

CHAPTER 5

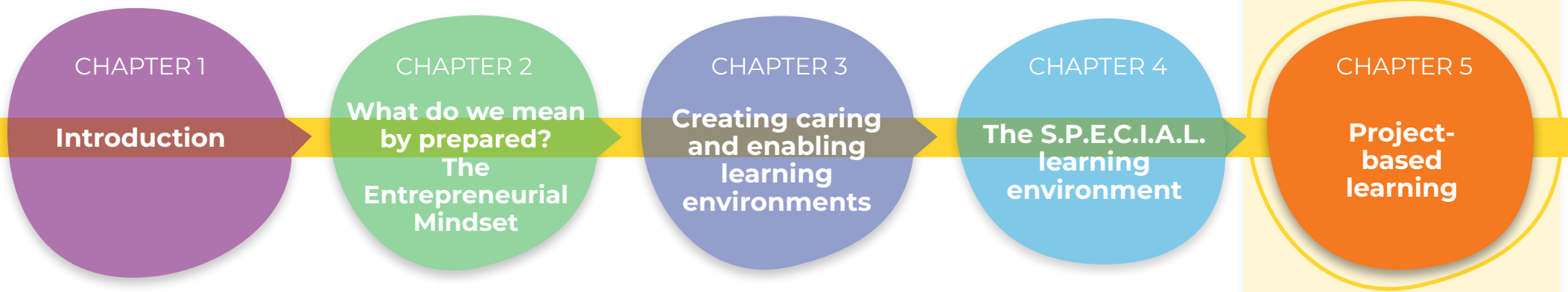
Project-based Learning



basic education

Department:
Basic Education
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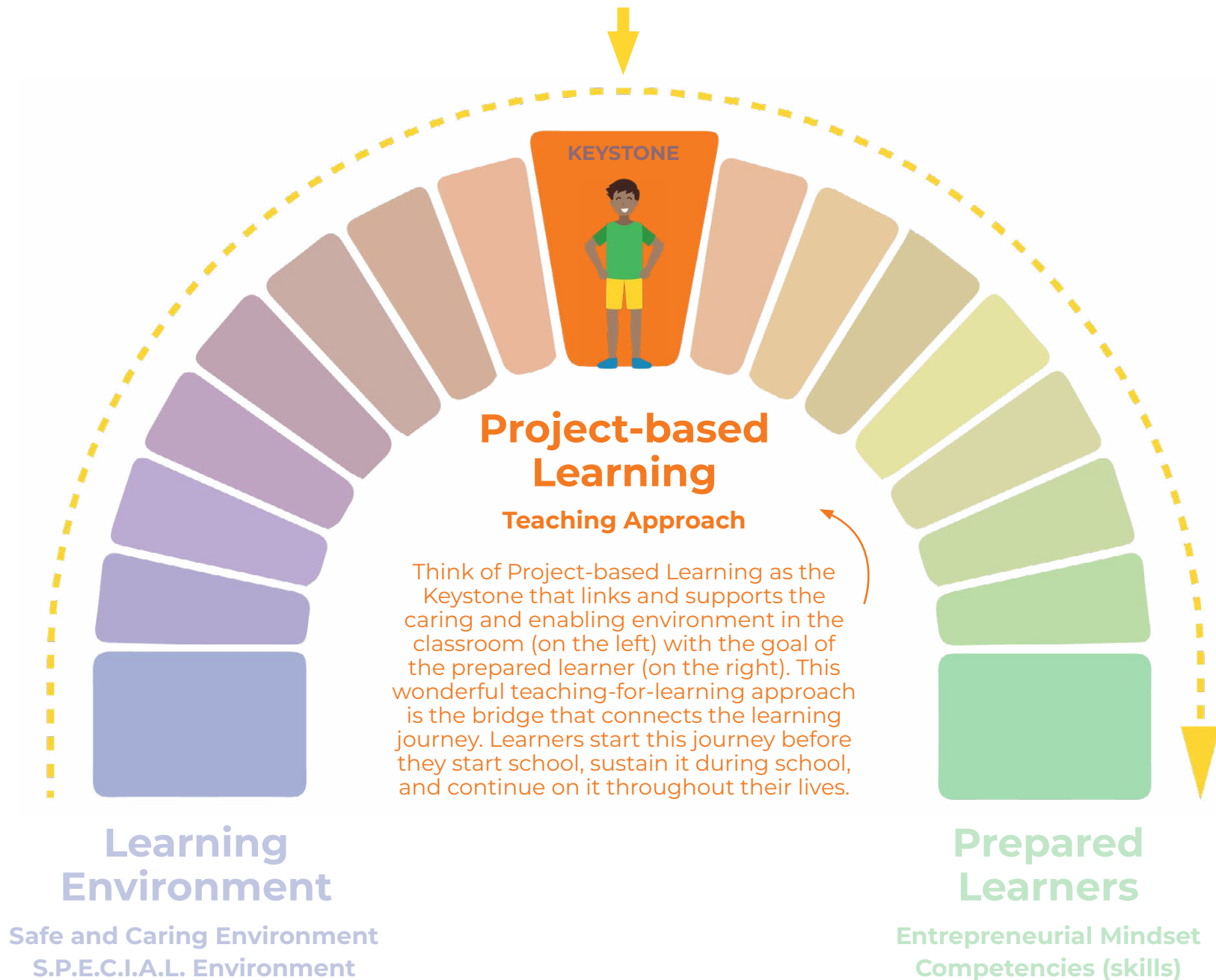




Project-based Learning, the keystone in the Teaching-for-Learning Journey

To be prepared for a changing world we believe that learners need to grow their entrepreneurial mindset. We know that the characteristics of an entrepreneurial mindset grow best in caring and enabling learning environments that we call S.P.E.C.I.A.L.

We will now explore Project-based Learning which is a teaching process that gives learners opportunities to grow their entrepreneurial mindsets.



In this chapter we give you a brief introduction to Project-based Learning. We will cover:

1. What project-based learning is
2. Why it is important and what the benefits are
3. What a project within project-based learning looks like.
4. How you can get started with Project-based Learning.

This guide is an introduction to the main concepts of Project-based Learning.

What is Project-based Learning?

Project-based Learning is a way of teaching that encourages learners to work together to solve problems that are real to them and come from their daily lives. As learners go through the process of solving problems, they grow their skills as they continue to learn to:

- **Collaborate** and work together in groups
- **Communicate** meaningfully and respectfully
- **Think critically**, ask questions and challenge opinions
- **Creatively** solve problems in new and innovative ways using knowledge from the CAPS.

Through Project-based Learning, learners gain knowledge and the skills they will need to succeed in a changing world.

Why is Project-based Learning important?

Throughout this teacher's guide, we have been talking about preparing young people for success in life after school. Being prepared means being 'entrepreneurial'! So, learners leave school with an entrepreneurial mindset, ready to identify and solve problems; this is what employers are looking for.

Employers are seeking people who can

think critically, innovate, learn without the fear of failure and communicate clearly and confidently. The world needs young people who can collaborate, who risk small, regular and carefully designed experiments and who persevere and do not give up even when a solution isn't immediately obvious. They can adapt to change with as little anxiety as possible. We all have the potential to grow our entrepreneurial mindsets, and we can do this by doing entrepreneurial activities.

But what are entrepreneurial activities?



These are experiences where people see problems and find solutions to real-world problems. This just so happens to be exactly what learners do when they take part in Project-based Learning.

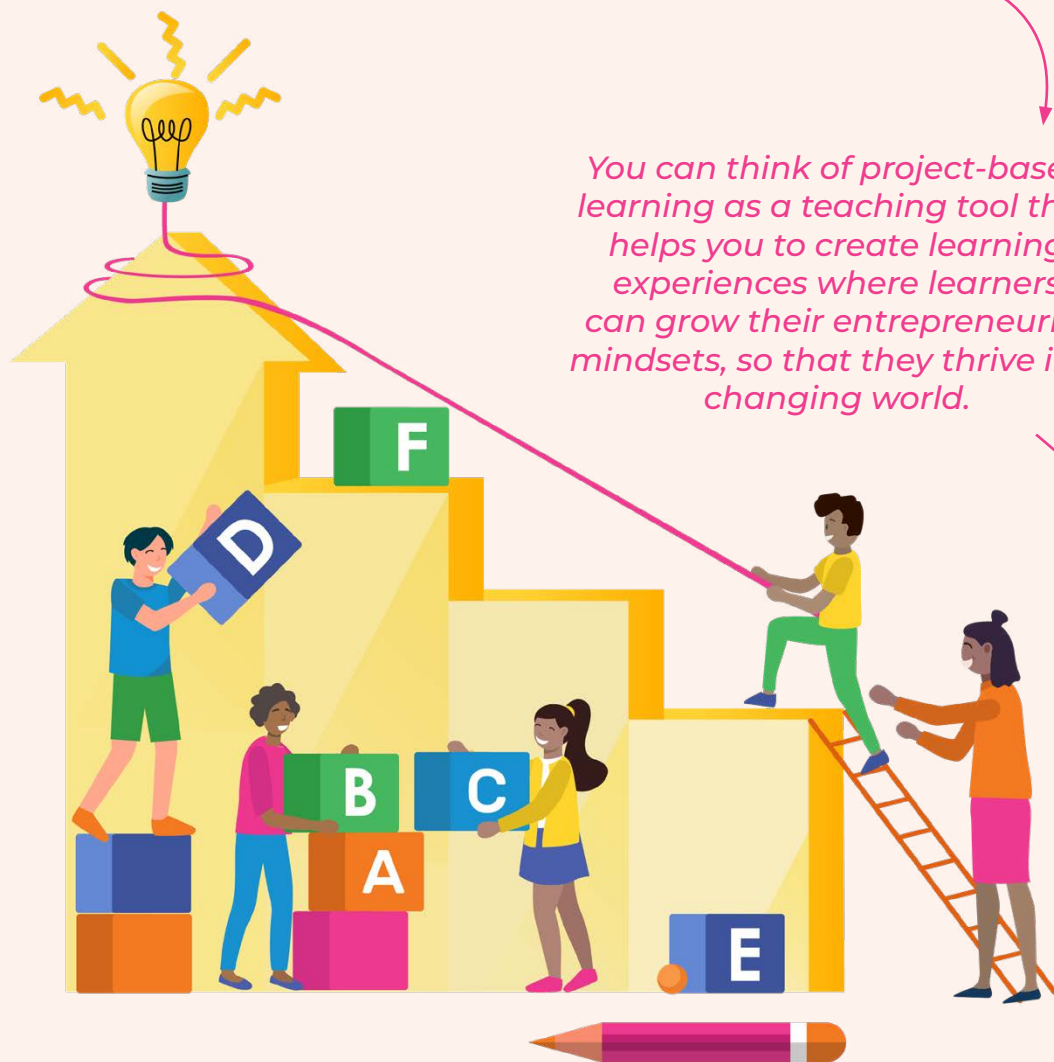
Teacher Tip



PBL - practising skills:

Project-based Learning is more than just group work. PBL goes a step further because the project is the whole of the lesson. It is the way curriculum content is communicated, and the process in which learners discover and practise knowledge and skills.

Project-based learning is a learner-centred process where learners work together to solve real-world, meaningful problems.



You can think of project-based learning as a teaching tool that helps you to create learning experiences where learners can grow their entrepreneurial mindsets, so that they thrive in a changing world.

Remember - an “entrepreneurial” is someone who has an entrepreneurial mindset and who can identify problems and find solutions to these problems.

What are the benefits of Project-based Learning?

If you Google project-based learning, you will find a lot of research on how effective Project-based Learning is at preparing learners with the skills they need to succeed and thrive in a changing world. You'll see studies showing how Project-based Learning contributes to academic success, and how it develops learners' skills like collaboration, communication, critical thinking, creative innovation and a whole host of other important skills.

We recently discovered that Project-based Learning also helps learners develop the skills they need to be 'entrepreneurial' i.e., communication, collaboration, critical thinking, creative innovation, problem solving and others. These are all skills they need to succeed in an ever-changing, uncertain world.

Teacher Tip

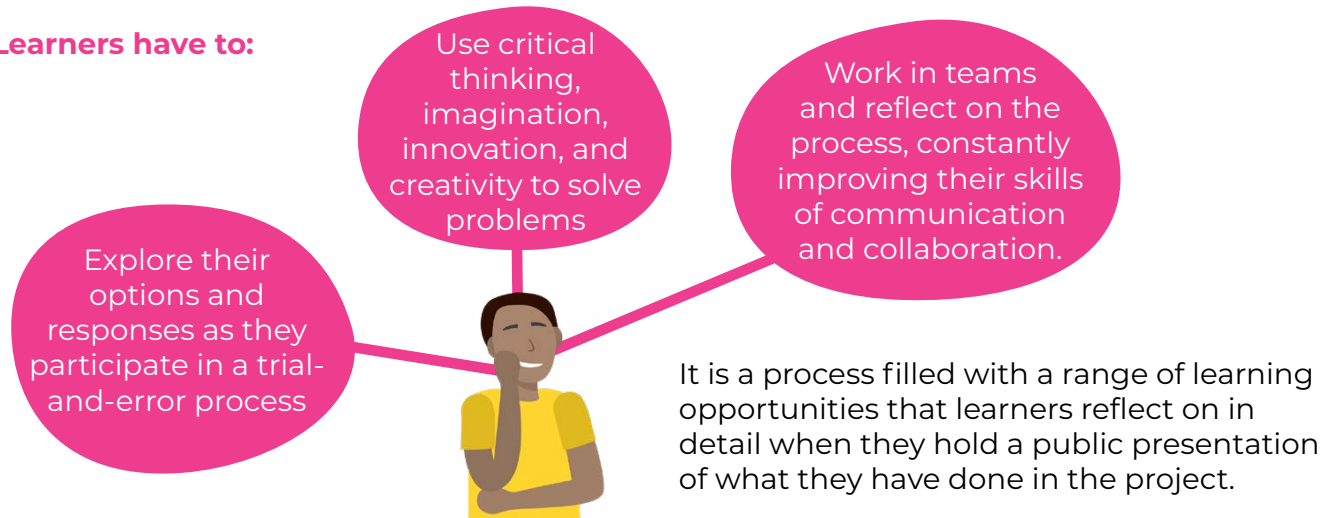
Skills (for example Collaboration, Communication, Critical thinking and Creative innovation): Try to find ways of linking the curriculum content to the specific skills you feel your learners need to practise. Be conscious of what skills you are trying to improve.

Project-based Learning as a tool to develop the entrepreneurial mindset

So how do we make sure learners are practicing the skills of someone with an entrepreneurial mindset? We need to go beyond memorising curriculum content towards enabling learners with the skills they need to engage any content in any context to their advantage.

In Project-based Learning, learners do more than just remember information or practise a step-by-step procedure. They are making something that solves a real-world problem based on a meaningful and open-ended driving question that does not have a single correct answer. There is no cheat-sheet for it.

Learners have to:



Teacher Tip



Innovation through collaboration: *Most innovations are the product of great teamwork. Create opportunities for teamwork; ensure the equal participation of team members; agree how to work together; brainstorm ideas; make decisions together; resolve conflict; divide roles that play to each other's strengths and interests; hold each other accountable; give and receive feedback with respect; manage time and resources through the creation of schedules; and develop a group identity all team members can be proud of.*

How does PBL integrate with your teaching requirements?

To help you implement Project-based Learning in your classrooms, we have created 7 Project-based Learning projects for grades R - 6. These projects fall within Life Skills and help you with your term three school-based assessment. These projects are all aligned to the CAPS curriculum, and each have a detailed CAPS assessment rubric.

What does a Project-based Learning project look like?

Let's take a closer look at what a Project-based Learning project looks like in the classroom.

Meaningful problem:

Projects are centred around a problem that learners need to solve. This problem is relevant and meaningful to learners' lives. Through the projects learners participate in three "performances" that help them to solve the problem. We call these three things performances, because they are "performances" that learners need to actively do/perform. Importantly, these performance areas also go far beyond formal education to include the ways in which learners make predictions and

navigate the world, solve problems in their communities, and generally prepare learners to successfully navigate a changing and uncertain world.

The performances are:



Asking questions:

The Project-based Learning process is focused on learners asking questions. Learners will grow their ability to know which questions to ask and when to ask them, as well as how to ask questions that lead them to innovative outcomes. The confidence and ability to ask questions is fundamental to the curiosity that drives the intrinsic motivation to learn and discover solutions. Some of the questions are also reflective questions - which we call “metacognitive questions”. These are questions that help us to think about how we think, and how we learn. The purpose of learners thinking of their own questions is to encourage learners (rather than the teacher) to reflect on what went well and what needs improvement.

In this way, they judge their own mastery or skill and become motivated to try again for a better outcome next time around.

Getting learners to ask the questions immediately shifts the focus of learning onto the learner, which helps them own their own learning. Questioning in general and metacognitive questions in particular are really important to being an ‘Entrepreneurial’.

Metacognition is the awareness we have about how we think, how we learn, what our strengths are and where we need to improve.

Let’s take a closer look at these three performance areas and the types of questions learners could ask. →

Teacher Tip



Mirror the real world: *Try to create the real world as much as possible. Perhaps the activity resembles the world of work, a local challenge or a global crisis. It needs to be meaningful and doable. Ask yourself “What can learners do with this knowledge and these skills that resemble what adults would do in the real world?”*

Teacher Tip



Meaning in the curriculum: *Remember that the curriculum is a wonderful starting point to include relevant content from local knowledge systems, current challenges facing the learners’ communities, local or national events on the news etc.*



Exploring the world - Inquiry

During this **INQUIRY** performance area, learners explore the world around them by asking open-ended questions. They discover knowledge including but not limited to the CAPS content as they move from what they know, to what they do not know - but need and want to know - about the topic. As they discover this knowledge (and experience) learners compare, organise and analyse this information.

During this performance area, learners ask questions such as:



Learner's Questions:

- What do I already know? How do I know it?
- What information do I need to know to add to my knowledge?
- What do I want to know and how can I find out more?
- What don't I know? How can I find out?
- What are the most important questions I can ask right now?
- What new information do I have now? How can I add that to what I know?
- How can I organise all this information, so it makes sense to me?
- What is my best guess about what is going on here?



What sorts of INQUIRY questions would you add?



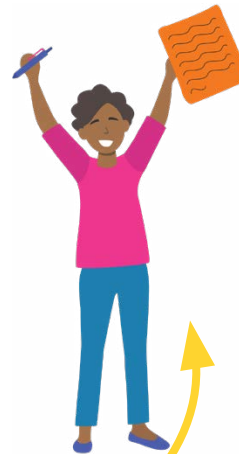
Teacher Tip



Questions questions questions:
Ask learners to think of the questions they want to ask. Questions help learners to think about what they already know and what they want to know about that question. Learning becomes meaningful when learners ask questions.

Reflection

Throughout the three performances, encourage learners to reflect on their work and apply feedback so that they continually improve what they are doing. Provide opportunities for redoing work (iteration) so that the outcomes of the reflections can be applied to achieve mastery. Reflection and peer-to-peer feedback is vital in any project. Remember, if things go wrong, this is a great learning opportunity.



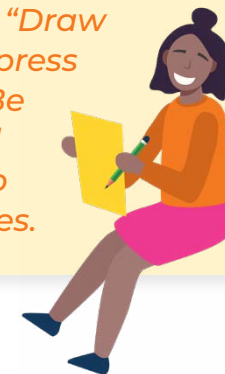
Public Performance

Sharing with a broader audience is one of the things that makes Project-based Learning real. It can happen during or at the end of a project. Learners can share their experience with their community, with 'pretend' or real clients for their products, with experts who can give feedback on project ideas, or with public officials who are responsible for the issues the project covered.



Teacher Tip

Learning activities: Have a list of activities at hand when the learners are doing their projects, so that you can guide them to use the most appropriate ones for the activities they are doing. For example: “Act it out”, “Brainstorm ideas now”, “Create a collage”, “Draw a mind map”, “Express your opinion”, etc. Be creative, you could also ask learners to suggest the activities.



Teacher Tip

Reflections: Create many moments of reflection and feedback throughout the project. For example, regular check-ins to see where they are in the process and how they feel about what they are achieving, or moments of quiet personal reflection, group reflection or peer-to-peer reflection.

This graphic is a visual summary to help you remember.

Project-based learning is not “doing Projects”

Did you know Project-based Learning and projects are not the same thing?

You might be thinking that you are already doing a project because the third term school-based assessment is a project. Project-based learning is slightly different! Project-based learning is all about solving real-world problems that mean something to the learners.

Let’s unpack some of the key differences.

Project	Project-based Learning
One attempt: learners hand in one final copy of the project.	Feedback, reflection and iteration is essential to the learning process. Learners give, receive, and apply feedback to improve their process and products, and find ways to overcome challenges.
It’s all about the mark.	It is all about the process: the process is more important than the end product. Learners learn a lot if their project does not work. Therefore, reflection and feedback are so important to the process.
Teacher directed: teachers instruct learners what to do, how to do it, when to do it.	Learner-led: learners make decisions about the project, such as how they work and what they create.
Not always relevant: Learners may not always know why they have to do the project or why it is relevant to their lives.	Real-world: the project is framed around a meaningful problem to solve that is context and age appropriate.
Traditional projects are often done by individuals.	Working in groups: an essential part of Project based-Learning projects is that learners work together. This is important because in the real world you usually have to work with other people.



If you want to know more, please watch this video: <https://www.youtube.com/watch?v=dhwuQU2-g5g>

How can you get started with Project-based Learning in your classroom?

If you have never done Project-based Learning before, it may seem like it is going to be challenging. You might be thinking, “Where do I start? I don’t have time to make a project. I don’t know enough to do this!”

That is why we have created CAPS-aligned Project-based Learning projects for grades R-6 in Life Skills for you. These projects contain everything you need to implement a project in your classroom. They will be available to download from our website here:

<https://learn.ecubed-dbe.org>

If you have more experience in Project-based Learning and would like to either adapt a project or create your own, we have a more detailed guide on the 12 steps to creating your own Project-based Learning project.



Teacher Tip

Slow down and allow for reflection...: Deep learning happens by refining and reworking and trying again. Try not to have learners rush to create the end product. Make sure there are opportunities for feedback, reflection and re-working (iteration). This leads to deeper learning and expertise.

Teacher Tip



Work in progress: Get learners to hand in their “rough work” for assessment throughout the project so that it can inform their performance as they go. Allow them to create more than one rough draft. Working in rough also slows the learning down and makes learners more aware of the natural learning cycle.

Teacher Tip

Freedom to fail: Feedback is essential for learning. It can be a self-assessment, peer-assessment or other forms of formative (continuous) or summative assessment, but its purpose should always be to inform the learner in a way that they feel comfortable to hear. This constructive feedback helps learners improve their next task or performance. This cannot happen if they are afraid of failure.


Design your own project in 12 steps

Here is a summary of the 12 steps.

12 steps to planning a project		Write your ideas here
<p>1</p> <p>Working with CURRICULUM CONTENT</p>	<p>What curriculum content do you want to cover?</p>	
<p>2</p> <p>Prioritising TRANSFERABLE SKILLS (such as collaboration, communication, critical thinking, creative innovation).</p>	<p>What skills do you want learners to develop?</p>	
<p>3</p> <p>Exploring REAL-WORLD APPLICATIONS</p>	<p>What real-world situations can you think of, based on the skills and curriculum content you decided in steps 1 and 2.</p>	
<p>4</p> <p>Choosing A MEANINGFUL AND DOABLE CHALLENGE</p>	<p>Turn your ideas from step 3 into a challenge or problem for your learners to solve.</p>	
<p>5</p> <p>Identifying PRODUCTS AND PROCESSES</p> 	<p>List the types of products or services you think learners might come up with.</p> <p>This will help you to see if your chosen challenge will work, and if it is age appropriate for your learners. When learners do the project they need to choose what they want to create.</p>	
<p>6</p> <p>Creating opportunities for COLLABORATION</p>	<p>Think of the different ways your learners can collaborate or work together in the project.</p> <p>Provide tools and methods learners can choose from to use to work effectively as a team.</p> <p>Remember: When learners struggle with collaboration, this is a great learning opportunity for them.</p>	

12 steps to planning a project

Write your ideas here


<p>7 Ensuring LEARNER PARTICIPATION</p>	<p>Make some notes for yourself on how you can support learners to make their own decisions so that they own the project.</p>	
<p>8 Creating a SEQUENCE of events</p>	<p>Now that you have thought about all the different parts of the project, think about how you will order them. Think about the three performances here.</p>	
<p>9 Developing INSTRUCTIONS</p>	<p>Create clear instructions for learners to help guide them through the project.</p>	
<p>10 Including moments of REFLECTION AND FEEDBACK</p>	<p>Reflection and feedback are essential to learning. Make sure you build in regular opportunities for feedback throughout the project. What ideas can you think of here?</p>	
<p>11 Integrating everything into your SCHEDULE</p>	<p>Look at your timetable, the CAPS document and work out how much time you have for your project.</p>	
<p>12 Finding opportunities to SHARE what you have learnt</p>	<p>Ask the learners to think of ways of sharing their projects with the public (this can be in and outside of school). Sharing the outcomes of the project in the form of a public exhibition makes the whole process real. It can happen any time during the project.</p>	



Teacher Tip

“It’s how you play the game...” The end of the project is not the goal. The goal of PBL is the process. This is why formative assessment is used throughout the PBL process and is carried out during the learning process (rather than a summative assessment at the end). This is because what is observed during the process is far more important than the end product. Formative assessment can regularly improve both the learners’ and the teacher’s performance so that learning goals are achieved together.

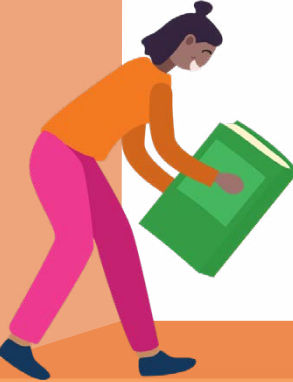
So, in a nutshell (and as a reminder)...



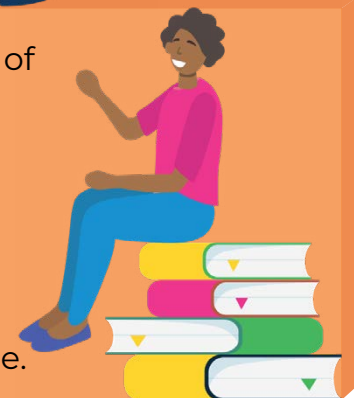
Project-based Learning is: **PARTICIPATION** in an **ONGOING PROCESS** that is driven by a real-world **CHALLENGE** that is **RELEVANT** to the learners.



The Project-based Learning process: uncovers **KNOWLEDGE** and **SKILLS** that improves the learner's **POTENTIAL** for: **collaboration, clear communication, critical thinking, and creative innovation.**
(All of which are key elements of the mindset of an entrepreneurial)



Project-based Learning is **MEANINGFUL** to the learner and their context, offering a sense of **PURPOSE**, and connecting learners to something bigger than themselves, allows them to develop **MASTERY** having the satisfaction of getting better at something by taking small steps and learning from feedback, affirms their **AGENCY** and **AUTONOMY**, allowing them to question, offering them choice and freeing them to change their world. It is supported by relevant curriculum-based **CONTENT**, and directed by meaningful **FEEDBACK** which offers an opportunity to risk failure and adapt performance.



Conclusion

Now you have either made your own project or used one of ours, don't worry if it wasn't perfect. The most important step is that you are starting something new and being an entrepreneurial yourself.

Remember, you are on your own learning journey. There will be ups and downs and that's OK. Like your learners, we hope that you iterate (try again), reflect and feel the joy of success as you master each new step.



Good luck and let us know how you get on!

Teacher Tips

Cultural knowledge: Take some of the core concepts from your lesson and ask learners what words or phrases they would use in their home language for that concept. Translation isn't always a neat one-to-one match. The differences in meaning introduce cultural knowledge that can encourage discussion and add to the richness of the lesson.



Diversity is strength: Try to find creative ways of exploring how different languages represent different concepts. Try not to use just a single source but try to find ways of including and benefiting from different ways of knowing. You could have conversations about how different languages represent concepts such as values, respect, success, intelligence, knowledge, beauty, power, wealth, health, identity, race, gender, sexual orientation, categories, cultural assumptions, social hierarchies, knowledge, truth, morality, sanity, freedom, etc.

Beginning with the end in mind: Giving learners a step-by-step checklist or the assessment rubric will help to clarify exactly what you expect and will help them to plan. They can see what everything is building up to and can anticipate the next step.



Innovation in diversity: Show many, different examples of what is possible in a project. This will keep learners from copying a single example and gives them permission to innovate and be creative.

The whole child: The most rewarding projects involve the whole learner. This includes senses, perceptions, emotions, physical movement, knowledge, language and relationships.

Balancing act: Try to create a balance between creating a flexible, relaxed, playful environment with one that is structured. It is like creating a 'playpen' (or boundaries) within which learners have the freedom to explore, while bumping up against constraints such as simple rules, scaffolded sequence of activities, set goals, time limits, or material constraints that contain and inform them. This way, they will feel safe but also free to innovate.

Strength in diversity and inclusion:

Find as many opportunities as possible for productive dialogue and teamwork. Help learners to grapple with group dynamics, collaborative practices, negotiation, resolving conflict, democratic process and building knowledge together. There is strength in diversity and inclusion and it strengthens learners' 'voice and choice'.

Honesty is the best policy: Hearing criticism is difficult for us all - but it is very important to be able to be truthful. Honest feedback is the key to effective collaboration. Allow learners to create and experiment with different 'rules of engagement,' so that they agree on rules that help them deal successfully with disagreement.



Each one teaches one: Everyone has something to contribute. Try to ensure that certain learners do not do most of the work. You can work with them to create specific roles. If each learner has a specific role vital to the completion of the project, they are more likely to accept responsibility for the team's success.

Learning happens at the edges: Your role is to ensure that the challenges are stretching but not too challenging, and the easy stuff stimulating but not too easy - for each learner. This is hard to achieve as a teacher. It is called “the zone of proximal development” - that space where learners can best stretch their learning. You want to try to create a satisfying sense of growth and achievement. If they are afraid of failure this will not happen.



Individual strengths: Try to create projects or activities that appeal to a range of learner strengths. Some may be better at writing, doing online research, making art, building structures, organising the team, presenting, and so on. Regardless of what they are doing individually they are still witnessing what other team members are doing, giving feedback to them and learning from them.

Be prepared: Have the learners think about what written materials they may need, such as instructions, project checklists, useful background information, feedback/assessment forms, etc. and what physical materials they may need such as paper, stationery, cardboard, waste for recycling, building materials, glue, etc.

Learner autonomy: One strategy to help learners take ownership of their work, is if they can create with you the assessment rubric you will use. It helps them understand the outcomes, describes the skills, and allows learners to think more deeply about what should be valued in the learning experience.

We don't live in silos...: Unfortunately school tends to create the impression that knowledge is in subject silos. This is not how the real world works. So, to mirror reality, try to break down some of the artificial barriers between subjects and encourage learners to transfer knowledge from one context to another. This ability to transfer knowledge is one of the most valued skills in the workplace and one of the most powerful techniques for solving personal problems.

Speaking is always best: Try as much as possible to give verbal feedback rather than a written mark. Try not to make comparisons with other learners but rather help them to try to figure out where they are on their own learning path and what they need to do to take the next beneficial step.

Journaling the journey: Ask learners to keep a journal to record their feelings and thoughts throughout the project process, with a description of exactly what they did and how the team operated. This is a useful way of affirming individual responsibility. They can add rough sketches from the group's process, or their own doodles and artworks, or whatever they need to express themselves. If you are going to assess journals, make that clear from the start.



Create positive identities: Try not to perceive a learner's disability or barriers to learning as the most important element in defining who they are. This just neglects all the other aspects of their being and ability. Rather accept that all learners are differently-abled and have learning strengths – as well as difficulties. When we only compare the performance of a child to narrow outcomes, we get a distorted view of what is natural and normal - and we can also miss the positive. We risk embedding a negative self-image, which is hard for them to rectify in the future.

