KEEP IT COOL
CLIMATE CHANGE EDUCATION

Set 6 for Teachers:
Implementing and managing your project

vvob
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Flanders
State of the art

This is a support set for Teachers primarily, but also for Professional Learning Communities (PLCs) participating in the Keep It Cool: Climate Change Education (KIC:CCE) Project.

The KIC:CCE Project aims to implement innovative, curriculum activated CCE projects, involving learners and communities. The project aims to facilitate collaborative, continuing professional development and improve the teaching and learning of climate change education in the South African education system. Secondary school teachers will implement the change projects, with guidance and support from the school leadership team for the successful implementation of the projects. At the same time, teachers have the opportunity to form Professional Learning Communities (PLCs) to facilitate their professional development collaboratively. Key themes that run through the materials are gender equity, good governance, and social inclusion. The support sets provide stories, examples, tools and processes that can be used within the KIC:CCE Project by PLCs, the school leadership team and teachers.
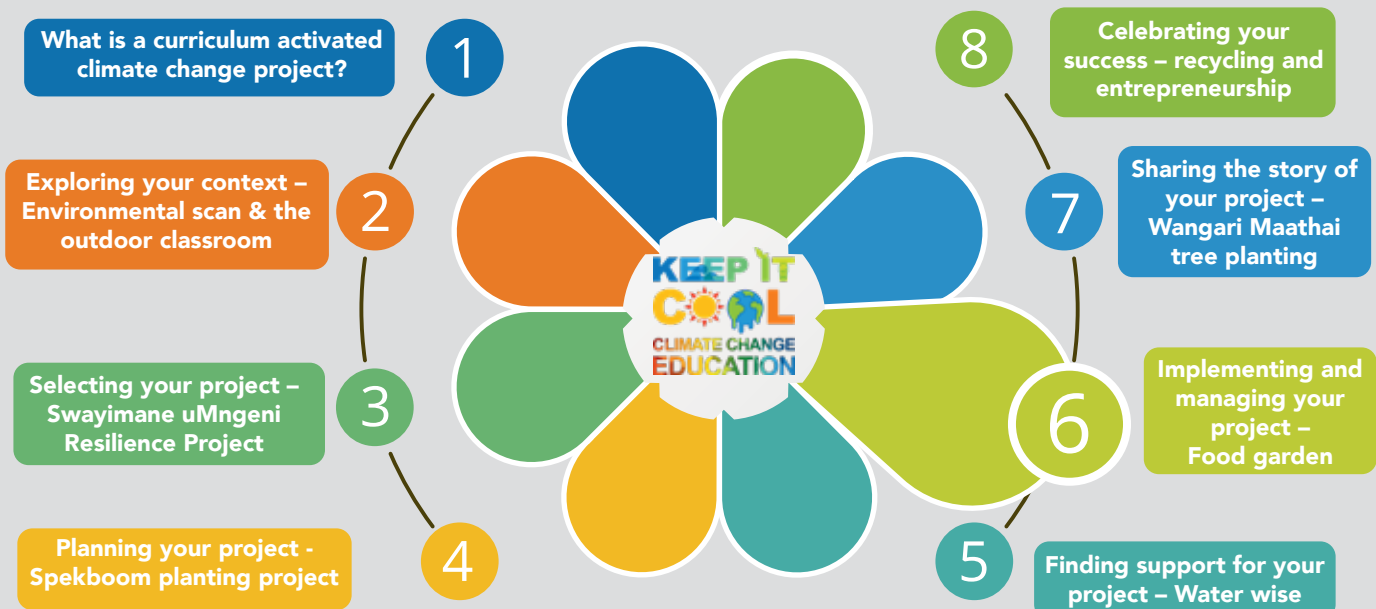
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ORIENTING TO THESE TEACHER SUPPORT RESOURCES

Set 6 is about implementing your curriculum activated climate change education project. So far, you have explored what a curriculum activated change project is; started with your subject and moved out to assess your context; selected your project; and started and planned your project. You have also looked at who can support you in your project. It is now time to start implementing and managing your project.

ORIENTING TO THE NATIONAL CURRICULUM

There are 8 sets in this Keep It Cool: Climate Change Education (KIC:CCE) project. The first set (What is a curriculum activated climate change project?) provides an overview, from which you can start thinking about your project. Each set shares examples of curriculum activated climate change projects intended to support you to integrate climate change education into your classroom. The inspirational stories provide possibilities that you can explore. What can you find out from the stories about possible projects, approaches or partners?

SET MAP

1. What is a curriculum activated climate change project?
2. Exploring your context – Environmental scan & the outdoor classroom
3. Selecting your project – Swayimane uMngeni Resilience Project
4. Planning your project - Spekboom planting project
5. Finding support for your project – Water wise
6. Implementing and managing your project – Food garden
7. Sharing the story of your project – Wangari Maathai tree planting
8. Celebrating your success – recycling and entrepreneurship

The stories will reference topics and page numbers from CAPS.
In this set, the curriculum activated project is about food gardens.
As you use the set, consider where you could use the learning in the food gardens story within CAPS.

WHAT WILL YOU FIND IN THE SETS ?

These sets are arranged into three key activity groups:

1. IMAGINING POSSIBILITIES
2. FINDING OUT
3. TRYING OUT

Curriculum links / Project ideas/ Inspiring stories/ 'How to' guide, choose, plan, implement…

Taking a curriculum activated climate change project from 'idea to action' is an important step. This set is about the actions and activities necessary for implementation and management. It's about ensuring that teaching and learning and the project idea are activated by CAPS, AND that the project is implementable. It offers tools and tips to assist with implementing and managing your curriculum activated climate change project. It's about asking: Are tasks being done? Is conflict addressed early?

WHAT WILL YOU FIND IN THIS SET?

SET 6 MAP

01 IMAGINING POSSIBILITIES
For food gardens as a teaching tool and to address food insecurity

02 FINDING OUT
How to start a small food garden; working with project implementers

03 TRYING OUT
By asking project implementation questions

IMAGINING POSSIBILITIES

How can food garden projects be used to support the delivery of the curriculum while also addressing a local matter of concern?

You can use the food garden to focus your lessons, and to learn more about your local contexts. You might find some useful ideas from the teachers' stories.

TEACHERS USING FOOD GARDENS TO SUPPORT TEACHING AND LEARNING

The community/ school food garden in Boikanyo School, Soweto, (which you can read about below) inspired Neo Molete, a Grade 9 Natural Sciences teacher at George Khosa Secondary School in Dobsonville (just near Boikanyo School), to integrate the food garden into his lessons. He decided to incorporate Indigenous Knowledge Systems (IKS) into the learners' thinking about Natural Sciences.

THIS IS WHAT HE DID:

imifino

1. 2. 3. 4.

He set a holiday task for learners. Combining the old and the new, he suggested that learners could make a video recording of the elder talking, or a voice note, that could be played in the classroom. Each learner had to ask an elder in the community:

1. What plants grew best in the environment when you were young?
2. What vegetables were grown and eaten – in the elder's youth, and now?
3. Which vegetables require less water or do well in wetter conditions?
4. Is there is a difference in what is grown now? Why is this so?

CAPs specifies knowledge of IKS as an important and necessary component of NS teaching (CAPS, 2011: p. 8).

He also incorporated an experiment when he was teaching the section on Greenhouse Gases (CAPS, 2011, p. 82). Learners planted seedlings into eggboxes – one covered with plastic, one without. The purpose of the experiment was to measure the impact of the greenhouse effect on how plants grow. They documented the differences, using their cellphones. And then the sprouted seedlings were planted in the food gardens, looked after by the learners.

Mabel Phiri, the Grade 12 Geography teacher, decided that part of the final formal formative assessment (Economic Geography of South Africa, CAPS, 2011, pp. 47; 52) for her learners should be to investigate the impact of the informal sector in addressing food insecurity (high prices, non-availability of preferred foods at reasonable prices). Learners were required to talk to community members around Boikanyo and report their findings.
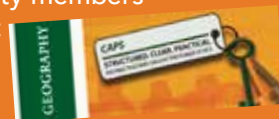
THE QUESTIONS ARE:

1 Do you think that the food garden is important for your community? Why? Why not?

2 What crops are grown in the food garden?

3 What crops would you like to be grown in the food garden?
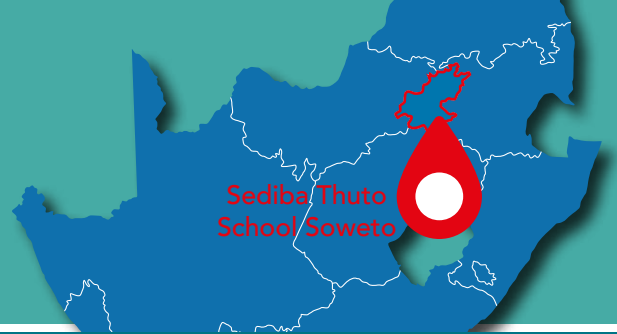
4 What further suggestions do you have about the community food garden?

STORY OF PARTNERSHIPS

The food garden story is from Gauteng.

The Boikanyo School / Community Vegetable Garden is a partnership.

Sediba Thuto School Soweto

WHAT IS IT? A wasteland turned into a vegetable garden that benefits the school and the community.

WHERE IS IT? On a dumping ground behind Sediba Thuto School in Mapetla, Soweto.

WHO? Mapabala Rachane and friends

HOW DID IT START? Mapabala says "In 2012 there was no community garden. We asked the principal if we could make a garden on the property behind the school. We wanted healthy food, to make money and help our community."

The wasteland where rubbish was burned
[Pictures from the website, 2021.]

BURNING WASTE

Harmful greenhouse gases are released when waste is burned. These impact negatively on the environment, climate change, air quality and the health of communities.

CLIMATE SMART AGRICULTURE:

Is about increasing sustainable productivity, strengthening resilience, reducing greenhouse gas emissions, and increasing carbon sequestration. This benefits the environment and strengthens food security. Practical techniques include mulching, intercropping, crop rotation, improved grazing, planting indigenous, resilient crops, and water management.

Learn more at https://www.profor.info/notes/climate-smart-agriculture-south-africa

WHAT IS IT?

A women-led initiative. Partnering with the school, the community and business. They maintain the gardens and maximise the harvest.

WHY PARTNER?

For support, expertise and mentorship.

Mapabala in the flourishing food garden

WHAT ARE THE SOURCES OF SUPPORT?

- The community
- The school
- The Dion Herson Foundation
- Izindaba Zokudla (University of Johannesburg)
- Food and Trees for Africa
- Shoprite Checkers.

WHAT IS THE IMPACT OF THE GARDEN?

Provides vegetables for the school feeding scheme and for sale; promotes healthy eating; gardeners are mentored and learn entrepreneurship skills. Improves food security for the community.

Teachers use the garden in their lessons.

This field used to be so dirty …. Look at it now!

We have learned about growing vegetables and many other skills.

Learners also help us with the food garden.

We work hard but are happy to have the vegetables.

The garden makes us feel proud!

It went very well – we sold a lot of vegetables and had an amazing time. – Mapabala Rachane

WHERE ARE THEY NOW?

At Market Day, Boikanyo sold their vegetables to shoppers.

REFLECTION: SUCCESS FACTORS

What do you think are the success factors for the Boikanyo School / Community Vegetable Garden?

A PLC might like to discuss lessons from Boikanyo:

How did the school and community solve the problem of the waste land and pollution?

What do you find interesting about the Boikanyo vegetable garden project?

What helped this project to succeed and thrive?
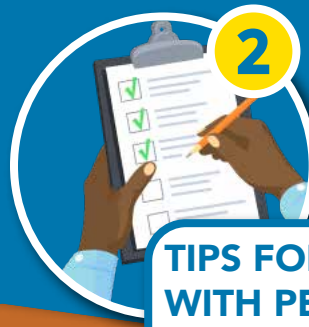
Your curriculum activated climate change project

What are the sustainability factors for your curriculum activated climate change project?

How will you resolve challenges that arise in your project? Who could support you?

In this section, two areas are available for you to explore. *They are:*

1

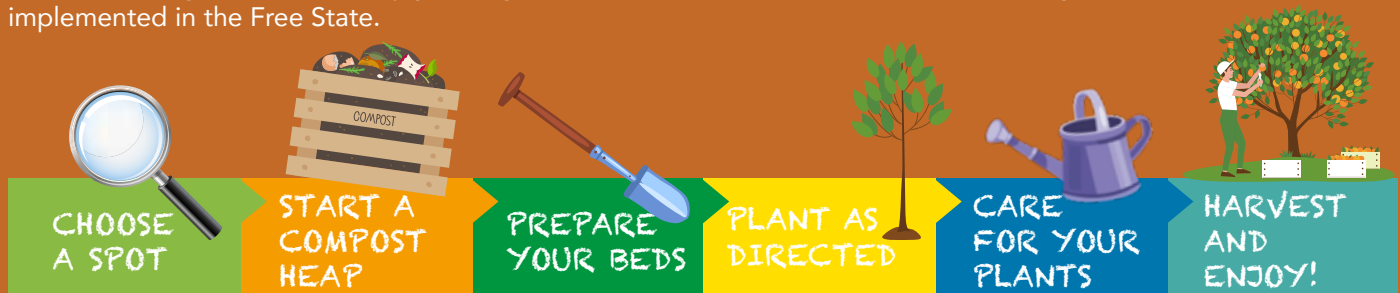**2**

FINDING OUT

HOW TO START A CLIMATE SMART SMALL FOOD GARDEN

TIPS FOR WORKING WITH PEOPLE WHEN IMPLEMENTING A PROJECT

Finding out how to start small – see results!

Food gardens can be started with very few resources. You can start small with what you have or can easily source. See below for good ideas to help you to get started. The information comes from food gardens implemented in the Free State.

COMPOST

| CHOOSE A SPOT | START A COMPOST HEAP | PREPARE YOUR BEDS | PLANT AS DIRECTED | CARE FOR YOUR PLANTS | HARVEST AND ENJOY! |

KEYHOLE GARDENS
- Keyhole gardening was designed for Africa by Africans!
- Composted waste is in a central 'basket'
- Plant imbumba in a raised space built out of rubble
- See: http://www.realfarmacy.com/how-to-make-a-keyhole-garden/

BAG GARDENS
- Space-saving vertical gardening!
- Fill a sack with compost and soil
- Filter water to the imifino
- https://arc.agric.za/Agricultural%20Sector%20News/How%20to%20grow%20a%20bag%20garden.pdf

TYRE POTATO STACKS
- Potatoes grow best when the soil level is constantly raised
- A small space and a stack of old tyres becomes a high-yield potato patch
- See: https://www.youtube.com/watch?v=XUeuI0TBFoo

A COMPOST TRENCH BED
- Fill a trench with organic matter. You can have a bambara ground nut bed within 4 weeks!
- Plant the first trench, then prepare the next for a constant supply of bambara ground nut
- Get Growing Vegetables: A comprehensive guide on how to establish maintain and manage a vegetable garden (on CD) from dora@goodbugs.co.za

HYDROPONIC GARDENING
- You can grow morogo using little water, basic waste items (2 litre plastic colddrink bottles), & no soil or compost!
- See: https://www.youtube.com/watch?v=PaoMduWaaPo

Find ideas for simple gardening projects at:
https://www.ufs.ac.za/supportservices/departments/service-learning-at-our-university-home/links-for-community-projects/food-garden-projects

TIPS FOR WORKING WITH PEOPLE WHEN IMPLEMENTING A PROJECT

In set 4, you have already done some planning for your project. In set 5, you thought about who could offer you support in your project and who you could have on your team. You have also thought about what resources you need. But how can you work with the people who are helping with your curriculum activated climate change project?

TWO IMPORTANT AREAS WHEN IMPLEMENTING A PROJECT ARE:

Managing People
You might like tips on how you could resolve conflict between project implementers quickly, before it becomes a real problem.

You might need to give feedback to a project partner. The method suggested below could help you to do this in a constructive way. **These are management roles.**

Getting these two right can help you with project sustainability.

Implementing Processes - Accountability
This is about setting up the correct structures and processes for accountability. **Accountability ensures proper implementation.**

YOU WILL FIND SOME TIPS BELOW THAT COULD GUIDE YOU IN THESE TWO IMPORTANT AREAS:

MANAGING PEOPLE

Sometimes, project partners become stressed, angry, or difficult. Knowing how to defuse conflict can help to keep your curriculum activated climate change project on track. Conflict could occur if learners don't do their tasks, or the SLT does not support the project. These are just two examples.

What is conflict ?

Conflict happens when people disagree. It could arise when people in a project perform differently or have different ideas.

Yes, the Grade 8 learners promised to clear away the rubbish so that the Grade 9 Learners can dig the soil and add compost. The Grade 9's are annoyed because it wasn't done.

1. State the facts… Do not personalise. Do not use 'you' or 'I'	"The rubbish was not cleared from the site for the vegetable garden."
2. "This makes me feel…" Express how it makes you feel	"This makes us feel worried because we must prepare the soil for the plants."
3. Let's agree…" State what changed behaviour you would prefer	"Let's work out when you can clear the rubbish, so that we can start digging the soil."

EXAMPLE OF A 'SANDWICH' DISCUSSION

(Start with a positive statement; give the feedback; end with positive action)

1. "The project meeting was useful."

2. "But we are not all making time to attend project meetings."

3. "Could we all agree to a date, place and time and then stick to this?"

IMPLEMENTING PROCESSES - ENSURING ACCOUNTABILITY

1 ENSURE PARTICIPATION
- Consult the school and the community about their needs
- Include project partners in plans and discussions

2 DEVELOP PLANS
- Develop an implementation plan for the curriculum activated climate change project with:
  - o Roles and responsibilities
  - o Timelines
- Accountabilities

3 COMMUNICATE
- Meet to discuss project progress
- Share information openly -
  - o on plans
  - o implementation progress, and
  - o any challenges (to find a solution)

4 MONITOR IMPLEMENTATION
- Check that what needs to happen is done
- Take steps to fix any gaps

TRYING OUT

TRYING OUT

Implementing your Curriculum Activated Climate Change Project
The questions below can help you to **implement** your curriculum activated climate change project. This could be a useful exercise to do together with your learners, other teachers, and interested community members. You might like to discuss these with a PLC, if you have formed or joined one.

Remember to keep the **CURRICULUM** and **CLIMATE CHANGE** at the centre of all your discussions. You may want to use a large piece of newsprint paper for this process.

1
Start by writing

Implementing our curriculum activated climate change project

in large letters across the top of the page

2
At the bottom of the page, draw five blocks - one for each of the five tasks you need to unpack

3
Use the activities in this lesson set to help you to implement your climate change project

WHAT IS OUR GOAL?

- What is the primary goal for the KIC:CCE curriculum activated project?
- What are the desired short-term goals for the project?
- What are the desired medium-term goals for the project?
- What are the desired long-term goals for the project?

WHAT IS THE TIMELINE?

- What is the deadline?
- What time can be allocated to each task to ensure that the deadline can be met?
- Have you factored in some time for unexpected delays?

PROJECT TEAM

- What is the role of the teacher/s and learners initiating the project?
- Who is the team leader?
- What are the skills, time availability and proposed role for each team member?
- How will we sort out differences?

RESOURCES

- Which resources are readily available?
- Which resources must still be obtained?
- What do you need to do to find resources?

TASK LIST

- What will be done by each team member and by when?
- How can you develop a task list?
- How will you keep track of the progress with tasks?
- What action will you take if there is not enough progress?

MEETINGS

- When will you have meetings?
- What type of meeting?
- How can you keep meetings short and productive?

ACCOUNTABILITY

- How will we keep ourselves accountable?
- What governance structures will we put in place?

REPORTING - Telling the story of your project

- What kind of reporting will we need to do?
- Should we take photographs at various stages of the project to document progress? (You can use a cellphone, or write a story on Facebook (Meta). Or, could you use an open day or a school assembly. Another possibility is a school newsletter. A local radio station might like to hear about the project.(Look in set 7 for more ideas)

By the end of this task, you should be ready to start implementing your project.

WHAT HAS BEEN COVERED IN THIS SET?

GETTING ON WITH THE JOB

Getting down to the work of a project is a necessary and important task. As the initiator of the project, you should not be doing most of the work: your role as a teacher is to facilitate tasks happening; to make sure that everyone working in the project knows their roles and responsibilities; and to make sure that people work well and productively together.

What is the story that you and your learners can start to tell about your project? How have you been able to try out your plans?

This set focused on supporting you with project implementation. Starting projects in a small and manageable way can help to keep the tasks manageable and sustainable. Also, calling on suitable partners for support helps with sustainability of the project.

The 'IMAGINING POSSIBILITIES' stories shared examples of food garden projects that:
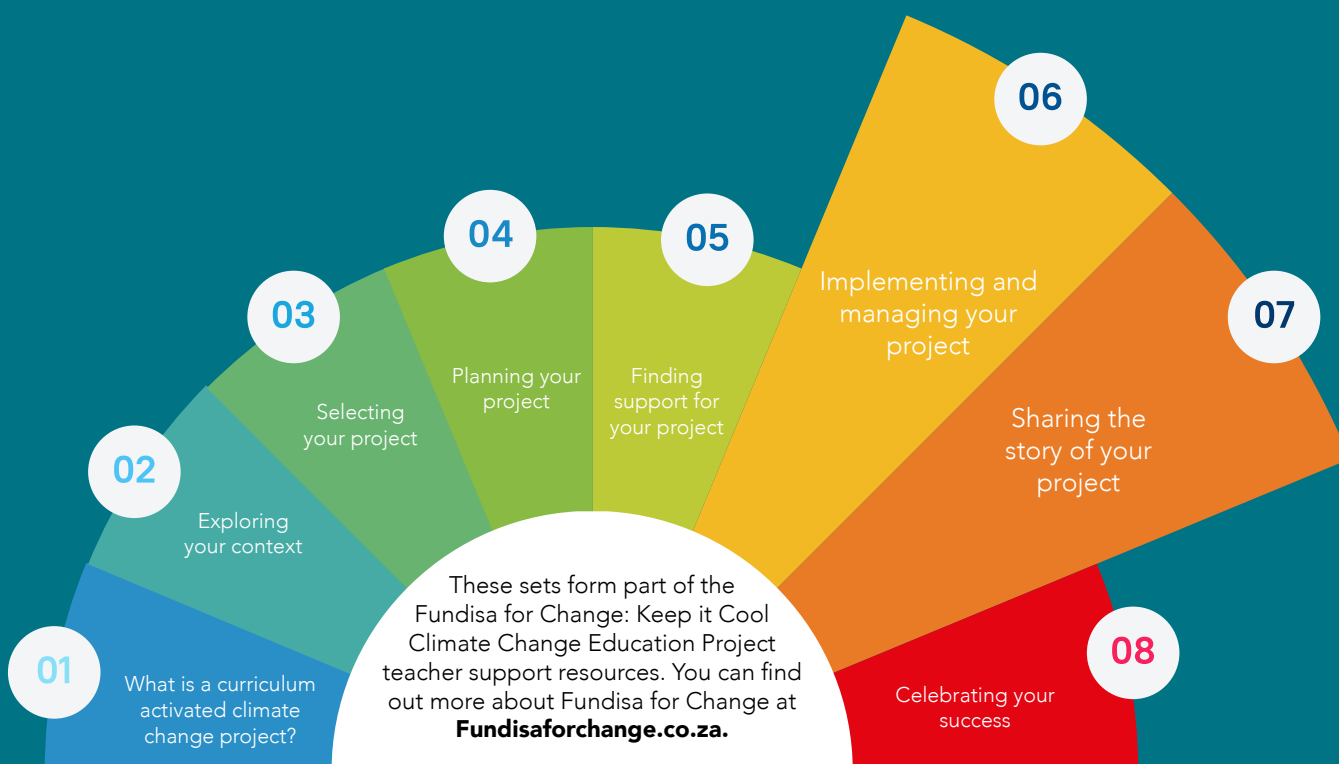
· align with CAPS and provide a resource for teaching and learning;
· harness the power of partnerships for success; and
· address food security and the economic needs of the community.

The 'FINDING OUT' and 'TRYING OUT' sections provide starting points and ideas for:

· using innovative gardening methods that are relatively easy to implement;
· having difficult conversations in a way that should not derail your project; and
· setting up accountability and governance structures in the project.

By looking at this set, you have explored ways to implement and manage this project.

In the next set, we will look at sharing the story of your project:

06 Implementing and managing your project

07 Sharing the story of your project

05 Finding support for your project

04 Planning your project

03 Selecting your project

02 Exploring your context

01 What is a curriculum activated climate change project?

08 Celebrating your success

These sets form part of the Fundisa for Change: Keep it Cool Climate Change Education Project teacher support resources. You can find out more about Fundisa for Change at **Fundisaforchange.co.za.**

REFERENCES

Brundrit, S. 2014. Teaching Climate Change. Fundisa for Change Programme. Environmental Learning Research Centre, Rhodes University, Grahamstown.

Department of Basic Education. 2011. Curriculum and Assessment Policy Statement (CAPS) Further Education and Training Grades 10-12, Geography. At: https://www.education.gov.za

Department of Basic Education. 2011. Curriculum and Assessment Policy Statements (CAPS) Senior Phase Grades 7-9, Natural Sciences. At: https://www.education.gov.za

Food Garden Projects. At: https://www.ufs.ac.za/supportservices/departments/service-learning-at-our-university-home/links-for-community-projects/food-garden-projects

Get Growing Vegetables: A comprehensive guide on how to establish, maintain and manage a vegetable garden. Available on CD from dora@goodbugs.co.za

How to grow a bag garden. n.d. At: https://arc.agric.za/

How to make a keyhole garden. n.d. At: http://www.realfarmacy.com/how-to-make-a-keyhole-garden/

How to make a tyre potato stack. n.d. At: https://www.youtube.com/watch?v=XUeul0TBFoo

Hydroponic gardening using plastic bottles. n.d. At: https://www.youtube.com/watch?

Smart Agriculture. n.d. At: https://www.profor.info/notes/climate-smart-agriculture-south-africa

Vogel, C., Misser, S. and Vallabh, P. 2013. Teaching Climate Change. (Geography). Fundisa for Change Programme.

Environmental Learning Research Centre, Rhodes University, Grahamstown.

United Nations Educational, Scientific and Cultural Organization. (n.d.). Sustainability Starts with Teachers. Capacity Building Programme for Teacher Educators on Education for Sustainable Development (CAP-ESD). At: https://sustainabilityteachers.org/

Another resource for you:

The KIC: Climate Change Education Project has developed an extensive digital library of materials for all KIC partners.

What is in the resource? Open Educational Resources (OER's) that focus on teaching and learning about climate change and sustainability

When will you be able to access it? The website is live

How can you access the resource? https://ibali.uct.ac.za/s/ccse/page/welcome

How can the resource be used? Its primary purpose is to provide the teaching community (from primary, through to teacher educators) with relevant text and media resources to enhance their teaching practices and courses. You can do general searches by main categories such as climate change topic, foregrounded approach, or target audience. Each general category is then broken down into subtopics to help you find your areas of interest

You will be able to add interesting materials that you generate or find!

If you would like more information about curriculum focused, transformative learning, and transformative teaching and learning methods, then look at the Fundisa for Change core resources. You can download them from the Fundisa for Change website.
https://fundisaforchange.co.za

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