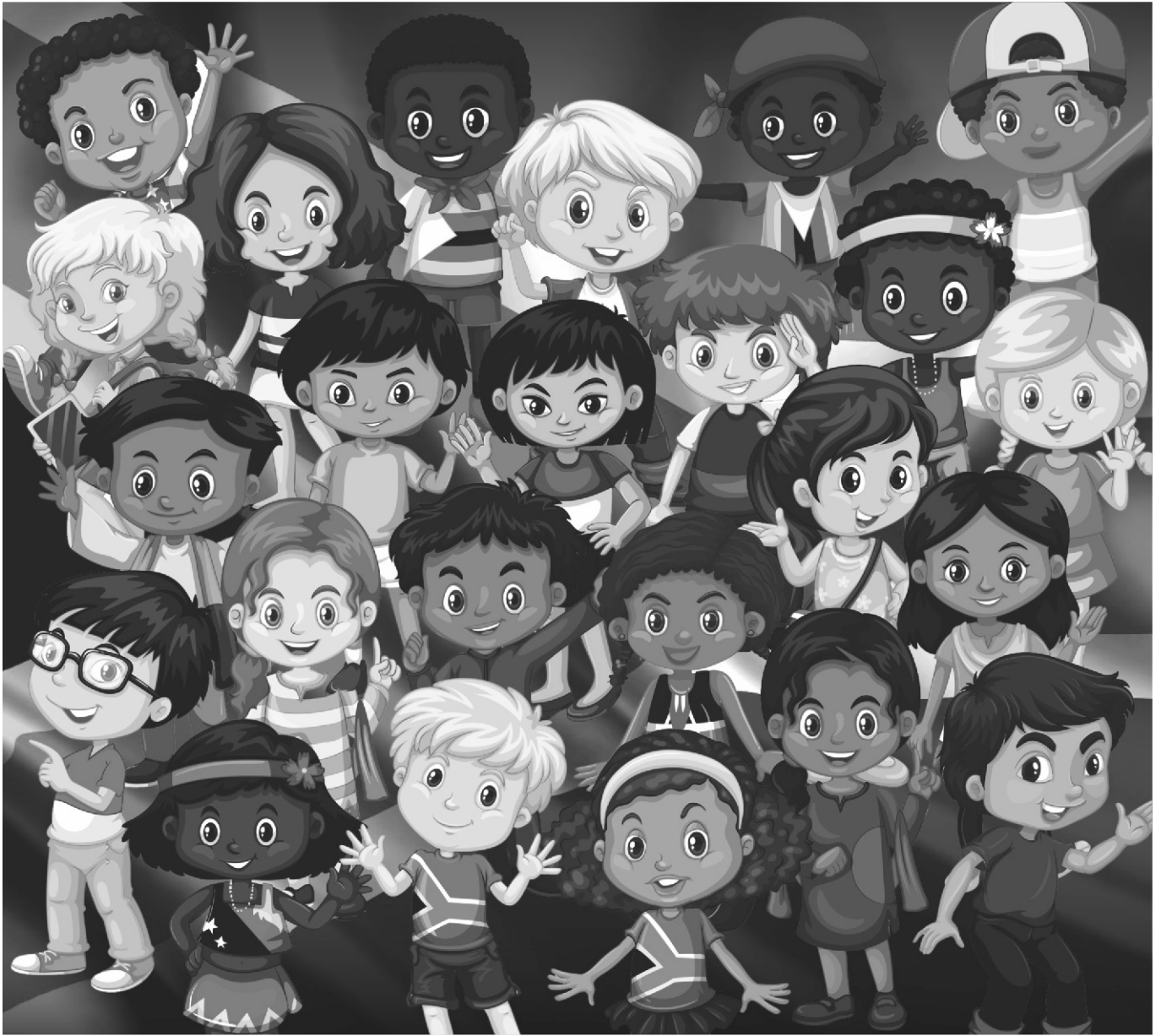


# SAVING WATER, SAVING LIFE TEACHER'S PROJECT NOTES



- 3** ENTREPRENEURSHIP
- EMPLOYABILITY
- EDUCATION

PLAYFUL PROJECT-BASED LEARNING | TERM 3 LIFE SKILLS PROJECT FOR SBA



basic education  
Department:  
Basic Education  
REPUBLIC OF SOUTH AFRICA



GRADE **5**



## Table of contents

Table of contents	1
Letter to teachers	2
Rubric to rate the level of competencies and e-mindset	3
PPBL Spiral-model	4
About PPBL	5
Thinking maps application tips	6
Welcome	9
ATP CAPS alignment	9
Grade five project: Saving water, saving lives	10
Project planning table	11
<b>Part 1: Inquiry-based learning</b>	<b>13</b>
<i>Step 1: Prior knowledge</i>	13
<i>Step 2: New knowledge</i>	14
<i>Step 3: Order</i>	15
<i>Step 4: Apply</i>	15
<b>Part 2: Problem-based learning</b>	<b>16</b>
<i>Step 5: Define</i>	16
<i>Step 6: Explore</i>	16
<i>Step 7: Brainstorm</i>	17
<i>Step 8: Present</i>	18
<b>Part 3: Design-based learning</b>	<b>18</b>
<i>Step 9: Evaluate</i>	18
<i>Step 10: Prototype</i>	18
<i>Step 11: Feedback</i>	18
<i>Step 12: Integration</i>	19
<i>Step 13: Present</i>	19
Assessment rubric	20

Dear Teacher

We have come a long way since January 2018 when the National Education Lekgotla announced that Entrepreneurship in Schools (EiS) was to become a national priority and that a programme should be set up to investigate how to prepare learners with thinking skills for a changing world.

EiS was rebranded as E<sup>3</sup>, as we felt that learners who were not able or keen to start an enterprise should not be excluded. Hence E<sup>3</sup> was born: **Entrepreneurship, Employability and Education** for lifelong learning has become the pathway all learners in our country will follow as they find their place in the economy. Playful Project-based Learning was the approach chosen as a method teachers would use for the first trial period, as PPBL has been proven to unlock competencies learners of our century need to thrive in the world after school. These are very clearly indicated in the model on the following pages.

Thus, since 2018, E<sup>3</sup> have been conducting trials in schools using the PPBL method as an approach, especially for Term 3 where the School-based Assessment is a Project. Thus, your work as a teacher has been prepared for you (you may, of course, change what does not work for you).

Provided herewith is a **Learner's Workbook** and a set of **Teacher's Project Notes for the School-Based Assessment (SBA) Task for Term 3**, as per the SBA Plan in Section 4 of the CAPS. These documents are specially created to support you as per the trimmed Annual Teaching Plan (Section 3) for Term 3. You will also be provided with the resources learners need to complete their projects

The Learner's Workbook and Teacher's Project Notes were created by DBE-E<sup>3</sup>, our unit at the National Department of Basic Education, and reviewed by our master trainers, who are leader teachers or district officials. For those schools that have been part of E<sup>3</sup> in the past: you will notice that we have added a number of additional thinking skills to the original model – try to engage learners in these “thinking” sessions as this is where their growth lies.

**We truly respect your apprehension during this time, and acknowledge your commitment. We appreciate all your hard work.**

Enjoy unlocking play in your classrooms and encouraging a solution-seeking mindset in your learners – and remember that our learners look up to us – so let's walk the talk!

Good luck!

The E<sup>3</sup> team



**basic education**

Department:  
Basic Education  
REPUBLIC OF SOUTH AFRICA



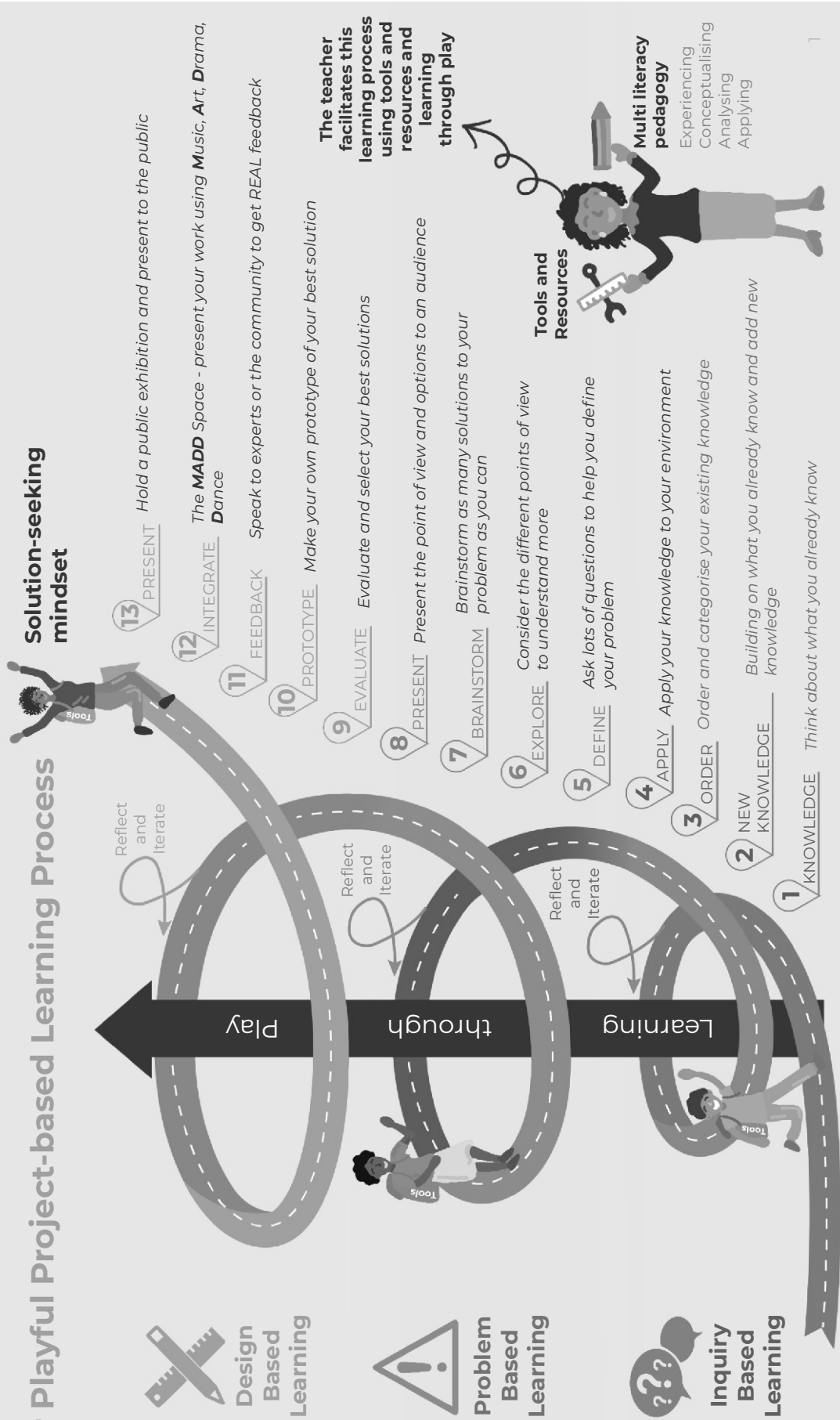
## RUBRIC TO RATE THE LEVEL OF COMPETENCIES AND E-MINDSET

Did your entrepreneurial mindset grow whilst managing this project?				Personal rating (1=Poor, 4=Excellent)	
				Pre-project	Post-project
<b>COMPETENCIES</b>	<b>Character</b>	Citizenship	I am very committed and involved in various activities in my community and people regard me as someone to follow in my circle of influence.		
		Curiosity	I am very curious about everything around me and all my senses are alerted to possibilities which I always put into practice.		
		Resilience	When I face challenges I am always excited about the possibilities and I always get up after I have been unsuccessful. I am always enthusiastic about what I have learnt in the process.		
	<b>Thinking</b>	Creativity	I always use my imagination to come up with original ideas and/or I am always creating new things.		
		Critical thinking	I always form judgements based on my ability to analyse and evaluate objectively.		
		Reasoning	I always think about things in a logical and sensible way and I always come up with conclusions easily.		
	<b>Collaboration</b>	Collaboration	I always produce good work/things by working well with people (individuals or a team).		
		Communication	I am always successful in conveying or sharing ideas or feelings.		
		Empathy	I have a highly developed ability to understand and share the feelings of others.		
<b>E-MINDSET</b>	<b>Agency</b>	Growth mind-set	I am always open to new information and am always willing to change my beliefs, assumptions and actions as a result.		
		Motivation	I always do what needs to be done without needing to be influenced by other people or situations. I always find a reason or the strength to complete a task, even when it is challenging, without giving up or needing anyone else to encourage me.		
		Internal locus of control	I am always in control of my life and my work is always my own, and it is because of this that I experience success often. I never blame others or circumstances for my lack of success.		
		Regulation of emotion	I always respond to the demands of a situation with emotions that are socially tolerable and sufficiently flexible, to allow spontaneous or delayed reactions – whichever are appropriate.		
	<b>Self-efficacy</b>	Tasting success	I have always done things successfully enough to give me “the taste of success” that makes me motivated to want more, and to believe that I can get it.		
		Socially relatable role model	I have always been fortunate to have been exposed to excellent role models that I can relate to and who make me motivated to want to be like them.		
		Positive support	I have always been fortunate to have had someone who has been a positive support to me and who has encouraged me and seen me as a person.		
	<b>Solution-seeking</b>	Resourceful	I always find quick and clever ways to overcome difficulties and find solutions.		
		Problem solving	I always find solutions to difficult or complex problems.		



# PPBL Spiral-model

## Our Playful Project-based Learning Process





Playful Project-based Learning is a **learner-centred, teacher-guided** teaching method where learners learn by actively engaging in real world and personally meaningful projects. Playful Project-based learning **connects** what learners learn in school to **real-world issues, problems, and applications**. If learning mirrors real-life contexts and equips learners with practical and useful skills, we argue that they are more likely to be **interested** in and **motivated** by what they are learning. This includes 21st century knowledge, work habits and character traits that are critically important to success in today's world.

Playful Project-based Learning is **learner centered and teacher guided**, allowing for in depth investigation of a topic. There are three phases to our Playful Project-based Learning approach.

### **Inquiry-based Learning**

Learners are given an open question or problem, they then create and answer their own more focused questions, generating conceptual procedural knowledge in the process. At the same time, learners are developing their problem solving and critical thinking skills.

Teachers encourage learners to ask questions, scaffolding them through the investigation process and moving them beyond general curiosity into the realms of critical thinking and understanding.

### **Problem-based Learning**

Learners work in teams to formulate complex, open problems rooted in the real world, and propose possible solutions.

Following a student-centred approach, teachers scaffold the development of learners' ability to work collaboratively, be self-directed, and to think critically, promoting critical thinking skills, communication skills, and cooperation.

### **Design-based Learning**

The design phase integrates design thinking and the design process in the classroom. This phase is concerned with how solutions to complex problems might work in practice, in a particular, context. Learners come up with solutions to complex problems by designing, building, and testing prototypes, \*(A "prototype" is a simple model that lets you test out your idea!) that solve some of the problems learners identified in the problem phase.



These resources have been created by Thinking Schools South Africa at admin@thinkingschools.org.za



## THINKING MAPS APPLICATION TIPS

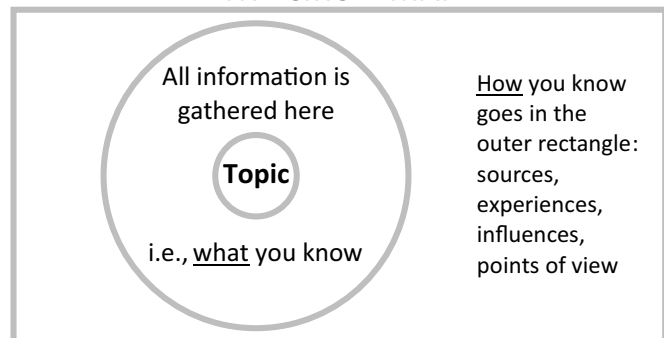
When you are **Defining...**

Key Words used	Questions asked	Applications
Tell me everything you know about this topic, List, Define, Note the key points, name all the types (of fractions, forces, habitats, plants, animals, qualities, points of interest) in this topic. Brainstorm, discuss.	What do you think this word means? What did we learn about this topic? What are the main issues raised in this video/book? What are all the points you want to make (or learn) about this topic? What are all the ways of getting to this answer/number?	Formative Assessment of what students already know about a topic. This includes misconceptions, which you can be aware of. A starting point to gather all ideas – firstly your own, and then perhaps more from peers, video or written material; or pre and post revision.

**...then the Thinking Map to use is**

Note: You can use the Circle Map to measure growth in your thinking, such as checking and self-correcting information that is incorrect and adding new information in a different colour.

### THE CIRCLE MAP



When you are **Describing...**

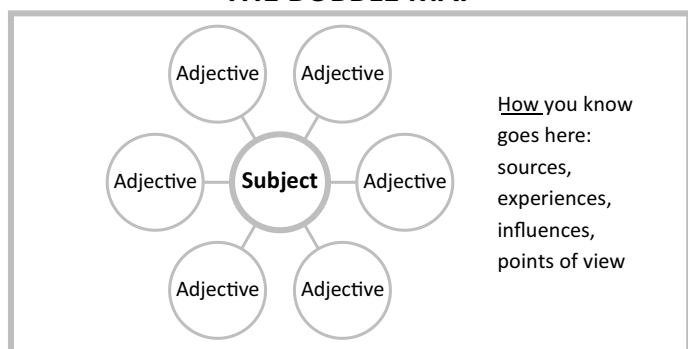
Key Words used	Questions asked	Applications
Describe feelings, attributes, characteristics, properties, adjectives, qualities. Use each of the 5 senses to explain how it feels, smells, sounds, tastes, looks.	How would you describe this in your own words? What is this really like? Which words would you use to paint a vivid picture of it in your mind?	Generate rich and original adjectives before writing – to describe a setting, a character, or situation. Consider the properties of materials or visuals in Natural Science, Design and Technology or Art.

**...then the Thinking Map to use is**

Note: The Bubble Map is for adjectives only.

It is not a Spider Diagram! (If you are looking for a Spider Diagram, either collect main ideas in a defining Circle Map or main headings in a classifying Tree Map, in which case you can also add sub-points under those headings).

### THE BUBBLE MAP

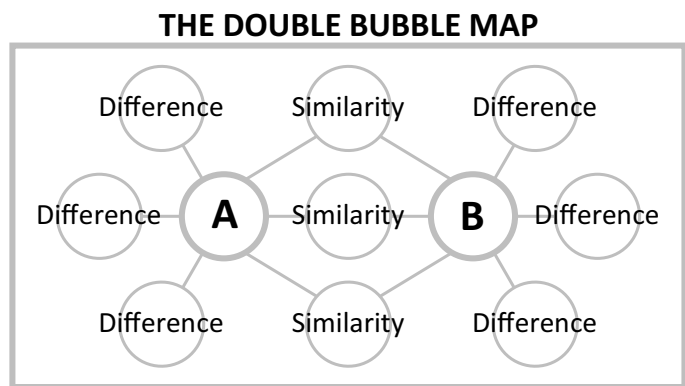


When you are **Comparing and Contrasting...**

Key Words used	Questions asked	Applications
Compare/contrast, discuss similarities/differences, distinguish between, differentiate, what things/concepts have in common or not.	What are the similarities and differences between A and B? What do they have in common? What is unique to only one of them? What distinguishing features help you identify them from each other?	Compare and contrast characters in a book/film, two shapes, methodologies, countries, time periods, formulae, technologies, types of plant or animal. Clarifying identifying properties that enhance understanding of forms, functions, applications and meanings.

...then the Thinking Map to use is

Note: Be careful to connect the lines to the rights places, based on the properties that link or differentiate A and B. Use the most striking or meaningful similarities and differences without mechanically mirroring them (e.g. tall and short may be less distinguishing than that A is gangly and B is well-dressed). A and B can have different numbers of differences.



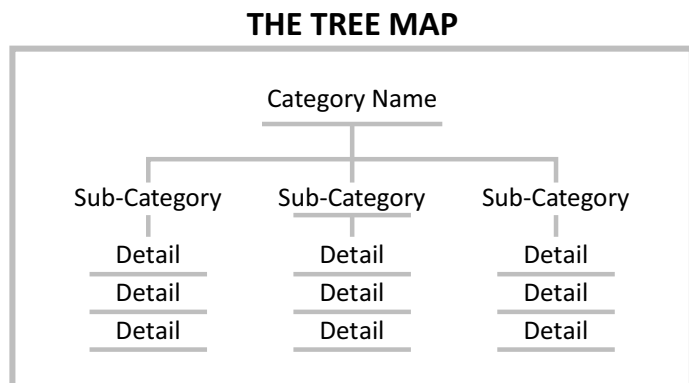
When you are **Classifying...**

Key Words used	Questions asked	Applications
Classify, sort, group, categorise, give related detail, types of, kinds of, list and elaborate, taxonomy	How might you group the main ideas, supporting ideas and details in this topic? What are the key headings in this unit of work/project/talk/essay? Can you sort all the information you have gathered into key concepts? What important details do you want to add under each heading?	Making notes or summaries in any content area – students think about the category headings and the details of what they learn. Categorising information from a Circle Map in preparation for writing about a topic or giving an oral presentation. Collecting information under predetermined headings whilst reading a text.

...then the Thinking Map to use is

Note: Be careful to draw the Tree Map exactly as structured here.

You can use the Tree Map to give students an overview of a subject, to see what is coming up and how units of work fit in. It is also extremely useful for revision.





When you are **Sequencing...**

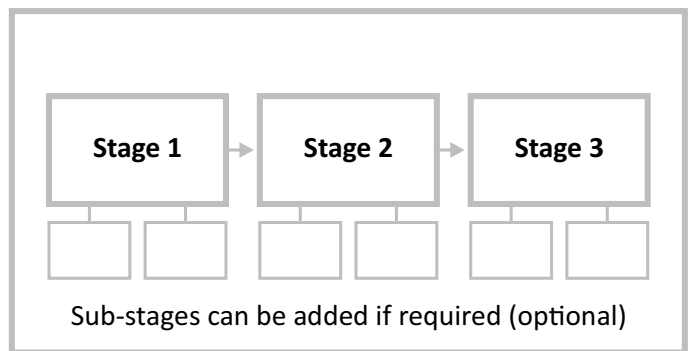
Key Words used	Questions asked	Applications
Sequence, map the steps in this project, put in order, order, recount/re-tell, what happens next, cycles, patterns, processes, change, solve multi-step problems	What is the process/project you are sequencing? What is the step-by-step sequence of events in the process/project? What are the sub-stages? Is each step in the right order?	Mapping a sequenced step-by-step project in PPBL. Life Cycles and processes in Natural Science/Social Science. Time lines in history. Planning the sequence of a story for writing/recording the sequence of a story. Recording a thought process, such as in problem solving.

**...then the Thinking Map to use is**

Note: Make sure that the Flow Map has arrows showing the order of events/stages. For life cycles it becomes a circle.

General Note: Whilst it is vital to apply the Thinking Maps with the elements of each map exactly as they were designed, please don't squeeze student thinking to the size or number of circles or blocks. Freehand maps that are corrected as they develop, capture more expansive thinking!

**THE FLOW MAP**



## Welcome



Welcome to the grade 5 term 3 project. We all know that South Africa is a water-scarce country which means that this essential source of all life in the planet needs to be respected, protected and conserved. In this project, learners will create and present a project where they inform their peers about the importance of water, and motivate them to save and protect water.

This project is designed to develop the learners' thinking skills, but also to help us as teachers rate our own mindsets towards this new way of teaching – so please complete the “Before and after” table on the next page.

This project is aligned with the following requirements of the ATP for Life Skills.

## ATP CAPS alignment



### ATP being assessed

- Water as an important basic need: – Importance of water – Different ways of saving water
- Different ways of protecting the quality of water
- Reading about the importance of water and how to save and protect the quality of water: recall and relate

This is merely a suggestion for a project and is not cast in stone – change parts of it to suit your context but ensure that you cover the steps and that you achieve the prescribed ATPs.

Launch the project at your school by asking the principal to announce the Project Exhibition Day at the end of the term, and ask learners to make posters about saving water to keep the theme alive. Any engagement by the learners in their project topic will embed knowledge.

## Have fun!



# Grade five project: Saving water, saving lives

<p><b>Inquiry Based Learning</b></p>	<p>Inquiry Phase: Focus: Why is water essential and where does our water go?</p>				<p>Reflect and Iterate</p>
	<p><b>1 KNOWLEDGE</b> Think about what you already know</p> <p>Learners play Hot Potato. Pass around circle maps and add what they know about water-related topics.</p> <p><b>EXPERIENCING</b></p>	<p><b>2 NEW KNOWLEDGE</b> Building on what you already know and add new knowledge</p> <p>Groups get fact sheets about water. These are used to answer question in a team quiz competition.</p> <p><b>CONCEPTUALISING</b></p>	<p><b>3 ORDER</b> Order and categorise your existing knowledge</p> <p>Surveys are created to gather data about water usage in the class: E.g. who uses water to shower, bath, wash, brush teeth, cook, drink, wash hands, sport.</p> <p><b>ANALYSING</b></p>	<p><b>4 APPLY</b> Apply your knowledge to your environment</p> <p>Data is analysed to see where most water is used. These findings are presented as a PSA, Tv interview or radio interview.</p> <p><b>APPLYING</b></p>	
<p><b>Problem Based Learning</b></p>	<p>Problem Phase: Improving water usage in the school/grade (Explore a wider environment than the class)</p>				<p>Reflect and Iterate</p>
	<p><b>5 DEFINE</b> Ask lots of questions to help you define your problem</p> <p>In groups, learners discuss and define what they want to research about water awareness and conservation in the school.</p> <p><b>EXPERIENCING</b></p>	<p><b>6 EXPLORE</b> Consider the different points of view to understand more</p> <p>Learners conduct the research using the tools they developed. They analyse and present a summary of the findings...</p> <p><b>CONCEPTUALISING</b></p>	<p><b>7 BRAINSTORM</b> Brainstorm as many solutions to your problem as you can</p> <p>Based on results from EXPLORE, learners brainstorm ways to improve water awareness and the importance of saving water in the school.</p> <p><b>ANALYSING</b></p>	<p><b>8 PRESENT</b> Present the point of view and options to an audience</p> <p>Present ideas (Board game production / Quiz night/ Water music presentation)</p> <p><b>APPLYING</b></p>	
<p><b>Design Based Learning</b></p>	<p>Design Phase: [insert one line about this stage in your project]</p>				<p>Reflect and Iterate</p>
	<p><b>9 EVALUATE</b> Evaluate and select your best solutions</p> <p>Based on the feedback from the PRESENT step, learners make a final decision on their</p> <p><b>EXPERIENCING</b></p>	<p><b>10 PROTOTYPE</b> Make your own prototype of your best solution</p> <p>Learners build or make the prototype based on the design</p> <p><b>CONCEPTUALISING</b></p>	<p><b>11 FEEDBACK</b> Speak to experts or the community to get REAL feedback</p> <p>Learner present their prototypes for feedback</p> <p><b>ANALYSING</b></p>	<p><b>12 INTEGRATE</b> The MADD Space – present your work using Music, Art, Drama, Dance</p> <p>Groups integrate feedback into final project.</p> <p><b>APPLYING</b></p>	
<p><b>13 PRESENT</b> Hold a public exhibition and present to the public</p> <p>Public exhibition: present projects: explain why they were done and what was learnt</p>					<p><b>1</b></p>



## Project planning table

### Grade 5 Life Skills

TERM 3					
ACTIVITY	DESCRIPTION	CAPS ALIGNMENT	RESOURCES	ENRICHMENT ACTIVITIES	ASSESSMENT & INTEGRATION WITH OTHER SUBJECTS
1.	PRIOR KNOWLEDGE: Learners play Hot potato game where they share prior knowledge about the importance, uses and sources of water.		Learner's Workbook		English HL English FAL
2.	NEW KNOWLEDGE: Team quiz: In groups, learners compete in a team quiz. The questions relate to a variety of aspects of water.		Learner's Workbook	Learners can create their own questions. FACT sheet can be used as a reading/listening comprehension.	English HL English FAL
3.	ORDER: interviews with family are conducted and data collected on a survey.		Learner's Workbook	Water usage can be calculated in litres.	English HL English FAL
4.	APPLY: Findings are presented to the class as a public service announcement, a TV news report or a community radio interview.		Learner's Workbook	Reports can be written for language assessment.	English HL English FAL
5.	DEFINE: Learners discuss and decide how to research and collect information on water use and awareness in the school.		Learner's Workbook		English HL English FAL
6.	EXPLORE: Learners use research tools to collect information.		Learner's Workbook		English HL English FAL
7.	BRAINSTORM: Based on the research, groups brainstorm possible plans to improve water awareness in the school.		Learner's Workbook		English HL English FAL
8.	PRESENT: The various plans are presented to the class for peer review.		Learner's Workbook	Learners can construct their own peer review questions.	English HL English FAL
9.	EVALUATE: Each group makes a final decision on what plan to action. This plan is the project.		Learner's Workbook		English HL English FAL
10.	PROTOTYPE: Learners build or make a prototype of their project.		Learner's Workbook		English HL English FAL Creative Arts



## Project planning table (continued)

### Grade 5 Life Skills

TERM 3					
ACTIVITY	DESCRIPTION	CAPS ALIGNMENT	RESOURCES	ENRICHMENT ACTIVITIES	ASSESSMENT & INTEGRATION WITH OTHER SUBJECTS
11.	FEEDBACK: Groups get feedback on their prototype.		Learner's Workbook		English HL English FAL
12.	INTEGRATE: Feedback is integrated into final production of the project. Sneak previews of projects are developed in the MADD space (Music, Arts, Dance and Drama).		Learner's Workbook		English HL English FAL Physical Education
13.	PRESENT: projects presented for the public. Groups participate in Q&A to explain the what, why and how of the projects.		Learner's Workbook		English HL English FAL

# PART 1

## INQUIRY-BASED LEARNING



Driving question: Where does our water go?



### STEP 1: Prior knowledge

Thinking and sharing what you already know

**Purpose of this step:** Using a game called Hot Potato, learners will think about, share and write down their knowledge of the many ways water touches their lives. This will start them thinking and talking about the importance of water.

1. To prepare for this step, print/copy the 6 Thinking Maps (in your resource pack) on large pieces of paper that learners can write on. Each map covers a different topic related to water (how we use water every day, water sources, ways to save water, what pollutes water, staying safe around water and the importance of water to the planet.)
2. Arranged learners into six groups. Give each group one thinking map.



*It's always a good idea for the group members to quickly choose a scribe to write down the ideas before starting the activity.*

3. On the word GO, use a timer and give the groups two minutes to share what they know about their topic by writing ideas down onto the circle map.
4. When the two minutes are up, groups swap around the thinking maps quickly, as if they are hot potatoes. Learners then get another two minutes to share and write down what they know about the new topic. They cannot repeat any information. Swap and play until each group has had a chance to brainstorm each topic.



*Did you know, the brain loves colour and a learner will concentrate better if information is colourful? Encourage groups to write down their knowledge in different, bright colours.*

5. After playing the game, display the thinking maps in the classroom to make the learners' collective knowledge visible.
6. Ask learners to reflect on this game, e.g. did they enjoy the game, did they find it useful and what did they learn about the importance of water?
7. To conclude, refer learners to **Worksheet 1: Water Circle thinking maps** in the Learner's Workbooks. Each learner needs to complete all six Circle thinking maps. This is an ideal homework activity.



*This is quick for you to review – simply looking at the Circle maps will immediately alert you to who needs extra help.*



## STEP 2: New knowledge

Build on what you already know and add new knowledge

**Purpose of this step:** In this activity, learners will be introduced, through a team quiz competition, to new knowledge about water. This will expand their understanding and knowledge about water as a basic need, the need to save water and the importance of protecting the quality of water.

### Team quiz competition

8. Learners will stay in their groups as these will be the competition teams. Group members can create a team name relating to water.
9. Refer learners to **Worksheet 2: Thirsty for knowledge** in the Learner's Workbooks.
10. Give the teams time to read through and understand the facts about water presented on the worksheet. This information will be used to help the teams answer questions.
11. Start the quiz. Ask each team a question. A correct answer scores a point. If you see learners collaborating and helping each other you can add extra points.
12. This is a list of question you can use for the quiz. These are guidelines. Feel free (and encourage your learners) to create other questions – and even bring in more new information from the resource pack.

### True or false questions

Using the worksheet, learners collaborate to work out if the statement is true or false . If false, they must give the correct fact to earn a point.

- a. Every time it rains, new water is made. – *False, water is a finite resource- it can “finish”.*
- b. There is no water at all in deserts. – *False, every living thing contains water.*
- c. Malaria is linked to polluted water. – *True*
- d. Polluted water can be cleaned easily. – *False, cleaning polluted water is slow and expensive.*
- e. We can only use about 2% of the water on earth. – *True*

### Answer and question

This is a back-to-front style of questioning. You give the answer and learners collaborate to work out the question that suits the answer. (There can be more than one question.) If there is time, this is an excellent language development activity because question formation is the beginning of higher order thinking.

- a. The answer is '75%'. What is the question? – *How much of your body is made of water?*
- b. The answer is 'the moon'. What is the question? – *What would the earth look like without water?*
- c. The answer is '10 000'. What is the question? – *How many litres of water does it take to make one pair of jeans?*
- d. The answer is 'tasteless'. What is the question? – *What does water taste like?*
- e. The answer is 'dinosaurs'. What is the question? – *What ancient, extinct animals also drank the water we drink today?*



## STEP 3: Order

Order and categorise your existing knowledge

**Purpose of this step:** Learners will use their prior and new knowledge to create a survey form to help them collect information in a systematic way that will help them find out where the most water is used in their home.

13. Refer learners to **Worksheet 3: Where does our water go?** in the Learner's Workbook.
14. Allow learners time to discuss what water use activities are relevant to their family. There are some ideas, but learners are encouraged to add in water use activities from their personal context.
15. Learners can refer back to **Worksheet 1: Water Circle thinking maps** in the Learner's Workbook to review all the knowledge shared in the circle thinking maps and the fact sheet.
16. Ensure learners understand how to complete the worksheet. This worksheet needs to be done at home. Allow learners to role play the survey in pairs if there is time. Help them create questions using the information in Column 1 by using question frames like: How often do you ...? They should interview at least one person at home and then, when they next group in class, put the surveys together in order to complete **Worksheet 3**.



*A useful tip: after you have explained the activity, ask learners to explain the task to one another. You can assist with any confusion that peers cannot sort out for themselves.*



## STEP 4: Apply

Apply your knowledge to your context (driving question)

**Purpose of this step:** In groups, learners collaborate and share their findings from the survey. They will use this information to answer the guiding question, “Where does our water go?”

17. Refer learners to **Worksheet 4: This is where our water goes**.
18. Explain the activity i.e., they need to use the information discovered from the surveys to answer the questions on the worksheet. This will probably be a lively discussion as learners discuss, compare, evaluate and apply information.
19. Each learner should complete the worksheet, but the findings must be presented to the class. Have some fun with this. Encourage learners to present their answers by a Public Service Announcement, a television news report, a community radio interview, etc.



*This is a good time to connect with the language teacher do – some cross-curricular teaching.*

### Public Service Announcement

Dear fellow South Africans. Do you know where your water goes? We, the grade 5 group, have done a survey and found that... We are sharing this information with you, the public because... Please help us save water by...



## Television news report

Good evening viewers . We start with breaking news...

## Community radio interview

Good evening listeners, this is your host \_\_\_\_\_. Tonight, on our Water Wise programme, I will be interviewing \_\_\_\_\_ about a survey done at their school. Welcome \_\_\_\_\_.

# PART 2

## PROBLEM-BASED LEARNING



Driving question: How can we improve water awareness in our school?

### STEP 5: Define



Ask lots of questions to help you define your problem

**Purpose of this step:** Having researched water usage in their own homes, and in the class, and seen for themselves how important water is and where it is used most, learners will now take their research into the wider school community.

20. Still in their groups, learners need to discuss and define what they want to research about water awareness and conservation in the school. Each group will come up with something different which is exactly what should happen in PPBL.

#### Here are some ideas for learners to consider:

- What part of water conservation do we want to know more about? This activity can be quite physical like checking every tap on the school ground to see if it's dripping, or more general like "10 ways we can start saving water today"
- How will we collect the information (questionnaires, interviews, surveys, etc.)?
- How many learners will we involve in the research?
- Will we stay in one grade, phase or the whole school?
- Will we include teachers?
- Which group members will be responsible for which task?
- How long will this probably take?

### STEP 6: Explore



Consider different points of view to help you understand more

**Purpose of this step:** Learners will now do the research and collect information using the tools they chose. They analyse the information and do a quick feedback of their findings.

21. Learners, following Covid-9 safety protocols, go 'out into the field' and conduct their research.
22. Each group can briefly (1 minute) give feedback on their findings. They can use a sentence frame such as the following: We researched \_\_\_\_\_ and what we found out was \_\_\_\_\_.



## STEP 7: Brainstorm

Brainstorm as many solutions to your problem as possible

**Purpose of this step:** Based on their research, each group has to brainstorm a plan to improve water awareness in the school.

23. In this step, explain the following project options to the class (details are in the resource pack).

### Project options

- Create a board game (see resource pack for ideas)
- Host a team quiz like the one the class played in the Inquiry phase.
- Present a water song and dance

This link takes you straight to the resource that explains a lively water music activity. The page is in the resource pack as well. Here is a summary of the idea:

[http://www.waterwise.co.za/export/sites/water-wise/education/activities/respect-water/downloads/Water\\_-\\_Life\\_Blood\\_of\\_the\\_Earth.pdf](http://www.waterwise.co.za/export/sites/water-wise/education/activities/respect-water/downloads/Water_-_Life_Blood_of_the_Earth.pdf)

### Water music

You will need:

- Five or six identical glass bottles
- A measuring jug
- Water
- metal spoon

Follow these steps:

- Fill all the bottles with different amounts of water – e.g. 50 ml for the first, 100 ml for the second, etc.
- Tap them with the spoon and listen to the different musical notes that each bottle makes. Try blowing across the neck of the bottles to make a note.
- These bottle can be used as part of a water song and dance project.
- Make sure the water is not wasted after the activity.

24. Groups need choose one of the project options. Alternatively, the class can regroup according to individual choice i.e. learners who want to host a team quiz can work together.

25. In their groups, learners need to brainstorm a possible plan for their projects.



## STEP 8: Present

Present the point of view and options to an audience

**Purpose of this step:** Groups will present the possible project plans to the class for comment.

26. Each group needs to present their possible plans for their projects for comments from the class. Refer learners to **Worksheet 4: Peer review** to guide their comments and feedback.

# PART 3

## DESIGN-BASED LEARNING



Apply and make

## STEP 9: Evaluate



Evaluate and select your best solution

**Purpose of this step:** Based on the feedback from the Present step, learners make a final decision on their project.

27. Each group needs to evaluate the feedback they received through the peer review. Using this advice they can improve on their projects and decide on a final plan.

## STEP 10: Prototype



Make the prototype of your best solution

**Purpose of this step:** Build or make the prototype based on the design

28. To begin this step, give learners the assessment rubric. Knowing exactly what is required of them will help guide their planning.
29. Learners collaborate to create their prototype. This is likely to be draft sketches, draft lyrics, mock-up models, etc. They need to keep the assessment criteria in mind and check that all outcomes are included in their project.

## STEP 11: Feedback



Speak to experts or the community to get REAL feedback

**Purpose of this step:** Learners get feedback from a wider community of people about possible improvements or design changes

30. Learners show their projects to family members, learners in other grades, teachers, and if possible, members of the community for comment and feedback.
31. The prototypes are tweaked (depending on the feedback) and the projects are made or practiced and finalised. These projects can take any form: a Tippy-Tap, an illustrated poster or a role-play. Just ensure that all the information required by the rubric comes out clearly.



## STEP 12: Integration

Integration in The MADD Space – present your work using Music, Art, Drama, Dance

**Purpose of this step:** To iterate learning in a fun way.

32. Learners can also create a quick and impactful way of advertising their projects and giving other learners a 'sneak preview' of what to expect. Encourage learners to 'play' in the Music, Art, Dance and Drama MADD space and use a song, advert, intercom announcements, etc.



*This is another cross curricular opportunity as the MADD space links well to Creative Arts.*

### **Integration with other subjects**

*In term 3, English (HL) learners have to write instructions for how to write a project. This list of criteria from the CAPS may be a useful way to help learners plan and make their prototypes.*

### **CAPS Term 3 Writing and presenting**

*Writes instructions (how to write a project)*

- *Selects relevant information*
- *Uses correct specific details*
- *Uses correct sequence*
- *Uses correct format*
- *Uses the command form of the verb and imperatives*
- *Uses appropriate grammar, spelling and punctuation*

*Uses the writing process*

- *Planning / pre-writing*
- *Drafting*
- *Revising*
- *Proofreading*
- *Presenting*



## STEP 13: Present

Public exhibition

**Purpose of this step:** Present and celebrate the products.

33. The public exhibition and celebration is the big day you will have announced at the launch of the project.
34. Each group needs to present their project and be prepared to explain a) the reason for the project (WHY), b) the process of the project (HOW) and c) what they have learnt from the project (WHAT)
35. After the excitement of the big day, learners need to take some quiet time to reflect on their projects.
36. Refer them to **Worksheet 5: My reflection on my learning**.



## Assessment rubric

CRITERIA	5	4	3	2	1
The importance of water as a basic human need.	Learner can explain 5 reasons why water is important for human survival and life.	Learner can explain 4 reasons why water is important for human survival and life.	Learner can explain 3 reasons why water is important for human survival and life.	Learner can explain 1 reasons why water is important for human survival and life.	Learner can explain 1 or no reason why water is important for human survival and life.
Different ways of saving water.	Learner can explain 5 ways of saving water that can apply to own and other contexts.	Learner can explain 4 ways of saving water that can apply to own and other contexts.	Learner can explain 3 ways of saving water that can apply to own and other contexts.	Learner can explain 2 ways of saving water that can apply to own and other contexts.	Learner can explain 1 to no ways of saving water that can apply to own and other contexts.
Different ways of protecting the quality of water.	Learner can explain 5 different ways of protecting the quality of water.	Learner can explain 4 different ways of protecting the quality of water.	Learner can explain 4 different ways of protecting the quality of water.	Learner can explain 2 different ways of protecting the quality of water.	Learner can explain 1 to no different ways of protecting the quality of water.
Project shares information effectively and achieves its objective.	Excellent project, information about water presented clearly and logically. Water awareness objective more than achieved.	Very well executed project and objective achieved.	Peers learnt a lot from the project but some information was unclear of there was not enough information.	Objective partially achieved. Not enough information and project not engaging for peers.	Objective not achieved. Project either unfinished or poorly executed.
Collaboration with peers.	Learner collaborates in full and demonstrates well-developed social skills such as respectful listening, turn taking etc.	Learner collaborates often and sometimes needs reminders not to dominate peers.	Learner often collaborates but needs frequent guidance on appropriate interactions with peers.	Learner tries to collaborate but struggles to function in a group and tends to withdraw.	Learner never collaborates well with others due to behavioural challenges.
Reflecting on learning	Learner can fully reflect on learning and construct a plan of how to improve on the parts that need more clarity.	Learner can fully reflect on learning and identify what was understood and what needs more clarity.	Learner can reflect on what was understood but needs scaffolding to identify areas that still pose a challenge.	Learner can recall lesson content but cannot yet answer the question, "What did you learn and what was hard to understand?"	Learner does not reflect on learning and can struggle to remember content from lessons.
<b>TOTAL SCORE</b>					<b>/30</b>