Toolkit:
Schematic Development and the Curriculum for Funded Non-maintained Nursery Settings

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Proffesiynol Professional | Ymatebol Responsive | Creadigol Creative | Ysbrydoledig Inspiring | Cydweithredol Collaborative

Introduction

Using the Toolkit:

This tool is designed as a starting point for recognising and supporting children's schemas in the the curriculum for funded non-maintained nursery settings.

It is not a definitive list of all the types of schemas children may demonstrate but the examples included in this toolkit are the most observed schemas in practice.

The included observation sheet is provided to facilitate planning for schemas but can be adapted for your use. There are several video clips available on social media for action based dynamic schemas if you want to view schemas in action.

Please use this toolkit as a working document to add in your own ideas for resources, vocabulary and learning opportunities to support children's schemas.

There are links made between schemas and the curriculum for funded non-maintained nursery settings.

These are intended as a guide, but every setting is different, and we are sure you will discover other curriculum links and ways forward to support the children's schemas in your settings. We hope you find this guide useful and worthwhile.

Best Wishes

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A Curriculum for Funded Non-maintained Nursery Settings: Five Developmental Pathways

This curriculum recognises and celebrates the individuality of each child and what they bring to the learning experience. This early period of learning should be unhurried, allowing time, space and freedom for the developing child to consolidate their learning with opportunities to return, revisit, and refine their emerging knowledge and skills.

This cyclical approach is essential for progression through the learning journey.

Central to this curriculum are five key developmental pathways that are fundamental to the learning and development of all young children. These developmental pathways are child-centred and are interdependent, having equal value in supporting overall development and progress.

They have been developed to ensure children can be supported to make progress at their own pace and in their preferred learning environment.

The five developmental pathways are:

- belonging
- communication
- exploration
- physical development
- well-being

Taking a holistic approach to teaching and learning will ensure that children have opportunities to develop skills within and across the developmental pathways. We should ensure that we provide ample time and opportunity for the successful mastery of skills, with long periods of uninterrupted play during which children can become absorbed in their learning.

It is usual for children to make faster or slower progress along some developmental pathways, dependent upon the quality of interactions, experiences and their individual developmental journeys up to the point of entry into the setting. It is therefore our responsibility to provide developmentally appropriate practice, within nurturing relationships, which meets the needs of all children.

Each of the five developmental pathways contains:

- a clear rationale that captures the essence of what children need to develop at

  their own pace and in a way that is appropriate to them

- statements that begin with and expand on the following:

  ‘I need to … ’ ‘I am learning to … ’ ‘My … is enhanced by … ’

  (WG, 2022. Pp.24-26)

Format of the Toolkit

In the following pages of this toolkit, the above statements are aligned with the different developmental pathways providing you with examples of how they can be linked to the different schema types. You will find them on the pages called 'Examples of Schemas linked to the Five Developmental Pathways'.

Each schema type also has a page that provides you with ideas of how to nurture that specific schema through your provision of the curriculum for funded non-maintained nursery settings, and it offers suggestions on each the following themes that can help with your planning:

- Definition of the schema
- Examples of how the schema may manifest
- Resources that can be useful
- Vocabulary that links with the schema type
- Activities
- Learning opportunities

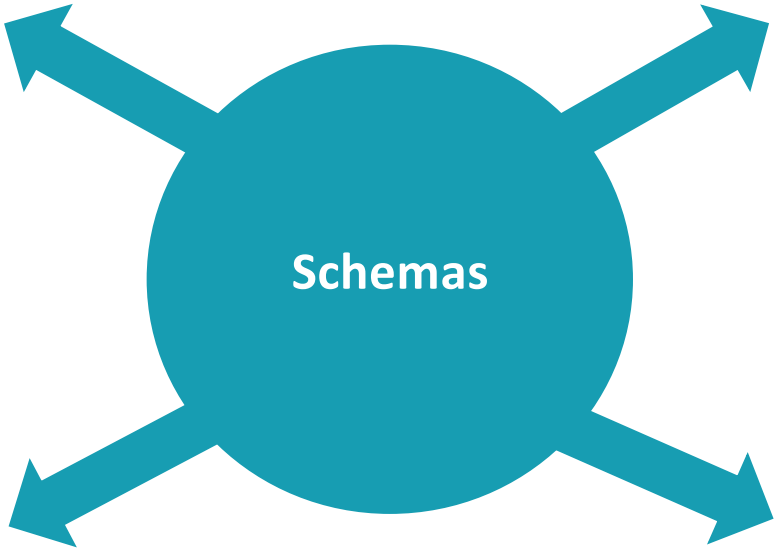
Referenced and adapted from:

- Stella Louis (2011) *Again, Again*. London: AC black
- Karen Constable (2013) *Planning for Schematic Learning in the Early Years*. Oxon: Routledge
- Sarah Neville (2009) *Schemas.* Available at: www.knutsfordchildminding.co.uk
- Welsh Government (2022) *Curriculum for funded non-maintained nursery settings*. Cardiff. WG

Schemas

What is a schema?

A schema is a repeated action, often seen in the behaviours of young children.



Schemas are biological

We are born with them, but the offered environment helps to support and develop them.

Why are they important?

Schemas link to developments in the brain. They support children's development and learning.

Schemas and learning?

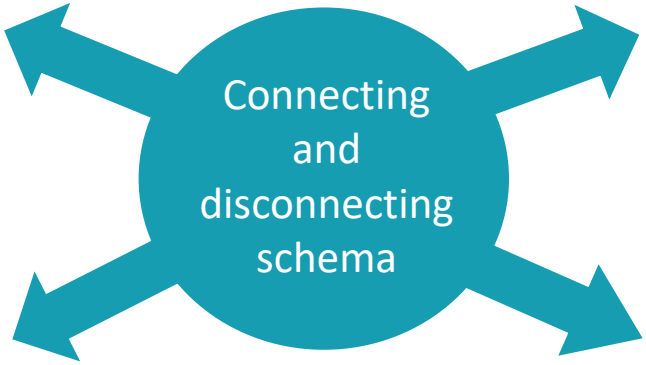
Schemas help us organise our thoughts and actions. They are often seen when young children are allowed to lead their play.

Schemas in the curriculum for non-maintained nursery settings: Connecting and disconnecting schema

Resource:

- Clothes with fasteners
- Fabric, Tape, Glue, String, laces, Rope,
- Jigsaws, Train tracks, Lego, beads
- Construction toys, Rubber Bands
- Treasury tags, pipe cleaners, Sellotape
- Ribbon, Zig- Zag books
- Paper, pipes, scissors, matching games
- Dominoes, Model making

Definition:
An interest in fastening and joining things together and in taking them



Examples of Connecting and disconnecting schema

- Connecting and disconnecting train tracks towers and models, dominoes
- Tying up objects and things
- Threading and unthreading objects
- Making jigsaws, sequencing pictures
- Follow recipes
- Repeating patterns on paper and using ICT

Activities:

- Sequence recipes,
- Sequencing stories (link word and pictures)
- Connecting (and disconnecting) more complex models
- Making own books (Linking words and Pictures)
- Pulleys, Pipes and Electrical Circuits

Key Vocabulary:

- Connect, Build, Open
- Disconnect, Separate, Close
- Join, Flexible, rigid
- Together, Tie, Knot, Thread
- Weaving, Stitch
- Construct, Match, Connect

Learning Opportunities:

- Hand/Eye co-ordination
- Sequencing events
- Problem solving
- Patterns, Direction
- Matching
- Connecting shapes

Connecting and disconnecting schemas linked to the Five Developmental Pathways

Wellbeing (p. 34)
A curriculum for funded non-maintained nursery settings

• I need to follow my own interests
• I need to feel valued
• I am learning to interact with others
• My well-being is enhanced by adults who respect and value my play

Physical Development (p. 33)
A curriculum for funded non-maintained nursery settings

- I need to develop fine motor skills in real life experiences
- I am learning to co-ordinate my movements
- My physical development is enhanced by opportunities to explore in my physical movements, concepts, size, shape , pattern, rhythm and position

Communication (p. 29)
A curriculum for funded non-maintained nursery settings

• I need to have time to think and process
• I am learning to notice and explore visual, auditory and physical patterns in my environment through my play
• My communication is enhanced by adults who give me time to process and respond

Belonging (p. 28)
A curriculum for funded non-maintained nursery settings

• I need to make connections with people places and things
• I am learning to recognise similarities and differences
• My sense of belonging is enhanced by adults who respond to my likes and dislikes

Exploration (p. 31)
A curriculum for funded non-maintained nursery settings

• I need to explore movement, direction and develop spatial awareness
• I need to develop my imagination in a variety of ways
• I am learning to develop my understanding of how things work.
• My exploration is enhanced by adults who enrich the environment with open- ended resources that enliven my curiosity

Schemas in the curriculum for non-maintained nursery settings: Positioning schema

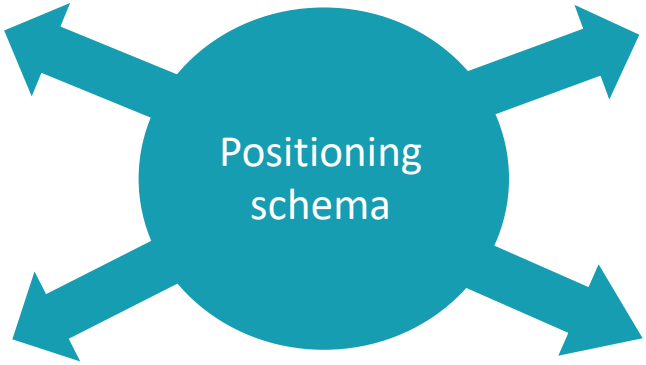
Resource:

- Building Blocks
- Collage materials
- Peg boards
- Sticky shapes
- Shells
- Writing materials
- Maps
- Stories that tell journeys

Activities:

- Position objects in length order
- Extend repeating patterns
- Sort for more than one criteria
- Extend positional language
- Create and design maps

Definition: An interest in placing objects in patterns or rows. Lining up and positioning objects.



Key Vocabulary:

Inside
Next to
Alongside
Between
In front
Under
Beneath
On top
Behind

Examples of Positioning schema

- Lining things up
- Order objects for size
- Likes peg boards
- Likes to arrange shapes around the edge touching each other
- Making mosaics; collaging

Learning Opportunities:

- Sorting objects for different criteria
- Creating mosaic patterns
- Using peg boards for repeating patterns
- Treasure trails where they need to find objects
- Positional language
- Read stories and rhymes that depict journeys and maps
- Use ICT packages to position and sort shapes, numbers and objects
- Thread beads onto strings and position collage materials

Positioning Schemas linked to the Five Developmental Pathways

Wellbeing (p. 34)
A curriculum for funded non-maintained nursery settings

- I need to follow my own interests
- I am learning to interact with others
- My well-being Is enhanced by adults who encourage me to be actively involved in my learning

Physical Development (p. 33)
A curriculum for funded non-maintained nursery settings

- I need to develop my fine motor skills in real-life experiences
- I am learning to co-ordinate my hands and eyes
- My physical development is enhanced by a learning environment that provides daily opportunities to develop both my gross and fine motor skills

Communication (p. 29)
A curriculum for funded non-maintained nursery settings

- I need to be listened to and understood
- I am learning to use mark-making tools with increasing control
- My communication is enhanced by adults who provide and plan authentic opportunities for mark-making

Belonging (p. 28)
A curriculum for funded non-maintained nursery settings

- I need to feel a valued as a member of the setting community
- I am learning to participate in the life of the setting
- My sense of belonging is enhanced by adults who perceive me as a capable learner

Exploration (p. 31)
A curriculum for funded non-maintained nursery settings

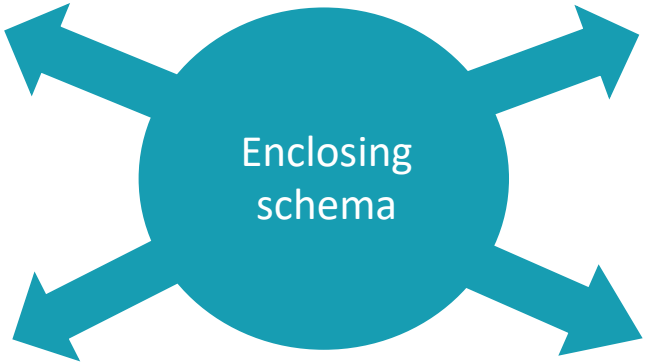
- I need to explore movement and direction and develop my spatial awareness
- I am learning to transfer my learning to new situations
- My exploration is enhanced by adults who recognise and celebrate my determination and effort

Schemas in the curriculum for non-maintained nursery settings: Enclosing schema

Resource:

- Blankets, curtains, sheets
- Different sized boxes, Feely boxes
- Fabric and material
- Big and little blocks
- Small world play such as farm sets
- Paint and craft materials, Bubbles
- Bags and envelopes
- Parachute
- Shape Sorting boxes

Definition:
An interest in creating or occupying enclosed spaces.



Examples of Enclosing schema

- Posting letters
- Placing objects inside a box
- Placing letters in envelopes
- Covering themselves in blankets
- Filling containers up
- Making dens and tunnels
- Hiding inside things
- Playing with a parachute

Activities:

- Experiment with making more complex boundaries
- Read books with stories that support enclosing schemas such as: Three Little pigs
- Develop writing letters and addressing envelopes
- Classify objects into sets

Key Vocabulary:

- Position and Size
- Inside and Outside
- Entrance and Exit
- Wrap, Enclosed, Corner, side
- Boundary, Edge, Margin
- Safe, Contain

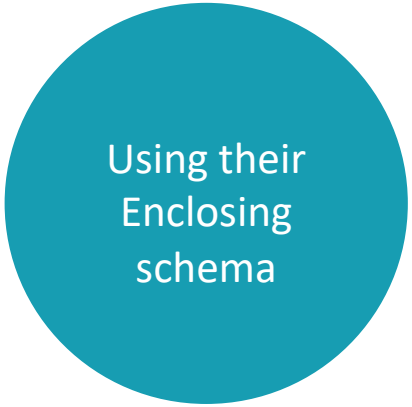
Learning Opportunities:

- Hand Eye co-ordination
- Problem Solving
- Working with 2D and 3D shapes
- Writing letters
- Capacity and Volume
- Sorting objects
- Role play real life scenarios
- Framing work
- Size and Measurements

Enclosing Schemas linked to the Five Developmental Pathways

Wellbeing (p. 34)
A curriculum for funded non-maintained nursery settings

- I need to feel safe and secure
- I am learning to recognise my feelings and that of others
- My wellbeing is enhanced by adults who support me to manage change and uncertainty



Physical Development (p. 33)
A curriculum for funded non-maintained nursery settings

- I need to move in and around objects indoors and outdoors
- I am learning to co-ordinate hands and eyes
- My physical development is enhanced by opportunities to develop co-ordination

Communication (p. 29)
A curriculum for funded non-maintained nursery settings

- I need to have time to think and process
- I need to be listened to and understood
- I am learning to take notice of others
- My communication is enhanced by adults who model and support my concepts and extend my vocabulary development

Belonging (p. 28)
A curriculum for funded non-maintained nursery settings

- I need to play on my own and with others
- I am learning to recognise that some things are unsafe
- My sense of belonging is enhanced by adults who plan experiences as a result of observing my play choices and preferences

Exploration (p. 31)
A curriculum for funded non-maintained nursery settings

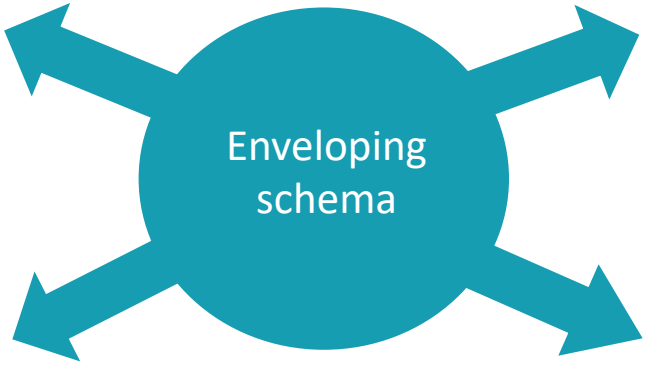
- I need to compare, sort and classify
- I need to explore movement and direction
- I am learning to explore the properties of materials
- My exploration is enhanced by adults who view me as confident and capable

Schemas in the curriculum for non-maintained nursery settings: Enveloping schema

Resource:

- Curtains, Blankets, Fabric
- Parachutes, Tents
- Transparent and Opaque paper
- Posting Boxes
- Wrapping Paper
- Bags

Definition:
An interest in covering and wrapping themselves and objects. Putting things inside bags and containers.



Examples of Enveloping schema

- Dressing up in clothes
- Wrapping up objects and toys
- Covering pictures all over with paint
- Filing containers/bags full of objects
- Cover dolls up in the home corner
- Playing with posting

Activities:

- Encourage the children to investigate the volume and capacity of different objects
- Create own books with hidden pictures and words
- Go on hidden number hunts where children order the numbers

Key Vocabulary:

- Under, Over, Inside
- Visible, Invisible
- Hidden
- Full, Empty
- Wrap, unwrap
- Size words

Learning Opportunities:

- Keeping warm and healthy
- Volume and capacity of containers
- How different colours mix when layering paint or cellophane
- How to measure paper to cover/wrap an object
- Fine motor skills when writing letters for posting
- Problem solving in making dens

Enveloping Schemas linked to the Five Developmental Pathways

Wellbeing (p. 34)
A curriculum for funded non-maintained nursery settings

- I need make choices
- I am learning to show my likes and dislikes
- My well-being is enhanced by adults who listen to my views and trust my choices

Using their enveloping schema

Physical Development (p. 33)
A curriculum for funded non-maintained nursery settings

- I need to express myself in large and small spaces
- I am learning to co-ordinate my movements
- My physical development is enhanced by opportunities to explore, in my physical movements, concepts, including size, shape pattern, rhythm and position

Communication (p. 29)
A curriculum for funded non-maintained nursery settings

- I need to have time to think and process
- I need to be listened to and understood
- I am learning express my needs, thoughts, feelings, ideas and opinions
- My communication is enhanced by adults who support and respond sensitively to my verbal and non- verbal communication

Belonging (p. 28)
A curriculum for funded non-maintained nursery settings

- I need to to play (on my own, alongside or with others)
- I am learning to participate in the life of the setting
- My sense of belonging is enhanced by adults who respond to my interests, likes and dislikes

Exploration (p. 31)
A curriculum for funded non-maintained nursery settings

- I need to explore, investigate, and discover
- I am learning to focus my attention on things that interest me
- My exploration is enhanced by adults who observe, notice and use my fascinations to deepen learning

Schemas in the curriculum for non-maintained nursery settings: Rotational schema

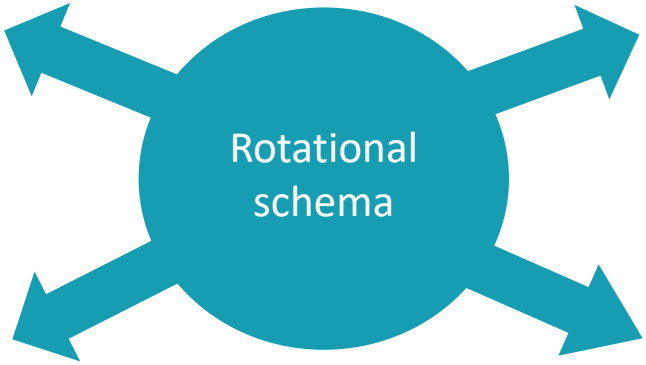
Resource:

- Spinners
- Rolls of string
- Fans
- Wheels
- Bikes
- Wooden spoons
- Water wheels
- Cotton reels

Activities:

- Sort round objects for different criteria
- Create simple circuits
- Mix different paints to create new colours
- Explore life cycles

Definition: An interest in things that turn. Also seen in children's actions such as spinning and spiral patterns in paint.



Key Vocabulary:

Fly
Roll
Spin
Twirl
Round
Rotate
Circle
Twist
Spiral
Mix
Whisk

Examples of Rotational schema:

- Fascination with things that turn
- Rolling objects
- Creating circles in different media
- Likes repeated phrase in stories and rhymes
- Likes to spin around outdoors

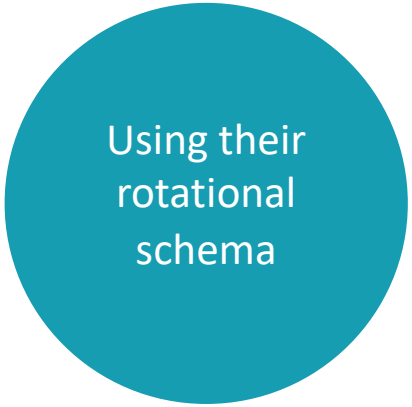
Learning Opportunities:

- Problem solving when making construction toys with wheels
- How materials change when mixed together
- Shapes that roll and shapes that don't roll (why?)
- Why things go faster and slower?
- Mix ingredients during cooking activities
- Explore wheeled and wind up toys
- Books that explore life cycles and round things

Rotational Schemas linked to the Five Developmental Pathways

Wellbeing (p. 34)
A curriculum for funded non-maintained nursery settings

- I need to follow my interests
- I am learning to interact with others
- My well-being is enhanced by adults who respect and value my play



Physical Development (p. 33)
A curriculum for funded non-maintained nursery settings

- I need to move in a variety of ways to support the development of my gross and fine motor skills
- I am learning to throw and catch objects
- My physical development is enhanced by opportunities to develop my co-ordination and core strength

Communication (p. 29)
A curriculum for funded non-maintained nursery settings

- I need to have time to think and process
- I am learning to notice symbols in my environment and beginning to recognise they carry meaning
- I am learning to use mark-making tools with increasing control
- My communication is enhanced by adults who create environments that give me opportunities to express myself physically, creatively and imaginatively

Belonging (p. 28)
A curriculum for funded non-maintained nursery settings

- I need to be heard and understood
- I am learning to participate I the life of the setting
- My sense of belonging is enhanced by adults who plan experiences as a result of observation of my play choices and preferences

Exploration (p. 31)
A curriculum for funded non-maintained nursery settings

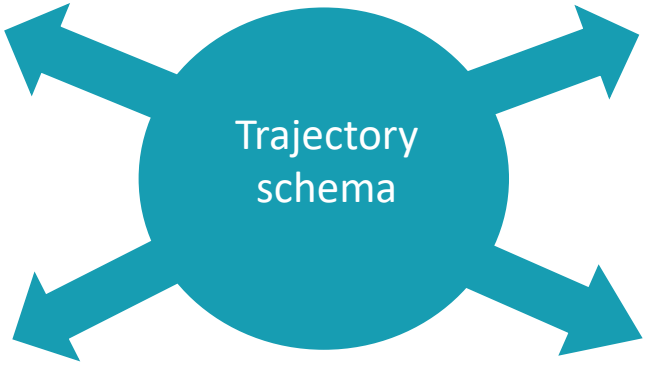
- I need to compare, sort and classify
- I am learning to notice shape, symmetry and pattern in the natural and built environment
- My exploration is enhanced by adults who support and celebrate and encourage my curiosity

Schemas in the curriculum for non-maintained nursery settings: Trajectory schema

Resource:

- Kites
- Bubbles, Marbles, Pulleys
- Sponges and targets
- Hoops, Targets
- Spray paint, string
- Squirty bottles, tubes
- Pop up toys

Definition: An interest in how people and things move vertically and horizontally. Creating and building vertical or horizontal structures



Examples of Trajectory schema

- Dropping objects from different heights
- Climbing up and down repeatedly
- Throwing objects
- Rolling objects
- Bouncing objects
- Pressing buttons continually
- Stacking objects

Activities:

- Children to problem solve how to make something go faster/slower
- Construct own moving model
- Sort objects based on pushing and pulling
- Measure heights and distances
- Explore body movements in straight and oblique lines

Key Vocabulary:

Fly, spin
Drop, float
Heavy, light
Up, down, fast
Land, target, take off
Slow, high, low, bounce
Fall
Twirl
Swing, pulley

Learning Opportunities:

- Investigate how objects move
- Understand different directions
- Different lengths of objects and heights
- Introduce the concept of faster and slower
- Design vertical and horizontal structures
- Number lines to count objects

Trajectory Schemas linked to the Five Developmental Pathways

Using their Trajectory schema

Wellbeing (p. 34)
A curriculum for funded non-maintained nursery settings

- I need to see me and my world reflected in my environment
- I am learning to recognise that my actions and those of others have consequences
- My wellbeing is enhanced by adults who encourage me to be actively involved in my learning

Physical Development (p. 33)
A curriculum for funded non-maintained nursery settings

- I need to be curious about how I interact physically with the world and objects around me
- I am learning to throw and catch objects
- I am learning to co-ordinate hands and eyes
- My physical development is enhanced by opportunities for me to develop co-ordination and core strength

Communication (p. 29)
A curriculum for funded non-maintained nursery settings

- I need to communicate
- I need to be listened to and understood
- I am learning to express my thoughts, feelings, ideas and opinions
- I am learning to take notice of others
- My communication is enhanced by adults who support and respond sensitively to my verbal and non- verbal communication

Belonging (p. 28)
A curriculum for funded non-maintained nursery settings

- I need to make connections with people, places and things
- I am learning to recognise that some things are unsafe
- My sense of belonging is enhanced by adults who enable me to play by myself and or with others indoors and outdoors

Exploration (p. 31)
A curriculum for funded non-maintained nursery settings

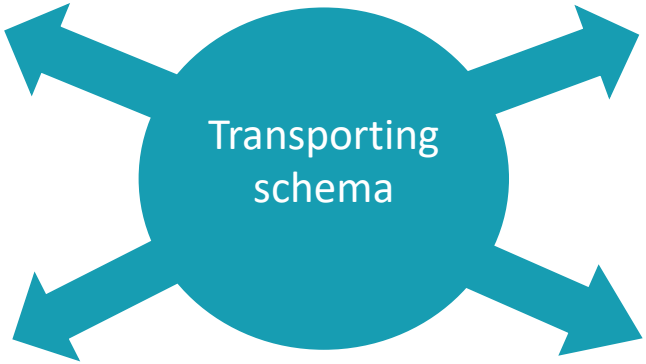
- I need to explore, investigate & discover
- I need to explore movement, direction and develop spatial awareness
- I am learning to use simple mathematical language in my play with purpose
- My exploration is enhanced by adults who observe and notice my fascinations to deepen learning

Schemas in the curriculum for non-maintained nursery settings: Transporting schema

Resource:

- Bags, baskets and boxes for transporting
- Scoops, spoons and containers to move objects from one place to another
- Crates and trays
- Wheeled vehicles (prams &Trolleys) to go on journeys

Definition:
An interest in moving themselves or objects around



Examples of Transporting schema

- Filling and emptying bags, boxes and containers
- Stacking boxes
- Pulleys for moving objects
- Fill and empty water jugs
- Fill purses with coins

Activities:

- Create own shopping lists to go shopping
- Go on journey to local shops
- Read stories and rhymes that depict journeys
- Go on treasure hunts to find shapes, words etc.

Key Vocabulary:

- In, on, under
- Empty and full
- All gone and more
- Brimming and overflowing
- Open and closed
- Same and different

Learning Opportunities:

- Use mouse to play movement games on the computer
- Role play people who help us
- Making moving models
- Write letters to be posted
- Recreate journeys
- Fit clothes into a suitcase (size and shape)

Transporting Schemas linked to the Five Developmental Pathways

Wellbeing (p. 34)
A curriculum for funded non-maintained nursery settings

- I need to make choices
- I need to feel connected to others
- I am learning to take turns and share
- I am learning to regulate my responses with support
- My wellbeing is enhanced by adults who

i. Provide a range of choice within my play
ii. Promote my increasing independence

Physical Development (p. 33)
A curriculum for funded non-maintained nursery settings

- I need to move around and in objects indoors and outdoors
- I am learning to move safely
- I am learning to plan and make decisions about movement
- My physical development is enhanced by a learning environment that provides daily opportunities to develop both fine and gross motor skills and opportunities to experience joy in my physical activity

Communication (p. 29)
A curriculum for funded non-maintained nursery settings

- I need to have time to think and process
- I need to develop social relationships
- I am learning to act out familiar routines and take on roles in my play
- I am learning to share my own stories
- My communication is enhanced by adults who:

i. model good communication skills including engaging in SST , using open ended questions to support my thinking
ii. provide opportunities for authentic and familiar role play

Belonging (p. 28)
A curriculum for funded non-maintained nursery settings

- I need to feel valued as a member of the setting community
- I am learning to participate in the life of the setting
- My sense of belonging is enhanced by adults who prioritise my needs when making decisions that impact on me

Exploration (p. 31)
A curriculum for funded non-maintained nursery settings

- I need to share my curiosity with others
- I need to create, communicate and express myself
- I am learning to develop my creative and critical thinking through my explorations
- My exploration is enhanced by adults who:

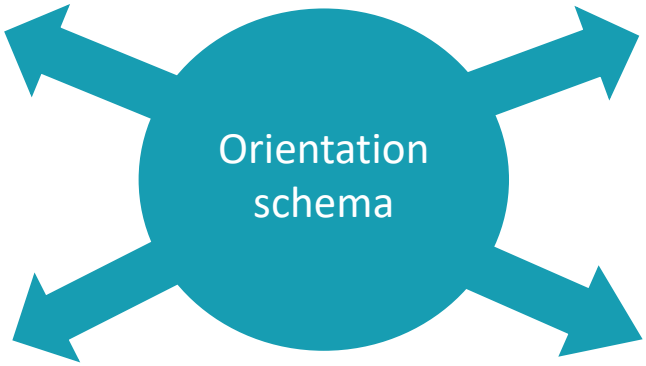
i. use of outdoor space
ii. provide authentic opportunities to play and experiment with a variety of materials, textures and tools, indoors and outdoors
iii. value the process of learning rather than the end product

Schemas in the curriculum for non-maintained nursery settings: Orientation schema

Resource:

- Colanders, mirrored tile, tubes
- Boxes, tunnels, Rope bridges
- Ladders, climbing frames
- Marbles, tiddlywinks, kaleidoscopes
- Small world equipment

Definition: An interest in exploring balance, height, width and length through looking at things from different angles, and through holes and transparent objects



Examples of Orientation schema

- Hanging upside down
- Standing on top of objects
- Bending to look at the world through their legs
- Climbing and balancing
- Using mirrors on the floor or
- above their heads

Activities:

- Use climbing frames and bars
- Place mirrors in unusual places
- Use pendulums and
- swings
- Play Twister
- Provide rope swings

Key Vocabulary:

Turn
Upside down
Backwards
Over
Twist
Roll
Under

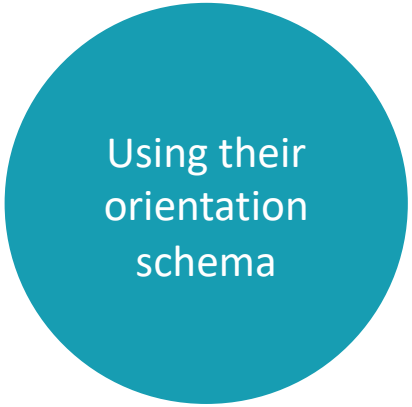
Learning Opportunities:

- Use PE equipment indoors and outdoors to encourage balance and co-ordination
- Develop spatial awareness
- Develop gross motor skills
- Understand angles
- Understanding positional language

Orientation Schemas linked to the Five Developmental Pathways

Wellbeing (p. 34)
A curriculum for funded non-maintained nursery settings

- I need to follow my own interests
- I am learning to show my likes and dislikes
- My well-being is enhanced by adults who work together to meet my needs



Physical Development (p. 33)
A curriculum for funded non-maintained nursery settings

- I need to express myself in larger or small spaces
- I am learning to co-ordinate my movements and maintain balance
- My physical development is enhanced by an inclusive environment that supports me to move and be active

Communication (p. 29)
A curriculum for funded non-maintained nursery settings

- I need to have time to think and process
- I am learning to notice symbols in my environment and begin to recognise that they carry meaning
- My communication is enhanced adults who make effective use of open- ended questions, balanced with comments to support my thinking

Belonging (p. 28)
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- I need to make connections with people, places and things
- I am learning to understand and follow some rules and boundaries
- My sense of belonging is enhanced by adults who model a joyful and curious approach to learning

Exploration (p. 31)
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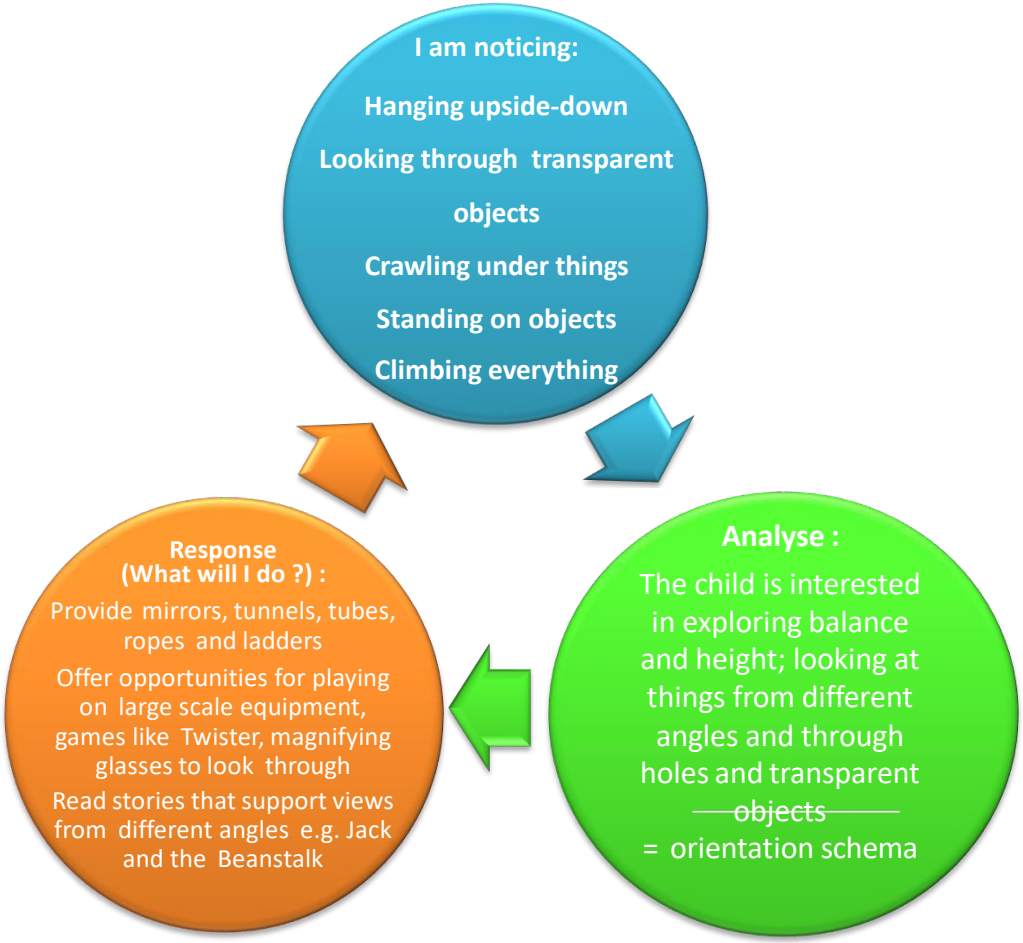
- I need to explore movement and direction and develop my spatial awareness
- I need to experiment with cause and effect
- I am learning to develop my understanding of how things work
- My exploration is enhanced by adults who provide authentic opportunities to play and experiment with a variety of materials, textures and tools, indoors and outdoors

Observation Cycle



- Observations help us to be more informed about children's fascinations and thus allows us to understand what and how they learn best.
- Making the most of the fascinations can extend learning and helps us to understand their schematic development.
- Observing children throughout the day can help us see different aspects of their play and we should ensure that we record our observations in a manageable way. Observations are catalyst for our planning of the experiences and environment we provide to enable learning.
- This observation cycle is an example of how using the observation cycle can help to identify schematic patterns and thus help to inform future planning.
- This example illustrates an Orientation **Schema**. These suggestions are included on the previous page where examples of orientation schemas are explained. This model can be applied to each schema contained in this toolkit to help you plan from the observations you make.

Observation record template (Optional template that can be used for making notes on what you observe)

Name:	**Date:**
Identified Schema:	
Developmental Pathway:	
Learning Opportunities to support schema (refer to toolkit for ideas):	
Supporting Schematic Vocabulary and Resources (Taken from toolkit):	
Next Steps Forward (Taken from toolkit):	

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