

An Introduction to Schemas



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Written by Michele McDermott

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Introduction

If you have ever wondered why a young child is rolling around on the floor or you have been irritated when a toddler is throwing things about or repeatedly banging or pulling something, you will be interested to learn about schemas.

Put simply, schemas appear as 'patterns of action' (Pen Green Centre for Children and Families, 2018) or patterns of play that a child engages in as they create a mental framework to help them understand the world. What may appear to be random, comical or even 'annoying' behaviour is, in fact, a natural and powerful urge for a young child with a purpose behind it. It is up to you as the adult to observe and identify this purpose so you can understand what the child might be learning through their actions and better support their learning and development.

This booklet offers a practical introduction to schemas and is suitable for anyone caring for young children between 18 months and 3 years, whether as a parent or in a professional capacity as a childminder or in an early learning and care setting. We focus on children of this age because of the rapid growth and development that takes place in the first three years of life and the fact that learning from this time is foundational to the rest of a child's development. Also, as children of this age do not necessarily have the language to tell you about what they are doing when they are engaged in schemas, it is important that you understand what they are doing so you can support their explorations.

The booklet outlines what a schema is, what you might observe when a young child is exploring a schema and how you can practically support the child to explore the fascination that they have for how things and they themselves move and are in the world through schemas.



What is a Schema?

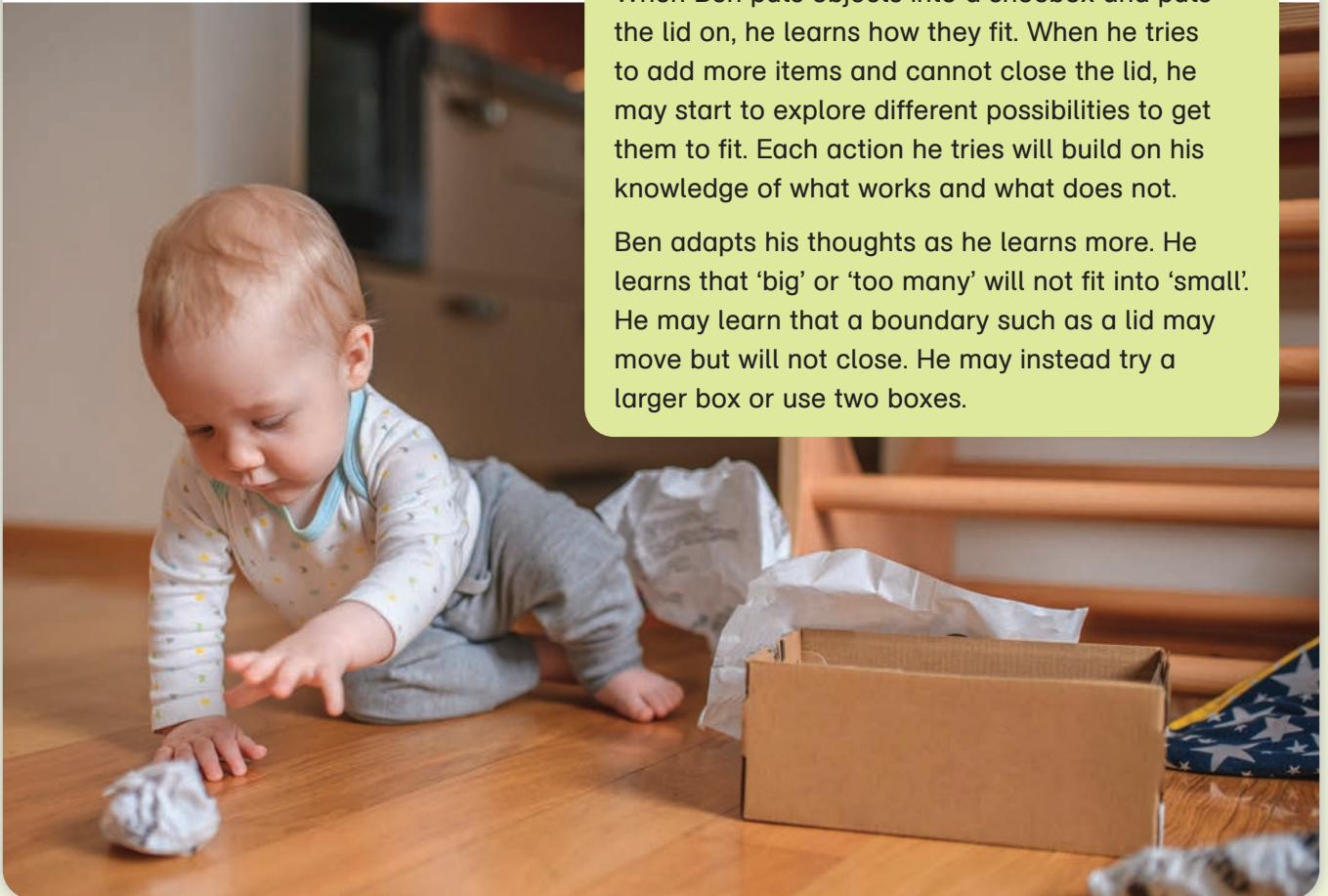
As human beings, we gain knowledge through our experiences as we interact with our physical and social environments. We are constantly acquiring new information to modify, add to or change our already existing knowledge. The term 'schema' describes both the physical and mental actions required to gain this knowledge and understanding. Through our actions, we interpret and understand the world around us, putting order on it. We then process and categorise this knowledge, adding it to memory.

As adults, we use our knowledge of schemas in an abstract way to support us in our everyday lives. When we are filling the kettle for our breakfast cup of tea, moving furniture around a room or determining whether we will be able to fit our car into a parking space, we are using our knowledge of schemas.

While the term 'schema' was first used by British psychologist Frederick Bartlett (1886-1969), it was developmental psychologist Jean Piaget (1896-1980) who first advanced a cognitive development theory that included schemas. Piaget observed that children become absorbed in and carry out activities repeatedly to help them make sense of their world. Through these patterns of repeated behaviour, i.e. schemas, they explore their developing ideas and accommodate new information, which leads to new, more complex and sophisticated actions and thinking. Athey (1990) furthered Piaget's ideas. Through close observations, she found that young children searched for commonalities between objects and experiences in order to develop their understanding about categories through schemas.

When Ben puts objects into a shoebox and puts the lid on, he learns how they fit. When he tries to add more items and cannot close the lid, he may start to explore different possibilities to get them to fit. Each action he tries will build on his knowledge of what works and what does not.

Ben adapts his thoughts as he learns more. He learns that 'big' or 'too many' will not fit into 'small'. He may learn that a boundary such as a lid may move but will not close. He may instead try a larger box or use two boxes.



The Importance of Schemas

'A schema is a pattern of repeated actions. Clusters of schemas develop onto later concepts.'

(Athey, 2007)

The urge to explore and investigate is very strong in a toddler. The reason they engage in schemas is because of an overriding urge to understand and process information about the world from their experiences. Sometimes referred to as 'fascinations' (Atherton & Nutbrown, 2013), schemas may appear to make no sense to an adult but they are a very important aspect of a child's development. By repeatedly acting in a certain way, using the same action on a variety of objects to investigate further, children adapt new information to add to their understandings of how things work and construct meaning about what they are doing. Schemas help young children to form connections in their brain, to build on previous learning to form new ideas and understandings, and to develop skills that they can use in their world.



When a young child puts an assortment of objects into a handbag or scatters objects and toys across a floor it may seem chaotic to the adult, but for the child it is an attempt to understand how things act in the world. When they repeatedly spin their body around and around, drop toys or items from a height or throw food from their high chair, they are investigating a schema. When they become fascinated with looking through their legs to see the world from that viewpoint and then move under a table to view the world from a different viewpoint, they are investigating a schema. Through these investigations of schema, a child is learning about the properties of objects, the organisation and categorisation of items and material, about action, shape, space, volume, positioning, quantity, number, object permanence and much more.

When a child is making actions going from side to side, back and forth, up and down or round and round they are engaged in schemas that act as pre-cursors to making marks, drawing and writing, with the child beginning to develop understandings about numeracy and literacy. A schema that involves positioning objects supports later categorisation in maths, while a schema about trajectories of vertical and horizontal helps with future reading and writing.

By the age of three or four, children will be able to think about some schemas in an abstract way, having developed memories of things through their explorations. For example, they will know that if they cover their hand up with paint, the hand will still exist. They will be able to visualise something upside down from memory without having to physically turn it or themselves to do so (although they may still choose to).

It is important to note that while schemas are an aspect of a child's development, children may have a strong interest in some schemas but not in others, and will have an interest in different schemas at different stages.

A young child may be engrossed for days on the same schema, another may explore for a day and then not return to it again. Some children may show no interest in schemas at all and never fully engage in them.



Toddlers as Physical Thinkers

Toddlers are physical thinkers who use all of their senses to understand and learn from hands-on experiences. In the physical exploration of schemas, children strengthen the cognitive structures in the brain that support them to become abstract thinkers. When a toddler tries to place themselves in a cupboard, for example, they are not being comical or awkward, they are finding out what it feels like to be inside that cupboard. This physical experience is providing them with the beginnings of knowledge of certain abstract concepts, for example, awareness of shape, space and position.

Healthy, happy young children are in perpetual motion. Exploring schemas through their movement is an important part of their learning about the world and themselves.

Repetition of this movement is fundamental to a child's learning – seeing patterns, forming expectations, questioning, speculating, problem solving and starting to make predictions about the exploration of movement of objects and the movement of their own body.

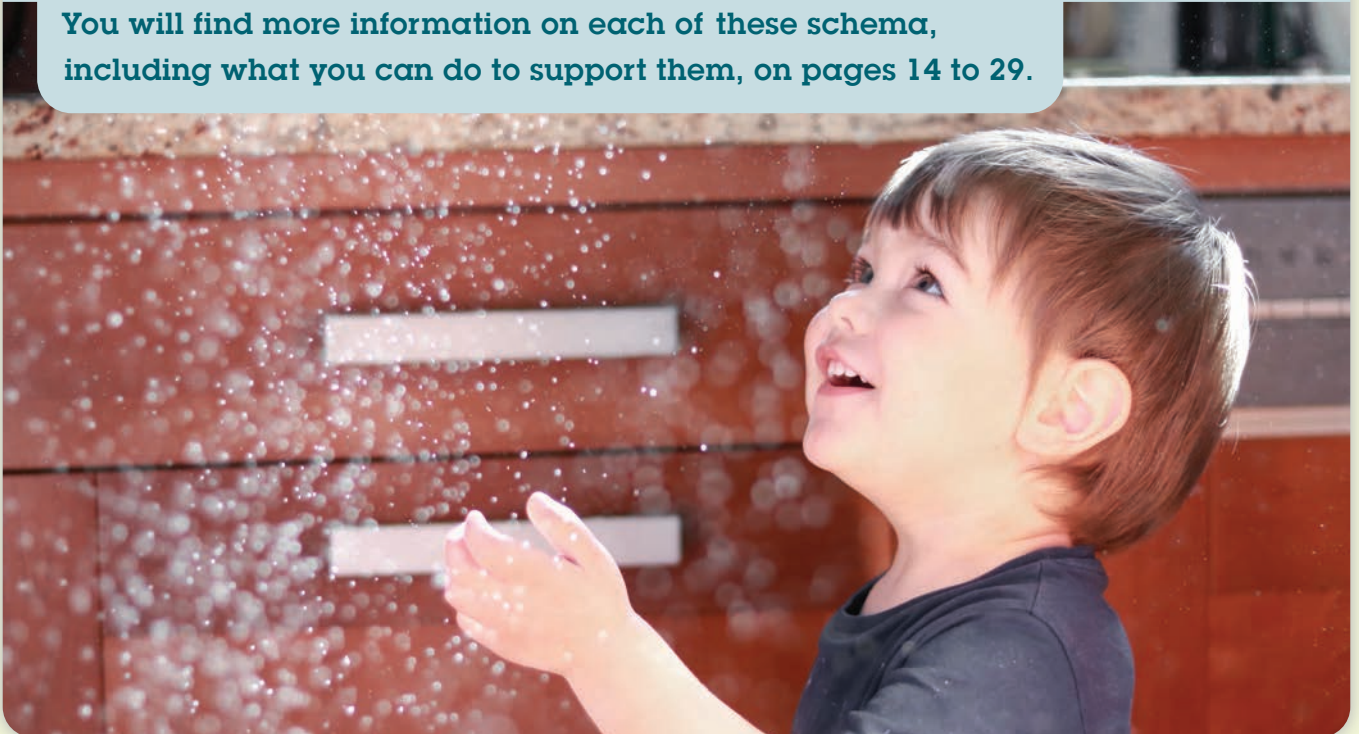


Types of Schema

Many schemas have been identified, however in this booklet we concentrate on the eight dominant ones that can be seen in young children.

1. Trajectory – making lines in space with things or with own body (throwing, dropping, rolling)
2. Rotation – turning or spinning objects or themselves
3. Transporting – carrying objects in hands, pockets, bags, wheeled transporters
4. Enclosing – creating borders around things or themselves
5. Connecting – building and joining things together
6. Positioning – lining items up, stacking or balancing items
7. Enveloping – covering up or ‘wrapping’ items, others or themselves
8. Orientation – investigating different viewpoints (hanging upside down, bending down, looking through their legs)

You will find more information on each of these schema, including what you can do to support them, on pages 14 to 29.



The Adult's Role in Schemas

When children are interested in an action or activity, they will learn from it. In fact, the same can be said for all humans when provided with the right environment and social interactions. You, as the adult, are key to deciphering what a toddler is doing and what they may be learning from their actions, and responding accordingly to support and further the learning.



A challenge for adults

It should be acknowledged at this point that schemas may sometimes be a challenge for adults. It can be exasperating to see a child throwing things all over a room you have just organised or to be asked to engage in an activity over and over and over again. It can be difficult to ensure the safety of a child who is climbing on top of furniture.

You can learn much about a toddler when you understand the schemas they engage in. This understanding will ensure that rather than stopping a child from what they are doing, as you believe they are being too boisterous or behaving badly, you will instead support them in their investigations. A true understanding of schemas will also reduce any potential irritation or annoyance when a child engages in behaviour patterns that you might find challenging. By observing a toddler, you will understand how they are seriously and deeply investigating and exploring through their play, and you will provide them with opportunities to deepen their learning.

You will need to be patient and understanding with a child who is engaging in schemas and consider their action from a developmental perspective to understand how you can best support them in a safe way. If a child keeps turning on taps, for example, they may be exploring a rotational schema to understand how things twist and turn, or they may be fascinated with a trajectory schema to develop their knowledge of the movement of water. With this understanding, you can accommodate these fascinations in ways other than flooding the bathroom.

Observing children

In 1990, Athey talked of children 'not flitting but fitting' when they move between spaces and tasks. This challenged the traditional notion that young children 'flit' between one activity and another due to an inability to concentrate. Instead, children are taking their ideas and trying to 'fit' them together based on what they have previously learned about the environment. You will learn much about young children through observation and will come to understand that what might seem to be a toddler's apparent random or chaotic behaviour is, in fact, ordered, active learning at work.



Every young child has the right to play freely, deeply and with emphasis on what they choose to be interested in. Observing how the young child is playing and exploring, following their interests, and providing them with what they require to fully explore these interests are the most supportive ways you can assist deep learning.

By observing a young child you will be able to identify the schemas they engage in and support their unique investigations. Watching for movements such as transporting, wrapping up or dropping things, or throwing objects into the air or across the room are all opportunities to understand and provide appropriate resources to enable the child to explore. Through observation you will also notice when children are pushing the boundaries of their resources (Nutbrown in Arnerich, 2019) and determine what sort of resources they really require to follow their interests. In the example given above of the child turning on taps and flooding the bathroom, you will realise that filling a jug in the water tray is not enough for them and might consider using rotary whisks in soapy water or provide wind-up toys for a rotation schema. If you realise the fascination is with a trajectory schema you might decide to attach guttering at an angle to a wall to allow water to be poured down it.

You may consider photographing or videoing a child involved in dynamic movements to capture the important learning that is going on. You can then use this to review the child's engagement in schemas and share with the child and with other adults in their life.

Developing the learning environment

Young children will use whatever is to hand to engage in schemas that are of interest to them. Items left within the reach of a toddler may be wrapped up and 'posted' into the bin, covered up, thrown, kicked, dropped from a height or moved from place to place, so think carefully about the open materials you might provide to meet these fascinations.

It is important also to understand what a child will be capable of based on their stage of development. For example, asking a toddler to share items when they may be engrossed in a transporting or enclosing schema denies the child of the opportunity to develop a good idea of how things work. Ensure that there are multiples of open-ended materials so children can amicably play together. Children benefit from opportunities to explore a schema together in a social interaction to enrich the experience.

What might seem like household rubbish can be real treasures for children, so consider how materials such as lidded plastic bottles and varying sized cardboard containers might be used before consigning them to the recycling. If you work in an early years setting, ask neighbours, friends and parents to provide items that they may be recycling to add to your selection of loose materials. Children under three years of age should not be given small items that they can choke on, so take care when choosing the collections of items.

There are many ways you can develop the learning environment to enable children to explore schemas safely. It may not be conducive for children to throw items across a busy environment, for example, but you can find alternative ways for children to be able to explore a schema in a safe way rather than stopping them from engaging in the behaviour altogether, denying this particular aspect of development. Think about how you might make small adaptations to the physical environment to support schema safely, for example, provide a little platform for climbing on or dropping objects from, or a small slide for the feeling of being high up and low down. In an early learning and care setting, remove unnecessary tables as floor space is important for toddlers so they can lie, sit and kneel while on the floor. At home, move furniture to one side where possible, to allow the child more space to explore.

Opportunities to play outdoors and explore schemas in a larger environment will be very helpful to the child's experimentation and deepen their learning. Exploration of the trajectory, orientation, transportation and rotation schemas in particular will benefit greatly from being outdoors so ensure that children have ample time outside every day.



Supporting language development

Think about the language you use with your toddlers and how, by providing appropriate vocabulary for each schema, you can support children to communicate their thoughts on what is happening during their investigations and explain their ideas as they develop. When children are able to articulate their reasons behind their actions and their understanding of what is happening, you will be able to help them to develop their ideas further.

Adults working together

If a child spends part of their day in an early learning and care setting or with a childminder, it is important that parents share information about what the child is interested in with the educators in the setting, and vice versa. Communicating with each other can help to provide a child with rich experiences for long lasting learning. You might choose to do this by sharing and discussing photos and/or videos of the child engaged in play. If you are an educator, consider sharing information about schemas on a parent notice board or through social media.



Positive Relationships and Their Impact on Schemas

Relationships that are responsive, patient and kind support children when they are engaged in schemas. An adult who observes and understands what a child might be doing and then acts accordingly to facilitate the child assists their deep learning. During interactions with a child who is involved in a schema, you can jog their memory to support them to remember something they learned from another schema they were previously engaged in. By naming their actions, you can provide a child with the language to make sense of what they are doing.

When you create and enrich the schema experiences for a child, you are supporting them to remember their endeavours and to develop what might be unconscious, effortless explorations into conscious efforts to further their own learning.

Children can engage in the majority of actions described over the following pages both indoors and outside, with the outdoors allowing for more expansive movement.



Trajectory

What it is

Young children who have a fascination with patterns of movement will engage in a trajectory schema. This exploration of movement can be vertical, horizontal or diagonal. Toddlers will make lines in space with objects, dropping, throwing, rolling or kicking objects to see what occurs, or lines with their own body, reaching out, kicking their legs, waving arms up and down or side to side. They may climb on and walk/jump from surfaces or roll and scatter objects off tables or onto floors.

What children learn from this schema

Through investigations of this schema, a child will develop an understanding of the action of objects, for example, what direction an object falls, how long it takes to reach the ground, what happens when it does reach the ground. The understandings learned from the trajectory schema develop into future skills in throwing, catching and kicking.

Supporting this schema

Children engaging in this schema enjoy building up and knocking down as well as scattering items to watch the trajectory of what they scatter or knock down. Provide objects to throw, to kick, to roll or to drop from a height, both indoors and outdoors. If there is room, provide a little stage or small slide for investigation.

Offer toddlers the following equipment and opportunities to support them with trajectory:

- Opportunities to climb and jump from appropriate equipment, such as a low platform or steps
- The opportunity to catch bubbles
- A variety of objects to throw and drop such as soft balls, bean bags, feathers, scarves, rolled up socks, scrunched up paper
- Buckets and containers to catch the thrown objects
- Laundry baskets for indoor basket ball
- Opportunities to pour water
- Ramps for cars or other wheeled toys

Key words

up	high
down	low
fast	land
slow	swing
over	drop
under	float



Eighteen-month-old Shen, sitting in his low chair at lunchtime, throws his bowl of food onto the floor. He bends over to look at the bowl and the food splattered on the ground. Shen has repeated the action of pushing his food onto the floor for the past two days. His childminder Sandi tells him not to throw his food on the floor as he will be hungry if he doesn't eat up. She clears the food from the floor, puts more food into a bowl and sits beside Shen, offering him a spoon of food, which he hungrily eats.

Sandi reflects on Shen's behaviour at lunchtime and realises that he is not rejecting food. He is just interested in the way the food falls onto the floor. She decides to provide him with some other items of different properties at lunchtime and at other times of the day that he can drop from a height, such as playdough, a ball and some feathers.

Rotation

What is it

The rotation schema is an interest in things that are circular or curved and that go round and round, such as a wheel or tumble dryer drum. Toddlers are often fascinated with objects that spin, twist, roll and turn, including their own bodies. They may wish to turn on taps, spin bottle tops and cogs on water wheels, turn the wheels on toy cars or ride on roundabouts and toys that go round. They will also run in circles or roll themselves on the ground, they will twist, turn and twirl themselves quickly and slowly and enjoy being swung around.

What children learn from this schema

The child interested in a rotational schema is learning about things that turn round, for example, that wheeled toys move one way when steered in one direction and another way if steered in the opposite direction. From this, they learn about movement, shape, space and spatial awareness.

Supporting this schema

To support children engaging in this schema think about how you can offer children opportunities to explore rotation such as tap turning and body twirling in a safe but interesting way. Offer toddlers the following equipment and opportunities to support them:

- A treasure basket of objects that support a fascination with rotation such as clocks, different sized wheels, string/material for winding and unwinding, locks and keys, a salad spinner, paint rollers
- A selection of conch shells to explore spiral patterns
- Items that are designed to turn around such as hula hoops, water wheels and windmills
- Ribbons and scarves to turn while dancing
- A bucket of soapy water and a bucket of rinse water, some rags and small clothes. Model washing and wringing out (twisting and squeezing) clothes
- Plastic bottles with lids of varying sizes in a basket besides water play. Support children by filling bottle with water and twisting lids on to explore rotation.
- Baking activities where they can mix and whisk
- Opportunities to stir and mix paint



Key words

roll
spin
twist
turn
round and
round
twirl
circle
rotate

Jess, an early years educator, removes Ryan from the bathroom where he has been turning on the water taps, for the third time that day. She thinks that Ryan is interested in the water so she closes the bathroom door and takes him to the water tray, giving him a plastic bottle to fill up. Ryan plays at the water tray for a very short time and then walks back towards the bathroom door. He is stopped by another educator, Alex, who suggests he come and do some painting.

Jess realises that, rather than being interested in the water, Ryan is fascinated in the rotational movement of turning on the taps. Initially she decides to support Ryan in this rotational schema by providing a time she can facilitate him as he turns taps on and off but realises that that would be a waste of water. Instead, she brings Ryan to the water butt just outside the playroom where he can turn the tap on and off. The water is returned to the water butt. Jess decides to provide an array of objects on a board that Ryan can rotate such as taps, connecting cogs and spinning bottle tops. She also gives Ryan some containers with screw lids to support his interest in things that turn round and round. Later on, they take out scarves and ribbons for Ryan to dance with to support this interest in rotation.

Transporting

What it is

Young children are fascinated with moving and carrying objects from one place to another. They may take sand from the sand tray and transport it elsewhere. They will carry objects in hands, pockets, baskets and bags, and move collections of resources from one part of the room to another. They will transfer objects in prams, buggies and wheeled toys. In shops, they may be seen pushing and trying to carry items that are too heavy or large for them. Very young children may hand toys or objects back and forth to an adult. When a child walks repeatedly back and forth from A to B they are exploring how they transport themselves.

What children learn from this schema

Toddlers involved in transporting are interested in how things move from one place to another. They are interested in the direction they are going in or in different locations and places. As they carry or transport toys or other items, they learn about concepts such as direction, quantity and number.

Supporting this schema

Think about how you can offer transporting opportunities both indoors and outdoors. Young children can easily transport sand and water outdoors without you having to worry about spillage but you can also support this activity indoors on a smaller scale by supplying other materials, such as pasta or broad beans, that children can move easily. Provide items of different weights and textures so that children can learn about the properties of varying materials and objects. You can also provide toddlers with the opportunity to 'put things away'. An everyday activity that would support this schema is encouraging a child to help you transport clothes from the washing machine to the basket, ready to be hung on the line. In an early years setting, a washing area can be set out to imitate the same transporting experience.

The space may not be conducive to large wheeled transporters but smaller wheeled ones will work too. Ensure you have a selection of bags and containers for carrying.

Offer toddlers the following equipment and opportunities to support them with transporting:

- A collection of cloth bags, small baskets and boxes of varying sizes, metal tins, trays, small light crates, small wheelie suitcases, wheelbarrows, buggies
- Sand, water, shredded paper, rags, fabric, leaves, pine cones for transporting
- Diggers, tractors and dumpers to use in the sand
- Varying sized spoons, ladles and jugs in messy areas
- Opportunity to give out snacks to others



Key words

here
there
push
pull
heavy
light
all gone
more
less

On Monday, Aimee, who is 32 months, carries pebbles and leaves in the pockets of her coat from the nature area in the early years setting to the home corner. She throws them all into a saucepan. She shakes the saucepan as she carries it over to shelving where she takes a bowl and pours the contents of the saucepan into the bowl. Claire, an educator, sees this and says to Aimee that she looks like she is making dinner and tells her that she has a spoon that Aimee can use to serve it. Aimee takes the spoon and puts it into her saucepan. On Tuesday and Wednesday, Aimee carries out a similar pattern of actions. Claire, observing what Aimee has been doing, realises that she is involved in a schema of transporting. Claire collects a small wheelbarrow, a cloth bag, some feathers and some small empty, clean hand sanitiser bottles. She puts them besides Aimee and tells her that she may want to use them. Aimee puts the pebbles and leaves into the barrow and adds the bottles, bag and feathers. She pushes the wheelbarrow to the end of the room and back again, dropping items off as she goes and then collecting them again.

Enclosing

What it is

Toddlers are engaged in an enclosing schema when they create borders or boundaries around things or around themselves. They may enclose by putting things into boxes or baskets, sticking their fingers or arms into gaps such as door jams or DVD players, or placing toys into toilets and plug holes. They may use equipment such as blocks, boxes, tunnels or tents to enclose other items or themselves.

What children learn from this schema

This schema supports the development of concepts of capacity, volume and space. It provides children with the opportunity to learn that objects can be contained in a specific space and understand 'full' and 'empty' among other ideas.

Supporting this schema

Think about how you can offer children opportunities to investigate small gaps in things in the environment in a safe manner. If children are investigating ajar doors, consider what you can do to support this safely or offer a safer alternative as a replacement.

Create a surprise box for children to enclose objects or toys inside. Place items inside boxes and encourage the child to discover what is inside.

Offer toddlers the following equipment and opportunities to support them with enclosing:

- Boxes of varying sizes for both getting into and for putting things in such as shoe boxes, tea bag boxes, tissue boxes
- A variety of items for children to put into containers
- Dens and hidey holes
- Large blocks for enclosing themselves, small blocks for enclosing objects and toys
- Collections of items such as small world or loose materials that can be contained in boxes

Key words

wrap	small
enclose	fill
in	full
out	empty
inside	entrance
outside	exit

Niamh, who is 18 months old, climbs into the basket of freshly washed laundry with her wellies on. Stevie, her childminder, can see that Niamh is interested in enclosing and containing things, including herself. He walks over to take Niamh out of the basket and calmly suggests if she takes her outdoor clothes off and takes the clothes out of the basket, she can get into it. Stevie takes out dressing-up clothes that Niamh can put in place of the laundry in the basket along with the small cardboard boxes and the collection of bottle tops and flowerpots she often plays with. When Niamh's sister Ciara arrives in from school, she joins Niamh in the washing basket.



Connecting

What it is

This schema is about joining and tying things together and then separating them, building things together and then knocking them down. It also includes opening and closing things such as doors, bottles and containers. You may find toddlers trying to stick or tie objects together, build towers, screw and unscrew bottles and jars. These are all part of exploring connecting ideas.

What children learn from this schema

With this schema, children learn how things come together and then come apart. When they undo a lid they are learning about disconnection as well as connection. When children place bricks on top of each other they learn about the properties of surfaces. Connecting things together introduces children to the concepts of strength, magnetic force, stickiness and slippiness.

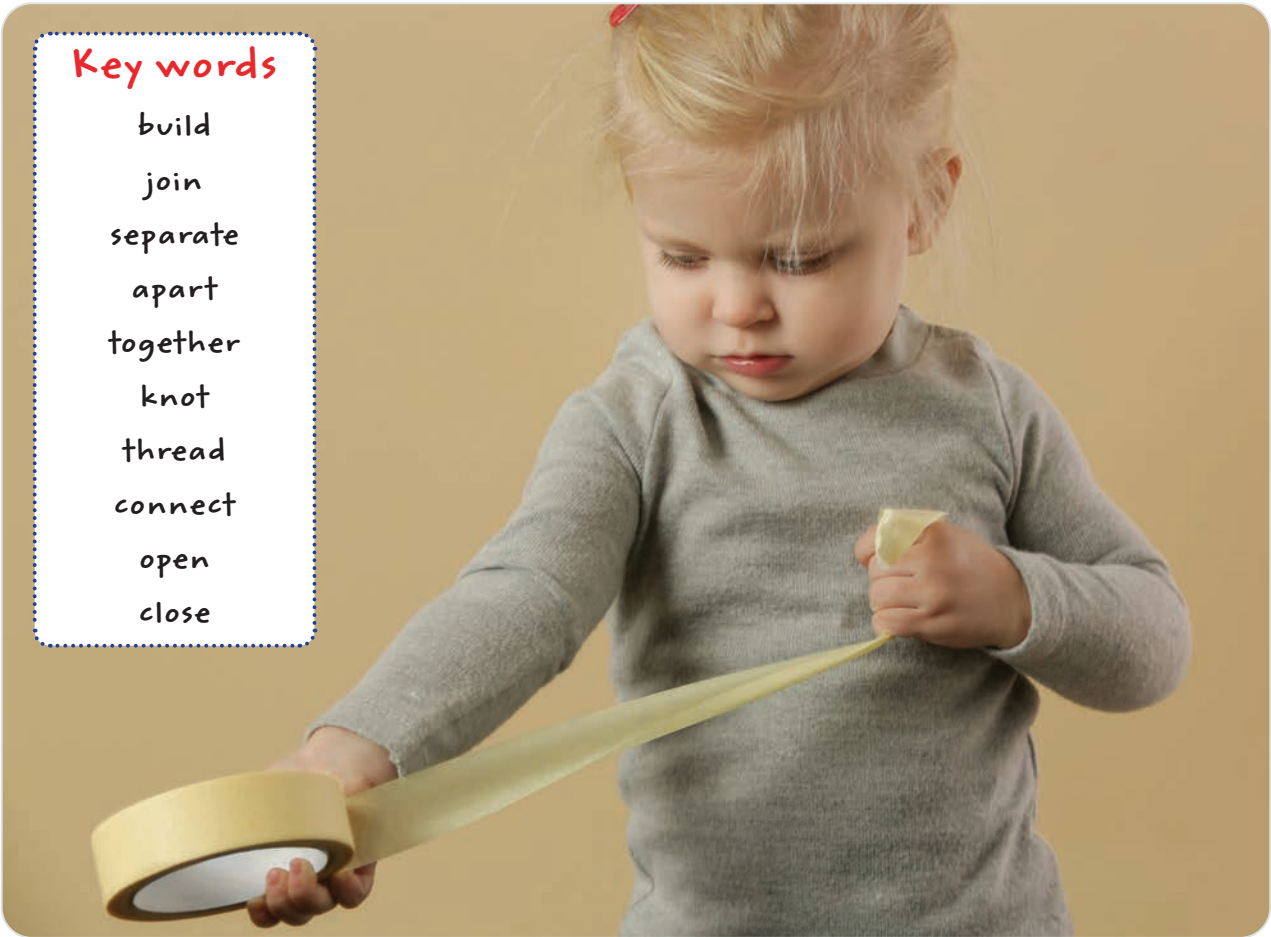
Supporting this schema

Offer toddlers the following equipment and opportunities to support them with connecting:

- Magnets
- Interlocking train tracks and train
- Blocks, bricks, square sponges or anything that children can line up or stack
- Flower pots, boxes and containers with lids
- Threading opportunities with thick string and large beads, kitchen roll holders and thin ropes
- String, ribbon and scarves so that they can join toys/objects together
- Sets of dominoes
- Lollipop sticks and straws
- Sticky tape, such as masking tape, for joining things together

Key words

build
join
separate
apart
together
knot
thread
connect
open
close



Lily, 24 months, uses a string from the threading beads box to try to tie two teddies together by their legs. She realises that the string is too short so she asks her mum, Shifa, to help her. Shifa takes another string and ties it to the one Lily has been using. Lily uses this to join the teddies together. She takes Shifa's scarf from around her neck and, with her help, attaches the teddies with the scarf to the leg of the table. Later on, Lily puts masking tape around her teddies and tries to attach them to the side of a cardboard box. They fall off. Shifa tells her that they might have to think of some other way to attach teddies to the box.

Positioning

What it is

When you see a toddler lining items up, arranging items in a pattern or balancing items one on top of the other they are exploring positioning. By positioning and ordering items or putting them into groups, children are experimenting with ideas about pattern, shape, length, size and height.

Children may line up toys, cutlery, cups etc., they may stack books and cushions, and they may create patterns with anything that they can find to follow this fascination.

What children learn from this schema

Children engaged in this schema are learning about sequencing which helps with later maths. They are putting things in order, which, in turn, helps them to logically organise events, images and thoughts. Positioning helps children come to recognise patterns in the world that make it predictable and more easily understood.

Supporting this schema

Offer toddlers the following equipment and opportunities to support children with positioning:

- Baskets with open-ended materials to sort and organise
- Themed treasure baskets, for example, the seasons
- Empty shelves to arrange objects on
- Larger items to organise (perhaps outdoors) such as plastic piping and cardboard boxes
- Empty pieces of guttering to line objects up in
- Spoons, place mats and beakers so they can set the table. You can help them to place the items on the table.
- Muffin tins and empty egg trays to sort items into
- Nesting toys
- Opportunities for shoe/boot sorting. Collect pairs of shoes and a box for each pair. Photograph the pairs of shoes/boots and attach to box. Encourage children to match the shoes/boots to the box.

Key words

besides
next to
behind
in front
under
on top



Sive notices that her daughter Emma, who is 30 months, has again taken all the farm animals out of the playbox and organised them in a line. Emma has been doing this repeatedly for the past few days. Sive brings the toy barn over but Emma ignores it.

As Emma places the animals in order of size, Sive realises that she is involved in a positioning schema and considers what might help this fascination with putting things in order and sequencing.

She gathers a variety of small boxes of differing sizes and puts them into a low-sided laundry basket, which she leaves out. Emma takes out the boxes and stacks them on top of each other. Sive adds square and rectangle scraps of coloured materials to the basket. Emma takes the boxes from the stack and places them in a line on the floor, putting a scrap of material of a similar size on top of each box. Sive is delighted to see that her observation and understanding of this schema has created opportunities for Emma to explore it further.

She thinks about what else she can do and remembers the shells and pebbles they collected during the summer while on the beach, and decides to get them down so Emma can use them.

Enveloping

What it is

When toddlers cover up items such as teddies, dolls or themselves to see what happens, they are exploring enveloping. You may also observe children 'wrapping' themselves, other people or objects up with paper or fabrics or covering them with textural materials such as playdough, sand or paint. Children might also fill empty containers with various items, post toys and objects into empty tissue boxes and hide items. They may also dry tea sets with a tea towel, covering items as they go. Children may also lock themselves or others in rooms or hide in tents or blanket forts.

What children learn from this schema

Children engaged in this schema are learning and understanding about object permanence. That even when hidden from view an object, person or thing stills exists.

Supporting this schema

Using soft toys, play hide and seek around the room and assist the children to look for them. Play this with two or three toddlers at a time. Ask children where they think monkey or teddy might be. Follow on by asking children if they want to hide and monkey will find them.

Offer toddlers the following equipment and opportunities to support them with enveloping:

- Dressing up and other clothes, scarves, fabric and wrapping paper to wrap themselves in
- Parachute play
- Textural play such as playdough, sand and paint
- Various containers such as empty tissue boxes or cereal boxes
- Large boxes or containers to use as dens to contain themselves
- Fabric, net, ribbons, sheets for wrapping up dolls, teddies and other items
- Used paper for wrapping up bigger items including outdoor equipment
- Tea towels and cloths for washing/drying crockery and cutlery
- Large boxes with safety mirrors on the inside for them to sit into

Key words

inside
outside
hide
disappear
over
under
cover
uncover
wrap
unwrap



Gareth, 32 months, is in the dressing-up corner in the early years setting. He wraps a large scarf around his waist and another around his arm and approaches Paddy, his key person, to help him put a third scarf around his head. Harry, who is standing nearby, wants the scarf. Paddy suggests to Gareth that Harry should have the scarf as he has already got two and there are no more scarves for Harry to use.

The other educator in the room, Clodagh, thinks that Gareth may be exploring an enveloping schema. She and Paddy talk about this and they decide to ensure there are plenty of scarves, lengths of fabric and clean bandages available, along with the dressing-up clothes, for children to use to envelop themselves and other things.

Orientation

What it is

This schema is about investigating different viewpoints and all angles. Being 'up' is important for toddlers as it provides them with the opportunity to view from a different aspect and understand another perspective. Hanging upside down or bending down and looking through legs is common among young children as is hanging off a bed or sliding under a chair or table to understand what it looks and feels like.

What children learn from this schema

With the orientation schema, children learn how it feels to be sideways, to be upside down or higher than usual and thus learn about the world having different perspectives. Activities and experiences of the orientation schema provide children with a good understanding of their own body in space and their relationship to other objects and people in space, and they begin to learn the important skills of spatial awareness and balance. As they develop this understanding, the learning becomes more complex, leading to an understanding of distance and location.

Supporting this schema

Offer toddlers the following equipment and opportunities to support them with orientation:

- The opportunity to engage in yoga, tumbling and headstands – provide rubber matting for those opportunities
- Opportunities to dangle upside down from low furniture
- Opportunities both indoors and outdoors to be at different heights
- Music and movement using ribbons and scarves
- Provide binoculars, bought or homemade
- A low triangular climbing frame to hang from
- Get outdoors as much as possible so children can climb trees, go up and roll down hills
- Add safety mirrors to surfaces, not necessarily walls

Key words

climb

under

over

on

off

upside down

backwards

forwards



Robyn, 19 months old, climbs up onto her chair and looks around her while bouncing up and down on her legs. Her dad, Francis, observes this and quickly removes Robyn from the chair saying 'Chairs are for sitting on, not for standing on. You will fall and hurt yourself'

Robyn starts to cry and Francis soothes her, carrying her to the couch where they both sit and look at a book. Later, Robyn tries to climb up on a table. Francis takes her down and thinks about what Robyn is trying to do. He searches online and discovers that Robyn may be expressing a fascination with orientation.

Francis decides he will place some mirrors around the house to show different viewpoints for Robyn. He will also ask his sister Bronagh, who is a carpenter, if she can make them a small set of steps with a platform for Robyn to use to explore an orientation schema. He also thinks about bringing Robyn to parent and toddlers group to play on the low climbing frame.

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Useful Weblinks

- A Guide to Schema Play in Toddlers
<https://www.onehundredtoys.com/blogs/news/understanding-schema-play-in-toddlers>
- Schemas Why You Need to Know About Them
https://www.youtube.com/results?search_query=schemas+in+early+years
- Supporting Schemas
<https://www.teachearlyyears.com/enabling-environments/view/supporting-schemas>
- Schemas (Pacey)
<https://www.pacey.org.uk/working-in-childcare/spotlight-on/schemas/>
- Types of Schema (ECI)
<https://www.earlychildhoodireland.ie/wp-content/uploads/2014/02/Types-of-Schema.pdf>



Barnardos

Christchurch Square, Dublin 8

T: 01 4549699

E: training@barnardos.ie or resources@barnardos.ie

W: www.barnardos.ie

CHY 6015 / RCN 20010027



An Roinn Leanáí, Comhionannais,
Míchumais, Lánpháirtíochta agus Óige
Department of Children, Equality,
Disability, Integration and Youth

