Rx for Discovery Math I Workshop 2027

This is a lecture and laboratory course designed to train teachers to provide mathematical intervention in a group setting. Rx 4 Discovery Math is specifically intended for students in Grades R – 5 who would benefit from early intervention or whose basic math skills are below expected standards.

I. COURSE DESCRIPTION

Rx for Discovery Math training will build and strengthen number sense, math fluency, math vocabulary, and problem- solving strategies within three 30-minute or two 45-minute weekly small sessions. Students who need to master basic number sense skills as well as those who rely on procedural understanding would benefit most from this programme.

Students will be challenged to apply their growing understanding of number sense to solve novel problem-solving activities that challenge thinking and reasoning. Hands-on, research-based, number sense activities will be utilized as the core content of this dynamic intervention while mediation, Socratic questioning, and the strengthening of cognitive functions will serve as the core methodology. In this dynamic intervention, students' foundational math concepts will be strengthened while their thinking and critical thinking skills will be challenged, all within an atmosphere where math anxiety is reduced, and thinking is maximised.

The Rx 4 Discovery Math training strengthens your skills in 4 essential ways:

1. To provide small-group mathematical intervention that includes activities to strengthen the foundation of mathematical thinking: Number Sense.
2. To immerse students in dynamic activities that foster the understanding of what numbers mean as well as think and reason flexibly with numbers, use numbers to solve problems, spot unreasonable answers, understand how numbers can be taken apart and put together in diverse ways, see connections among operations, figure mentally, and make estimates.
3. To strengthen conceptual understanding of numbers and encourage the development of self-generated mathematical strategies for efficient mathematical methods that produce independent thinkers.
4. To provide instruction in mathematical language and problem solving through mediation, questioning, and small-group interactions where students' competency in routine and non-routine mathematical problems and awareness of patterns and relationships is strengthened.

II. COURSE OBJECTIVES

A. ***General:*** Successful completion of this course will enable the participant to better understand student needs in Maths, based on the four subtypes of Math disabilities and understand how to strengthen number sense, develop Math fluency, and bolster problem solving skills, while also learning how to utilize the group model for Rx 4 Discovery Math to teach students conceptual, procedural, and problem-solving. Math skills and strategies to strengthen students' foundational grasp of numbers.

B. ***Specific:*** Upon completion of this course, the participant will be able to:

1. Communicate an understanding of the differences between group and individualized interventions.

2. Demonstrate an ability to work with groups of 4-6 students in the teaching of basic mathematical skills focused on number sense.

3. Communicate the theories of mediated learning in a group setting.

4. Design a plan for group implementation that would meet the learning needs of specific groups of students.

III. COURSE RESOURCES

A. Rx for Math training Manual (provided by NILD SA)

B. *Coming to Know Number* by Grayson H. Wheatley & Ann M. Reynolds – **required text**

C. Math kit (provided by NILD SA)

D. *Mediating Math* (provided by NILD SA)

E. *Playing with Math: The Name of the Game* by Chris Horne and Steven Feiffer (**not required but advisable)**

IV. COURSE REQUIREMENTS

A. ***Prerequisite***: a teaching or associated professional qualification.

B. **Pre-course Preparation**:

1. Obtain permission from the school or programme supervisor to use group models in classrooms, remedial rooms, or after school settings. No written permission is required for this course, but we ask that you secure permission ahead of time to ensure ease of implementation after training is completed.

2. **Read Part I**, "Helping Children Learn Mathematics," of *Coming to Know Number*.

3. Read the following 4 articles, which will be emailed to you once you have registered:

- *Early Number Sense Plays a Role in Later Math Skills* by Lauren Neergaard

- *Is It Counting or Adding?* by Sara Eisenhardt, Molly H. Fisher, Jonathan Thomas, Edna O. Schack, Janet Tassell, and Margaret Yoder
- *What is Conceptual Understanding?* by Balka, Hull, and Harbin Miles
- *Using Concreteness in Education* by Megan C. Brown, Nicole M. McNeil, and Arthur M. Glenberg

V. MATERIALS

1. **Required -** *Coming to Know Number* by Grayson H. Wheatley & Ann M. Reynolds - if proof of ordering Coming to Know Number digital version is supplied, we are able to supply a digital copy of the required reading.
2. CTKN - Part ll, "Pupil Activities" (will be supplied for practice during the course).
3. *Playing with Math: The Name of the Game* by Chris Horne and Steven Feifer (optional)

VI. COURSE WORKLOAD

The time required for assignments and prerequisite assignments has been estimated at 7 hours.

VII. COURSE EVALUATION

Participants will practice the maths techniques with a small group and receive feedback on their demonstrations. Proficiency with number sense activities and the ability to articulate their importance will be assessed.

VIII.

CONTENT	METHOD	FOCUS
Maths Disability Subtypes 1. Verbal Dyscalculia 2. Procedural Dyscalculia 3. Semantic Dyscalculia	**Socratic Questioning**	▪ Worked through Output Responses ▪ Expressive Verbal Tools ▪ Data Output
	Small-Group Learning	▪ Visual Transport ▪ Behaviour
Cognitive Functions *INPUT* ▪ Clear Perception ▪ Exploration of the Learning Situation ▪ Receptive Verbal Tools & Concepts ▪ Spatial Orientation ▪ Temporal Orientation ▪ Conservation of Constancies ▪ Precise & Accurate Data Gathering ▪ Use of two or more Sources of Information	**Multi-Sensory** **Games** **Mediated Learning Experience** ▪ Intentionality ▪ Reciprocity ▪ Transcendence ▪ Meaning ▪ Competence ▪ Shared Behaviour	**CONTENT** **Quantitative Abilities** ▪ Number Sense *(collections, patterns, and relationships)* ▪ Primary Numeric Abilities *(ordinality, counting, arithmetic)* ▪ Secondary Numeric Abilities

ELABORATION ▪ Definition of the Problem ▪ Select Relevant cues ▪ Spontaneous comparative behaviour ▪ Broad and Wide Mental Field ▪ Planning Behaviour ▪ Summative Behaviour ▪ Project Virtual Relationships ▪ Pursue Logical Evidence ▪ Ability to internalise events ▪ Inferential-Hypothetical Thinking ▪ Hypothesis Testing ▪ Planning Behaviour ▪ Elaboration of Cognitive Categories ▪ Grasp of Reality *OUTPUT* ▪ Communication Modalities ▪ Participatory Output Responses		*(number-counting system, arithmetic computations, word problems)* ▪ Conceptual Understanding ▪ Maths Fluency *(efficiency, accuracy, flexibility)* ▪ Maths Vocabulary ▪ Problem Solving Strategies

IX. COURSE FEES

INDIVIDUALS: R3 140.00 per person

SCHOOLS: A school's rate applies if more than four participants attend.

Cancellation policy: Should you cancel after the course closing date you will lose 25% of the fee and if cancelling within 1 week of the start of the course you will lose 50% of the course fee.

Please note: You need to attend the entire training in order to fulfil the pass requirements. Classes will finish at 5 p.m. on the final day of training. Classes start at **8.00 a.m.**

NILD Position Statement: The National Institute for Learning Development (NILD) was founded upon the biblical worldview that affirms each individual was created in the image of God and therefore has innate potential to learn and become effective in service to the world. As a professional educational training centre, we strive to maintain integrity at every level of service delivery. NILD has a policy of non-discrimination in relation to race, colour, gender, national or ethnic origin and religious belief.

NILD's Philosophy: Believing that all students can learn and that the brain is open to modification at all stages of development, we provide direct and focused educational treatment for cognitive systems that are weak and vulnerable.

Rx for Discovery Math I Workshop Application 2027

Personal details:

Full Name	
ID Number	
Cell number	
Email Address	
Closest Postnet	
Province	
Code	

Educational Background:

College / University	*Major*	*Degree/Diploma held*

Training: Please indicate which courses you have successfully completed.

Level 1	Level 2	Level 3	Rx for Writing	Rx for Reading	Rx for Maths II	Search & Teach	Executive Functions	Linking Spelling & Reading

Cost:

☐ **R3 140,00- due with the application or** ☐ **R2 670-Full Early Bird Settlement paid by the Early Bird closing date**

☐ **Please email the completed application form (pg. 5) and a copy of your degree to admin@nildsa.co.za**

☐ **Order and pay for the course at our online shop at www.nildsa.co.za**