SECTION 1

CEPP INTERVENTION SESSIONS 1 – 12

1.1 SESSION 1: HIGHER ORDER CONCEPT: COLOUR AND PICTURES

<table>
<tr><td colspan="2">Session 1

Higher order concept: COLOUR AND PICTURES

Lower order concept: Brown, Black, Red, Blue, Yellow, Green, White, Orange</td></tr>
<tr><td colspan="2">CRITICAL OUTCOMES:
✓ Identify and solve problems and make decisions using critical and creative thinking.
✓ Organise and manage themselves and their activities responsibly and effectively.
✓ Collect, analyse, organise and critically evaluate information.
✓ Communicate effectively using visual, symbolic and / or language skills in various modes.
✓ Demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation.
✓ Reflect on and explore a variety of strategies to learn more effectively.</td></tr>
<tr><td>LEARNING AREA: HOME LANGUAGE
LEARNING OUTCOME 5: THINKING AND REASONING

The learner will be able to use language to think and reason as well as to access, process and use information for learning.

AS 1: Uses language to develop concepts:
• demonstrates developing knowledge of concepts such as quantity, size, shape, direction , colour, speed, time, age, sequence.

AS 2: Uses language to think and reason:
• matches items that go together and compares items that are different;
• classifies items.

AS 4: Processes information (the ability to process multiple sources of complex information – a prerequisite for higher order cognitive tasks):
• chooses selected information from a description.</td><td>INTEGRATION
HOME LANGUAGE (HL):
LEARNING OUTCOME (LO) 1:
LISTENING
The learner will be able to listen for information and enjoyment and respond appropriately and critically in a wide range of situations.

AS 1: Listens attentively to questions, instructions and announcements and responds appropriately.

MATHEMATICS (M):
LEARNING OUTCOME (LO) 5:
DATA HANDLING
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.

AS 2: Sorts physical objects according to one attribute E.g. colour.</td></tr>
</table>

INFORMATION PROCESSING

Multiple ideas: Can the learner process one or more idea/s at the same time? E.g. I saw an orange and green butterfly on the flower.
Complex ideas: Does the learner understand higher order concepts?. E.g. I sorted the shapes into groups according to their size, colour and shape.
Linking between ideas: Can the learner link concepts between ideas? E.g. These blocks have different colours, but they also differ in shape.

RESOURCES	**AIM**
• A4 posters with different colours (*cf*. Appendix 5 Session 1) • Coloured disks (*cf*. Appendix 5 Session 1) • Pictures to match colours (*cf*. Appendix 5 Session 1) • Activity sheet (*cf*. Appendix 5 Session 1) • Transfer Problem (*cf*. Appendix 5 Session 1)	• Develop and optimise convergent reasoning ability (classification) • Recognise differences and similarities • Develop and optimise auditory perception • Develop and optimise fine motor skills • Develop and optimise visual memory • Problem-solving

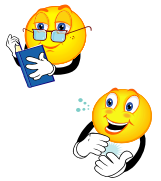
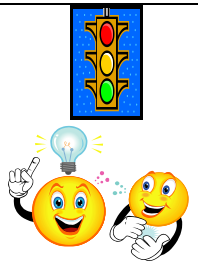
COGNITIVE MAP

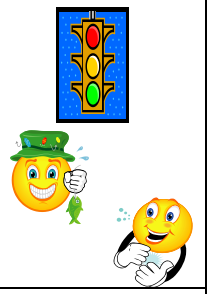
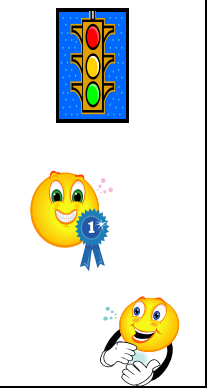
1. Content	**2. Modality**
• Recognising and identifying colours " *red, blue, green, yellow, brown, black, orange".* • Comparative thinking. • Planned, systematic thinking.	• Figural • Pictorial • Verbal

3. Phases of mental act

3.1 Input	**3.2 Elaboration**	**3.3 Output**
• Gathering information • Clear perception • Labelling accurately • Spatial orientation	• Planning behaviour • Categorising • Comparing • Looking for relationships • Problem-solving	• Using clear and precise language • Restraining impulsive behaviour • Precision and accuracy

4. Cognitive operations	**5. Level of abstraction**	**6. Level of efficiency**
• Categorisation • Comparison • Classification • Planned, systematic behaviour • Problem-solving • Hypothetical thinking • Critical reflection	• Low	• Low to medium

Phases according to dynamic assessment	ACTIVITIES	Symbols representing mediation principles
Labelling Phase	**1. Focused Attention** • Guide learners with questions to talk about colours. • Do you like to draw a picture? What do you need to draw a picture? Yes, sheet of paper, crayons. • If you had to draw a picture, what would you draw? Which colours would you use? • Hide coloured clouds in the room. Ask learners to look for them (red, blue, green, yellow, brown, black, orange, white) (*cf*. Appendix 5 Session 1). • Ask them to look around the room and name other colours they see in the room. • Learners' attention is focused on the concept colour. Utilising subordinate concepts " *red, blue, green, yellow, brown, black, orange"* while the mediator guides the learners by asking questions such as: - What do you see? - What colour is it? - How do you know this is the colour?	
	2. Meaning • Learners receive coloured disks (*cf*. Appendix 5 Session 1) and are requested to put those who look alike together. • Ask them what they just did. Yes, that is right, you made groups. • How did you group your disks? According to colour. • Let learners name the colours of their disks. • Ask them where have they seen the colour before? Talk about the different places where this colour can be found and in what form.	
	3. Self-reflection • Think of your favourite colour. • Close your eyes and make a picture in your mind with your favourite colour.	
	4. Sharing • Tell us about your favourite colour and what picture you saw in your mind.	

Example and Independent Phase	**5. Challenge and Competence** • Learners classify, categorise, seriate different colours. • Learners are requested to put pictures (*cf.* Appendix 5 Session 1) which remind them of a certain colour on the cloud with the corresponding colour, e.g. picture of sun on yellow cloud, etc. • Learners should explain why the picture reminds them of a certain colour. • Learners receive an activity sheet on which they should fit pictures to colours (*cf.* Appendix 5 Session 1).	
Transfer Phase	**6. Bridging and Transfer** • Ask learners what colours the different seasons (summer, autumn, winter, spring) / pictures remind them of. • Ask learners what their associations are with colours, e.g. is yellow a happy or sad / hot or cold colour? Why? Do you like yellow? What else can you think of that is yellow? • Find pictures of all the colours you know and bring them to school tomorrow. • Transfer Problem 1 (*cf.* Appendix 5 Session 1). • Remember to tell your parents and friends of all the colours we have learned about today. • Throughout the day try to identify different colours, in nature, at school, in the shop.	

Examples of activities are presented in Appendix 5

Evaluation of Session 1: Experimental Group A

Evaluation of the *CEPP* intervention – Experimental Group A				
Session 1: Colour and picture			**Date: 25 May 2009**	
	Criteria	**Yes**	**No**	**Comment**
1.	**Were the identified needs addressed?**	**X**		
1.1	Unsystematic, unplanned behaviour – inability to look for cues, no step-by-step way of working	**X**		
1.2	Lack of precision and accuracy	**X**		
1.3	Inability to work with more than 2 sources of information at a time	**X**		
1.4	Does not work out a problem, does not look for evidence, does not compare situations before responding.	**X**		
1.5	Reflecting / communicating / explaining thought processes while working	**X**		
1.6	Verbal tools	**X**		
2.	**Was the programme implemented as designed and according to the principles of mediation?**	**X**		
3.	**Were the outcomes achieved?**	**X**		
3.1	Curriculum-related outcomes	**X**		
3.2	Cognitive outcomes (deficient or emerging)	**X**		**Cognitive functions are deficient**
3.2.1	Unsystematic, unplanned behaviour – inability to look for cues, no step-by-step way of working	**X**		
3.2.2	Lack of precision and accuracy	**X**		
3.2.3	Inability to work with more than 2 sources of information at a time	**X**		
3.2.4	Does not work out a problem, does not look for evidence and does not compare situations before responding.	**X**		
3.2.5	Reflecting / communicating / explaining thought processes while working	**X**		
3.2.6	Verbal tools	**X**		**Poor verbal tools**
4.	**Adaptations needed** More attention should be given to participants' verbal tools and planning of behaviour.			

Evaluation of Session 1: Experimental Group B

Evaluation of the *CEPP i*ntervention – Experimental Group B				
Session 1: Colour and picture			**Date: 19 Augustus 2009**	
	Criteria	**Yes**	**No**	**Comment**
1.	**Were the identified needs addressed?**	**X**		
1.1	Unsystematic, unplanned behaviour – inability to look for cues, no step-by-step way of working	**X**		**Participants work extremely unsystematically**
1.2	Lack of precision and accuracy	**X**		
1.3	Inability to work with more than 2 sources of information at a time	**X**		
1.4	Does not work out a problem, does not look for evidence, does not compare situations before responding.	**X**		
1.5	Reflecting / communicating / explaining thought processes while working	**X**		
1.6	Verbal tools	**X**		
2.	**Was the programme implemented as designed and according to the principles of mediation?**	**X**		
3.	**Were the outcomes achieved?**	**X**		
3.1	Curriculum-related outcomes	**X**		
3.2	Cognitive outcomes (deficient or emerging)	**X**		**Cognitive functions are deficient**
3.2.1	Unsystematic, unplanned behaviour – inability to look for cues, no step-by-step way of working	**X**		
3.2.2	Lack of precision and accuracy	**X**		
3.2.3	Inability to work with more than 2 sources of information at a time	**X**		
3.2.4	Does not work out a problem, does not look for evidence and does not compare situations before responding.	**X**		
3.2.5	Reflecting / communicating / explaining thought processes while working	**X**		
3.2.6	**Verbal tools**	**X**		**Poor verbal tools.**
4.	**Adaptations needed** Pictures that fit in coloured clouds should be the same size. As with Group A more attention to be paid to the development of verbal tools and planning of behaviour			

1.2 SESSION 2: HIGHER ORDER CONCEPT: COLOUR AND PATTERNS

<table>
<tr><th colspan="2">Session 2
Higher order concept: COLOUR AND PATTERNS
Lower order concept: Brown, Black, Red, Blue, Yellow, Green, White, Orange</th></tr>
<tr><td colspan="2">CRITICAL OUTCOMES:
✓ Identify and solve problems and make decisions using critical and creative thinking.
✓ Organise and manage themselves and their activities responsibly and effectively.
✓ Collect, analyse, organise and critically evaluate information.
✓ Communicate effectively using visual, symbolic and / or language skills in various modes.
✓ Demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation.
✓ Reflect on and explore a variety of strategies to learn more effectively.</td></tr>
<tr><td>LEARNING AREA: HOME LANGUAGE
LEARNING OUTCOME 5: THINKING AND REASONING

The learner will be able to use language to think and reason as well as to access, process and use information for learning

AS 1: Uses language to develop concepts:
• demonstrates developing knowledge of concepts such as quantity, size, shape, direction , colour, speed, time, age, sequence

AS 2: Uses language to think and reason:
• matches items that go together and compares items that are different
• classifies items

AS 4: Processes information (the ability to process multiple sources of complex information – a pre-requisite for higher order cognitive tasks)
• chooses selected information from a description</td><td>INTEGRATION
HOME LANGUAGE (HL):
LEARNING OUTCOME (LO) 1:
LISTENING
The learner will be able to listen for information and enjoyment and respond appropriately and critically in a wide range of situations
AS 2: Creates own patterns

MATHEMATICS (M):
LEARNING OUTCOME (LO) 2:
PATTERNS, FUNCTIONS AND ALGEBRA
The learner will be able to recognise, describe and represent patterns and relationships as well as to solve problems using algebraic language and skills.
AS 1: Copies and extends simple patterns using physical objects and drawings (using colour)
AS 2: Creates own patterns
LEARNING OUTCOME (LO) 5:
DATA HANDLING
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.
AS 2: Sort physical objects according to one attribute, e.g. colour</td></tr>
</table>

<table>
<tr><th colspan="3">INFORMATION PROCESSING</th></tr>
<tr><td colspan="3">Multiple ideas: Can the learner process one or more idea/s at the same time? E.g. I see patterns in nature, on clothes and buildings.
Complex ideas: Does the learner understand higher order concepts? E.g. I can make patterns according to their size, colour, shape, sequence
Linking between ideas: Can the learner link concepts between ideas? E.g. These patterns have different colours and the sequence also differs.</td></tr>
<tr><td colspan="2">RESOURCES
Coloured disks and string (cf. Appendix 5 Session 1).
Instruction posters (cf. Appendix 5 Session 2).
Colour-pattern (cf. Appendix 5 Session 2).
Transfer Problem (cf. Appendix 5 Session 2).</td><td>AIM
Develop and optimise convergent reasoning ability (classification).
Recognise differences and similarities.
Develop and optimise auditory perception.
Develop and optimise fine motor skills.
Develop and optimise visual memory.
Problem-solving.</td></tr>
<tr><th colspan="3">COGNITIVE MAP</th></tr>
<tr><td colspan="2">1. Content
Recognising and identifying colours “ red, blue, green, yellow, brown, black, orange”.
Completing patterns.
Creating their own patterns.</td><td>2. Modality
Figural
Pictorial
Verbal</td></tr>
<tr><th colspan="3">3. Phases of mental act</th></tr>
<tr><td>3.1 Input
Gathering information.
Clear perception.
Labelling accurately.
Spatial orientation.</td><td>3.2 Elaboration
Planning behaviour.
Categorising.
Comparing.
Looking for relationships.
Problem-solving.</td><td>3.3 Output
Using clear and precise language.
Restraining impulsive behaviour.
Precision and accuracy.</td></tr>
<tr><td>4. Cognitive operations
Categorisation.
Comparison.
Classification.
Planned, systematic behaviour.
Problem-solving.
Hypothetical thinking.
Critical reflection.</td><td>5. Level of abstraction
Low.</td><td>6. Level of efficiency
Low to medium.</td></tr>
</table>

Phases according to dynamic assessment	ACTIVITIES	Symbols representing mediation principles
Labelling Phase	**1. Focused Attention** • Take learners outside and name all the colours they see outside. • Take them back to the class and ask them if they can remember what colours they just saw outside? • Guide learners with questions to talk about colours. • What is the colour of your clothes today? • Can you remember the colours we learned about yesterday? • Let learners name different colours. As they name a colour you put out a colour cloud to form a pattern. - What do you see? - What do we call it if we put the colours in a row like this? - Yes, that is right, we call it a pattern. - Let's make more colour patterns. - How do you know which colour should follow? - Yes, that is right; we follow the sequence of the colours.	 
	2. Meaning • Learners receive coloured disks and are requested to put those who look alike together. • Ask them what they just did. Yes, that is right, you made groups. • How did you group your disks? According to colour. • Let learners name the colours of their disks. • Ask them where have they seen the colour before? Talk about the different places where this colour can be found and in what form. • Ask learners what they associate with colours, e.g. is yellow a happy or sad or angry / hot or cold colour? Why? Do you like yellow? What else can you think of that is yellow?	 
	3. Self-reflection • Think of your favourite colours. • Close your eyes and make a pattern of your favourite colours.	
	4. Sharing • Tell us about your colour pattern, what colours you used and why you used those colours.	

Example and Independent Phase	**5. Challenge and Competence** • Learners classify, categorise, seriate different colours. • Learners are requested to make a coloured pattern with the disks on their desks: - *red, green, red, green*…. (learners complete the pattern on their desk). - *red, red, green, red, red green* …. (learners complete the pattern on their desk). - *red, red, green , blue, red, red, green , blue…..* (learners complete the pattern on their desk). • You are very clever. You can break up your patterns now. • Close your eyes and think about the patterns you just made. • Facilitate the process by asking learners how they knew what colour to put next. • How did they know it was the right colour? • They are requested to string the disks according to colour while ensuring accuracy (*cf*. Appendix 5 Session 2) (fine motor skill). - *red, green, blue, blue, red, green, blue, blue*…. (learners string the pattern). - *orange, green yellow, blue, orange, green, yellow, blue*… (learners string the pattern). - *yellow, orange, blue, green, red, yellow, orange, blue, green, red* … (learners string the pattern). • Close your eyes and think about the patterns you just made. • Facilitate the process by asking learners how they knew what colour to put next. • How did they know it was the right colour? • Learners receive an activity sheet to complete colour pattern (*cf*. Appendix 5 Session 2).	  
Transfer Phase	**6. Bridging and Transfer** • Ask learners what colours the different seasons (summer, autumn, winter, spring) / pictures remind them of. • Find pictures of all the colours you know and bring them to school tomorrow. • Transfer Problem 2 (*cf*. Appendix 5 Session 2). • Remember to tell your parents and friends of all the colours we have learned about today. • Throughout the day try to identify different colours, in nature, at school, at home, in the shop.	  

Evaluation of Session 2: Experimental Group A

Evaluation of the *CEPP i*ntervention – Experimental Group A				
Session 2: Colour and pattern			**Date: 28 May 2009**	
	Criteria	**Yes**	**No**	**Comment**
1.	**Were the identified needs addressed?**	**X**		
1.1	Unsystematic, unplanned behaviour – inability to look for cues, no step-by-step way of working	**X**		
1.2	Lack of precision and accuracy	**X**		
1.3	Inability to work with more than 2 sources of information at a time	**X**		
1.4	Does not work out a problem, does not look for evidence, does not compare situations before responding.	**X**		
1.5	Reflecting / communicating / explaining thought processes while working	**X**		
1.6	Verbal tools	**X**		
2.	**Was the programme implemented as designed and according to the principles of mediation?**	**X**		
3.	**Were the outcomes achieved?**	**X**		
3.1	Curriculum-related outcomes	**X**		
3.2	Cognitive outcomes (deficient or emerging)	**X**		**Cognitive functions are deficient**
3.2.1	Unsystematic, unplanned behaviour – inability to look for cues, no step-by-step way of working	**X**		
3.2.2	Lack of precision and accuracy	**X**		
3.2.3	Inability to work with more than 2 sources of information at a time	**X**		
3.2.4	Does not work out a problem, does not look for evidence, does not compare situations before responding.	**X**		
3.2.5	Reflecting / communicating / explaining thought processes while working	**X**		
3.2.6	Verbal tools	**X**		**Poor verbal tools**
4.	**Adaptations needed** Each participant should be seated at his or her own desk. Not share a desk with the other participant. Not enough space to work comfortably. Provide more space to work comfortably. Verbal tools and planning of behaviour also need increased attention.			

Evaluation of Session 2: Experimental Group B

Evaluation of the *CEPP i*ntervention – Experimental Group B				
Session 2: Colour and pattern			**Date: 20 August 2009**	
	Criteria	**Yes**	**No**	**Comment**
1.	**Were the identified needs addressed?**	**X**		
1.1	**Unsystematic, unplanned behaviour – inability to look for cues, no step-by-step way of working**	**X**		
1.2	**Lack of precision and accuracy**	**X**		
1.3	**Inability to work with more than 2 sources of information at a time**	**X**		
1.4	**Does not work out a problem, does not look for evidence, does not compare situations before responding.**	**X**		
1.5	**Reflecting / communicating / explaining thought processes while working**	**X**		
1.6	**Verbal tools**	**X**		
2.	**Was the programme implemented as designed and according to the principles of mediation?**	**X**		
3.	**Were the outcomes achieved?**	**X**		
3.1	**Curriculum-related outcomes**	**X**		
3.2	**Cognitive outcomes (deficient or emerging)**	**X**		
3.2.1	**Unsystematic, unplanned behaviour – inability to look for cues, no step-by-step way of working**	**X**		
3.2.2	**Lack of precision and accuracy**	**X**		
3.2.3	**Inability to work with more than 2 sources of information at a time**	**X**		
3.2.4	**Does not work out a problem, does not look for evidence, does not compare situations before responding.**	**X**		
3.2.5	**Reflecting / communicating / explaining thought processes while working**	**X**		
3.2.6	**Verbal tools**	**X**		
4.	**Adaptations needed** Since participants were seated individually, they had more space to work comfortably.			

1.3 SESSION 3: HIGHER ORDER CONCEPT: COLOUR AND POSITION

<table>
<tr><td colspan="2">Session 3
Higher order concept: COLOUR AND POSITION
Lower order concept: Next to, above, under, between, left to, right to
Brown, Black, Red, Blue, Yellow, Green, White, Orange</td></tr>
<tr><td colspan="2">CRITICAL OUTCOMES:
✓ Identify and solve problems and make decisions using critical and creative thinking.
✓ Organise and manage themselves and their activities responsibly and effectively.
✓ Collect, analyse, organise and critically evaluate information.
✓ Communicate effectively using visual, symbolic and / or language skills in various modes.
✓ Demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation.
✓ Reflect on and explore a variety of strategies to learn more effectively.</td></tr>
<tr><td>LEARNING AREA: HOME LANGUAGE

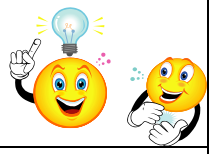
LEARNING OUTCOME 5: THINKING AND REASONING

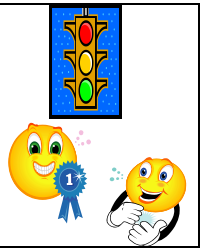
The learner will be able to use language to think and reason as well as to access, process and use information for learning.
AS 1: Uses language to develop concepts:
• demonstrates developing knowledge of concepts such as quantity, size, shape, direction , colour, speed, time, age, sequence.
AS 3: Uses language to investigate and explore
• asks questions and searches for explanations
• gives explanations and offers solutions
AS 4: Processes information (the ability to process multiple sources of complex information – a prerequisite for higher order cognitive tasks) picks out selected information from a description.</td><td>INTEGRATION
MATHEMATICS (M)
LEARNING OUTCOMES (LO) 3:
SPACE AND SHAPE

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.

AS 5: Describes one three-dimensional object in relation to another
AS 6: Follows directions to move or place self within the classroom (at the front, at the back)</td></tr>
</table>

<table>
<tr><td colspan="3">INFORMATION PROCESSING
Multiple ideas: Can the learner process one or more idea/s at the same time? E.g. I saw an orange and green butterfly on the flower.
Complex ideas: Does the learner understand higher order concepts? E.g. I sorted the shapes into groups according to their size / colour.
Linking between ideas: Can the learner links concepts between ideas? E.g. These blocks have different colours, but they also differ in shape.</td></tr>
<tr><td colspan="2">RESOURCES
Coloured pegs and wooden blocks (cf. Appendix 5 Session 3).
Activity sheet (cf. Appendix 5 Session 3).
Transfer Problem (cf. Appendix 5 Session 3).</td><td>AIM
Develop and optimise convergent reasoning ability (classification).
Recognise differences and similarities.
Develop and optimise auditory perception.
Develop and optimise fine motor skills.
Develop and optimise visual memory.
Problem-solving.</td></tr>
<tr><td colspan="3">COGNITIVE MAP</td></tr>
<tr><td colspan="2">1. Content
Recognising and identifying colours “ red, blue, green, yellow, brown, black, orange”.
Recognising position with regard to another object.</td><td>2. Modality
Figural
Pictorial
Verbal</td></tr>
<tr><td colspan="3">3. Phases of mental act</td></tr>
<tr><td>3.1 Input
Gathering information
Clear perception
Labelling accurately
Spatial orientation</td><td>3.2 Elaboration
Planning behaviour
Categorising
Comparing
Looking for relationships
Problem-solving</td><td>3.3 Output
Using clear and precise language
Restraining impulsive behaviour
Precision and accuracy</td></tr>
<tr><td>4. Cognitive operations
Categorisation
Comparison
Classification
Planned, systematic behaviour
Problem-solving
Hypothetical thinking
Critical reflection</td><td>5. Level of abstraction
Low</td><td>6. Level of efficiency
Low to medium</td></tr>
</table>

Phases according to dynamic assessment	ACTIVITIES	Symbols representing mediation principles
Labelling Phase	**1. Focused Attention** • Learners revise the concept colour, utilising subordinate concepts "red*, blue, green, yellow, brown, black, orange".* • Learners are requested to identify their own position regarding other objects. • Learners are taken outside to determine the position of the air, aeroplanes, trees, ants, etc.	
	2. Meaning • Learners receive a ball. • Learners are requested to put the ball on the chair, under the chair, next to the chair, at the top of the desk, at the bottom of the desk, at the right, at the left side of the desk. • Learners are asked to explain what they are doing	 
	3. Self-reflection • Learners are requested to close their eyes and in their minds create a picture of any object in different positions.	
	4. Sharing • Tell us about the picture you created in your mind. • What object did you use and why? • Which object was at the top, at the bottom, etc.	
Example and Independent Phase	**5. Challenge and Competence** • Learners receive a wooden block with holes and coloured pegs (*cf*. Appendix 5 Session 3). • Request learners to fill the middle block with red pegs. • Request learners to put a yellow peg in the **top** block / **left** to/ **right** to / **next** to the middle block. • Ask them to put the green peg **first**, the blue one **second**, the yellow one **third**. • Learners explain what they did and how they knew they did it correctly.	 

Transfer Phase	**6. Bridging and Transfer** • Learners complete Activity sheet (*cf*. Appendix 5 Session 3). • Transfer Problem 3 (*cf*. Appendix 5 Session 3). • Find pictures of objects in different positions and bring them to school tomorrow. • Remember to tell your parents and friends about what we have learned today.	

Evaluation of Session 3: Experimental Group A

Evaluation of the *CEPP i*ntervention – Experimental Group A				
Session 3: Colour and position			**Date: 29 May 2009**	
	Criteria	**Yes**	**No**	**Comment**
1.	**Were the identified needs addressed?**	**X**		
1.1	Unsystematic, unplanned behaviour – inability to look for cues, no step-by-step way of working	**X**		
1.2	Lack of precision and accuracy	**X**		
1.3	Inability to work with more than 2 sources of information at a time	**X**		
1.4	Does not work out a problem, does not look for evidence, does not compare situations before responding.	**X**		
1.5	Reflecting / communicating / explaining thought processes while working	**X**		
1.6	Verbal tools	**X**		
2.	**Was the programme implemented as designed and according to the principles of mediation?**	**X**		
3.	**Were the outcomes achieved?**	**X**		
3.1	Curriculum-related outcomes	**X**		
3.2	Cognitive outcomes (deficient or emerging)	**X**		
3.2.1	Unsystematic, unplanned behaviour – inability to look for cues, no step-by-step way of working	**X**		
3.2.2	Lack of precision and accuracy	**X**		
3.2.3	Inability to work with more than 2 sources of information at a time	**X**		
3.2.4	Does not work out a problem, does not look for evidence, does not compare situations before responding.	**X**		
3.2.5	Reflecting / communicating / explaining thought processes while working	**X**		
3.2.6	Verbal tools	**X**		
4.	**Adaptations needed** Let participants first do the position of cats practically with unifix blocks before they mark it with a cross (*cf.* Appendix 5 Session 3).			

Evaluation of Session 3: Experimental Group B

Evaluation of the *CEPP i*ntervention – Experimental Group B				
Session 3: Colour and position			**Date: 25 August 2009**	
	Criteria	**Yes**	**No**	**Comment**
1.	**Were the identified needs addressed?**	**X**		
1.1	**Unsystematic, unplanned behaviour – inability to look for cues, no step-by-step way of working**	**X**		
1.2	**Lack of precision and accuracy**	**X**		
1.3	**Inability to work with more than 2 sources of information at a time**	**X**		
1.4	**Does not work out a problem, does not look for evidence, does not compare situations before responding.**	**X**		
1.5	**Reflecting / communicating / explaining thought processes while working**	**X**		
1.6	**Verbal tools**	**X**		
2.	**Was the programme implemented as designed and according to the principles of mediation?**	**X**		
3.	**Were the outcomes achieved?**	**X**		
3.1	**Curriculum-related outcomes**	**X**		
3.2	**Cognitive outcomes (deficient or emerging)**	**X**		
3.2.1	**Unsystematic, unplanned behaviour – inability to look for cues, no step-by-step way of working**	**X**		
3.2.2	**Lack of precision and accuracy**	**X**		
3.2.3	**Inability to work with more than 2 sources of information at a time**	**X**		
3.2.4	**Does not work out a problem, does not look for evidence, does not compare situations before responding.**	**X**		
3.2.5	**Reflecting / communicating / explaining thought processes while working**	**X**		
3.2.6	**Verbal tools**	**X**		
4.	**Adaptations needed** Use pegboard and pegs for other sessions as well, e.g. shapes (*cf.* Appendix 5 Session 3)			

1.4 SESSION 4: HIGHER ORDER CONCEPT: COLOUR AND NUMBER

<table>
<tr><td colspan="2">Session 4
Higher order concept: COLOUR AND NUMBER
Lower order concept: Brown, Black, Red, Blue, Yellow, Green, White, Orange
One, two, three, four, five, six, seven, eight, nine, ten</td></tr>
<tr><td colspan="2">CRITICAL OUTCOMES:
✓ Identify and solve problems and make decisions using critical and creative thinking.
✓ Organise and manage themselves and their activities responsibly and effectively.
✓ Collect, analyse, organise and critically evaluate information.
✓ Communicate effectively using visual, symbolic and / or language skills in various modes.
✓ Demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation.
✓ Reflect on and explore a variety of strategies to learn more effectively.</td></tr>
<tr><td>LEARNING AREA: HOME LANGUAGE

LEARNING OUTCOME 5:
THINKING AND REASONING

The learner will be able to use language to think and reason as well as to access, process and use information for learning.

AS 1: Uses language to develop concepts:
• demonstrates developing knowledge of concepts such as quantity, size, shape, direction , colour, speed, time, age, sequence.

AS 4: Processes information (the ability to process multiple sources of complex information – a prerequisite for higher order cognitive tasks)
chooses selected information from a description.</td><td>INTEGRATION: MATHEMATICS (M):

LEARNING OUTCOME (LO) 1:
NUMBERS, OPERATIONS AND RELATIONSHIPS

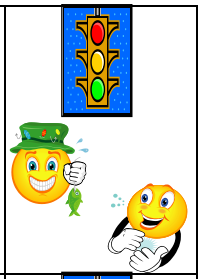
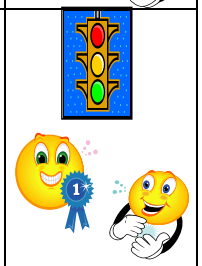
The learner will be able to recognise, describe and represent patterns and relationships as well as solve problems using algebraic language and skills.

AS 1: Counts up to at least 10 everyday objects reliably.
AS 4: Orders and compares collections of objects using the words more, less and equal.
AS 7: Solves verbally-stated additions and subtraction problems with single-digit numbers and with solutions up to at least 10.

MATHEMATICS (M):
LEARNING OUTCOME (LO) 5:
DATA HANDLING
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.
AS 3 Draws a picture as a record of collected objects.</td></tr>
</table>

<table>
<tr><td colspan="3">INFORMATION PROCESSING
Multiple ideas: Can the learner process one or more idea/s at the same time? E.g. I saw an orange and green butterfly on the flower.
Complex ideas: Does the learner understand higher order concepts? E.g. I sorted the shapes into groups according to their size / colour.
Linking between ideas: Can the learner links concepts between ideas? E.g. These blocks have different colours, but they also differ in shape.</td></tr>
<tr><td colspan="2">RESOURCES
Instruction posters No 13,14,17,18 (cf. Appendix 5 Session 4)
Smarties
Smartie box graph (cf. Appendix 5 Session 4)
Smartie box picture (cf. Appendix 5 Session 4)
Transfer Problem (cf. Appendix 5 Session 4)</td><td>AIM
Develop and optimise convergent reasoning ability (classification)
Problem-solving
Vocabulary, such as same /different; more / less; hot/ cold
Count 1-10</td></tr>
<tr><td colspan="3">COGNITIVE MAP</td></tr>
<tr><td colspan="2">1. Content
Recognising and identifying colours “ red, blue, green, yellow, brown, black, orange”.
Categorise and classify objects according to colour.
Number quantity</td><td>2. Modality
Figural
Pictorial
Verbal</td></tr>
<tr><td colspan="3">3. Phases of mental act</td></tr>
<tr><td>3.4 Input
Gathering information
Clear perception
Labelling accurately
Spatial orientation</td><td>3.5 Elaboration
Planning behaviour
Categorising
Comparing
Looking for relationships
Problem-solving</td><td>3.6 Output
Using clear and precise language
Restraining impulsive behaviour
Precision and accuracy</td></tr>
<tr><td>4. Cognitive operations
Categorisation
Comparison
Classification
Planned, systematic behaviour
Problem-solving
Hypothetical thinking
Critical reflection</td><td>5. Level of abstraction
Low to medium</td><td>6. Level of efficiency
Medium to high</td></tr>
</table>

Phases according to dynamic assessment	ACTIVITIES	Symbols representing mediation principles
Labelling Phase	**1. Focused Attention** • Learners revise the concept colour, utilizing subordinate concepts " *red, blue, green, yellow, brown, black, orange"* while the mediator guides the learners by asking questions such as: - What do you see? - What colour is it? - How do you know this is the colour?	 
	2. Meaning • Learners group the Smarties according to their colours. • Ask learners to see which colour has the most Smarties and which has the least Smarties. • How do you know these Smarties are more / less than those? • Mediator brings in quantity when learners are requested to put the Smarties in certain patterns, e.g. 2 green, 2 red, 1 orange, 4 blue (*cf.* Appendix 5 Session 4).	  
	3. Self-reflection • Think of any number. • Close your eyes and match a colour with any number that comes into your mind.	
	4. Sharing • Tell us about the numbers you created in your mind that will match the colour you were thinking of. • Why did you choose this specific colour and number? • How did you know those numbers would match that colour?	

Example and Independent Phase	**5. Challenge and Competence** • Learners determine how many coloured Smarties are in their box. • Put the Smarties on the graph (*cf*. Appendix 5 Session 4) • Ask questions such as: Which colour has the most Smarties? If you eat two how many will be left? • Create your own picture with the Smartie box. Tell me how you plan to draw yourself, what colours will you use and why. Mediate the detail of the picture, e.g. colour of eyes, eyebrows, eye-lashes, nose, mouth, ears, hair colour, boy, girl.	
Transfer Phase	**6. Bridging and Transfer** • Learners receive Transfer Problem 4 (*cf*. Appendix 5 Session 4). • Find pictures of all the colours and numbers we have learned about and bring them to school tomorrow. • Remember to tell your parents and friends about what we have learned today. • Throughout the day try to identify different colours and numbers, in nature, at school, in the shop.	

Evaluation of Session 4: Experimental Group A

Evaluation of the *CEPP i*ntervention – Experimental Group A				
Session 4: Colour and number			**Date: 3 June 2009**	
	Criteria	**Yes**	**No**	**Comment**
1.	**Were the identified needs addressed?**	**X**		
1.1	Unsystematic, unplanned behaviour – inability to look for cues, no step-by-step way of working	**X**		
1.2	Lack of precision and accuracy	**X**		
1.3	Inability to work with more than 2 sources of information at a time	**X**		
1.4	Does not work out a problem, does not look for evidence, does not compare situations before responding.	**X**		
1.5	Reflecting / communicating / explaining thought processes while working	**X**		
1.6	Verbal tools	**X**		
2.	**Was the programme implemented as designed and according to the principles of mediation?**	**X**		
3.	**Were the outcomes achieved?**	**X**		
3.1	Curriculum-related outcomes	**X**		
3.2	Cognitive outcomes (deficient or emerging)	**X**		
3.2.1	Unsystematic, unplanned behaviour – inability to look for cues, no step-by-step way of working	**X**		
3.2.2	Lack of precision and accuracy	**X**		
3.2.3	Inability to work with more than 2 sources of information at a time	**X**		
3.2.4	Does not work out a problem, does not look for evidence, does not compare situations before responding.	**X**		
3.2.5	Reflecting / communicating / explaining thought processes while working	**X**		
3.2.6	Verbal tools	**X**		
4.	**Adaptations needed** None. Participants enjoyed this session.			

Evaluation of Session 4: Experimental Group B

Evaluation of the *CEPP i*ntervention – Experimental Group B				
Session 4: Colour and number			**Date: 28 August 2009**	
	Criteria	**Yes**	**No**	**Comment**
1.	**Were the identified needs addressed?**	**X**		
1.1	Unsystematic, unplanned behaviour – inability to look for cues, no step-by-step way of working	**X**		
1.2	Lack of precision and accuracy	**X**		
1.3	Inability to work with more than 2 sources of information at a time	**X**		
1.4	Does not work out a problem, does not look for evidence, does not compare situations before responding.	**X**		
1.5	Reflecting / communicating / explaining thought processes while working	**X**		
1.6	Verbal tools	**X**		
2.	**Was the programme implemented as designed and according to the principles of mediation?**	**X**		
3.	**Were the outcomes achieved?**	**X**		
3.1	Curriculum-related outcomes	**X**		
3.2	Cognitive outcomes (deficient or emerging)	**X**		
3.2.1	Unsystematic, unplanned behaviour – inability to look for cues, no step-by-step way of working	**X**		
3.2.2	Lack of precision and accuracy	**X**		
3.2.3	Inability to work with more than 2 sources of information at a time	**X**		
3.2.4	Does not work out a problem, does not look for evidence, does not compare situations before responding.	**X**		
3.2.5	Reflecting / communicating / explaining thought processes while working	**X**		
3.2.6	Verbal tools	**X**		
4.	**Adaptations needed** None. Participants enjoyed this session.			

1.5 SESSION 5: HIGHER ORDER CONCEPT: SHAPE

<table>
<tr><td colspan="2">Session 5
Higher order concept: SHAPE
Lower order concept: Circle, square, rectangle, triangle, diamond</td></tr>
<tr><td colspan="2">CRITICAL OUTCOMES:
✓ Identify and solve problems and make decisions using critical and creative thinking.
✓ Organise and manage themselves and their activities responsibly and effectively.
✓ Collect, analyse, organise and critically evaluate information.
✓ Communicate effectively using visual, symbolic and / or language skills in various modes.
✓ Demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation.
✓ Reflect on and explore a variety of strategies to learn more effectively.</td></tr>
<tr><td colspan="2">LEARNING OUTCOME 5: THINKING AND REASONING
The learner will be able to use language to think and reason as well as to access, process and use information for learning</td></tr>
<tr><td>LEARNING AREA: HOME LANGUAGE

LEARNING OUTCOME 5:
THINKING AND REASONING

The learner will be able to use language to think and reason as well as to access, process and use information for learning

AS 1: Uses language to develop concepts:
• demonstrates developing knowledge of concepts such as quantity, size, shape, direction , colour, speed, time, age, sequence

AS 2: Uses language to think and reason:
• identifies and describes similarities and differences
• matches items that go together and compares items that are different
• classifies things
AS 4: Processes information (the ability to process multiple sources of complex information – a prerequisite for higher order cognitive tasks)
• chooses selected information from a description</td><td>INTEGRATION

HOME LANGUAGE (HL):
LEARNING OUTCOME (LO) 2:
SPEAKING
The learner will be able to communicate confidently and effectively in spoken language in a wide range of situations

AS 9: Participates confidently and fluently in a group

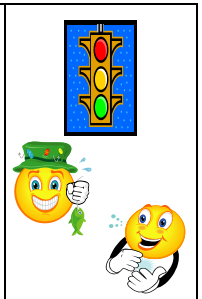
MATHEMATICS (M):
LEARNING OUTCOME (LO) 2:
PATTERNS, FUNCTIONS AND ALGEBRA

The learner will be able to recognise, describe and represent patterns and relationships as well as to solve problems using algebraic language and skills.

AS 1: Copies and extends simple patterns using physical objects (shapes)
AS 2: Creates own patterns</td></tr>
</table>

<table>
<tr><th>Phases according to dynamic assessment</th><th colspan="2">ACTIVITIES</th><th>Symbols representing mediation principles</th></tr>
<tr><td colspan="2">RESOURCES
Chalk
Long piece of string for each learner
Material bag
Wooden shapes of different colours and sizes (cf. Appendix 5 Session 5)
Big shapes (cf. Appendix 5 Session 5)
Activity sheet (cf. Appendix 5 Session 5)
Transfer Problem 5 (cf. Appendix 5 Session 5)</td><td colspan="2">AIM
Developing convergent reasoning ability (classification) with the aid of figural material.
Learners are expected to consider differences and similarities.
Categorisation and seriating.
Vocabulary such as curved line, straight line, side and corner, circle, square, triangle, rectangle, diamond, star, heart.
Revising colours “ red, blue, green, yellow, brown, black, orange”.
Learner should be able to recognize and identify different shapes.</td></tr>
<tr><td colspan="4">COGNITIVE MAP</td></tr>
<tr><td colspan="2">1. Content
Recognising and identifying shapes “circle, square, triangle, rectangle, diamond</td><td colspan="2">2. Modality
Figural
Pictorial
Verbal</td></tr>
<tr><td colspan="4">3 Phases of mental act</td></tr>
<tr><td>3.1 Input
Clear perception
Precise and accurate labelling
Spatial orientation</td><td>3.2 Elaboration
Categorising
Comparing
Looking for relationships
Problem-solving</td><td colspan="2">3.3 Output
Using clear and precise language
Restraining impulsive behaviour
Precision and accuracy</td></tr>
<tr><td>4 Cognitive operations
Categorisation
Comparison and hypothetical thinking
Classification
Planned, systematic behaviour
Problem-solving and critical reflection</td><td>5 Level of abstraction
Low to medium</td><td colspan="2">6 Level of efficiency
Medium to high</td></tr>
</table>

Labelling Phase	**1. Focused Attention** • Take learners outside, draw big shapes with chalk. • Learners walk / jump with one foot / both feet while repeating the name of the shape. • Learners experience and identify how many sides and corners, a square, triangle and rectangle have and that a circle has curved lines. • Mediator calls out a shape and the learners jump in the shape. • Request learners to stand **in** the shape, **next to** the shape, to the **left**/ to the **right** of the shape, at the **bottom** / **top** of the shape. • Learners form a circle, square, triangle and rectangle with a piece of string.	
	2. Meaning • Take learners back to the class. Show learners big 3D shapes. • Ask learners what do they see? Different shapes? • Ask learners if they can name some of the shapes. • How do you know this is a circle, square, triangle, diamond and rectangle? • Let learners measure how many footsteps are contained in the side of the square, diamond, triangle and rectangle. • How many steps can you take around the circle? • Learners work in pairs. One learner holds a bag with a specific shape in it, the other learner should guess what it is by naming the characteristics of the shape. • Discuss shapes with the learners, e.g. a triangle. Let learners trace the outline of the triangle with their finger. Talk about the straight line, corners, curved or rounded. • Asks learners if the shape will be able to roll or slide. Why do you say that? • Let learners identify the shape regardless of angle, position or size. • Learners discuss similarities and differences between shapes – corners, sides, curved line. • Learner should realise that the identity of the shape does not change when placed in different positions (conservation of object).	  
	3. elf-reflection • Think of your favourite shape. • Draw your shape in the air with your finger, while keeping your eyes closed. • Close your eyes and in your mind create a picture with your favourite shape. • Is your shape a specific colour? • Open your eyes and pick up the shape (and colour) you saw in your mind.	

Example and Independent Phase	**4. Challenge and Competence** • Where else can you find a shape like this one? • Can you still remember what a group is? In a group we put items together that are the same. • Put your shapes in groups. How did you sort your group? According to colour, shape, size? • Learners classify, categorise, seriate different shapes. • Can you still remember what a pattern is? A pattern repeats the same objects. • Let learners build patterns, e.g. △ ○ ○ △ ___ ___ ___ ; ◇ ⬭ ▭ ▬ • Learners complete activity sheet (*cf*. Appendix 5 Session 5)	
Transfer Phase	**5. Bridging and Transfer** • Ask learners to think which shapes they would use if they had to build a house. • Find pictures of all the shapes you know and bring them to school tomorrow. • Transfer Problem 5 (*cf*. Appendix 5 Session 5) • Remember to tell your parents and friends about what we have learned today. • Throughout the day try to identify different shapes, colours, in nature, at school, in the shop.	

Evaluation of Session 5: Experimental Group A

Evaluation of the *CEPP i*ntervention – Experimental Group A				
Session 5: Shapes			**Date: 4 June 2009**	
	Criteria	**Yes**	**No**	**Comment**
1.	**Were the identified needs addressed?**	**X**		
1.1	Unsystematic, unplanned behaviour – inability to look for cues, no step-by-step way of working	**X**		
1.2	Lack of precision and accuracy	**X**		
1.3	Inability to work with more than 2 sources of information at a time	**X**		
1.4	Does not work out a problem, does not look for evidence, does not compare situations before responding.	**X**		
1.5	Reflecting / communicating / explaining thought processes while working	**X**		
1.6	Verbal tools	**X**		
2.	**Was the programme implemented as designed and according to the principles of mediation?**	**X**		
3.	**Were the outcomes achieved?**	**X**		
3.1	Curriculum-related outcomes	**X**		
3.2	Cognitive outcomes (deficient or emerging)	**X**		
3.2.1	Unsystematic, unplanned behaviour – inability to look for cues, no step-by-step way of working	**X**		
3.2.2	Lack of precision and accuracy	**X**		
3.2.3	Inability to work with more than 2 sources of information at a time	**X**		
3.2.4	Does not work out a problem, does not look for evidence, does not compare situations before responding.	**X**		
3.2.5	Reflecting / communicating / explaining thought processes while working	**X**		
3.2.6	Verbal tools	**X**		
4.	**Adaptations needed** More time should be given (maybe a session on its own) for participants to play with and manipulate shapes freely, as well as to build block constructions.			

Evaluation of Session 5: Experimental Group B

Evaluation of the *CEPP i*ntervention – Experimental Group B				
Session 5: Shapes			**Date: 1 September 2009**	
	Criteria	**Yes**	**No**	**Comment**
1.	**Were the identified needs addressed?**	**X**		
1.1	Unsystematic, unplanned behaviour – inability to look for cues, no step-by-step way of working	**X**		
1.2	Lack of precision and accuracy	**X**		
1.3	Inability to work with more than 2 sources of information at a time	**X**		
1.4	Does not work out a problem, does not look for evidence, and does not compare situations before responding.	**X**		
1.5	Reflecting / communicating / explaining thought processes while working	**X**		
1.6	Verbal tools	**X**		
2.	**Was the programme implemented as designed and according to the principles of mediation?**	**X**		
3.	**Were the outcomes achieved?**	**X**		
3.1	Curriculum-related outcomes	**X**		
3.2	Cognitive outcomes (deficient or emerging)	**X**		
3.2.1	Unsystematic, unplanned behaviour – inability to look for cues, no step-by-step way of working	**X**		
3.2.2	Lack of precision and accuracy	**X**		
3.2.3	Inability to work with more than 2 sources of information at a time	**X**		
3.2.4	Does not work out a problem, does not look for evidence, and does not compare situations before responding.	**X**		
3.2.5	Reflecting / communicating / explaining thought processes while working	**X**		
3.2.6	Verbal tools	**X**		
4.	**Adaptations needed** More time should be given (maybe a session on its own) for participants to play with and manipulate shapes freely, as well as to build block constructions			

1.6 SESSION 6: HIGHER ORDER CONCEPT: SHAPE AND SIZE

<table>
<tr><td colspan="2">Session 6
Higher order concept: SHAPE AND SIZE
Lower order concept: square, triangle, rectangle, circle, big, small, tall, short, thick, thin</td></tr>
<tr><td colspan="2">CRITICAL OUTCOMES:
✓ Identify and solve problems and make decisions using critical and creative thinking.
✓ Organize and manage themselves and their activities responsibly and effectively.
✓ Collect, analyse, organise and critically evaluate information.
✓ Communicate effectively using visual, symbolic and / or language skills in various modes.
✓ Demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation.
✓ Reflect on and explore a variety of strategies to learn more effectively.</td></tr>
<tr><td colspan="2">LEARNING OUTCOME 5: THINKING AND REASONING
The learner will be able to use language to think and reason as well as to access, process and use information for learning</td></tr>
<tr><td>LEARNING AREA: HOME LANGUAGE

LEARNING OUTCOME 5:
THINKING AND REASONING

The learner will be able to use language to think and reason as well as to access, process and use information for learning.

AS 1: Uses language to develop concepts: Demonstrates developing knowledge of concepts such as size.

AS 2: Uses language to think and reason: Matches items that go together and compares items that are different.

AS 4: Processes information: (the ability to process multiple sources of complex information – a prerequisite for higher order cognitive tasks).
• picks out selected information from a description.</td><td>INTEGRATION

MATHEMATICS (M)
LEARNING OUTCOME 3
SPACE AND SHAPE

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.

AS 2: Describes sorts and compares physical three-dimensional objects according to size, shape, and colour.
AS 3: Builds three-dimensional objects using concrete materials.

MATHEMATICS (M)
LEARNING OUTCOME 5
DATA HANDLING

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.

AS 2: Sort physical objects according to one attribute, e.g. small / big /thick / thin / circles, triangles, squares, rectangles.</td></tr>
</table>

RESOURCES	AIM
• Plastic shapes in different sizes and thickness (*cf*. Appendix 5 Session 6) • Coloured rope in different lengths (*cf*. Appendix 5 Session 6) • Prestik • Crayons • Activity sheet (*cf*. Appendix 5 Session 6) • Transfer problem 6 (*cf*. Appendix 5 Session 6)	• Comprehension of relational terms • Looking for relationships • Categorising and comparing

INFORMATION PROCESSING

Multiple ideas: Can the learner process one or more idea at the same time? E.g. I saw an orange and green butterfly on the flower.
Complex ideas: Does the learner understand higher order concepts? E.g. I sorted the shapes into groups according to their size / colour.
Linking between ideas: Can the learner links concepts between ideas? E.g. These blocks have different colours, but they also differ in shape.

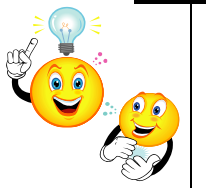
COGNITIVE MAP

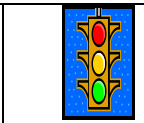
1. Content	2. Modality
• Look for relationships in objects • Categorise and compare objects according to size • Vocabulary: big, small, tall, short, thick, thin	• Figural • Pictorial • Verbal

3. Phases of mental act

3.1 Input	3.2 Elaboration	3.3 Output
• Gathering information • Clear perception • Labelling • Spatial orientation	• Categorising • Comparing • Looking for relationships • Problem-solving	• Using clear and precise language • Restraining impulsive behaviour • Precision and accuracy

4. Cognitive operations	5. Level of abstraction	6. Level of efficiency
• Categorisation • Comparison • Classification • Critical reflection	• Low to medium	• Medium to high

Phases according to dynamic assessment	ACTIVITIES	Symbols representing mediation principles
Labelling Phase	**1. Focused Attention** • Put objects of the same shape and colour but different sizes in front of the learners. • Ask them what they see? • Ask learners the name and colour of the shapes. • Ask learners if they can identify the difference in the shapes in front of them – they differ in size. • Ask them how they know that the shapes differ in size – by comparing them one can see one shape is bigger or smaller or thicker or thinner than the other.	 
	2. Meaning • Ask learners to find a block the same size as the one I have. • Ask them how they know that the block is the same size – by comparing or measuring it. • Ask learners to find a bigger / smaller block than the one they have. • Let learners sort blocks according to size. • Ask them how they will sort the blocks (small to big or big to small – by comparing the blocks with each other). • Learners arrange pieces of rope from the shortest to the longest (tallest). • Ask learners which ones are neither the shortest nor the longest. • What do we call them? Medium size.	 
	3. Self-reflection • Close your eyes and in your mind make a picture of small (short) and big (tall) and medium size objects. • Keeping their eyes closed they must with their finger draw the picture they see in their mind on the table.	
	4. Sharing • Tell us why you chose the specific objects. • Tell us about the picture you have created in your mind.	

Example and Independent Phase	**5. Challenge and Competence** • Learners find a shape (e.g. triangle) of their choice in different sizes. • Learners build 3D constructions with the blocks by making use of instruction sheet (*cf*. Appendix 5 Session 6) • Learners build their own 3D construction with the shapes and Prestik. • Let learners tell each other how they decided to build their construction.	 
Transfer Phase	**6. Bridging and Transfer** • How can we determine the size of objects? Compare and measure them – encourage learners to give more examples. • Ask learners to name objects that remind them of small triangles, big triangles, small or big circles, rectangles or squares. • Transfer Problem 6 (*cf*. Appendix 5 Session 6). • Tell your parents and friends about what you have learned today. Try to as much as possible use all the vocabulary we used today.	  

Evaluation of Session 6: Experimental Group A

Evaluation of the *CEPP i*ntervention – Experimental Group A				
Session 6: Shape and size			**Date: 8 June 2009**	
	Criteria	**Yes**	**No**	**Comment**
1.	**Were the identified needs addressed?**	**X**		
1.1	Unsystematic, unplanned behaviour – inability to look for cues, no step-by-step way of working	**X**		
1.2	Lack of precision and accuracy	**X**		
1.3	Inability to work with more than 2 sources of information at a time	**X**		
1.4	Does not work out a problem, does not look for evidence, and does not compare situations before responding.	**X**		
1.5	Reflecting / communicating / explaining thought processes while working	**X**		
1.6	Verbal tools	**X**		
2.	**Was the programme implemented as designed and according to the principles of mediation?**	**X**		
3.	**Were the outcomes achieved?**	**X**		
3.1	Curriculum-related outcomes	**X**		
3.2	Cognitive outcomes (deficient or emerging)	**X**		
3.2.1	Unsystematic, unplanned behaviour – inability to look for cues, no step-by-step way of working	**X**		
3.2.2	Lack of precision and accuracy	**X**		
3.2.3	Inability to work with more than 2 sources of information at a time	**X**		
3.2.4	Does not work out a problem, does not look for evidence, and does not compare situations before responding.	**X**		
3.2.5	Reflecting / communicating / explaining thought processes while working	**X**		
3.2.6	Verbal tools	**X**		
4.	**Adaptations needed:** Plastic sticks didn't work so well. Should rather use wooden sticks. Rather use only the wooden blocks instead of the plastic ones.			

Evaluation of Session 6: Experimental Group B

Evaluation of the *CEPP i*ntervention – Experimental Group B				
Session 6: Shape and size			**Date: 2 September 2009**	
	Criteria	**Yes**	**No**	**Comment**
1.	**Were the identified needs addressed?**	**X**		
1.1	Unsystematic, unplanned behaviour – inability to look for cues, no step-by-step way of working	**X**		
1.2	Lack of precision and accuracy	**X**		
1.3	Inability to work with more than 2 sources of information at a time	**X**		
1.4	Does not work out a problem, does not look for evidence, and does not compare situations before responding.	**X**		
1.5	Reflecting / communicating / explaining thought processes while working	**X**		
1.6	Verbal tools	**X**		
2.	**Was the programme implemented as designed and according to the principles of mediation?**	**X**		
3.	**Were the outcomes achieved?**	**X**		
3.1	Curriculum-related outcomes	**X**		
3.2	Cognitive outcomes (deficient or emerging)	**X**		
3.2.1	Unsystematic, unplanned behaviour – inability to look for cues, no step-by-step way of working	**X**		
3.2.2	Lack of precision and accuracy	**X**		
3.2.3	Inability to work with more than 2 sources of information at a time	**X**		
3.2.4	Does not work out a problem, does not look for evidence, does not compare situations before responding.	**X**		
3.2.5	Reflecting / communicating / explaining thought processes while working	**X**		
3.2.6	Verbal tools	**X**		
4.	**Adaptations needed:** Plastic sticks didn't work so well. Should rather use wooden sticks. Rather use only the wooden blocks instead of the plastic ones.			

1.7 SESSION 7: HIGHER ORDER CONCEPT: SHAPES: PART AND WHOLE

Session 7
Higher order concept: SHAPES: PART AND WHOLE
Lower order concept: circle, square, triangle, rectangle

CRITICAL OUTCOMES:

- ✓ Identify and solve problems and make decisions using critical and creative thinking.
- ✓ Organise and manage themselves and their activities responsibly and effectively.
- ✓ Collect, analyse, organise and critically evaluate information.
- ✓ Communicate effectively using visual, symbolic and / or language skills in various modes.
- ✓ Demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation.
- ✓ Reflect on and explore a variety of strategies to learn more effectively.

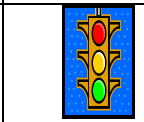
LEARNING OUTCOME 5: THINKING AND REASONING

The learner will be able to use language to think and reason as well as to access, process and use information for learning

LEARNING AREA: HOME LANGUAGE	INTEGRATION
LEARNING OUTCOME 5: **THINKING AND REASONING** ***The learner will be able to use language to think and reason as well as to access, process and use information for learning*** **AS 2: Uses language to think and reason:** • Matches items that go together and compares items that are different. • Identifies parts from the whole **AS 3: Uses language to investigate and explore:** • solves and completes puzzles **AS 4: Processes information** (the ability to process multiple sources of complex information – a prerequisite for higher order cognitive tasks). • picks out selected information from a description	**MATHEMATICS (M)** **LEARNING OUTCOME (LO) 3:** **SPACE AND SHAPE** ***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*** **AS 3:** Builds two-dimensional objects using concrete materials

<table>
<tr><td>RESOURCES
Wooden block with shapes (cf. Appendix 5 Session 7)
Activity sheets (cf. Appendix 5 Session 7)
Transfer Problem 7 (cf. Appendix 5 Session 7)</td><td>AIM
Comprehension of relational terms
Looking for relationships
Categorising and comparing
Developing convergent reasoning ability (classification) with the aid of figural material.
Learners are expected to consider differences and similarities.</td></tr>
<tr><td colspan="2">INFORMATION PROCESSING
Multiple ideas: Can the learner process one or more idea at the same time? E.g. I saw an orange and green butterfly on the flower.
Complex ideas: Does the learner understand higher order concepts? E.g. I sorted the shapes into groups according to their size / colour.
Linking between ideas: Can the learner links concepts between ideas? E.g. These blocks have different colours, but they also differ in shape.</td></tr>
<tr><td colspan="2">COGNITIVE MAP</td></tr>
<tr><td>1. Content
Look for relationships in objects
Categorise and compare objects according to size
Vocabulary: big, small, tall, short</td><td>2. Modality
Figural
Pictorial
Verbal</td></tr>
<tr><td colspan="2">3. Phases of mental act</td></tr>
<tr><td>3.1 Input
Gathering information
Clear perception
Labelling
Spatial orientation</td><td>3.2 Elaboration
Categorising
Comparing
Looking for relationships
Problem-solving</td><td>3.3 Output
Using clear and precise language
Restraining impulsive behaviour
Precision and accuracy</td></tr>
<tr><td>4. Cognitive operations
Categorisation
Comparison and hypothetical thinking
Classification
Planned, systematic behaviour
Problem-solving and critical reflection</td><td>5. Level of abstraction
Low to medium</td><td>6. Level of efficiency
Medium to high</td></tr>
</table>

Phases according to dynamic assessment	ACTIVITIES	Symbols representing mediation principles
Labelling Phase	**1. Focused Attention** • Can you remember all the shapes we have learned about? • Yes, that is right, we have learned all about "*Circle, square, rectangle, triangle".* • Can you still remember how many sides a square / rectangle / triangle / circle has? • Oh yes, I forgot, a circle does not have any sides! • Can you tell me if a circle will be able to slide or roll? • Why do you say a circle can roll? • And a triangle / square / rectangle?	 
	2. Meaning • Each learner receives a wooden block containing holes, together with loose wooden shapes. (*cf*. Appendix 5 Session 7) • Ask learners if they can guess which shape belongs in which hole. • Yes, that is right. The circle, triangle, rectangle and square each has its own hole in the block. • How do you know that each of the shapes has its own place in the block? • Yes, because the circle does not have straight lines and corners, the triangle has three corners and three straight sides, the rectangle has four corners and two straight sides of the same length and two straight sides of the same length and the square has four corners and four straight sides.	  
	3. Self-reflection • Close your eyes and imagine you are fitting the circle / square / triangle / rectangle into its place in the shape block.	
	4. Sharing • Tell the group how you know which shape to put into which hole.	

Example and Independent Phase	**5. Challenge and Competence** • Put parts of the circle, square, triangle and rectangle in front of the learners. • Learners should fit the parts of the shapes (cut into 2 pieces) into the shape block. (*cf*. Appendix 5 Session 7) • Learners should now fit parts of the shapes (cut into 3 pieces) into the shape block. • Ask them if they think these two / three pieces can make a shape? • Yes, you are right. These two / three pieces can make a shape if we put them together. • How do you know which shape can be made with these two / three pieces? • Yes, you are right. The circle has a curved line and no corners. • Learners explain how they figured out how to build the shapes. • Repeat with the square, rectangle and triangle.	 
Transfer Phase	**6. Bridging and Transfer** • Learners build 2D pictures with real objects (*cf*. Appendix 5 Session 7). • Learners complete Transfer Problem 7(*cf*. Appendix 5 Session 7). • Learners explain what they have been doing and how they knew how to build the pictures. • Tell your parents and friends about what you have learned today. Use all the vocabulary we used today.	 

Evaluation Session 7: Experimental Group A

Evaluation of the *CEPP i*ntervention – Experimental Group A				
Session 7: Shapes: parts and whole			**Date: 9 Junie 2009**	
	Criteria	**Yes**	**No**	**Comment**
1.	**Were the identified needs addressed?**	**X**		
1.1	Unsystematic, unplanned behaviour – inability to look for cues, no step-by-step way of working	**X**		
1.2	Lack of precision and accuracy	**X**		
1.3	Inability to work with more than 2 sources of information at a time	**X**		
1.4	Does not work out a problem, does not look for evidence, and does not compare situations before responding.	**X**		
1.5	Reflecting / communicating / explaining thought processes while working	**X**		
1.6	Verbal tools	**X**		
2.	**Was the programme implemented as designed and according to the principles of mediation?**	**X**		
3.	**Were the outcomes achieved?**	**X**		
3.1	Curriculum-related outcomes	**X**		
3.2	Cognitive outcomes (deficient or emerging)	**X**		
3.2.1	Unsystematic, unplanned behaviour – inability to look for cues, no step-by-step way of working	**X**		
3.2.2	Lack of precision and accuracy	**X**		
3.2.3	Inability to work with more than 2 sources of information at a time	**X**		
3.2.4	Does not work out a problem, does not look for evidence, and does not compare situations before responding.	**X**		
3.2.5	Reflecting / communicating / explaining thought processes while working	**X**		
3.2.6	Verbal tools	**X**		
4.	**Adaptations needed** More attention should be given to participants' verbal tools.			

Evaluation Session 7: Experimental Group A

Evaluation of the *CEPP i*ntervention – Experimental Group B				
Session 7: Shapes: parts and whole			**Date: 3 September 2009**	
	Criteria	**Yes**	**No**	**Comment**
1.	**Were the identified needs addressed?**	**X**		
1.1	Unsystematic, unplanned behaviour – inability to look for cues, no step-by-step way of working	**X**		
1.2	Lack of precision and accuracy	**X**		
1.3	Inability to work with more than 2 sources of information at a time	**X**		
1.4	Does not work out a problem, does not look for evidence, and does not compare situations before responding.	**X**		
1.5	Reflecting / communicating / explaining thought processes while working	**X**		
1.6	Verbal tools	**X**		
2.	**Was the programme implemented as designed and according to the principles of mediation?**	**X**		
3.	**Were the outcomes achieved?**	**X**		
3.1	Curriculum-related outcomes	**X**		
3.2	Cognitive outcomes (deficient or emerging)	**X**		
3.2.1	Unsystematic, unplanned behaviour – inability to look for cues, no step-by-step way of working	**X**		
3.2.2	Lack of precision and accuracy	**X**		
3.2.3	Inability to work with more than 2 sources of information at a time	**X**		
3.2.4	Does not work out a problem, does not look for evidence, and does not compare situations before responding.	**X**		
3.2.5	Reflecting / communicating / explaining thought processes while working	**X**		
3.2.6	Verbal tools	**X**		
4.	**Adaptations needed** More attention should be given to participants' verbal tools.			

1.8 SESSION 8: HIGHER ORDER CONCEPT: NUMBER QUANTITY

Session 8
Higher order concept: NUMBER QUANTITY
Lower order concept: counting 1-10**,** more or less, one to one correspondence

CRITICAL OUTCOMES:

- ✓ Identify and solve problems and make decisions using critical and creative thinking.
- ✓ Organise and manage themselves and their activities responsibly and effectively.
- ✓ Collect, analyse, organise and critically evaluate information.
- ✓ Communicate effectively using visual, symbolic and / or language skills in various modes.
- ✓ Demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation.
- ✓ Reflect on and explore a variety of strategies to learn more effectively.

LEARNING OUTCOME 5: THINKING AND REASONING
The learner will be able to use language to think and reason as well as to access, process and use information for learning.

LEARNING AREA: HOME LANGUAGE **LEARNING OUTCOME 5:** **THINKING AND REASONING** ***The learner will be able to use language to think and reason as well as to access, process and use information for learning.***	**INTEGRATION** **MATHEMATICS (M)** **LEARNING OUTCOME (LO) 1:** **NUMBERS, OPERATIONS AND RELATIONSHIPS**
AS 1: Uses language to develop concepts: • Demonstrates developing knowledge of concepts such as quantity **AS 4: Processes information** (the ability to process multiple sources of complex information – a pre-requisite for higher order cognitive tasks). • chooses selected information from a description	***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.*** **AS 1: Counts up to at least 10 everyday objects** • Orders and compares collections of objects using more, less, equal • Pronounces and uses number names in familiar contexts **HOME LANGUAGE (HL)** **LEARNING OUTCOME 4** **WRITING** ***The learner will be able to write different kinds of factual and imaginative texts for a wide range or purposes*** **AS 1:** Manipulates writing tools like crayons and pencils

<table>
<tr><td>RESOURCES
Number cards (cf. Appendix 5 Session 8)
Counters in different colours (Unifix blocks) (cf. Appendix 5 Session 8).
Activity sheet (cf. Appendix 5 Session 8).
Transfer Problem 8 (cf. Appendix 5 Session 8)</td><td>AIM
Comprehension of relational terms
Spatial ordering
Mathematical reasoning
Count 1-10</td></tr>
<tr><td colspan="2">INFORMATION PROCESSING
Multiple ideas: Can the learner process one or more idea at the same time? E.g. I saw an orange and green butterfly on the flower.
Complex ideas: Does the learner understand higher order concepts? E.g. I sorted the shapes into groups according to their size / colour.
Linking between ideas: Can the learner links concepts between ideas? E.g. These blocks have different colours, but they also differ in shape.</td></tr>
<tr><td colspan="2">COGNITIVE MAP</td></tr>
<tr><td>1. Content
Look for relationships in objects
Categorise and compare objects according to size
Vocabulary: big, small, tall, short</td><td>2. Modality
Figural
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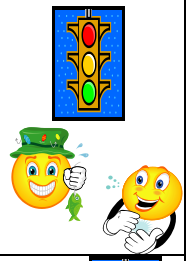
<tr><td>3.1 Input
Gathering information
Clear perception
Labelling
Spatial orientation</td><td>3.2 Elaboration
Categorising
Comparing
Looking for relationships
Problem-solving</td><td>3.3 Output
Using clear and precise language
Restraining impulsive behaviour
Precision and accuracy</td></tr>
<tr><td>4. Cognitive operations
Categorisation
Comparison and hypothetical thinking
Classification
Planned, systematic behaviour
Problem-solving and critical reflection</td><td>5. Level of abstraction
Low to medium</td><td>6. Level of efficiency
Medium to high</td></tr>
</table>

Phases according to dynamic assessment	ACTIVITIES	Symbols representing mediation principles
Labelling Phase	**1. Focused Attention** • Give learners number cards. • Discuss what they see on the cards. Yes, there are pictures, dots and numbers. • Ask learners to match the number of pictures on the cards and the same number of dots on the cards with the correct number name, e.g. (*cf*. Appendix 5 Session 8).  1	
	2. Meaning • Put counters in various colours in front of the learners (*cf.* Appendix 5 Session 8). • Let them categorise the counters according to colour. • Ask learners what they see? Different groups of counters? • Ask learners to put all the counters back in the bag, except for the blue and red counters. • Ask learners if the two groups have the same number of counters. No? There are more red counters than blue ones. The blue counters are less than the red counters. Let them work with the red and blue counters first. • How do you know there are more red counters than blue ones? We can compare both groups to determine which group has more / less. • Let learners count the groups by touching each counter as they count (one-on-one correspondence). • Learners are requested to explain how many more or less counters in each group. • Ask them how many more or less red counters than blue counters there are. • Learners can now work with two other coloured groups of counters; let them explain in pairs what they are doing.	  
	3. Self-reflection • Close your eyes and imagine two groups of counters. • One group has more counters than the other group. • Imagine that the group with more counters has a specific colour, and the group with fewer counters has a specific colour.	
	4. Sharing • Tell the group about the two groups you created in your mind. How many counters were in your groups and what were the colours of your groups?	

Example and Independent Phase	**5. Challenge and Competence** • Learners work in pairs. • Learners pose problems regarding more / less to one another, e.g. Learner A prepares two groups of counters while Learner B keeps his eyes closed. • Learner A asks Learner B to open his eyes and to tell him which group has more / less counters. Focus on one-on-one correspondence. • Learner B should then answer that the green group has 3 counters more / less than the yellow group.	
Transfer Phase	**6. Bridging and Transfer** • Learners complete an activity sheet where they are instructed to do one-on-one correspondence (*cf.* Appendix 5 Session 8), as well as an activity sheet where they are requested to draw a cross over the picture with more, less, or equal objects (*cf.* Appendix 2.8.4). • Tell your parents and friends about what you have learned today. Try to as much as possible use all the vocabulary we used today. • Transfer Problem 8 (*cf.* Appendix 5 Session 8).	

Evaluation Session 8: Experimental Group A

Evaluation of the *CEPP i*ntervention – Experimental Group A				
Session 8: Number quantity			**Date: 10 June 2009**	
	Criteria	**Yes**	**No**	**Comment**
1.	**Were the identified needs addressed?**	**X**		
1.1	Unsystematic, unplanned behaviour – inability to look for cues, no step-by-step way of working	**X**		
1.2	Lack of precision and accuracy	**X**		
1.3	Inability to work with more than 2 sources of information at a time	**X**		
1.4	Does not work out a problem, does not look for evidence, and does not compare situations before responding.	**X**		
1.5	Reflecting / communicating / explaining thought processes while working	**X**		
1.6	Verbal tools	**X**		
2.	**Was the programme implemented as designed and according to the principles of mediation?**	**X**		
3.	**Were the outcomes achieved?**	**X**		
3.1	Curriculum-related outcomes	**X**		
3.2	Cognitive outcomes (deficient or emerging)	**X**		
3.2.1	Unsystematic, unplanned behaviour – inability to look for cues, no step-by-step way of working	**X**		
3.2.2	Lack of precision and accuracy	**X**		
3.2.3	Inability to work with more than 2 sources of information at a time	**X**		
3.2.4	Does not work out a problem, does not look for evidence, and does not compare situations before responding.	**X**		
3.2.5	Reflecting / communicating / explaining thought processes while working	**X**		
3.2.6	Verbal tools	**X**		
4.	**Adaptations needed:** Participants enjoyed this session, except for Participant  who could not complete the activities at all due to his poor cognitive functioning and blocking behaviour.			

Evaluation Session 8: Experimental Group B

Evaluation of the *CEPP i*ntervention – Experimental Group A				
Session 8: Number quantity			**Date: 8 September 2009**	
	Criteria	**Yes**	**No**	**Comment**
1.	**Were the identified needs addressed?**	**X**		
1.1	Unsystematic, unplanned behaviour – inability to look for cues, no step-by-step way of working	**X**		
1.2	Lack of precision and accuracy	**X**		
1.3	Inability to work with more than 2 sources of information at a time	**X**		
1.4	Does not work out a problem, does not look for evidence, and does not compare situations before responding.	**X**		
1.5	Reflecting / communicating / explaining thought processes while working	**X**		
1.6	Verbal tools	**X**		
2.	**Was the programme implemented as designed and according to the principles of mediation?**	**X**		
3.	**Were the outcomes achieved?**	**X**		
3.1	Curriculum-related outcomes	**X**		
3.2	Cognitive outcomes (deficient or emerging)	**X**		
3.2.1	Unsystematic, unplanned behaviour – inability to look for cues, no step-by-step way of working	**X**		
3.2.2	Lack of precision and accuracy	**X**		
3.2.3	Inability to work with more than 2 sources of information at a time	**X**		
3.2.4	Does not work out a problem, does not look for evidence, and does not compare situations before responding.	**X**		
3.2.5	Reflecting / communicating / explaining thought processes while working	**X**		
3.2.6	Verbal tools	**X**		
4.	**Adaptations needed** Participants enjoyed this session.			

1.9 SESSION 9: HIGHER ORDER CONCEPT: NUMBER - ADDITION

Session 9
Higher order concept: NUMBER - ADDITION
Lower order concept: add, plus, addition, put together

CRITICAL OUTCOMES:

- ✓ Identify and solve problems and make decisions using critical and creative thinking.
- ✓ Organise and manage themselves and their activities responsibly and effectively.
- ✓ Collect, analyse, organise and critically evaluate information.
- ✓ Communicate effectively using visual, symbolic and / or language skills in various modes.
- ✓ Demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation.
- ✓ Reflect on and explore a variety of strategies to learn more effectively.

LEARNING OUTCOME 5: THINKING AND REASONING
The learner will be able to use language to think and reason as well as to access, process and use information for learning

LEARNING AREA: HOME LANGUAGE	**INTEGRATION**
LEARNING OUTCOME 5: **THINKING AND REASONING** ***The learner will be able to use language to think and reason as well as to access, process and use information for learning*** **AS 1: Uses language to develop concepts:** • Demonstrates developing knowledge of concepts such as quantity and addition or plus **AS 4: Processes information** (the ability to process multiple sources of complex information – a prerequisite for higher order cognitive tasks). • chooses selected information from a description	**MATHEMATICS (M)** **LEARNING OUTCOME (LO) 1:** **NUMBERS, OPERATIONS AND RELATIONSHIPS** ***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*** **AS 6:** • solves verbally-stated additions problems with single-digit numbers and with solutions up to at least 5 (10) **AS 7**: Uses the following techniques: • building up and breaking down numbers up to at least 5 (10) • using concrete apparatus **AS 8:** • Explains own solutions to problems **HOME LANGUAGE (HL)** **LEARNING OUTCOME 4** **WRITING** ***The learner will be able to write different kinds of factual and imaginative texts for a wide range of purposes*** **AS 1** Manipulates writing tools like crayons and pencils

Phases according to dynamic assessment	ACTIVITIES	Symbols representing mediation principles
• Activity sheet (*cf*. Appendix 2.9.4) • Transfer Problem 9 (*cf*. Appendix 2.9.5)	• Count 1-10 • Building up and breaking down of numbers • Simple addition operations	

INFORMATION PROCESSING

Multiple ideas: Can the learner process one or more idea at the same time? E.g. I saw an orange and green butterfly on the flower.
Complex ideas: Does the learner understand higher order concepts? E.g. I sorted the shapes into groups according to their size / colour.
Linking between ideas: Can the learner links concepts between ideas? E.g. These blocks have different colours, but they also differ in shape.

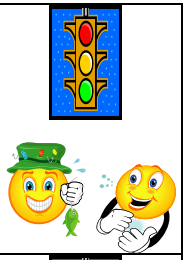
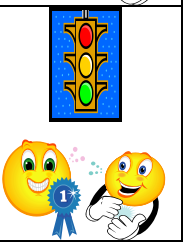
COGNITIVE MAP

1. Content	2. Modality
• Looking for relationships in objects • Categorise and compare objects according to size • Vocabulary: big, small, tall, short	• Figural • Pictorial • Verbal

3. Phases of mental act

3.1 Input	3.2 Elaboration	3.3 Output
• Gathering information • Clear perception • Labelling • Spatial orientation	• Categorising • Comparing • Looking for relationships • Problem-solving	• Using clear and precise language • Restraining impulsive behaviour • Precision and accuracy
4 Cognitive operations	**5 Level of abstraction**	**6 Level of efficiency**
• Categorisation • Comparison and hypothetical thinking • Classification • Planned, systematic behaviour • Problem-solving and critical reflection	• Low to medium	• Medium to high

Labelling Phase	**1. Focused Attention** • Put counters of various colours in front of the learners. • Let them work with the red and blue counters first. • Can you still remember how to determine if a group has more or less counters? • Yes, you can compare the number of counters in each group by counting them. • Give each learner 3 red counters and 5 blue counters. • Ask learners if all the groups have the same number of counters. No? There are more blue counters than red ones. • How do you know one group has more counters than the other group? • Let learners make groups with their counters and show you which group has more counters and why they say the group has more counters than the other group.	 
	7 Meaning • Put out one group of counters (*cf*. Appendix 5 Session 9). Let learners count with you how many counters in the group (e.g. 2 green counters). • Give each learner one red counter. • Ask them what happens now? I add one counter (show learners the + sign) (*cf*. Appendix 5 Session 9). • How many counters do you have now? 3 counters. • Can you remember what I did when I gave you the red counter? • Yes, I added one counter to your group of 2. • Do you know the symbol we use for add / addition / plus? • Show learners the + sign. • Let learners play with a friend by adding up to 5 (depending on the group, but not more than 10). • Learners can also make use of the number cards used in Session 8 to create operations (*cf*. Appendix 5 Session 9).	  
	8 Self-reflection • Close your eyes and imagine you are in “Candy Land”. • All the trees are filled with candy. • A very friendly lady gives you a basket with 2 Smarties in it (Repeat the story with different numbers 1, 2, 3, - the answer should not be more than 5 depending on the group). • Just as you pass the Smartie Tree, Mr Smartie Tree drops one Smartie in your basket. • How many Smarties do you have now? • Still with your eyes closed, put out the number of Smarties you have now (3) by using your counters.	 
	9 Sharing • Tell the group how you know your answer is correct. • Tell the group what your “Candy Land” looks like.	

Example and Independent Phase	**10 Challenge and Competence** • Use the example in 3 and ask learners if they can create a sum. • Counters: ♥♥ + ♥ = ♥♥♥ and 2 + 1 = 3	
Transfer Phase	**11 Bridging and Transfer** • Learners complete Activity sheet (*cf*. Appendix 5 Session 9) • Tell your parents and friends about what you have learned today. Try to as much as possible **use** all the vocabulary we used today. • Transfer Problem 9 (*cf*. Appendix 5 Session 9).	

Evaluation Session 9: Experimental Group A

Evaluation of the *CEPP i*ntervention – Experimental Group A				
Session 9: Number quantity: Addition			**Date: 12 June 2009**	
	Criteria	**Yes**	**No**	**Comment**
1.	**Were the identified needs addressed?**	**X**		
1.1	Unsystematic, unplanned behaviour – inability to look for cues, no step-by-step way of working	**X**		
1.2	Lack of precision and accuracy	**X**		
1.3	Inability to work with more than 2 sources of information at a time	**X**		
1.4	Does not work out a problem, does not look for evidence, and does not compare situations before responding.	**X**		
1.5	Reflecting / communicating / explaining thought processes while working	**X**		
1.6	Verbal tools	**X**		
2.	**Was the programme implemented as designed and according to the principles of mediation?**	**X**		
3.	**Were the outcomes achieved?**	**X**		
3.1	Curriculum-related outcomes	**X**		
3.2	Cognitive outcomes (deficient or emerging)	**X**		
3.2.1	Unsystematic, unplanned behaviour – inability to look for cues, no step-by-step way of working	**X**		
3.2.2	Lack of precision and accuracy	**X**		
3.2.3	Inability to work with more than 2 sources of information at a time	**X**		
3.2.4	Does not work out a problem, does not look for evidence, and does not compare situations before responding.	**X**		
3.2.5	Reflecting / communicating / explaining thought processes while working	**X**		
3.2.6	Verbal tools	**X**		
4.	**Adaptations needed** Although I adapted the activities to suit the development level of Participant  , one should make provision for participants who might not be able to perform the activities at all as was the case with Participant  .			

Evaluation Session 9: Experimental Group B

Evaluation of the *CEPP i*ntervention – Experimental Group B				
Session 9: Number quantity: Addition			**Date: 9 September 2009**	
	Criteria	**Yes**	**No**	**Comment**
1.	**Were the identified needs addressed?**	**X**		
1.1	Unsystematic, unplanned behaviour – inability to look for cues, no step-by-step way of working	**X**		
1.2	Lack of precision and accuracy	**X**		
1.3	Inability to work with more than 2 sources of information at a time	**X**		
1.4	Does not work out a problem, does not look for evidence, and does not compare situations before responding.	**X**		
1.5	Reflecting / communicating / explaining thought processes while working	**X**		
1.6	Verbal tools	**X**		
2.	**Was the programme implemented as designed and according to the principles of mediation?**	**X**		
3.	**Were the outcomes achieved?**	**X**		
3.1	Curriculum-related outcomes	**X**		
3.2	Cognitive outcomes (deficient or emerging)	**X**		
3.2.1	Unsystematic, unplanned behaviour – inability to look for cues, no step-by-step way of working	**X**		
3.2.2	Lack of precision and accuracy	**X**		
3.2.3	Inability to work with more than 2 sources of information at a time	**X**		
3.2.4	Does not work out a problem, does not look for evidence, and does not compare situations before responding.	**X**		
3.2.5	Reflecting / communicating / explaining thought processes while working	**X**		
3.2.6	Verbal tools	**X**		
4.	**Adaptations needed** Participants form Experimental Group B enjoyed the number quantity activities, although Participant  needed more assistance than the other participants.			

1.10 SESSION 10: HIGHER ORDER CONCEPT: NUMBER - SUBTRACTION

Session 10
Higher order concept: NUMBER - SUBTRACTION
Lower order concept: take away, minus, subtraction

CRITICAL OUTCOMES:
*Identify and solve problems and make decisions using critical and creative thinking
*Organize and manage themselves and their activities responsibly and effectively
*Collect, analyze, organize and critically evaluate information
*Communicate effectively using visual, symbolic and/or language skills in various modes
*Demonstrate an understanding of the world as a set of related systems by recognizing that problem-solving contexts do not exist in isolation
*Reflect on and explore a variety of strategies to learn more effectively

LEARNING OUTCOME 5: THINKING AND REASONING
The learner will be able to use language to think and reason as well as to access, process and use information for learning

LEARNING AREA: HOME LANGUAGE **LEARNING OUTCOME 5:** **THINKING AND REASONING** **The learner will be able to use language to think and reason as well as to access, process and use information for learning**	**INTEGRATION** **MATHEMATICS (M)** **LEARNING OUTCOME (LO) 1:** **NUMBERS, OPERATIONS AND RELATIONSHIPS**
AS 1: Uses language to develop concepts: • Demonstrates developing knowledge of concepts such as quantity and minus / subtraction **AS 4: Processes information** (the ability to process multiple sources of complex information – a pre-requisite for higher order cognitive tasks). • picks out selected information from a description	**The learner will be able to recognize, describe and represent numbers and their relationships and to count, estimate, calculate and check with competence and confidence in solving problems** **AS 6:** • solves verbally-stated subtraction problems with single-digit numbers and with solutions to at least 5 (10) **AS 7**: Uses the following techniques: • building up and breaking down numbers to at least 5 (10) • using concrete apparatus **AS 8:** • Explains own solutions to problems **HOME LANGUAGE (HL)** **LEARNING OUTCOME 4** **WRITING** **AS 1** Manipulates writing tools like crayons and pencils

RESOURCES	AIM
• Counters. Unifix blocks (*cf*. Appendix 5 Session 10) • +, -, = sign (*cf*. Appendix 5 Session 10) • Number cards (*cf*. Appendix 5 Session 10) • Activity sheet (*cf*. Appendix 5 Session 10) • Transfer Problem 10 (*cf*. Appendix 5 Session 10)	• Comprehension of relational terms • Spatial ordering • Mathematical reasoning • Count 1-10 • Building up and breaking down of numbers • Simple subtraction operations

INFORMATION PROCESSING

Multiple ideas: Can the learner process one or more idea at the same time? E.g. I saw an orange and green butterfly on the flower.

Complex ideas: Does the learner understand higher order concepts. E.g. I sorted the shapes into groups according to their size / colour.

Linking between ideas: Can the learner links concepts between ideas? E.g. These blocks have different colours, but they also differ in shape.

COGNITIVE MAP

1. Content	1. Modality
• Looking for relationships in objects • Categorize and compare objects according to number • Building up and breaking down of numbers 1-10 • Vocabulary subtraction, minus, equals	• Figural • Pictorial • Verbal

7. Phases of mental act

3.7 Input 3.4 Input	3.4 Elaboration	3.5 Output
• Gather information • Clear perception • Labeling • Spatial orientation	• Categorizing • Comparing • Looking for relationships • Problem solving	• Using clear and precise language • Restraining impulsive behavior • Precision and accuracy
8. Cognitive operations • Categorization • Comparison and hypothetical thinking • Classification • Planned, systematic behaviour • Problem solving and critical reflection	**9. Level of abstraction** • Low to medium	**10. Level of efficiency** • Medium to high

Phases according to dynamic assessment	ACTIVITIES	Mediation symbols of criteria
Labeling Phase	**1. Focused Attention** • Can you still remember how to determine if a group has more or less counters? • Yes, you can compare the number of counters in each group by counting them. • Put out one group of counters. Let learners count with you the number in each group (3 green counters). • Take away one counter. • Ask them what happens now? I subtract one counter (show learners the - sign). • How much counters do you have now? 3 counters.	 
	2. Meaning • Put out one row of counters (*cf*. Appendix 5 Session 10). Let learners count with you how many counters in the row (e.g. 4 green counters). • Take away one or 2 counters. Asks learners what I just did. Yes, I took away 1 block. • How many counters do I have now? • Do you know another name for take away? Yes subtract or minus. • Do you know the symbol we use for take away / subtraction / minus? • Show learners the - sign. • Let learners work in pairs. Let them create subtraction operations by using their unifix blocks, e.g. Learner A instruct learner B to subtract 1/2/3 blocks from the row of unifix blocks. Learner A asks learner B how many blocks are left. • Do you think we can write it down? **♥♥(♥) - ♥ = ♥♥** • Learners can also make use of the number cards used in Session 8 to create operations (*cf*. Appendix 5 Session 10).	  
	3. Self-reflection • Close your eyes and imagine you are in a forest filled with grumpy old trees. • You are walking through the forest and as you pass one of the trees, he grabs one of your sweets (repeat the story with different numbers 3, 4, 5, 6, 7, 8 – the answer should not be more than 10). • How many Smarties do you have now? • Without peeping put out the amount of smarties (counters) you have now. • Open your eyes and tell us what you just did?	 
	4. Sharing • Tell the group how you know your answer is correct. • Tell the group what your “Forest with grumpy old trees” look like.	

Example and Independent Phase	**5. Challenge and Competence** • Ask learners what happens if I take away counters from their existing group. • Yes, there will be less counters. • Ask learners to think of situations in their lives which include subtraction problems.	
Transfer Phase	**6. Bridging and Transfer** • Learners complete Activity sheet (*cf*. Appendix 5 Session 10) • Tell your parents and friends about what you have learned today. Try to use as much as possible all the vocabulary we used today. • Transfer Problem 10 (*cf*. Appendix 5 Session 10).	

Evaluation Session 10: Experimental Group A

Evaluation of the *CEPP i*ntervention – Experimental Group A				
Session 10: Number quantity: Subtraction			**Date: 15 June 2009**	
	Criteria	**Yes**	**No**	**Comment**
1.	**Were the identified needs addressed?**	**X**		
1.1	Unsystematic, unplanned behaviour – inability to look for cues, no step-by-step way of working	**X**		
1.2	Lack of precision and accuracy	**X**		
1.3	Inability to work with more than 2 sources of information at a time	**X**		
1.4	Does not work out a problem, does not look for evidence, and does not compare situations before responding.	**X**		
1.5	Reflecting / communicating / explaining thought processes while working	**X**		
1.6	Verbal tools	**X**		
2.	**Was the programme implemented as designed and according to the principles of mediation?**	**X**		
3.	**Were the outcomes achieved?**	**X**		
3.1	Curriculum-related outcomes	**X**		
3.2	Cognitive outcomes (deficient or emerging)	**X**		
3.2.1	Unsystematic, unplanned behaviour – inability to look for cues, no step-by-step way of working	**X**		
3.2.2	Lack of precision and accuracy	**X**		
3.2.3	Inability to work with more than 2 sources of information at a time	**X**		
3.2.4	Does not work out a problem, does not look for evidence, and does not compare situations before responding.	**X**		
3.2.5	Reflecting / communicating / explaining thought processes while working	**X**		
3.2.6	Verbal tools	**X**		
4.	**Adaptations needed** Although I adapted the activities to suit the development level of Participant  , one should make provision for participants who might not be able to do the activities at all, as was the case with Participant  , since his number concept is poorly developed.			

Evaluation Session 10: Experimental Group B

Evaluation of the *CEPP i*ntervention – Experimental Group B				
Session 10: Number quantity: Subtraction			**Date: 13 September 2009**	
	Criteria	**Yes**	**No**	**Comment**
1.	**Were the identified needs addressed?**	**X**		
1.1	Unsystematic, unplanned behaviour – inability to look for cues, no step-by-step way of working	**X**		
1.2	Lack of precision and accuracy	**X**		
1.3	Inability to work with more than 2 sources of information at a time	**X**		
1.4	Does not work out a problem, does not look for evidence, and does not compare situations before responding.	**X**		
1.5	Reflecting / communicating / explaining thought processes while working	**X**		
1.6	Verbal tools	**X**		
2.	**Was the programme implemented as designed and according to the principles of mediation?**	**X**		
3.	**Were the outcomes achieved?**	**X**		
3.1	Curriculum-related outcomes	**X**		
3.2	Cognitive outcomes (deficient or emerging)	**X**		
3.2.1	Unsystematic, unplanned behaviour – inability to look for cues, no step-by-step way of working	**X**		
3.2.2	Lack of precision and accuracy	**X**		
3.2.3	Inability to work with more than 2 sources of information at a time	**X**		
3.2.4	Does not work out a problem, does not look for evidence, and does not compare situations before responding.	**X**		
3.2.5	Reflecting / communicating / explaining thought processes while working	**X**		
3.2.6	Verbal tools	**X**		
4.	**Adaptations needed** Although Participant  required more support, all participants enjoyed this session with numbers.			

1.11 SESSION 11: HIGHER ORDER CONCEPT: SOUNDS AND PHONICS

<table>
<tr><td colspan="2">Session 11
Higher order concept: SOUNDS and PHONICS
Lower order concept: a, m, s, f, r, e ,b, n, g, t, p, d, h, l, k</td></tr>
<tr><td colspan="2">CRITICAL OUTCOMES:
✓ Identify and solve problems and make decisions using critical and creative thinking.
✓ Organise and manage themselves and their activities responsibly and effectively.
✓ Collect, analyse, organise and critically evaluate information.
✓ Communicate effectively using visual, symbolic and / or language skills in various modes.
✓ Demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation.
✓ Reflect on and explore a variety of strategies to learn more effectively.</td></tr>
<tr><td colspan="2">LEARNING OUTCOME 5: THINKING AND REASONING
The learner will be able to use language to think and reason as well as to access, process and use information for learning</td></tr>
<tr><td>LEARNING AREA: HOME LANGUAGE
LEARNING OUTCOME 5:
THINKING AND REASONING
The learner will be able to use language to think and reason as well as to access, process and use information for learning.

AS 2: Uses language to think and reason:
• identifies parts of a whole (c-a-t)
AS 4: Processes information (the ability to process multiple sources of complex information – a prerequisite for higher order cognitive tasks).
• chooses selected information from a description.</td><td>INTEGRATION
HOME LANGUAGE (HL)
LEARNING OUTCOME 6
LANGUAGE STRUCTURE AND USE
The learner will know and be able to use the sounds, words and grammar of the language to create and interpret texts.
AS 1: Relates sounds to letters and words:
• recognises that words are made up of sounds;
• recognises the sounds at the beginning of some words.
AS 2: Works with words:
• groups words (e.g. words which rhyme);
• identifies a word, a letter.
AS 5: Uses meta-language:
• sound, word, letter, rhyme, beginning, middle, end sounds

HOME LANGUAGE (HL)
LEARNING OUTCOME 4
WRITING
HL LO 4 AS 1
The learner will be able to write different kinds of factual and imaginative texts for a wide range or purposes
Manipulates writing tools like crayons and pencils</td></tr>
</table>

RESOURCES	AIM
• Clay • Letter cards (*cf.* Appendix 5 Session 11) • Rhyme words game (*cf.* Appendix 5 Session 11) • Beginning, middle, end sound game (*cf.* Appendix 5 Session 11) • Transfer Problem 11 (*cf.* Appendix 5 Session 11)	• Comprehension of relational terms • Spatial ordering • Recognising sounds • Recognising rhyme words • Recognising beginning, middle, end sounds in words

INFORMATION PROCESSING

Multiple ideas: Can the learner process one or more idea at the same time? E.g. I saw an orange and green butterfly on the flower.
Complex ideas: Does the learner understand higher order concepts? E.g. I sorted the shapes into groups according to their size / colour.
Linking between ideas: Can the learner links concepts between ideas? E.g. These blocks have different colours, but they also differ in shape.

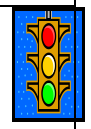
COGNITIVE MAP

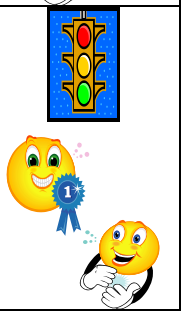
1. Content	2. Modality
• Looking for relationships in objects. • Categorising and comparing objects and words according to sound. • Building up and breaking down of words. • Vocabulary, beginning, middle, end sounds, letter, word, rhyme.	• Figural • Pictorial • Verbal

3. Phases of mental act

3.1 Input	3.2 Elaboration	3.3 Output
• Gathering information • Clear perception • Labelling • Spatial orientation	• Categorising • Comparing • Looking for relationships • Problem-solving	• Using clear and precise language • Restraining impulsive behaviour • Precision and accuracy

4. Cognitive operations	5. Level of abstraction	6. Level of efficiency
• Categorisation • Comparison and hypothetical thinking • Classification • Planned, systematic behaviour • Problem-solving and critical reflection	• Low to medium	• Medium to high

Phases according to dynamic assessment	ACTIVITIES	Symbols representing mediation principles
Labelling Phase	**1. Focused Attention** • Show learners letter cards. (a, m, s, f, r, e ,b, n, g, t, p, d, h, l, k) • Ask learners what they see. Yes, these are letters. • Ask them to find the first letter of their name. • Name other words that begin with the first letter of your name.	 
	2. Meaning • Show learners letter cards (*cf.* Appendix 5 Session 11). • Ask them to identify the letter and name a few things that begin with the letter, e.g. p is for pan, pot, Peter. (Let learners clap their hands while saying the words in syllables). • Let learners form the letters with clay (only small letters).	 
	3. Self-reflection • Close your eyes and imagine you are in a forest filled with letters hanging from the trees. • Grab a letter and write it in the air with your finger with your eyes closed. • See an object in your mind that begins with that letter.	 
	4. Sharing • Tell the group which letters you caught. • Name some objects that begin with those letters.	

Example and Independent Phase	**5. Challenge and Competence** • Ask learners if they know what a rhyme word is. • Yes, that is right. Rhyme words sound the same, e.g. cat, mat, rat. • Let learners put pictures that rhyme together while naming them (*cf.* Appendix 5 Session 11).	
Transfer Phase	**6. Bridging and Transfer** • Ask learners to select letter cards and fit them into 3 incomplete words on a playing board. • Learners complete Activity sheet (*cf.* Appendix 5 Session 11). • Tell your parents and friends about what you have learned today. Try to as much as possible use all the vocabulary we used today. • Transfer Problem (*cf.* Appendix 5 Session 11).	

Evaluation Session 11: Experimental Group A

Evaluation of the *CEPP i*ntervention – Experimental Group A				
Session 11: Sounds			**Date: 18 June 2009**	
	Criteria	**Yes**	**No**	**Comment**
1.	**Were the identified needs addressed?**	**X**		
1.1	Unsystematic, unplanned behaviour – inability to look for cues, no step-by-step way of working	**X**		
1.2	Lack of precision and accuracy	**X**		
1.3	Inability to work with more than 2 sources of information at a time	**X**		
1.4	Does not work out a problem, does not look for evidence, and does not compare situations before responding.	**X**		
1.5	Reflecting / communicating / explaining thought processes while working	**X**		
1.6	Verbal tools	**X**		
2.	**Was the programme implemented as designed and according to the principles of mediation?**	**X**		
3.	**Were the outcomes achieved?**	**X**		**These outcomes were not achieved fully due to participants' poor language abilities. I recommend that three sessions on language proficiency should be presented in future implementations of the *CEPP.***
3.1	Curriculum-related outcomes	**X**		
3.2	Cognitive outcomes (deficient or emerging)	**X**		
3.2.1	Unsystematic, unplanned behaviour – inability to look for cues, no step-by-step way of working	**X**		
3.2.2	Lack of precision and accuracy	**X**		
3.2.3	Inability to work with more than 2 sources of information at a time	**X**		
3.2.4	Does not work out a problem, does not look for evidence, and does not compare situations before responding.	**X**		
3.2.5	Reflecting / communicating / explaining thought processes while working	**X**		
3.2.6	Verbal tools	**X**		
4.	**Adaptations needed** The session on "letters" should be presented over two or even three sessions, since participants' language skills are not well developed.			

Evaluation Session 11: Experimental Group B

Evaluation of the *CEPP i*ntervention – Experimental Group B				
Session 11: Sounds			**Date: 15 September 2009**	
	Criteria	**Yes**	**No**	**Comment**
1.	**Were the identified needs addressed?**	**X**		
1.1	Unsystematic, unplanned behaviour – inability to look for cues, no step-by-step way of working	**X**		
1.2	Lack of precision and accuracy	**X**		
1.3	Inability to work with more than 2 sources of information at a time	**X**		
1.4	Does not work out a problem, does not look for evidence, and does not compare situations before responding.	**X**		
1.5	Reflecting / communicating / explaining thought processes while working	**X**		
1.6	Verbal tools	**X**		
2.	**Was the programme implemented as designed and according to the principles of mediation?**	**X**		
3.	**Were the outcomes achieved?**	**X**		**These outcomes were not achieved fully due to participants' poor language abilities. I recommend that three sessions on language proficiency should be presented in future implementations of the *CEPP***
3.1	Curriculum-related outcomes	**X**		
3.2	Cognitive outcomes (deficient or emerging)	**X**		
3.2.1	Unsystematic, unplanned behaviour – inability to look for cues, no step-by-step way of working	**X**		
3.2.2	Lack of precision and accuracy	**X**		
3.2.3	Inability to work with more than 2 sources of information at a time	**X**		
3.2.4	Does not work out a problem, does not look for evidence, and does not compare situations before responding.	**X**		
3.2.5	Reflecting / communicating / explaining thought processes while working	**X**		
3.2.6	Verbal tools	**X**		
4.	**Adaptations needed** The session on "letters" should be presented over two or even three sessions, since participants' language skills are not well developed.			

1.12 SESSION 12: HIGHER ORDER CONCEPT: PERCEPTION

Session 12
Higher order concept: PERCEPTION
Lower order concept: Categorisation, visual memory, differences and similarities, direction

CRITICAL OUTCOMES:

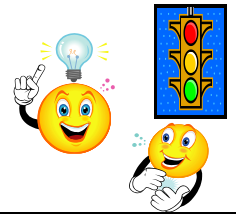
- ✓ Identify and solve problems and make decisions using critical and creative thinking.
- ✓ Organise and manage themselves and their activities responsibly and effectively.
- ✓ Collect, analyse, organise and critically evaluate information.
- ✓ Communicate effectively using visual, symbolic and / or language skills in various modes.
- ✓ Demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation.
- ✓ Reflect on and explore a variety of strategies to learn more effectively.

LEARNING OUTCOME 5: THINKING AND REASONING
The learner will be able to use language to think and reason as well as to access, process and use information for learning

LEARNING AREA: HOME LANGUAGE	INTEGRATION
LEARNING OUTCOME 5: **THINKING AND REASONING** ***The learner will be able to use language to think and reason as well as to access, process and use information for learning*.** **AS 2: Uses language to think and reason:** • identifies and describes similarities and differences; • matches items that go together and compares items that are different; • classifies items; **AS 3: Uses language to investigate and explore** • gives explanations and offers solutions. **AS 4: Processes information** (the ability to process multiple sources of complex information – a prerequisite for higher order cognitive tasks). • chooses selected information from a description.	**MATHEMATICS (M)** **LEARNING OUTCOMES (LO) 3:** **SPACE AND SHAPE** ***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.*** **AS 6 Follows** directions to move or place self within the classroom (at the front, at the back).

RESOURCES	AIM
• Activity sheet (*cf*. Appendix 5 Session 12)	• Comprehension of relational terms

• 24 picture cards (*cf.* Appendix 5 Session 12)	• Spatial ordering • Recognising sounds • Recognising rhyme words • Recognising beginning, middle, end sounds in words

Phases according to dynamic assessment	ACTIVITIES	Symbols representing mediation principles
Labelling Phase	**1. Focused Attention** • Practise direction with learners. • Let them walk away from you, towards you, to the right, to the left. • Learner A instructs learner B to perform the above-mentioned motions.	
	2. Meaning • Show learners the pictures of Activity sheet (*cf.* Appendix 5 Session 12). • Ask learners what they see. Yes, a man in a car and a man in a truck. • Ask them if the cars and trucks all look the same. • No, some cars / trucks are driving to the left, right, away and towards you.	
	3. Internalisation, Self-regulation and reflection • Close your eyes and imagine you are in a street and you see cars coming towards you, going away from you, drive to your left and to your right.	
	4. Sharing • Tell the group what you saw, the colour of the car, the type of car, etc.	

Example and Independent Phase	**5. Challenge and Competence** • Let learners complete Activity Sheet (*cf.* Appendix 5 Session 12)	
Transfer Phase	**6. Bridging and Transfer** • Show learners 24 picture cards (*cf.* Appendix 5 Session 12). • Ask learners to name the pictures. • Let learners look at the pictures for one minute. • Take the pictures away and ask them if they can remember the pictures. Record their response. • Let learners categorise the pictures into 6 groups (farm animals, pets, marine animals, wild animals, insects and animals that can fly). • Take the pictures away and ask learners once again to name the pictures. Record their response. • Tell your parents and friends about what you have learned today. Try to as much as possible use all the vocabulary we used today. **7.** Transfer Problem 12 (*cf.*Appendix 5 Session 12).	

Evaluation Session 12: Experimental Group A

Evaluation of the *CEPP i*ntervention – Experimental Group A				
Session 12: Perception			**Date: 19 June 2009**	
	Criteria	**Yes**	**No**	**Comment**
1.	**Were the identified needs addressed?**	**X**		
1.1	Unsystematic, unplanned behaviour – inability to look for cues, no step-by-step way of working	**X**		**A huge improvement in participants' planned behaviour**
1.2	Lack of precision and accuracy	**X**		
1.3	Inability to work with more than 2 sources of information at a time	**X**		**Participants 1 to 4 could work with more than 2 sources of information at a time, but Participant 5 still struggled**
1.4	Does not work out a problem, does not look for evidence, and does not compare situations before responding.	**X**		
1.5	Reflecting / communicating / explaining thought processes while working	**X**		
1.6	Verbal tools	**X**		
2.	**Was the programme implemented as designed and according to the principles of mediation?**	**X**		
3.	**Were the outcomes achieved?**	**X**		
3.1	Curriculum-related outcomes	**X**		
3.2	Cognitive outcomes (deficient or emerging)	**X**		**A definite improvement in cognitive capacity, except Participant 5**
3.2.1	Unsystematic, unplanned behaviour – inability to look for cues, no step-by-step way of working	**X**		
3.2.2	Lack of precision and accuracy	**X**		
3.2.3	Inability to work with more than 2 sources of information at a time	**X**		
3.2.4	Does not work out a problem, does not look for evidence, and does not compare situations before responding.	**X**		
3.2.5	Reflecting / communicating / explaining thought processes while working	**X**		
3.2.6	Verbal tools	**X**		
4.	**Adaptations needed** Visual memory should be presented in a separate session.			

Evaluation Session 12: Experimental Group B

Evaluation of the *CEPP i*ntervention – Experimental Group B				
Session 12: Perception			**Date: 16 September 2009**	
	Criteria	**Yes**	**No**	**Comment**
1.	**Were the identified needs addressed?**	**X**		
1.1	Unsystematic, unplanned behaviour – inability to look for cues, no step-by-step way of working	**X**		**A huge improvement in participants' planned behaviour**
1.2	Lack of precision and accuracy	**X**		
1.3	Inability to work with more than 2 sources of information at a time	**X**		**Participants could work with more than 2 sources of information at a time**
1.4	Does not work out a problem, does not look for evidence, and does not compare situations before responding.	**X**		
1.5	Reflecting / communicating / explaining thought processes while working	**X**		
1.6	Verbal tools	**X**		
2.	**Was the programme implemented as designed and according to the principles of mediation?**	**X**		
3.	**Were the outcomes achieved?**	**X**		
3.1	Curriculum-related outcomes	**X**		
3.2	Cognitive outcomes (deficient or emerging)	**X**		**A definite improvement in cognitive capacity**
3.2.1	Unsystematic, unplanned behaviour – inability to look for cues, no step-by-step way of working	**X**		
3.2.2	Lack of precision and accuracy	**X**		
3.2.3	Inability to work with more than 2 sources of information at a time	**X**		
3.2.4	Does not work out a problem, does not look for evidence, and does not compare situations before responding.	**X**		
3.2.5	Reflecting / communicating / explaining thought processes while working	**X**		
3.2.6	Verbal tools	**X**		
4.	**Adaptations needed** Visual memory should be presented in a separate session.			