may be taken out of the budget supporting the School Nutrition Programme. Other expenses incurred by the Entrepreneurship Learning Garden should be carried by the school. Learners receive compensation for their work following each delivery and a rental fee for using the Entrepreneurship Learning Garden is deducted.
TIME	10 – 40 hours
MATERIALS	Garden tools, materials and seeds



Entrepreneurship Learning Gardens for healthy school nutrition.



The mini-company project contributes to the School Nutrition Programme, and the chef is happy.

Learning from elderly community members

CONTENT	- Traditional knowledge of agriculture/gardening, plants and herbs in the community - Intergenerational exchange in the Entrepreneurship Learning Garden - Traditional knowledge and entrepreneurship
LEARNING OUTCOMES	- I understand the value of exchanging ideas with others - I understand the value of traditional knowledge and can act upon it
ACTIVITIES ORAL HISTORY INTERVIEW/ EVENT PREPARATION AND ORGANISATION EVENT PREPARATION AND ORGANISATION	**Outline: Traditional knowledge of agriculture, gardening, food and herbs** Agriculture and food production have changed over time. Today, agriculture ranges from subsistence farming to large-scale commercial production. How was agriculture practised in the past? On what knowledge was it based? What can learners discover about past agricultural practices and traditional plants? They learn from elderly community members and engage in a joint gardening project with them. This project can be linked to National Heritage Day. **STEP 1: Collecting stories of the past** Learners invite elderly community members to the Entrepreneurship Learning Garden. They plan the event and prepare a set of questions beforehand. Learners organise seating and refreshments and create a space for a lively discussion. Learners explain the idea of the event. Learners take their guests through their garden and introduce them to their activities. The learners should listen carefully to their visitors' stories and take notes. Guiding questions: 1. What did agriculture or gardening mean to the community? 2. What did the community want to achieve by working the land? 3. Who performed this work? 4. How did this relate to other sources of income? 5. What were the challenges faced then? 6. Which plants were most popular? 7. Did they grow any vegetables or herbs that are no longer cultivated? 8. Were plants, vegetables and herbs used only for eating, or did they have other purposes? 9. How did young people learn about agriculture and plants? 10. At what age did they start helping with agricultural work or gardening? 11. What do the visitors think of the learners' work in the Entrepreneurship Learning Garden? Have they learned anything from Sprouting Entrepreneurs' learners? Ask the learners to think about the stories they have heard from their visitors. What similarities and differences can they find with their own experiences in the Entrepreneurship Learning Garden? Review all the findings in class. Ask the learners to write their own short stories entitled "How our community practised agriculture in the past". They should use the information they have learned from their guests. Have the learners discovered any insights from the past that can be used today? Ask them to record these on a poster. Learners should apply any new insights to their work in the Entrepreneurship Learning Garden. **STEP 3: Heritage market** Source seeds from traditional plants and grow seedlings. Together with elderly members of the community, plan a heritage market. On Heritage Day, install a market stand at school to sell traditional plants and inform buyers of the value of "forgotten" knowledge. Invite the learners to shorten their stories to half a page. These can be attached to the seedlings, to grow awareness of traditional knowledge and encourage people to value the knowledge and experience of elderly community members.
TIME	7-10 hours
MATERIALS	Paper, pens, chairs, table, gardening materials (e.g. seeds) and tools



Agriculture, gardening and life experience.

Pop-up market project

CONTENT	- Vegetable production and sale - Marketing of own products
LEARNING OUTCOMES	- I can produce vegetables in the Entrepreneurship Learning Garden - I can market and sell my product - I can start a business initiative and understand the value of doing this
ACTIVITIES	**Outline: A pop-up market at school** With limited resources, it can be difficult to grow enough vegetables to sell. Holding a low-cost, occasional pop-up market may therefore be easier than holding a regular sale. This project focusses on growing food and creating financial value. Agriculture is combined with basic business training, as learners sell the vegetables they grow to teachers and school staff on market days. This project can be implemented by using teaching resources from the "Garden Value Challenge".
BRAINSTORMING	**STEP 1: Ideas** Learners brainstorm ideas for a pop-up market. Give each learner an A4 paper and encourage them to write down every idea they can think of. Complete the exercise by sticking these papers on the wall. Learners discuss and select from the ideas presented.
PROJECT PLANNING / GROUP WORK / EVENT PREPARATION	**STEP 2: Planning** Learners form groups to draw up a timeline for their pop-up market. Install a horizontal line of masking tape on a classroom wall, running from corner to corner. Mark the starting point with "start", and the endpoint with "event". Groups must decide on steps (activities to be completed) leading up to the event, and set a date for each step. Ask groups to stick their steps on the horizontal line in chronological order. Discuss this with the class and place the steps in an order that all groups agree upon. Learners copy the final timeline into their journal.
PROJECT IMPLEMENTATION / GROUP WORK	**STEP 3: Seedlings** In groups, learners prepare for the market day. Each group is responsible for a specific task. Each group defines its own roles and responsibilities and lists these on a poster. Suggested task-teams and their responsibilities: 1. Harvest team: prepare vegetable bundles for sale 2. Marketing team: create leaflets, posters, advertisements and creative packaging (e.g. drawings used as wrapping paper) 3. Logistics team: prepare the market stall (e.g. organise tables, provide information on products and prices, etc.) 4. Sales team: administration of sale (e.g. keep a record of finances, etc.) Encourage the teams to meet regularly to coordinate their tasks and keep each other updated about their progress.
POSTER CREATION	**STEP 4: Reflection** Once the learners have completed the project and performed one or more market days, assemble in class. Ask the learners to brainstorm what they have learned from the project and write this in their journal. Discuss the real-world value of what they have learned.
TIME	10 – 20 hours
MATERIALS	Garden materials and equipment, paper/poster, pens, tape, (recycled) materials for packaging goods and decorating the market stand



Teachers and learners selling together.



Pop-up markets at school.



Market day action and a happy customer.

(All photos by participating teachers).

Ubuntu bundles for the community

CONTENT	- Contributing to food security in the community - Entrepreneurial gardening for nutrition and food security
LEARNING OUTCOMES	- I can integrate ubuntu into entrepreneurship and act upon it - I can respond creatively to community needs
ACTIVITIES	**Outline: Ubuntu bundle** The ubuntu bundle project seeks to supply households that are vulnerable to food insecurity with fresh garden produce for a defined period. Learners grow vegetables to share, creating social value for others. Once produce is available, every learner should supply one household in their neighbourhood. This project works best once a garden is already established and produces large amounts of vegetables. **Comment: Emphasise that food insecurity and vulnerability are sensitive issues.**
GROUP DISCUSSION	**STEP 1: The meaning of ubuntu** Form a circle in the garden and discuss the concept of ubuntu with learners. Do their understandings of ubuntu differ? How? Why is the concept relevant? How can the Entrepreneurship Learning Garden promote ubuntu?
GROUP WORK: DEFINITION AND SURVEY	**STEP 2: Identify the need** Form groups. Ask learners to define what it means to be "in need". Every group should think of at least three examples (e.g. no home garden, no seeds, no-one in the household is employed). Share these in class and adopt a class-based definition. Discuss why this can be a sensitive issue. Together with learners, establish a code of conduct. Learners survey their neighbourhoods to identify at least one household in need. Learners should keep this information confidential. However, ask learners to explain why they have chosen these households – e.g. no-one in the household is employed.
GROUP WORK / PLANNING	**STEP 3.1: Production content and volume** 1. Which vegetables are easily produced? 2. How many kinds of vegetables can realistically be included in a bundle? 3. How often can the learners deliver bundles, and for how long? 4. How big will the bundles be, and what will they contain? **STEP 3.2: Establishing vegetable gardens** Learners can also help households to set up their own vegetable gardens. Learners start by asking the following questions: 1. Does the household have the basic requirements – i.e. space, water and soil? 2. Is the household willing to work with us? 3. Which two vegetables should we start with? 4. How much time will establishing and monitoring a garden require from us? **STEP 3.3: Supplying seedlings** Alternatively, existing gardens can be supplied with seedlings from the Entrepreneurship Learning Garden. Learners grow and distribute seedlings to needy households. 1. Which seedlings will we provide? 2. How many seedlings will we supply? 3. How often will we supply seedlings?

GROUP WORK / IMPLEMENTATION	**STEP 4: Choose your project** The class should choose one of the above options (3.1 – 3.3). In groups, learners plan the project. Consider using materials from the "Garden Value Challenge". Start production. Record how many bundles or seedlings are distributed, or how many gardens each class establishes. Comment: This exercise emphasises solidarity and ubuntu. The school should therefore supply learners with the necessary resources for production. Alternatively, funds from sales (e.g. to the School Nutrition Programme) could support the project.
REFLECTION	**STEP 5: Analysis and discussion** Groups analyse the output of the project. How many bundles or seedlings were distributed or how many gardens were established? How do learners feel about these numbers? Are they satisfied with the scale of their project? Why or why not? Is there room for improvement? Engage groups in a facilitated discussion.
TIME	10 – 40 hours
MATERIALS	Gardening tools and materials, packaging materials of own choice



Tackling food insecurity in the community by supplying ubuntu bundles.

Grade 6+ (recommended)

REFLECTION

Reflection exercises are already included in some of the challenges. The three additional reflection methods below can be used with any of the 12 challenges or to reflect on the full academic year in the garden.

Future box

Ask the learners to write a letter to themselves addressing the two questions below. The letter should be a half to full A4 page in length, and should take 30 minutes to write.

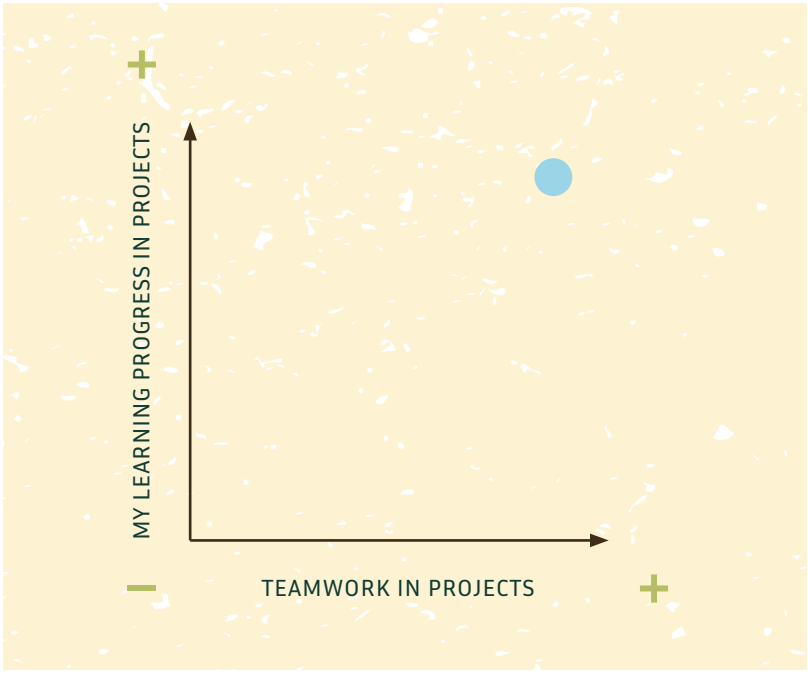
1. What have I learned during this challenge/this year?
2. Which learnings are relevant to me? Why?

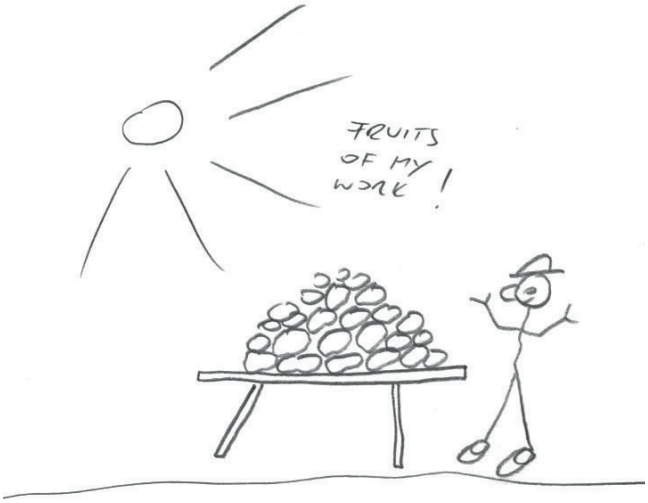
Collect all of the letters in a box. Decide whether to open the box at the end of the term, or when the next school year begins and new activities in the Entrepreneurship Learning Garden are due to start. Each learner will get her/his statement back to reflect upon. Have the learners' individual perceptions changed since they wrote their letters? Discuss this with them.

Our learnings – dot by dot

Many activities in the Entrepreneurship Learning Garden are shared learning experiences. The learners plan and implement ideas that result from joint creative and decision-making processes. At the same time, their individual progress in gaining new skills varies.

Ask learners to create a group picture of their learning curves as they evaluate two aspects of learning that occurred within one or more challenges. Draw a coordinate space on the chalkboard or on the floor. Then ask each learner to evaluate and mark her/his satisfaction with her/his learning progress and the teamwork, using a single dot. The upper right section (blue dot) marks the highest score (satisfaction with learning). Discuss the results with the learners.





Draw a garden picture

"What picture comes to mind when you think of this challenge/this academic year in the garden?" Ask learners to draw a picture on an A4 page. Pin their pictures on the wall. Ask the learners to gather around the pictures and discuss each of their drawings.

Example: "Fruits of my work." Ntokozo is happy that learning produces tangible results, such as a harvest.

Module: **GARDEN VALUE CHALLENGE**

Grade 7+ (recommended)

MODULE OVERVIEW

INTRODUCTION: This project introduces learners to every step of the Entrepreneurship Learning Garden cycle. The garden serves as a medium of learning. Learners develop and implement ideas that create value for others through a year-long project.

CHALLENGE: Learners plan, grow, market and sell their own produce at school or community-based markets, and educate customers about the economic and nutritional benefits of home gardening and vegetable consumption.

The Entrepreneurship Learning Garden: key learning areas of the chapter

Create a marketing story

Understand challenges and opportunities

Be confident and express your creative ideas

Be financially and economically literate



Ubuntu: reflect on your responsibility towards your community

Manage your project

Reflect on your own learning outcomes.

Be conscious of the value you create for others

COMPETENCES: WHAT IS THE LEARNING OUTCOME?

AGRICULTURE

Learners:
- I am able to set up and run my own garden
- I can grow seasonal vegetables
- I know how to market self-grown vegetables
- I can increase the vegetables available in the community or at school

FOOD

- I know a variety of vegetables
- I know that vegetables are part of a healthy diet
- I realise the need for healthy eating and can act upon this

YOUTH START - ENTREPRENEURSHIP COMPETENCES LEVEL A1 / A2

Learners:
- I can develop creative ideas to solve problems
- I recognise opportunities in the market
- I can present my own ideas
- I can see the importance of economic, ecological and social issues for our lives

- I can work with others, agree on responsibilities and deal with possible problems
- I can apply simple planning skills and work with limited resources
- I can explain and compare the price and value of products

BUILD ON: HOW TO CONNECT TO CAPS

Natural Sciences / Economic and Management Sciences

TIME ALLOCATION

42 hours (academic year)

OVERVIEW: WHAT IS THE LEARNING CONTENT OF THE MODULE?

TERM 1/PHASE 1 GARDEN VALUE PROJECT: START AND PLANNING

Teacher input:
Garden value project (overview)
Brainstorming / clustering:
Set the stage for the project
Case study – Preparing for ideas 1:
Garden business
Research / interview – Preparing for ideas 2:
Community opportunities

Brainstorming – Opportunities and ideas:
Garden value project
Project planning – From ideas to activities:
Garden value project
Communication – Summarise your project:
One-pager

TERM 2/PHASE 2 GARDEN VALUE PROJECT: IMPLEMENTATION AND MONITORING

Project documentation – Record the process:
Creative action
Market research 1:
Home and neighbours
Market research 2:
Products for the community

Case study / cost calculation:
Vegetables for profit
Individual reflection:
Learner journal entries
Group reflection:
What we learned as a team

TERM 3/PHASE 2 GARDEN VALUE PROJECT: IMPLEMENTATION AND MONITORING

Clustering – Detailed planning:
Week-to-week project plan
Marketing and medium 1:
Tell the story of your product

Marketing and medium 2:
Veggie power tags

TERM 4/PHASE 3 GARDEN VALUE PROJECT: PROJECT PRESENTATION, EVALUATION AND CLOSING

Reflection – Picturing experience:
Say it without words
Evaluation – Questionnaire:
What we learned from this project

Presentation – Final event:
Entrepreneurial culture in our school
Project closing – Complete the learning cycle:
Back to the start?

MATERIALS AND TOOLS: WHAT DO I NEED?

PHASE 1 GARDEN VALUE PROJECT: START AND PLANNING	PHASE 2 GARDEN VALUE PROJECT: IMPLEMENTATION AND MONITORING	PHASE 2 GARDEN VALUE PROJECT: EVALUATION, PRESENTATION, CLOSING
Learner journals, A4 paper, pens, poster/flipchart paper (10 sheets), masking tape or reusable putty adhesive, colouring pens	Poster/flipchart paper, A4 paper (see "PHASE 1"), masking tape or reusable putty adhesive, vegetable seed packs (chosen for project), cardboard, colouring pens, scissors (5), glue	Creative action records (see "PROJECT DOCUMENTATION", term 2), questionnaire

OVERVIEW: GARDEN VALUE PROJECT (DURATION 12 MONTHS)

PROJECT PHASE	ACTIVITIES	TERM 1 - DURATION (WEEKS) 1 2 3 4 5 6 7 8 9 10
1	**Introduction to project management and entrepreneurship**	End of term 1 HOLIDAYS
	Garden value project: Brainstorming and planning • Garden ideas • Event ideas	

PROJECT PHASE	ACTIVITIES	TERM 2 - DURATION (WEEKS) 1 2 3 4 5 6 7 8 9 10 11
2	**Garden value project: Implementation** • Garden practice (preparation, planting, maintenance)	End of term 2 HOLIDAYS
	Garden value project: Implementation • Event preparation (logistics)	
	Project reflection – monitoring	

PROJECT PHASE	ACTIVITIES	TERM 3 - DURATION (WEEKS) 1 2 3 4 5 6 7 8 9 10 11
2	**Garden value project: Implementation** • Garden practice (maintenance and harvesting)	Continuation of term 2: maintain garden and harvest for events End of term 3 HOLIDAYS
	Garden value project: Implementation • Event preparation (logistics)	
	Garden value project: Implementation • Event management (market days)	Market day 1 Market day 2

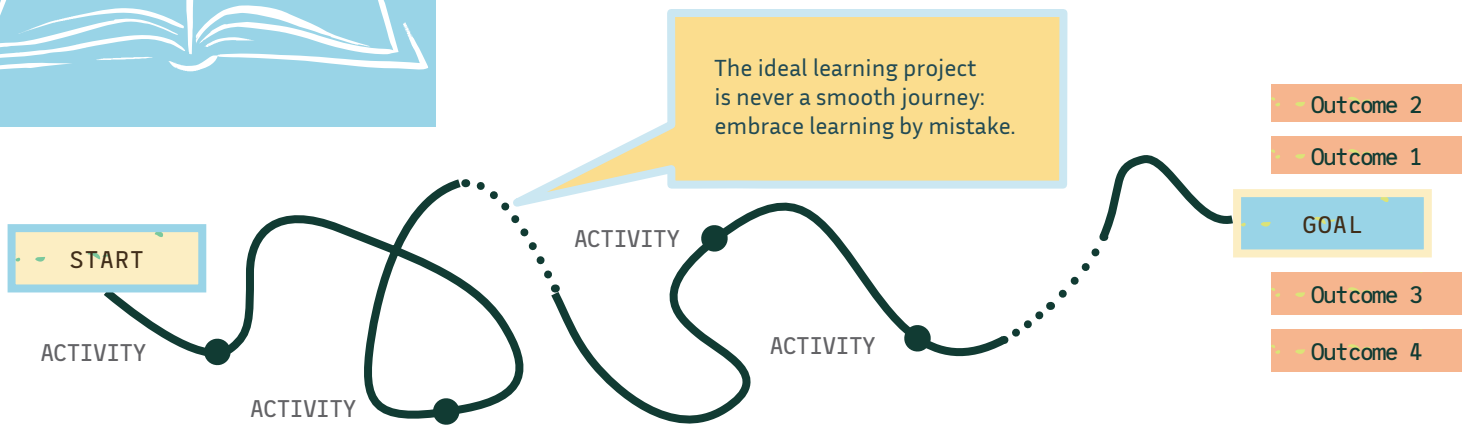
PROJECT PHASE	ACTIVITIES	TERM 4 - DURATION (WEEKS) 1 2 3 4 5 6 7 8 9 10
3	**Project evaluation**	End of term 4 HOLIDAYS
	Project presentation	
	Project closing (garden clean-up)	

Grade 7+ (recommended)

KNOWLEDGE

PROJECT WORK AT SCHOOL

School-based projects



A school-based project is a temporary activity with a clear beginning and end. Although it follows a project plan, this may change, and so demands flexibility and creativity from the project team.

A project is guided by a plan. This defines:

1. Goal: The project team needs to have a shared understanding of what they want to achieve. A project goal is usually a statement that describes the overall idea (e.g. creating value for others by establishing an Entrepreneurship Learning Garden).

2. Outcomes: Next, the goal must be broken down into outcomes (e.g. garden established, produce marketed and sold, community awareness created). For more complex projects it is necessary to define outcomes more precisely. These should be formulated in a SMART way. The clearer an outcome is formulated, the better, as it can be evaluated.

SPECIFIC	STATE CLEARLY WHAT NEEDS TO BE ACCOMPLISHED
MEASURABLE	MEASURABLE THROUGH EVALUATION
ACHIEVABLE	REALISTIC IN THE GIVEN TIME
RELEVANT	CONTRIBUTES TO OVERALL GOAL
TIME-LIMITED	A TIMEFRAME IS GIVEN

"Fifty tomato plants are sown from seed, raised and harvested in the school-based Entrepreneurship Learning Garden by 10 learners from grade 7 during the second term of the academic year."

3. Activities are work packages with defined outcomes (e.g. beds prepared, seeds planted, marketing story created, selling event and project evaluation completed.

4. A timeframe puts the activities in perspective and provides an overview of the whole project.

EXAMPLE: PROJECT PLAN FRAMEWORK (BASIC VERSION)

PROJECT PHASE	TIMEFRAME	ACTIVITY	OUTCOME
1	3 weeks (3 periods)	Brainstorming and drafting of planting ideas.	A plan for the production, marketing and sale of 250 kg of tomatoes has been created.
2	3 weeks (3 periods)	Preparing the bed	A bed for planting 50 tomato seeds, correctly spaced, has been completed.
-	-	-	50 seeds have been sown.
-	-	-	50 plants have been spaced.
-	-	-	Etc.

Project phases and tasks

PROJECT START:
BRAINSTORMING,
DRAFT CONCEPT

PLANNING:
1. GOAL,
2. OUTCOMES,
3. ACTIVITIES,
4. TIMEFRAME

IMPLEMENTATION
MANAGEMENT
MONITORING

PRESENTATION
EVALUATION
CLOSING

Ideas for the project are discussed and a simple concept is developed.

Planning: define each component (1-4) of the project.

Implement the plan. Monitor activities and timeframe. Adapt where necessary.

Evaluation: have you achieved 1-4? Why or why not?
Presentation: present your school-based project to a selected audience.









Entrepreneurship Learning Garden activities throughout the academic year: from planning to school kitchen sale.

WHAT IS ENTREPRENEURSHIP?

”Entrepreneurship is when you act upon opportunities and ideas and transform them into value for others. The value that is created can be financial, cultural, social(...)”, civic or ecological (FFE-YE 2012, p. 11). This definition includes four elements: (1) creative development of ideas, (2) personal and (non-) material resources to work on ideas (e.g. independence, skills, financial resources), (3) the implementation of ideas and (4) the creation of value for others based on ideas.

There are five types of entrepreneurship value creation:

1. Financial value: “I sell a bundle of spinach and I make a profit from it”.
2. Social value: “I create a community youth club to contribute to leisure time activities for the youth”.
3. Cultural value: “I organise a theatre group in my community. We meet in the hall once a week and work on plays that are performed in the community”.
4. Civic value: “I am not happy with the support youth entrepreneurship receives from local government. I collaborate with other youth leaders. Together we discuss with local government how our initiatives could be better supported”.
5. Ecological value: “We organise and carry out a cleaning campaign in our community”.

WHO IS GOING TO BENEFIT FROM AN IDEA? HOW?

The “garden value challenge” combines 1. and 2. It aims for a small profit and for educating community members on healthy nutrition.

Characteristics of an entrepreneur

Entrepreneurship is the result of an informal or formal learning process. Entrepreneurship competency describes the relevant knowledge, skills and attitudes of an entrepreneur.

Sprouting Entrepreneurs

are creative
are visionaries
work together with others
mobilise others
are critical citizens
understand economic opportunities and constraints
plan and manage
take initiative
mobilise resources
cope with ambiguity, uncertainty and risk
learn through experience
have ubuntu
are financially and economically literate
think sustainable and ethical
value ideas
spot opportunities
are motivated and perseverant



(Photo by participating teachers).

Entrepreneurship competences (BACIGALUPO ET AL. 2016, p. 11, authors modification).

Entrepreneurship: creating value and change

The term "entrepreneur" became popular through the works of the economist Joseph Schumpeter (1883-1950). He argued that running a business was not enough to make someone an entrepreneur. Instead, he emphasised the concept of innovation, defining an entrepreneur as someone who disrupts the economy with a new idea. The concept of entrepreneurship education builds on a broader understanding of this. The emphasis on a new idea remains but is not confined to market capitalism and profit orientation. Instead, entrepreneurship education embraces competences that enable us to create new things which benefit society, whether on a school, community, municipal, provincial, national or international level. Therefore, entrepreneurs are changemakers. They introduce new ideas to society. This is how society has evolved over time – by developing fresh ideas in the fields of the economy and society.

"Innovation" is relative. If a group of youths start the fifth soccer club in their community, this is not an innovation. But if there is no formal sports structure in a community, let alone a soccer club, then the idea is an innovation and adds significant social value to the lives of young soccer players.

Creating value: direct profitability model

Many ideas need material resources for their implementation. If non-financial value is the main objective, then it is enough if expense and revenue are the same. If the project aims to make a profit, then a basic calculation based on the direct profitability model is needed (BMBWF ET AL. 2018, p. 50, with modifications by the authors).

Costs	Revenue
Profit	Sales of products and services to customers

As part of a school-based project, learners need to understand basic financial concepts. They must know how to calculate costs to make their project economically successful. The activities in PHASE 3 of the project support this.

REVENUE refers to the income from sales of products or services to customers and is based on a selling price. COSTS [= costs or expenses] refer to what is needed to produce and sell a certain product or service (e.g. seeds, water, tools, compost, transport, marketing materials, etc.). Some of the COSTS occur regardless of how much is produced (fixed costs), while others depend on this (variable costs). PROFIT is what remains after all COSTS are deducted from the REVENUE. If the COSTS are higher than the REVENUE, the Sprouting Entrepreneurs will make a loss. In order to make a PROFIT, the COSTS need to be lower than the REVENUE. Thus, the selling price of a product must reflect COSTS and PROFIT (see "ACTIVITY: Vegetables for profit").



Learner-produced spinach bundles for sale.

Grade 7+ (recommended)

ACTIVITIES

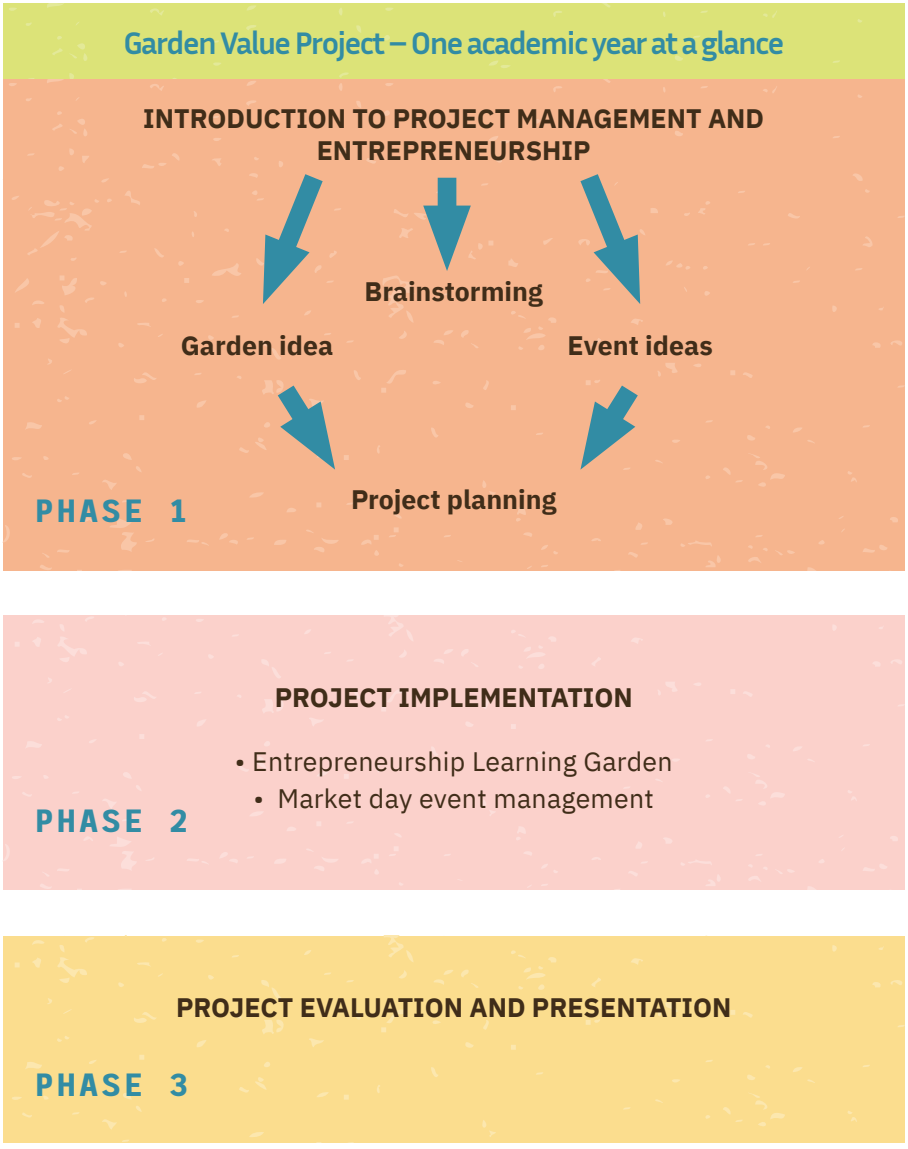
TEACHER INPUT - GARDEN VALUE PROJECT: Overview

The following section shows teachers how to scaffold the 12-month garden value project for learners. Although the project aims at building on the creativity of the learners, the process must be carefully scaffolded depending on the grade and age of learners, and the learner: teacher ratio.

The goal is to produce, market and sell vegetables for profit by establishing an Entrepreneurship Learning Garden over the period of an academic year. In year one and two, the Sprouting Entrepreneurs curriculum focussed on smaller projects and exercises. In year three, learners must build on the experiences of the previous two years and combine them in one single project. This is divided into three phases, which are based on the school calendar:

PHASE 1/TERM 1:	Introduction and planning
PHASE 2/TERM 2-3:	Project implementation and monitoring
PHASE 3/TERM 4:	Evaluation, project presentation and closing

Each project phase (1-3) offers a variety of exercises for teachers to choose from.

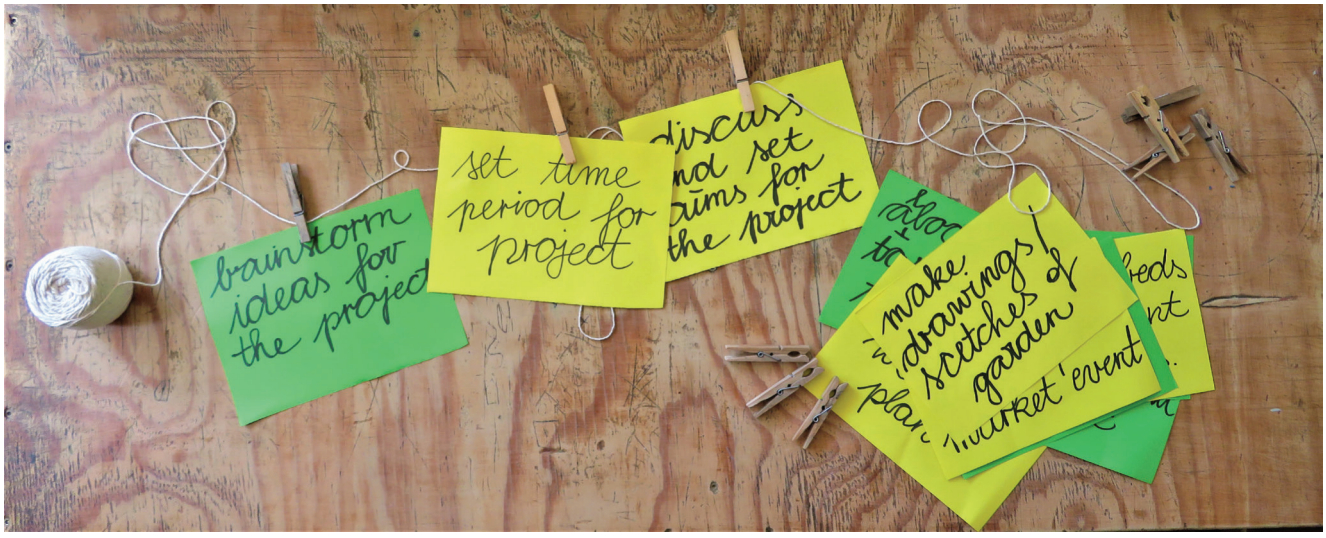


INTRODUCTION TO PROJECT WORK AND ENTREPRENEURSHIP

TERM 1 introduces the learners to the concepts of project management and entrepreneurship. They creatively develop and plan ideas.

PROJECT PHASE	ACTIVITIES	TERM 1 - DURATION (WEEKS) 1 2 3 4 5 6 7 8 9 10
1	**Introduction to project management and entrepreneurship**	End of term 1 HOLIDAYS
	Garden value project: brainstorming and planning • Garden ideas • Event ideas	

BRAINSTORMING and CLUSTERING: Set the stage for the project



STEP 1: Framing the activities

Before embarking on brainstorming and planning exercises, it is important to introduce learners to the general idea of the 4 term project in the Entrepreneurship Learning Garden. Talk to learners about the basic outcomes that should be achieved: (1) establishing a garden, (2) planting, maintaining and harvesting, (3) marketing and selling produce. (4) It is also a good idea to steer activities in the Entrepreneurship Learning Garden in a direction that is sustainable and addresses a social need in the community (e.g. donating some of the harvest to those who are in need). The learners of a class can work towards the general outcomes as one team or as multiple teams. Dividing the class into multiple teams is preferable, as the garden can be divided into plots, on which each team can put their ideas into action.

STEP 2: Preparing for ideas

Before you start brainstorming for ideas, it is a good idea to give the learners a sense of the wide range of possibilities that can be realised in and through the Entrepreneurship Learning Garden.

CASE STUDY - PREPARING FOR IDEAS 1: Garden business



SFISO SEES AN OPPORTUNITY

An entrepreneur is someone who puts an innovative idea into action, thereby creating value for others.

Sfiso Kunene has worked as a groundskeeper at a primary school in Katlehong (GP) for more than 5 years. He is passionate about gardening and has always looked for an opportunity to create a side business to supplement his regular income.

When the school principal decided to improve the school nutrition programme, Sfiso saw an opportunity. He offered to assist in the extension of the school garden and to oversee the garden throughout the academic year.

As compensation for the extra work, he asked the principal for a section of the garden where he could grow his own crops, which he would then sell for his own profit to teachers and members of the community.

While his efforts in supplying the school kitchen with vegetables would fall into normal working hours, growing crops to sell to the community would be a side business. He planned to work on this outside school hours, to increase his income and generate extra money for his family.

Sfiso got permission and started growing seedlings with five packs of vegetable seed. He planted the seeds at different times in order to always have enough seasonal harvest.

Every Friday after school, Sfiso put up a table and sold his vegetables to community members, teachers and parents/guardians who came to pick up their children from school.

Sfiso's customers seemed happy and he made good sales and decent profits. When Sfiso asked them what they liked about his product they mentioned service, taste, quality, variety and price. They were saving time on shopping and getting good quality at affordable prices. In addition, they knew where their food was coming from and that it was produced by a passionate gardener.

Questions:

1. Sfiso could be called an entrepreneur. Why? Discuss in class.
2. Do you know of an entrepreneur in your community? Share his or her story in class.

RESEARCH AND INTERVIEW – PREPARING FOR IDEAS 2: Community opportunities

Entrepreneurs are found in every community and can be a source of inspiration and learning. In this exercise, learners are asked to identify and interview entrepreneurs in their communities. In addition, they learn how to prepare, conduct and analyse interviews.





An entrepreneur is creative and puts ideas into action. The entrepreneur creates financial, social, cultural, civic or ecological value for others.

Search for entrepreneurs in your community and learn from their experiences.

STEP 1: Find someone to interview

Form groups of 4. Each group must interview an entrepreneur in the community. The following questions help to identify someone to interview, prepare questions and analyse the interview. Decide how much structure your learners need:

- Who is the entrepreneur?
- What opportunity did she/he spot?
- What idea did she/he put into practice?
- How was the idea put into practise?
- What is the value of the idea?
- What skills must an entrepreneur have?
- What strengths must an entrepreneur have?

STEP 2: Prepare for the interview

Before they meet their interview subject, learners must have a clear idea of their own research interests. They need to create a questionnaire for the interview. Help the learners to create a list of open questions (questions should not allow a "yes" or "no" answer only). Use the table providing key topics. Copy the table on the board and complete it together with the learners. Draw their attention to additional areas of interest that can or should be included to create an informative questionnaire.

Opportunities	Risks	Role models	?
Resources	Successes	Failures	?
Knowledge and skills	Relationships	Ideas and products e.g. interview question: "How did you come up with your business idea?"	Support
Markets	Customers	Experience e.g. "How long have you been working in this field?"	?

STEP 3: Practise the interview situation

Before they conduct the interview, learners need to practise in pairs. One person acts as the interviewer and the other as the subject. The following questions help to guide them:

1. How are you going to approach the person you are interviewing?
2. How will you introduce yourself and the project?
3. How will you record the answers?

STEP 4: Conduct the interview and present your findings

Ask the principal for permission to have learners conduct interviews in the community. As soon as the learners return from their interviews, they must analyse the results. The teams read through their notes and discuss the information they have collected. Each group then creates a poster based on their findings.

Ask learners to choose a creative way of presenting their findings (e.g. role play, picture story etc.). The posters can serve as a basis, but should not be the main medium for the presentation. When presenting, the learners should be able to answer the following additional questions:

1. What impressed you the most?
2. What was new to you?
3. What does "being an entrepreneur" mean to you?

BRAINSTORMING – OPPORTUNITIES AND IDEAS: Garden value project

The field research and interviews gave learners a chance to identify entrepreneurial activities in their community and learn from role models. Now the time has come for them to start their own project in the Entrepreneurship Learning Garden.

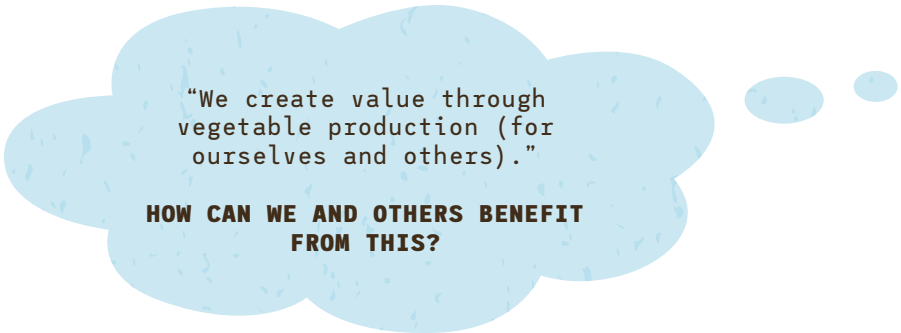
STEP 1: Reality check

Write this statement on the board and ask learners to answer the question. Collect all ideas on the board.



STEP 2: Value creation

Introduce learners to the concept of value creation (see "KNOWLEDGE"). Form groups. If you are planning to have multiple teams each working on a section of the Entrepreneurship Learning Garden, then form the teams now. Provide learners with paper and pens. Ask them to copy the statement and question on a poster and brainstorm ideas. Give them enough time to produce answers, which will be presented at the end of this exercise.



STEP 3: Idea contest

Continue to work in groups. Learners think up a creative idea for producing a product in/through the Entrepreneurship Learning Garden (time frame: one academic year – e.g. growing seedlings, tomatoes, herbs, etc.) Use posters.

"We use eggboxes for planting, grow seedlings in newspaper rolls and sell them, etc."

HOW CREATIVE CAN WE BE?

This means: each group must decide on an Entrepreneurship Learning Garden product. They must work out how to market and sell their product twice during TERM 3. They can either repeat a similar event twice or organise two different events. The aim is to create financial, social, cultural or civic value.

Examples of value creation in/through the Entrepreneurship Learning Garden (examples can be combined):

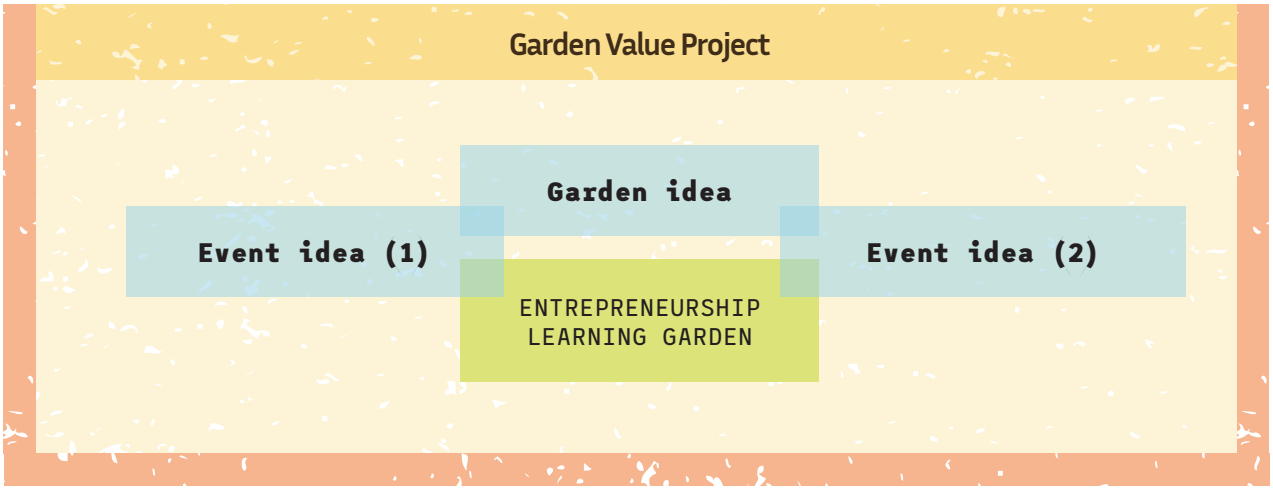
Financial value: "I produce and sell tomato seedlings".

Social value: "I organise a free two-hour workshop on organic compost production for community members".

Cultural value: "I plant and distribute a traditional but forgotten plant and educate community members on its benefits".

Civic value: "I form a community group that advocates the implementation of school-based organic food gardens for the School Nutrition Programme".

Ecological value: ""Waste management in our community can affect home gardens. We draft an information-booklet for community members".



STEP 4: Select garden / event ideas

Remind learners of the exercises in creative gardening they did in year 2. Encourage them to think out of the box regarding vegetable production and the organisation of two events. All ideas must be discussed in the group, so that the perfect match (garden/events) can be selected.

- Each group must present their garden value project and get feedback from the other groups.
- If you have chosen to implement one project instead of multiple projects, then all groups need to present their proposed idea. The class votes on which of these projects to implement.

PROJECT PLANNING – FROM IDEAS TO ACTIVITIES: Garden value project

Learners have developed an initial idea for the Entrepreneurship Learning Garden. In this exercise, learners are introduced to the chronological planning of project activities.

STEP 1: Define activities

Activities are defined work packages with an outcome.

Learners now need to identify what steps must be taken to realise their idea. Groups continue to work on the poster that describes the original idea (see: "Idea contest"). The following points help to guide the learners:

Garden:

- What type of garden to plant?
- When to set up garden beds?
- When to plant?
- When to harvest?
- Who must be informed?
- Who do we need permission from?
- Who could assist (during school holidays)?
- Garden maintenance intervals?
- Maintenance tasks?
- Other considerations?

Sales Event:

- What makes sales events successful?
- How long will preparing for a sales event take?
- What items are needed for preparation?
- Who could assist at an event?
- Date/time/venue/format of sales event?
- Who do we need permission from?
- When/how should we advertise an event?

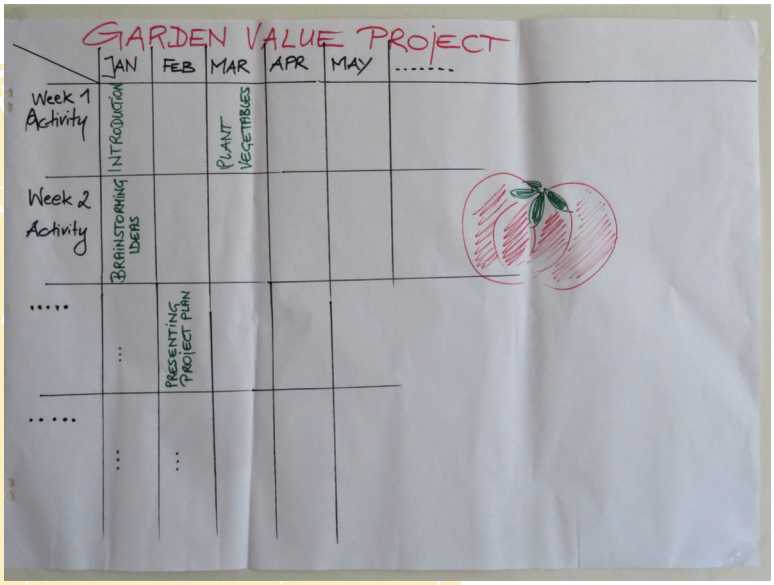
Monitoring happens throughout the project and asks: "Are we completing all the planned activities in time? If not, what changes do we need to make?"

Evaluation happens after the project and asks: "Have we completed all the planned activities in time? If not, what do we need to improve next time? What have we learned from the challenges?"

Monitoring and evaluation:

- How do you monitor your project?
- When do you discuss and reflect on monitoring outcomes?
- Evaluating and presenting your project – how/when/to whom?

STEP 2: Create a planning framework



After the learners have identified and defined the relevant activities, they need to place the activities within a timeframe. Draw the basic matrix (left) on the board and ask the groups to copy it on their poster.

It is important to set dates for planned activities, to check whether all ideas can be realised within the given time. The schedule must refer to the academic year and show all relevant project phases and tasks. Ask the learners to use different colours for vegetable production and event organisation, to show when they must coordinate different tasks and teams at the same time. Put the project plan on the class wall.

COMMUNICATION – SUMMARISE YOUR PROJECT: One-pager

This exercise asks the project teams to summarise important general information about the project. The result, a project one-pager, can be presented to stakeholders and serve as reference for the final evaluation. Each team must prepare a decorative card that provides information about the project.

Project title	
Project team members	
Project story description	
Project goals	
Project time period	
Project outcomes (what should happen)	



Mxolisi (10) communicating key information about his project to a broadcaster.

PROJECT IMPLEMENTATION AND MONITORING

TERM 2

In TERM 2 the learners focus on growing vegetables. They implement part 1 of their project, the Entrepreneurship Learning Garden. All activities need to be monitored closely to ensure the success of this year-long project. At the same time, learners need to carry out preparation activities for TERM 3.

PROJECT PHASE	ACTIVITIES	TERM 2 - DURATION (WEEKS) 1 2 3 4 5 6 7 8 9 10 11
2	**Garden value project: implementation** • Garden practice (preparation, planting, maintenance)	End of term 2 HOLIDAYS
	Garden value project: implementation • Event preparation (logistics)	
	Project reflection – monitoring	

PROJECT DOCUMENTATION – RECORD THE PROCESS: Creative action

Learners should document the process every third week. This should be done in a creative way. Ask them to write a story, draw a picture or a comic, to take photos or use other colourful ways to record what happens in the project. Every team has 5 minutes to present their findings/products at the beginning of the following period. This can happen in class or in the garden. Collect all artworks in a folder and use them in the final presentation.

MARKET RESEARCH 1: Home and neighbours

STEP 1: Ranking of favourite vegetables

Ask the learners to do a survey, asking household members and neighbours what their favourite vegetables are. Learners should copy the table below and use this as a basis for their research. Interview subjects should list and rank the vegetables they consume on a weekly basis. Analyse the findings in class.

Research questions:

- Which vegetables do you eat on a weekly basis? Please rank them according to how often you eat them.
- What vegetables would you like to eat more often, but are in short supply in your community?

Your market research findings should determine your planting plan for the Entrepreneurship Learning Garden.

MARKET RESEARCH MATRIX
INTERVIEW SUBJECT: NOBUHLE, 26 YEARS

Ranking	Which vegetables do you eat the most? (rank them)?	Price per unit?	Which vegetables would you like to eat more often, but are in supply (rank them)?	Price per unit?
1	e.g. mielies		e.g. tomatoes	
2	e.g. spinach		e.g. carrots	
3	e.g. butternut		e.g. red pepper	
4				
5				

STEP 2: Planting season

Learners need to check: (1) the planting season of each chosen vegetable and (2) the planting instructions (depth, spacing, shade, etc.). Provide them with the vegetable seed packs, where they can find this information.

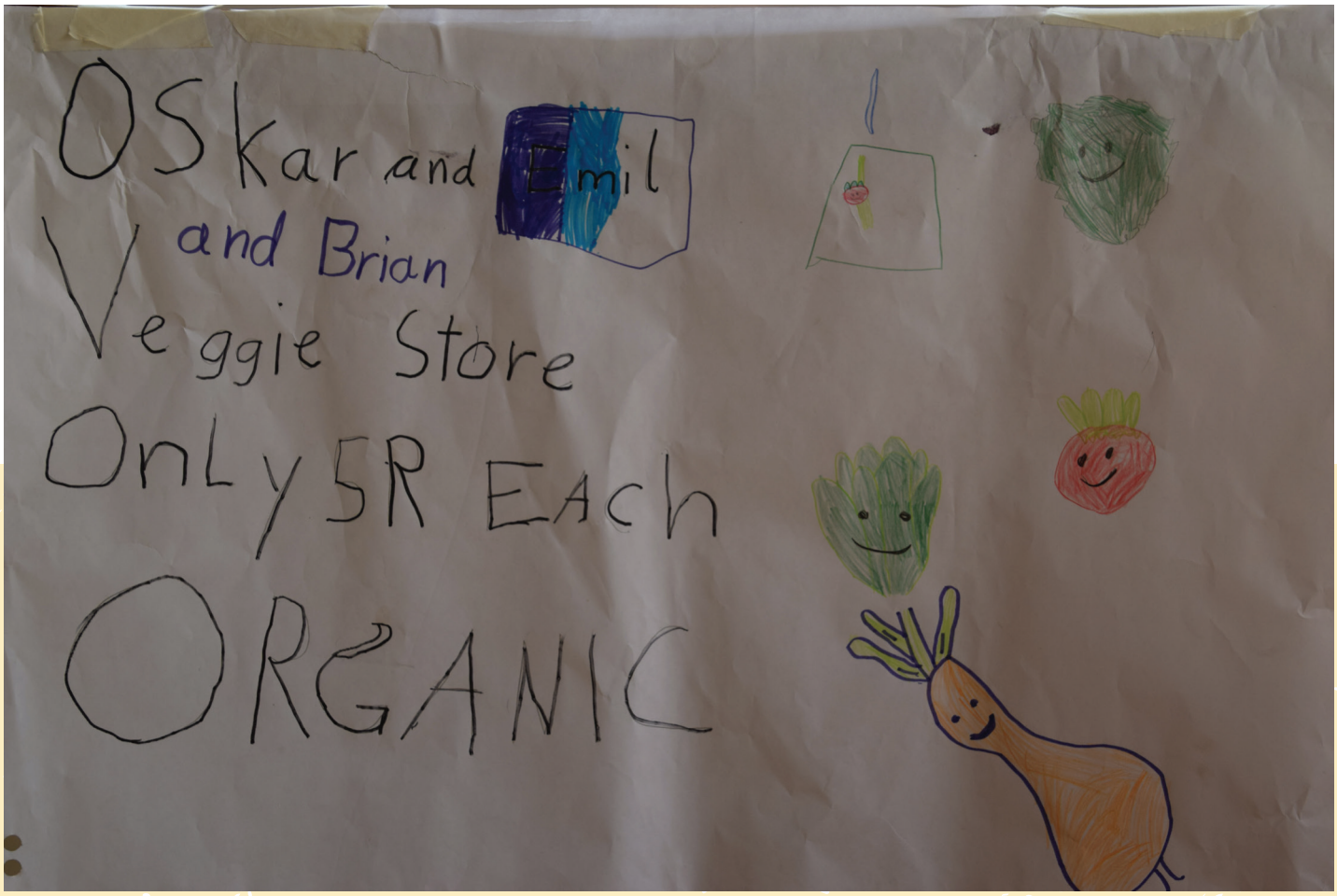
MARKET RESEARCH 2: Products for the community

Learners conduct market research to check their business idea against the needs of the community. The results can be used to plan the Entrepreneurship Learning Garden and/or a sales event, such as a pop-up market (a mobile sales point in a temporary location – e.g. the taxi rank on payday). Conducting the research will be a homework task. It consists of the following questions:

1. Who is interested in our products?
2. Why does he/she like our products?
3. Is she/he willing to buy from us? Why or why not?
4. How many of our products will she/he need?
5. Where should our product be sold? How much does one usually pay for this product?

Analyse the findings with your learners and create posters that stay in class.

(adapted from UNESCO 2006, p. 14)



Market your own harvest: Oskar (6), Emil (8), Brian (8).

CASE STUDY: Vegetables for profit

Themba, Nthabiseng and Mxolisi work a plot in the Entrepreneurship Learning Garden. Their plan is to sell lettuce to teachers, parents and community members. The group starts by calculating the costs and possible profits, to get a clearer picture of their business idea.

Ask the learners to imagine themselves in the shoes of Themba, Nthabiseng and Mxolisi. Help them to go through the steps of cost calculation. Consider cooperating with the EMS class teacher.



STEP 1: Calculate fixed and variable costs

Different types of costs make up the total cost of production. Themba, Nthabiseng and Mxolisi calculate costs depending on different production volumes. Complete the tables below and calculate the total amounts for both fixed and variable costs.

Fixed costs:

To be able to produce vegetables, an Entrepreneurship Learning Garden has to be installed. Fixed costs arise regardless of how many vegetables are grown.

GARDEN (SIZE 10 X 15 M) - FIXED COSTS (RAND)		
Basic equipment and tools needed to set up garden = **basis for production** of vegetables.	Garden equipment and tools (e.g. forks, wheelbarrows, shovels ...)	2000
	Water tank	600
	Fence	400
	...	...
TOTAL FIXED COSTS FOR THE ENTREPRENEURSHIP LEARNING GARDEN		3000

Variable costs:

It is possible to plant and harvest crops several times a year. The more crops learners produce, the higher the costs will be (e.g. for materials such as seeds, compost, bags). Variable costs therefore change depending on how much will be produced.

LETTUCE - VARIABLE COSTS(RAND)	10 lettuces	100 lettuces	1000 lettuces
1 seed pack	15		1500
1 compost bag	35		3500
Packaging	10		1000
TOTAL VARIABLE COST FOR LETTUCE PRODUCTION	60		6000

Costs differ according to the quantity of lettuces produced

The tables above show some examples of fixed and variable costs. Give more examples and discuss them in class. What is the difference between these two types of costs?

STEP 2: Establish cost per unit

To decide how many lettuces to grow for profit, Themba, Nthabiseng and Mxolisi calculate the total cost of production. In addition, they work out the cost per lettuce. They divide the total cost of production by the number of vegetables produced.

LETTUCE - COSTS PER UNIT(RAND)	10 lettuces	100 lettuces	1000 lettuces
Variable costs	60		6000
Fixed costs	3000		3000
Total costs	3060		9000
COSTS PER UNIT (1 LETTUCE)	306		9

Total cost of lettuce production divided by quantity

How does cost per unit relate to the different production quantities and their costs?

STEP 3: Set the selling price

Themba, Nthabiseng and Mxolisi do market research in the community. The market price for a lettuce is R11. They decide to grow 1000 lettuces and sell each lettuce for R11 to be competitive. Assist the learners with the calculation of the profit. What is the profit earned on each lettuce?

LETTUCE - SELLING PRICE(RAND)	1000 lettuces
Variable costs	6000
Fixed costs	3000
Total costs	9000
Cost per unit (1 lettuce)	9
Profit per unit	
SELLING PRICE FOR 1 LETTUCE	11

STEP 4: Understand revenue, costs and profit

By the end of the year Themba, Nthabiseng and Mxolisi have sold 1000 lettuces to parents and teachers.

Costs
The total costs of production for 1000 lettuces was R .....

Profit
We made a total profit of R .... and a profit of R ..... /lettuce.

Revenue
We have sold 1000 lettuces for R .....

How do costs, profit and revenue relate to each other? Discuss with the learners and ask them for their opinion on the success of their lettuce business.

Grade 7+ (recommended)

REFLECTION

INDIVIDUAL REFLECTION: Learner journal entries

All learners should reflect on what they have learned. Ask them to answer the following questions in their learning journal. Collect the journals and give feedback.

Questions for self-reflection

1. What have I done in the project so far?
2. What have I learned so far?
3. What has been our biggest success since we started the project?
4. What was new to me?
5. How do I relate to my team? What role do I have in the group?
6. How did I feel (describe positive and negative experiences while doing the project)?
7. What are my strengths?
8. Where do I still need to improve?
9. What am I looking forward to?
10. What have I enjoyed the most so far?

GROUP REFLECTION: What we learned as a team

Learners document what they have learned throughout the project. Reflecting on challenges and achievements helps them to stick to the planned activities and allows for adjustments to help achieve the planned outcomes. Ask the learners to discuss the following questions in their project groups and present their answers. Which experiences are similar across the groups, and which differ?

Questions for group reflection

1. How many activities have you completed so far?
2. What knowledge and skills have you gained throughout the project?
3. What has been your biggest success so far?
4. What has been the biggest challenge so far?
5. How did you respond to the challenge?
6. How is your teamwork? Briefly describe the dynamics of the group.
7. What are the next steps? What will happen in term 3?
8. What are the challenges of the next project phases? How are you going to address them?
9. Are you enjoying the project work? Why or why not?



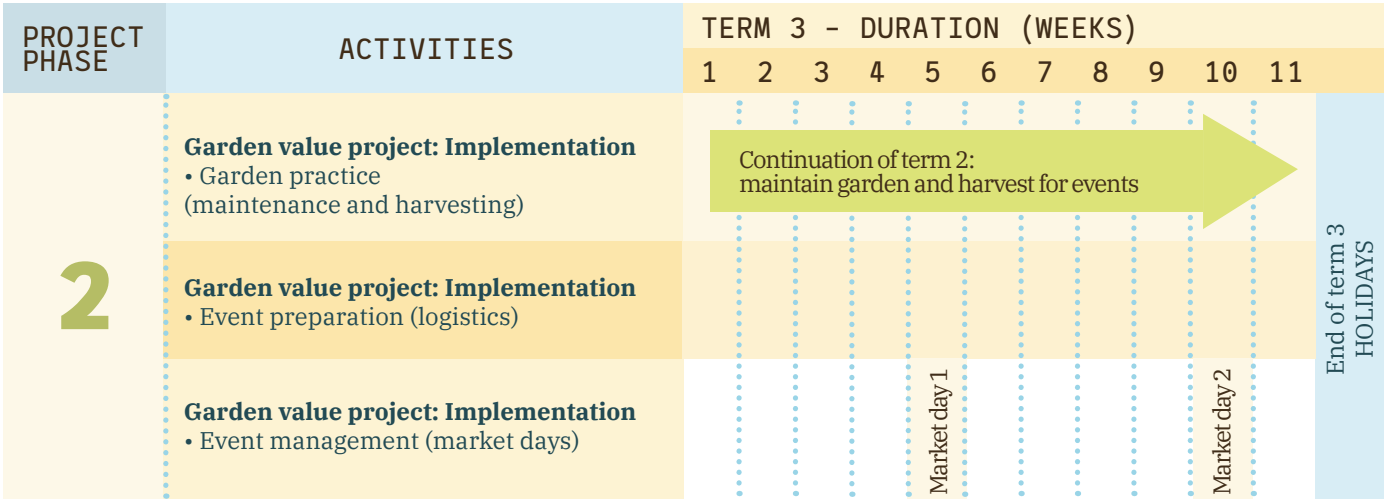


The “All Stars” and other teams in the garden.

PROJECT IMPLEMENTATION AND MONITORING

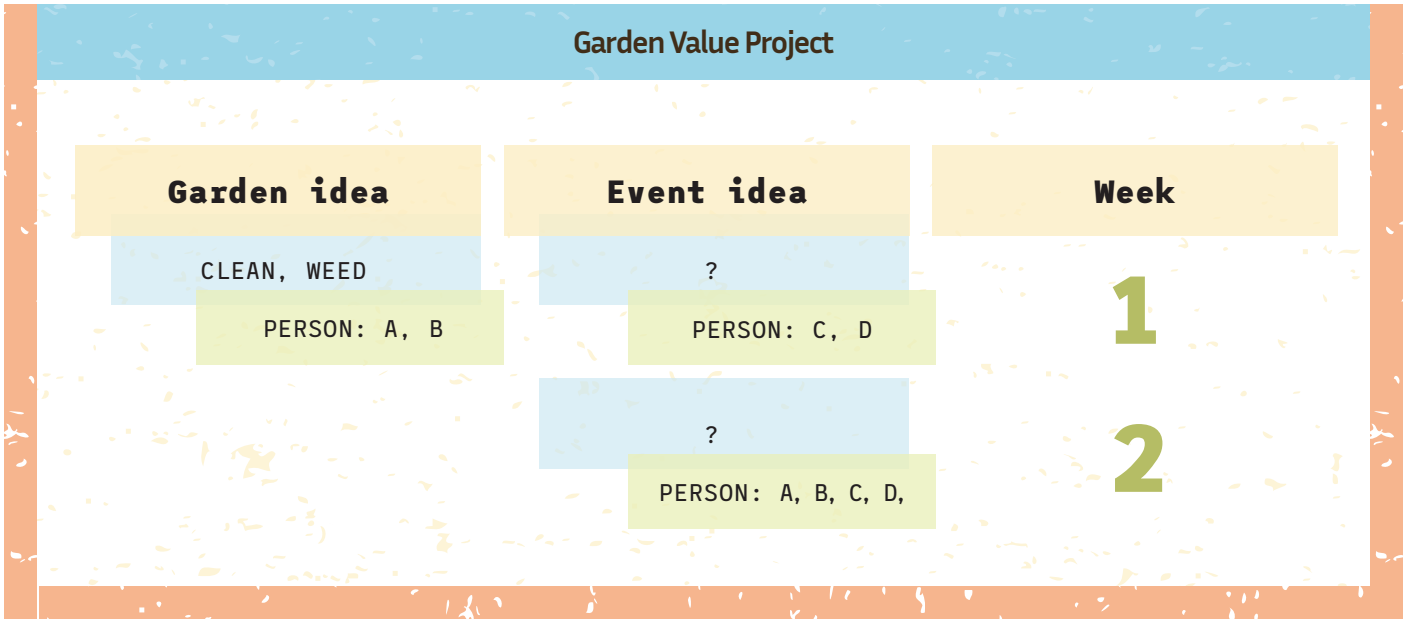
TERM 3

TERM 3 focusses on event preparation and management, while garden activities continue. Different tasks must be coordinated to supply fresh, self-grown vegetables to customers in or outside the school twice within 11 weeks.



CLUSTERING – DETAILED PLANNING: Week-to-week project plan

The major challenge in this term is to coordinate gardening and event planning. The clustering method (see below) will help in planning activities throughout the project. Learners must identify what needs to be done and when (both in the garden and for the event) and carry out these tasks as a team. Creating a plan will help with logistics and remind learners of important tasks to be completed in preparation for the events. Use a poster.



MARKETING AND MEDIUM 1: Tell the story of your product!

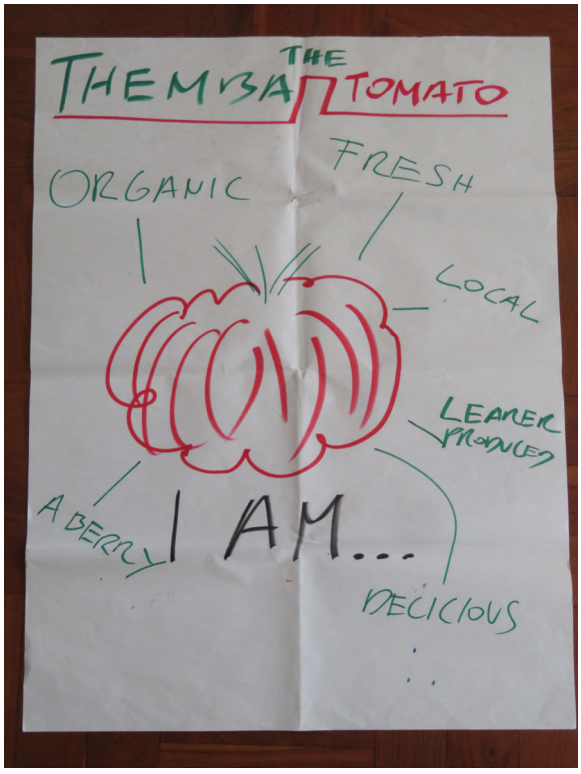
STEP 1: Create a marketing story

Successful brands use storytelling to connect with potential customers. A story could communicate the following:

1. you aim for something unique and special (e.g. organic and local vegetables for your community).
2. you can be trusted (e.g. your vegetables are produced in an educational institution).
3. you are different to the others (e.g. learner-produced vegetables).
4. you care and have purpose (e.g. you believe in the value of the region in which you learn and produce).
5. you offer a personal story (e.g. by doing this, you want to learn and grow for the benefit of yourself and your community).

Consider working on this with your school's language teachers.





STEP 2: Design a leaflet

When the groups have agreed on their projects, events and products, they need to advertise and inform people at school and in the community. A leaflet is a cost-effective form of advertising that allows for creatively designed information. Each group must produce a leaflet based on the guidelines in the box, and present it (time: 1-2 periods). They can make copies of the leaflets to distribute for marketing purposes. Consider working with the art teacher for this exercise.

Leaflet design - method

- What is the most important information regarding your project/ business idea/event? Give a brief overview and point out your outcomes/goals/highlights.
- What is your marketing story?
- Do not use too much text. Use bullet points and a font size that is easy to read.
- Group relevant information in paragraphs.
- Make it attractive: use catchy headings and pictures.
- Do not use too much colour.
- Avoid mistakes.
- Get feedback. Give a few copies to friends and ask for their opinion before you distribute your leaflets.
- Keep it short and simple.



STEP 3: Present the project on social media

If learners have access to devices and the internet, they can create a blog, Instagram or Facebook account for their project.

MARKETING AND MEDIUM 2: Veggie power tags

While the vegetables are growing in the Entrepreneurship Learning Garden, learners can work on other simple and helpful tools for marketing. Discuss the qualities and benefits of each vegetable in class and ask each learner to create attention-grabbing plant tags for two different vegetables. Make sure that all vegetables to be sold are dealt with, and that the cards are edited. Provide cardboard, colours and scissors.

If you have access to a printer or photocopier, veggie power tags can be displayed at the sales event. You can organise a competition and select the best veggie tags.



A hanging garden for every Sprouting Entrepreneur.

PROJECT PRESENTATION, EVALUATION AND CLOSING

TERM 4

TERM 4 represents the last stage of the project. The learners reflect on their experiences and present their achievements to others. The activities in this chapter help them to evaluate the project and prepare for a final presentation. The project closes with a clean-up of the garden and the development of ideas for future projects.

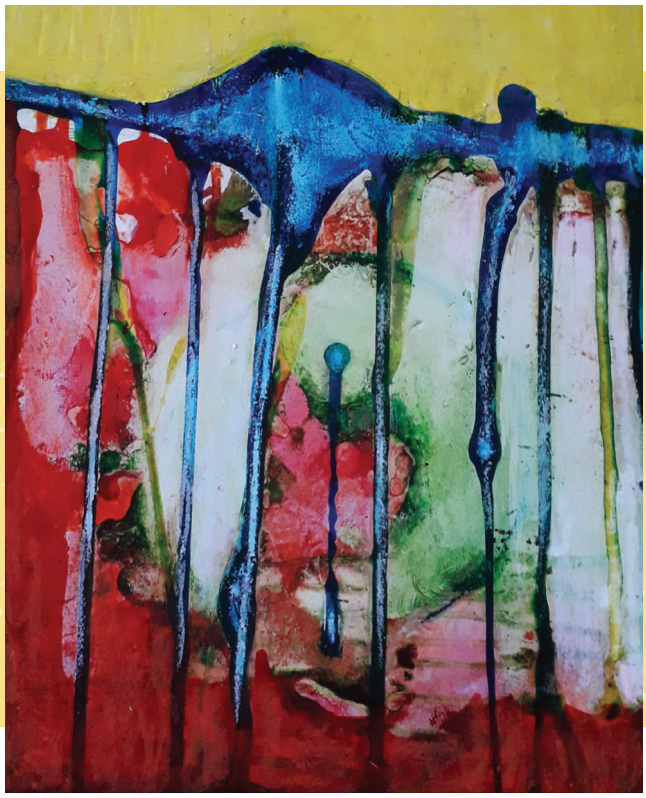
PROJECT PHASE	ACTIVITIES	TERM 4 - DURATION (WEEKS) 1 2 3 4 5 6 7 8 9 10
3	**Project evaluation**	End of term 4 HOLIDAYS
	Project presentation	
	Project closing (garden clean-up)	

REFLECTION – PICTURING EXPERIENCES: Say it without words

Before the learners embark on a final, detailed evaluation of their project, they reflect on their experiences and create a visual statement.

Ask them to describe their own feelings regarding the project using colour instead of words. Provide paper and colours. Create a relaxed atmosphere for this exercise and give learners space and time to create their own pictures.

When they are finished, set up a gallery in the classroom. Ask the learners to walk around and talk about their paintings. How do they interpret the pictures? Is there a general atmosphere that the drawings and paintings reflect regarding their experiences? Share in class.



EVALUATION – QUESTIONNAIRE: What have we learned from this project?

Reflection on the process is a key element of a learning approach that aims to move beyond knowledge to include skills and attitudes. It is thus important that learners examine the learning path they have completed over the course of the academic year. This will enable them to use the competences gained in the Entrepreneurship Learning Garden to deal with future learning challenges both in and beyond the garden.

Hand out the questionnaire below to learners and let them answer the questions individually. When they are done, compare the results. Discuss the outcome of the evaluation in class. How similar or different are the learners' experiences regarding the project? Allow for enough time to discuss this.

Questionnaire – Garden Value Project

LEARNER – CLASS/NAME:

1	How do you rate the success of the project?	very poor … very good 1 2 3 4 5
2	Did you enjoy the project work?	not at all … a lot! 1 2 3 4 5
3	Did your team work well together on the project?	very poorly … very well 1 2 3 4 5
4	Have the intended project outcomes/goals been achieved? Specify.	
5	Compare effort and benefits. Was the project worthwhile for you?	
6	What did you enjoy most in doing the project?	
7	Did you gain new knowledge and skills? What did you learn?	
8	What were you good at? Why?	
9	Where did you improve your skills?	
10	What kind of challenges did you face in the course of the project?	
11	How did you address the challenges? What solutions did you find?	
12	What lessons have you learned from this project?	
13	What did you enjoy most in the preparation for the project?	
14	Do you have suggestions for future projects?	

PRESENTATION – FINAL EVENT: Entrepreneurial culture in our school

Every project concludes with a final event. It highlights the achievements and learnings of the participants, and shares these with the community. This helps to inspire learners and teachers and contributes towards a culture of entrepreneurship at school. In addition, learners will receive feedback from outside their usual learning group.

Invite parents, teachers and learners of the school to a final project presentation at the end of the TERM.

Ask learners to prepare a presentation documenting the project. Invite learners to use the drawings, sketches and comics they have produced over time to document the project step-by-step. This is the right time to use the archived records of creative action (see "ACTIVITY"/TERM 2). They can also use photos and pictures (see "ACTIVITY: Say it without words") for the presentation.

Presentation - method

- What are the key messages?
- Point out highlights and catch the audience's attention.
- Keep the presentation simple but informative.
- Be prepared: use notes for important information.
- Use tools appropriately (e.g. flipcharts).
- Decorate the room in which you present (e.g. with photos).
- Practice free speech.
- Save time for discussion: involve others, answer questions.
- Do a test run!

Give them a few hints (see table) for the presentation and enough time to prepare for the final event.

Ideally learners could offer some vegetable snacks from the Entrepreneurship Learning Garden during the event. The presentation should last 45 to 60 min. Arrange for a short discussion afterwards.

PROJECT CLOSING – COMPLETE THE LEARNING CYCLE: Back to the start?

Before the end of the project the learners return to the Entrepreneurship Learning Garden. There, they will either:

1. Clean the garden for next year's group.
2. Prepare for another round of developing and implementing creative ideas in the Entrepreneurship Learning Garden in the coming academic year. In this case, record initial ideas for a fresh start in January.

MAY THE GROWTH BE WITH YOU!

PART V: BIBLIOGRAPHY



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SPROUTING™
ENTREPRENEURS

growing change

Sprouting Entrepreneurs centres around the concept of the school-based Entrepreneurship Learning Garden. Learners plan their garden creatively, plant, overcome challenges, harvest, market and sell an edible product together. They tackle key areas of entrepreneurship education, defined as spotting opportunities and turning ideas into action through which financial, social, cultural, civic and ecological value is created. Additional learning outcomes focus on healthy nutrition and food security, gardening as a vocational skill and personal development.

