

An Emergent Curriculum Approach to learning and the National Outcomes-Based Curriculum

FIGURE A

The 9 Learning Areas
1. Life Orientation
2. Numeracy
3. Home Language
4. 1 st Additional Language
5. Arts and Culture
6. Natural Sciences
7. Social Science: History
8. Social Science: Geog
9. Technology

FIGURE B

The Learning Outcomes for Numeracy Grade 1 (but the wording is the same for all grades)
Learning Outcome 1: Numbers, Operations and Relationships: <i>The learner will be able to recognise, describe and represent numbers and their relationships, and to count, estimate, calculate and check with competence and confidence in solving problems.</i>
Learning Outcome 2: Patterns, Functions and Algebra <i>The learner will be able to recognise, describe and represent patterns and relationships, as well as to solve problems using algebraic language and skills.</i>
Learning Outcome 3: Space and Shape (Geometry) <i>The learner will be able to describe and represent characteristics and relationships between two-dimensional shapes and three-dimensional objects in a variety of orientations and positions.</i>
Learning Outcome 4: Measurement <i>The learner will be able to use appropriate measuring units, instruments and formulae in a variety of contexts.</i>
Learning Outcome 5: Data Handling <i>The learner will be able to collect, summarise, display and critically analyse data in order to draw conclusions and make predictions, and to interpret and determine chance variation.</i>

FIGURE C

Learning Outcome 4: Measurement <i>The learner will be able to use appropriate measuring units, instruments and formulae in a variety of contexts.</i>
Assessment standards
1. Describes the time of day using vocabulary such as 'early', 'late morning', 'afternoon' and 'night'.
2. Compares events in terms of the length of time they take (longer, shorter, faster, slower).
3. Sequences events using language such as 'yesterday', 'today' and 'tomorrow'.
4. Places birthdays on a calendar.
5. Estimates, measures, compares and orders three-dimensional objects using non-standard measures:
5.1 mass (e.g. bricks, sand bags);
5.2 length (e.g. hand spans, footsteps)
5.3 capacity (e.g. spoons, cups)

FIGURE D

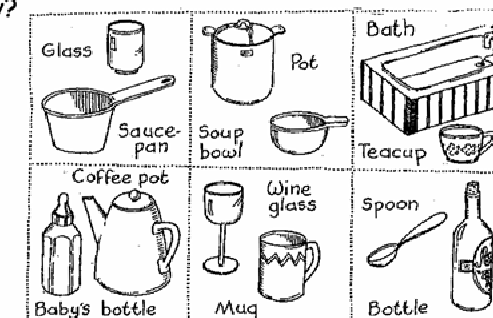
The scenario above shows how the National Curriculum is divided into the 9 Different Learning Areas (Figure A). Each Learning Area is then divided further in Learning Outcomes describing what components of the Learning Area are to be covered (Figure B). These Learning outcomes are the same for each grade. What differentiates between the grades are the Assessment standards (Figure c). These are the criteria used to guide and support a teacher in teaching learners. The teacher then provides exercises (Figure D) that intend to teach learners the specific concepts required for that grade. These are the results that the teacher is required to produce, thereby demonstrating that the children have learnt the concepts for that Grade's Learning Outcome, in each learning area.

The intention of the National Curriculum is to give teachers the flexibility and choice to design their own worksheets and activities according to the needs of the children in their class. The intention is to work towards the outcomes of the process and not prescribe how the teacher is going to teach the concept. The challenge is that traditional teachers do not have the time nor the resources (nor the real training) to design their own resources. What ends up happening is a curriculum becomes so tightly structured and pre-determined that each lesson and school day is designed (a year in advance) which actually leaves no flexibility for teachers to work with children's current needs, interests or learning pace. All effort is actually now put into the design of the curriculum which makes the curriculum input based and not outcomes based. At times the teacher is simply handed a pre-determined curriculum and told to teach it, therefore leaving no room for meeting a learner's individual needs or desires.

Learning Area 2; Learning Outcome 4; Assessment standard 5.3 An example of a worksheet in a pre-determined traditional curriculum for the above Assessment standard 5.3 (in figure C above). This is not experiential (hands-on) and doesn't really support children in grappling with the real concept of 'Capacity'.

Capacity

1. Circle the container in each pair which has the greater capacity?



A living example: In the Emergent Approach, the teacher asks the children what they are interested in. In the case below, the children shared that they wanted to learn more about the oceans. We then ask the children two main questions, "What do you know about oceans?" and "what do you want to know about oceans?" The first question allows for learners to share knowledge and 'teach' each other. The second question guides the teacher as to how to structure and focus the curriculum on the children's interests

These are some of the many examples of what the children wanted to know about OCEANS:

- How can the sea have salt?
- What is the Red Sea and the Dead Sea and how do people float in the Dead Sea?
- Does an egg float in water?
- Why do bubbles rise?
- What is the difference between Sea and fresh water?
- What is a wave and how does it work?
- How does the moon make different tides?
- What does an inside of a shark look like?

The teacher then looks over these ideas and looks to see how s/he can use the children's natural enquiry to drive the learning process. She also looks at how she can integrate what children are interested in with the National Curriculum Statements. Here are some of the ideas she came up with:

Ideas:

- Water cycle
- Properties of water
- Life cycles of ocean life
- Who lives in the ocean?
- How oceans impact us?
- Our local oceans – biospheres
- The nine (eight) planets and how they impact us
- How can we protect and care for our oceans and planets?
- Transport on oceans and space
- Space versus oceans: similarities and differences (living there?)
- What has changed in oceans and planets over time?

Possible Outings:

- aquarium
- beach (rock pools)
- planetarium/ observatory



Out of the many and varied ideas, she chooses those which would explore possible answers to the many questions children shared (and connect to the children's passion to learn about oceans), while also enabling her to bring in the learning concepts outlined by the National Curriculum. These can perhaps be described as Sub themes: In this case, the teacher chose the following sub themes which were the basis through which she worked for a period of 7-9 weeks with the children.

1. Ocean animals
2. Water Cycle
3. Properties of Water
4. Space versus oceans

She then takes these sub themes and shows how she can integrate all of the 9 learning areas into this sub-theme (see below for the example of the 'Properties of Water'). She has also shown which Learning Outcomes will be achieved in each of the Learning Areas. Through this process she creates an INTEGRATED CURRICULUM showing how the learning is an interrelated process. It also shows how the natural curiosity of the children will be harnessed and explored through tangible means. She bridges the National Curriculum with the child's interests and passion while also taking into consideration the developmental level of the children. Therefore this reflects a more authentic version of Outcomes Based Education than other schools.



SUB THEME: Exploring the properties of water

- float and sink (properties) activity
- capacity activity
 - measuring water
 - what holds more and what shape containers hold more or less
- asking and answering questions in a discussion and then researching
 - why do we float in water?
 - what do we use water for?
 - sea water and salt water: what's the difference?
 - who lives in sea water and who in fresh water?
 - The Red Sea and the Dead sea
 - What is a wave and how does it work?

Life Orientation (Learning Area)

- L.O. 1: Health Promotion in environment

Numeracy (Learning Area)

- L.O. 1. 7.3: estimation
- L.O. 2.4 describes observed patterns
- L.O. 3: space and shape of water
- L.O. 4. 5.3 : measurement of capacity
- L.O. 5: graphs/tables of properties of water

Home Language: (Learning Area)

- L.O. 1: listen – discussion and explorations
- L.O. 2: speaking – discussions & estimation
- L.O. 3: reading & viewing - information
- L.O. 4: writing – recording findings, tables etc.
- L.O. 5: thinking & reasoning: cause and effect, classification
- L.O. 6: language structure and use works with words, sentences, texts & punctuation

Arts and Culture: (Learning Area)

- L.O.1: creating, interpreting and presenting: drama & visual arts
- L.O. 2: reflecting: drama and visual arts
- L.O. 3: participate and collaborating: drama, composite & visual arts
- L.O. 4: expressing and communicating: drama & visual art

EMS: (Learning Area)

- L.O. 2: Sustainable growth: teamwork, impact of humans on environment

Natural Sciences: (Learning Area)

- L.O. 1: Scientific investigation: plans, does and reviews investigations of water properties

Social Science: History (Learning Area)

- L.O. 1 – 3: Red and the Dead sea, how they were formed

Social Science: Geog(Learning Area)

- L.O. 1 - 3: where is water found and how affects my health

Technology (Learning Area)

- L.O. 1: technological processes and skills: investigates, designs, makes and evaluates

KEY TO THE TABLE

Example: L.O. 2.4

L.O.2 = Learning Outcome 2.
.4 = the assessment standard

Through an activity on sinking and floating, children measure capacity, reason, interpret, estimate and explore. All of this can be covered through exploring the properties of water. This is a hands on experience, whereby children find the solutions to the problems/ challenges posed by the teacher. As a result their learning is self-motivated and learner centred which creates an integrated understanding for children.



Once the teacher has the sub themes, then she plans a lesson (and following lessons) that focus and centre around the interests of the child while still covering the concept required by the National Curriculum. Her worksheets are therefore directly related to the actual interests of the children while still incorporating the outcomes required by the curriculum. In carrying out the lesson, she also checks to further support what the child connects to.

Daily Lesson Plan			
Time	Learning Area	Exploration of the properties of water	Learning outcomes covered
9.30 - 10.30	Numbers	<p>Intro: (lesson intro by asking relevant questions)</p> <ul style="list-style-type: none"> - how do we measure length/weight? - What about if I wanted to work out how much water I needed to use to bake a cake? Or how much of something will fit inside? - Introduce ml, l, kl, gallons (which is bigger etc.) - What do we use to measure water? (jugs, cups etc.) <p>Activity: measuring capacity using water</p> <ul style="list-style-type: none"> - different size containers - putting in order and estimating capacity of different shapes and sized containers - work in pairs & have various work stations - measure how many cups of go water in each container - re-order containers according to measured results - then make a graph (as a group) of findings <p>Conclusion:</p> <ul style="list-style-type: none"> - all come together and read the graph, which container holds the most/least etc. - talking about properties of different sized containers and how this relates to capacity. (what they have learnt) 	<p>Learning Area: Numeracy: Learning Outcome (L.O.) 4: <i>The learner will be able to use appropriate measuring units, instruments and formulae in a variety of contexts.</i></p> <p>(measuring using non-standard units – capacity)</p> <p>L.O. 5: <i>The learner will be able to collect, summarise, display and critically analyse data in order to draw conclusions and make predictions, and to interpret and determine chance variation.</i> (using tables and graphs to record data and read the graph.)</p>
11:00 – 12:	Natural Science and Numbers	<p>Float and sink (45min) Intro: what can water do?</p> <ul style="list-style-type: none"> - do we sink/float in the water? Is it easier to float in a pool or in the sea? <p>Activity: guessing and measuring objects that float or sink</p> <ul style="list-style-type: none"> - guess first and then measure (write yes or no) <p>Conclusion: drawing inferences about why objects float or sink</p> <ul style="list-style-type: none"> - why do some objects float and others sink? - What makes objects float or sink - Talk about what water is made up of H₂O 	<p>Learning Area: Natural Sciences: L.O. 1: <i>The learner will be able to act confidently on curiosity about natural phenomena, and to investigate relationships and solve problems in scientific, technological and environmental contexts.</i> (Scientific investigation: plans, does and reviews investigations of water properties)</p> <p>Learning Area: Numeracy: L.O. 5: <i>The learner will be able to collect, summarise, display and critically analyse data in order to draw conclusions and make predictions, and to interpret and determine chance variation.</i> (using tables to record data and read the table.)</p>

Worksheet for sink/float activity

Object	Guess sink or float	Measure sink or float	Guess right – yes or no?
orange with skin			
orange without skin			
egg			
boiled egg with shell			
egg shell			
apple			
coffee bean			
tennis ball			
metal pin			
cork			
pencil			
koki			
match stick			

Does it Sink or Float?

This is an activity designed by the teacher which she implemented in the 11:00 – 12:00 time slot of the lesson on the left hand side of this page. Through this activity, children experientially explore water and some of the underlying concepts of the different learning areas. In the conversations which follow such an activity, this is where the children process their learning, and begin to determine and integrate a solid foundation of these core concepts. Lots of other learning is happening simultaneously: learning to fill in a table/ to write sight words/ to read/ to take turns/ to adjust estimation with new info/ to support group learning/ to share what is learnt verbally/ to respect other people's perspectives.

Here are some photographs from the lesson on *capacity* in the time slot 9:30 – 10:30. These show the children estimating and then measuring the different containers to determine the actual ordering of their capacities. The teacher included the Synergy Skills of team work in this exercise as well (see photo on the far right). Not only were the children experiencing and exploring the academic concepts but were also learning the core skills of team work and communication!



The teacher then uses a similar process with all the other sub themes, leveraging off the passion and the questions of the children (see the three other sub themes below). As the children become more involved and more interested, so it opens up more possibilities for the teacher to include other relevant activities and exercises. For example, children started writing poems about the sea and doing internet research on ocean animals. The teacher is continuously aware of the different outcomes required by the National Curriculum and can vary her lessons to go with the flow of the children's passion while still linking to the curriculum requirements. In this way, the children are not only getting the National Curriculum, but their learning is meaningful and relevant to their current lives. The children feel part of the learning process as active co-creators of the curriculum. They feel empowered, motivated and inspired. As the children get older, so the depth and richness of the learning is shared as they can play a greater role in the originating and implementation of the curriculum. If the above example is of a grade 1 and 2 class, can you imagine what it might be like in a grade 5 and 6 class where the children are so much more able to articulate their interest and be far more responsible in making their learning happen? The emergent curriculum allows a child to play an active role in their own learning, leaving them inspired and self motivated. From this space learning happens at a far deeper and more integrated level for children. They learn with a deeper understanding and with greater enthusiasm.

SUB THEME: WATER CYCLE		SUB THEME: SPACE AND OCEANS		SUB THEME: OCEAN ANIMALS	
<p>Lesson Ideas:</p> <ul style="list-style-type: none"> - water/steam/ice - evaporation - how does water get to my tap? - Where does water start? - Clouds and snow - Weather and how water impacts weather - Is my water clean? Filters etc. - water cycle after gathering info - Saving water and recycling - Alternatives to what we are doing now 	<p>Life Orientation</p> <ul style="list-style-type: none"> • L.O. 1: Health Promotion in environment <p>Numeracy</p> <ul style="list-style-type: none"> • L.O. 2.4: observed patterns • L.O. 3.1 & 3.2: recognises and describes shapes • L.O. 4.2; 4.3: describes length if time events take • L.O. 5.2; ;3 etc.: sorts physical objects according to attribute <p>Home Language:</p> <ul style="list-style-type: none"> • L.O. 1: listen to instructions and draws picture • L.O. 2: speaking (explain water cycle) • L.O. 3: reading & viewing (reads the diagram of the water cycle) • L.O. 4: writing (writes a story about the rain drop) • L.O. 5: thinking & reasoning: cause and effect • L.O. 6: language structure and use works with words, sentences, texts & punctuation <p>Arts and Culture:</p> <ul style="list-style-type: none"> • L.O.1: creating, interpreting and presenting - visual arts: presents images of own world in various media • L.O. 2: reflecting - visual arts: explains art • L.O. 3: participate and collaborating - visual arts and composite • L.O. 4: expressing and communicating - imagination expressed visually <p>EMS:</p> <ul style="list-style-type: none"> • L.O. 2: Sustainable growth - produce environmentally friendly products <p>Natural Sciences:</p> <ul style="list-style-type: none"> • L.O. 1: Scientific investigation - plans, does and reviews investigations around water <p>Social Science: History</p> <ul style="list-style-type: none"> • L.O. 1 – 3: how the water cycle is impacted by history <p>Social Science: Geog</p> <ul style="list-style-type: none"> • L.O. 3: exploring issues about water safety and environmental health <p>Technology</p> <ul style="list-style-type: none"> • L.O. 1: technological processes and skills: makes a water cycle 	<p>Lesson Ideas:</p> <p>similarities and differences living there what sounds like in space and in ocean?</p> <p>Life Orientation</p> <ul style="list-style-type: none"> • L.O. 1: Health Promo – food in space and sea <p>Numeracy</p> <ul style="list-style-type: none"> • L.O. 1.7.3: estimation • L.O. 2.4: describes patterns in world (life cycles & food webs) • L.O. 3: space and shapes in the ocean & space (circles etc.) • L.O. 4: time of day/ time in general with planets and sun etc. • L.O. 5: collects and sorts info <p>Home Language:</p> <ul style="list-style-type: none"> • L.O. 1: listen: discussion and explorations • L.O. 2: speaking: discussions & report back • L.O. 3: reading & viewing: finding info • L.O. 4: writing: legible, pre-writing, diff purposes, drafts and revises, understandable, • L.O. 5: thinking & reasoning: similarities and differences • L.O. 6: language structure and use works with words, sentences, texts & punctuation <p>Arts and Culture:</p> <ul style="list-style-type: none"> • L.O.1: creating, interpreting and presenting: drama, music & visual arts • L.O. 2: reflecting: drama, music and visual arts • L.O. 3: participate and collaborating: drama, music, composite & visual arts • L.O. 4: expressing and communicating: drama, music & visual art <p>EMS:</p> <ul style="list-style-type: none"> • L.O. 1: Economic Cycle: goods and services have a price • L.O. 2: Sustainable growth: teamwork, impact of humans on environment & completing a task on time etc. <p>Natural Sciences:</p> <ul style="list-style-type: none"> • L.O. 1: Scientific investigation: plans, does and reviews investigations of water properties <p>Social Science: History</p> <ul style="list-style-type: none"> • L.O. 1 – 3: what do you think ocean and space like millions of years ago? <p>Social Science: Geog</p> <ul style="list-style-type: none"> • L.O. 1 - 3: positions in ocean/space, express likes or dislikes, health & safety <p>Technology</p> <p>L.O. 1: technological processes and skills: investigates, designs, makes & evaluates</p>	<p>Lesson Ideas:</p> <ul style="list-style-type: none"> - who lives in the ocean - choose an animal and research animal - life cycles – what are they? - Food webs in the ocean - Endangered sea animals – what can we do? - Food from the oceans (cost and effect) 	<p>Life Orientation</p> <ul style="list-style-type: none"> • L.O. 3: Personal development: responds to challenges in environ <p>Numeracy</p> <ul style="list-style-type: none"> • L.O. 1.5: money (endangered animals & food) • L.O. 1. 6: practical problems to solve re: ocean • L.O. 2.4: describes patterns in world (life cycles & food webs) • L.O. 3: space and shapes in the ocean • L.O. 4: sequences of events (food web and life cycles) • L.O. 5: collect objects/info and classify info into tables etc. <p>Home Language:</p> <ul style="list-style-type: none"> • L.O. 1: listen – discussion and explorations • L.O. 2: speaking – discussions & estimation • L.O. 3: reading & viewing – finding info • L.O. 4: writing – tables, diagrams, labels etc. • L.O. 5: thinking & reasoning: cause & effect, classification, investigate/explore • L.O. 6: language structure and use works with words, sentences, texts & punctuation <p>Arts and Culture:</p> <ul style="list-style-type: none"> • L.O.1: creating, interpreting and presenting: drama & visual arts • L.O. 2: reflecting: drama and visual arts • L.O. 3: participate and collaborating: drama, composite & visual arts • L.O. 4: expressing and communicating: drama & visual art <p>EMS:</p> <ul style="list-style-type: none"> • L.O. 1: Economic Cycle: identifies units and value of money to buy things • L.O. 2: Sustainable growth: teamwork, impact of humans on environment & completing a task on time etc. <p>Natural Sciences:</p> <ul style="list-style-type: none"> • L.O. 1: Scientific investigation: plans, does and reviews investigations of water properties <p>Social Science: History</p> <ul style="list-style-type: none"> • L.O. 1 – 3: how has the ocean changed over time? <p>Social Science: Geog</p> <ul style="list-style-type: none"> • L.O. 1 - 3: local sea animals and describe experience of place & environ issues <p>Technology</p> <p>L.O. 1: technological processes and skills: investigates, designs, makes & evaluates</p>	