



The Creative Skills Podcast  
Bonus Episode: A Schematic Approach to Arts in Early Years  
**Transcript**

**Quick Links:**

- Creative Skills Online: [www.starcatchers.org.uk/creative-skills-online](http://www.starcatchers.org.uk/creative-skills-online)
- This podcast episode, more information on schemas, and Wee Inspirations: <https://starcatchers.org.uk/schema-resources/>

All our resources are free to access, and feedback is vital for us to keep doing what we do.

If you have any thoughts, please do fill in our short survey here:  
[\*\*https://www.surveymonkey.co.uk/r/CreativeSkillsOnline\*\*](https://www.surveymonkey.co.uk/r/CreativeSkillsOnline)

You can enter each month to be entered into a prize draw where you could win £50 worth of materials for your setting

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## Transcript

### Heather Armstrong (00:10)

Welcome to this special bonus episode of Starcatchers Creative Skills Online. I'm Heather Armstrong.

On 24<sup>th</sup> June we ran an online workshop for early years artists looking at schemas. When I Googled "schema play" I got 119 million hits, so I think it is fair to say there's a *lot* of information out there already, but I'm particularly interested in schemas in an arts context, whether you're planning creative experiences for wee ones, or making productions for a young audience.

When I run schema workshops in person, I try to make the learning as practical as possible – so I'll explain some of the theory, and give people lots of time to experiment and play around with loose parts. If you haven't heard the term loose parts before, it's basically a term for any object that can be played with in more than one way – they're also sometimes called open ended resources. If you have a Captain America figure, it's pretty much always going to be Captain America – whereas something like a beanbag or building blocks, sticks, boxes, even the contents of your recycling bin – can be used in lots and lots of different ways.

Obviously, this is a podcast, so it's a bit more challenging for us to interact, but we're going to try something new. If you can have some paper and a few pens handy as you listen along, what I'll do is give you some theory, then leave a gap to give you a chance to have a wee play – you'll be amazed at how many ways you can find to play with just paper and pens as your loose parts. There's also a short video I refer to later on in the podcast, and the link to that will be on the [web page for this episode](#).

First things first, what are schemas? Schemas are patterns of behaviour that appear in the way babies and young children play.

Babies and young children are naturally curious. They're like wee scientists – they learn by experimenting as they play. By exploring and repeating these schemas, or patterns of behaviour, wee ones are learning about the world around them.

You might find your wee one is fascinated by certain schemas at different times – sometimes the interest lasts for weeks or months, sometimes it disappears as suddenly as it appears. As children get older, they sometimes revisit schemas in different, more complex ways.

In theory there are hundreds of different schemas, but in early years we usually talk about nine main ones: trajectory, transformation, rotation, enclosure, enveloping,

transporting, connection and orientation. And that's what I'm going to cover in this podcast.

But before we get into the nitty gritty, I want to cover a wee bit about the brain development of babies and young children, which will help explain why schemas, and why creative experiences more generally, are so important in the early years.

When we're born, our brains still have a lot of developing to do, and the majority of that development happens in the first three years of life. The experiences we have during that time literally shapes the structure of our brains – 90% of the connections, or synapses, are hard wired in by the time we're three<sup>1</sup>. It's important to say our brains do keep growing and changing after that: there's another period of neuroplasticity in our teens, and our brains aren't fully developed until our mid-twenties. But the first three years are critical, and if you look at the brain scan of a child who has suffered extreme neglect compared to the brain scan of a child who has grown up in a stable, loving environment, the physical difference is stark.

In Scotland, our children face something called the Attainment Gap<sup>2</sup>. On average, by age five, compared to children experiencing the least amount deprivation, children who grow up in our most deprived communities are 18 months behind in vocabulary and 13 months behind in cognitive ability, or problem solving. Unfortunately, this gap in attainment does not narrow, and you can see the same gap from age 5 follow through all stages of education – it's still there when we look at exam results by the end of secondary school.

These kinds of statistics are obviously based on averages – it's not a universal truth for every single child. So, these statistics are only helpful if we can identify what can make the difference: what about the children who don't follow this trend? The "Growing Up in Scotland" study<sup>3</sup> found that one of the most effective ways to insulate young children from the negative effects of poverty was what they call an enriched home environment: which includes reading books, drawing and playing together, singing and rhymes. Shared creative activities.

But why should shared creative activities make such a difference when it comes to the development of young children?

Think about the way babies learn. They learn through exploring the world around them. They learn through trial and error. And they learn through repetition. Each time babies go through sensory experiences – seeing, tasting, touching, smelling - new connections, or synapses are being made in their brains. Different parts of the brain are used to process different senses, and all those synapses, all those connections, are how

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<sup>1</sup> <https://www.firstthingsfirst.org/early-childhood-matters/brain-development/>

<sup>2</sup> <https://education.gov.scot/improvement/learning-resources/scottish-attainment-challenge/>

<sup>3</sup> <https://growingupinScotland.org.uk/>

all those different bits of the brain work together. And if the same synapses, or connections are used again and again, they grow stronger. That's why babies love repetition.

It's a bit like walking through long grass – the first time you take a path, you might flatten down a bit of the grass, but mostly it will spring back up. If you walk the same path again and again, it gets clearer over time. And if there are lots of paths that get used all the time, you start getting a network of paths that can take you wherever you want to go.

Babies don't consciously make these paths or connections – every day they are having thousands and thousands of tiny experiences, and they learn through trial and error where the patterns in these experiences are.

If you think about the creative process – it's about trial and error too. It's about combining two or more – things, objects, senses, words – in a way that's new to you, and means something to you. Sometimes it works, sometimes you have to learn from your mistakes. Creativity isn't always about  $A + B = C$ , sometimes you can get to C by dividing X by Y, but you'll only find that out if you explore and play around with what you have. Creativity can be combining musical notes to write an opera, or it can be getting locked in a toilet and using the contents of your pockets to find a way to jimmy the lock open.

The way babies and young children learn is a creative process. And a creative environment can be a really great, inspiring place for wee ones to.

So where do schemas come into this? Schemas help us make sense of all the thousands of ways children can play. In the 1980s Chris Athey noticed fascinations, or patterns of behaviour, that appeared in children's play time and time again<sup>4</sup>. By exploring and repeating these schemas, wee ones are making sense of the world, and developing their brains. And I think fascinations is a really good way of describing them, because you'll see wee ones really concentrating, really fascinated by different schemas at different points, and it's like they *have* to do that certain action or behaviour over and over again.

Now in theory play schemas are infinite, but broadly they're grouped into 9 main schemas.

The best way to learn about these schemas is to anchor them into real life situations. So I want you to take a journey in your imagination...it's a middle class journey...we're taking a baby or toddler... to Pizza Express! (Other pizza restaurants are available).

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<sup>4</sup> <https://www.nurseryworld.co.uk/features/article/early-years-pioneers-chris-athey>

You go in, baby or toddler is awake, and happy, and they can sit up, so they go into a highchair. And the lovely server gives them a paper menu, a wee tin with some crayons inside. So, in your mind, or with your paper and pens, I'd like to explore all the different things that baby might do with the paper and the tin of crayons.

Spoiler alert: the baby is *not* going to draw a picture, or colour in, or complete any of the word searches. If it helps, you can think of a "naughty" baby- and I'm saying that in inverted commas.

Okay, let's have a look at some of the things a wee one might do and which ones we can link into schemas.

Schema One. Maybe you said the first thing baby will do is tip the crayons on the floor or throw them. Then the adult picks them up, and baby drops them on the floor again. And again, and again. This is trajectory schema – it tends to be about throwing or dropping, and they're learning about movement – across the horizontal, side to side, the vertical, up and down, and diagonally, it all tends to be in straight lines. Okay, we know what happens when we drop the crayons, what happens when we drop the tin? What happens when I drop this spoon? What happens when I drop this dough ball? What happens when I drop this glass tealight holder?

This schema can be about objects, but it can also be about moving themselves – so with trajectory, once they're mobile they might spend a lot of time trying to jump off the furniture. They're learning about gravity and weight and speed. If you try and stop wee ones exploring a schema, it's likely to lead to a lot of frustration because that fascination, that urge, is still there. So, think about ways to explore this schema safely – think about throwing scarves or feathers, light, soft balls, bean bags, think about ramps to slide objects down, and creating safe spaces to be able to explore jumping down. Running water also comes under this schema.

If you're creating a production for a young audience that has a play session at the end, it can be really useful to think about schemas when you're planning, and make sure your performers or facilitators know about schemas too. That way, if they notice a wee one really wants to throw stuff, they can think *aha!* Trajectory! What else might they be interested in so we can explore the same urge without anyone else being worried about being hit in the face by a flying object.

Schema Two. You may have said they'll make a circular or swirly movement and sweep everything onto the floor. Yes, the crayons are on the floor again, but this time it was all about the wee ones making circles with their hands – this is the rotation schema. Think spinning and making circles with objects or with our bodies. They may like rolling the tin the crayons came in or playing with the wheels on their pram. Hula hoops, toys with wheels, twirling taps to turn the water on, getting you to spin them round and round, it's all good rotational fun.

Again, when you're thinking about productions for young audiences, wee ones are really interested when they see other people explore the schema they're interested in. And actually, as you play about with your paper and pens – maybe you're giving your pens a wee spin in your hand as you're listening to this – you'll find schemas that are still really satisfying to you, as an adult. If you know someone who loves things like spinning a coin on its edge? That's the rotational schema appearing again.

Okay, back to the baby in the highchair.

Schema Three. maybe you said they will take the tip the crayons out then arrange them in a line or pattern. This is positioning schema. Wee ones who are exploring this schema might be really focussed in arranging toys or objects, they may have strong feelings about who sits where, or sometimes they want their food arranged separately or in a specific way. Positioning schema can sometimes make people think their wee ones might be neurodivergent, but it's actually really common across the whole population.

And this is the schema you see most often still sneak out in adults – so if you love arranging your desk really neatly there's a bit of that positioning schema urge going on. As I said before, schemas aren't always a one time thing: so you might find that your wee one gets really focussed on a certain type of play for a period of time, then suddenly they're not interested anymore.

Often you'll find schemas reappear at different developmental stages, so babies might be interested in positioning for a while, then it might come back in a more complex way in when they're toddling, and again when they're a bit older again.

If you want to support positioning schema, it's good to have objects for them to move around that are age and stage appropriate – so obviously for really wee ones, nothing that's a choking hazard, you want objects that are easily grabbable, a selection of similar objects that can be grouped together....and games about lining up, or where people stand or move in relation to each other.

What else might the wee one be doing in the highchair?

Schema Four. Maybe you said they will snap the crayons, or pour their water on the paper menu, or maybe put their crayons into their drink. This is the transformation schema, it's all about the properties of materials – how strong is a crayon, what happens when you mix water and pizza crusts, what if your ice cream melts and you get to swirl your sauce into the melty bits. There can be a lot of messy play involved in transformation, but you can also think of it in terms of cooking or baking, making magic potions, playdough...and the transformation can also be more cerebral.

So if you think of the classic drama game, “This Is Not A...” (e.g.) “This is not a pen, it’s a moustache, it can be a telephone, or an extra finger, or a tail...” That’s part of the transformation schema too, and wee ones absolutely *love* to see this.

Schema Five. Maybe you said the baby might put the paper menu over their face, or on top of their head – this is the enveloping schema – it’s all about covering or hiding. Peekaboo is an absolute classic game that almost everyone knows babies love, and you see it used in loads of early years productions. Enveloping might also be about covering every inch of the paper in paint, again and again, or even painting your whole arm. When my daughter was wee, we had about six months where every single time we got the paints out, she would always, without fail, cover the entire piece of paper in paint. She was still building the same fine motor control, she was still exploring different ways to move the brush, but for her it was very much about the process of enveloping, rather than creating a specific picture that represented something.

If you’re running creative experiences for wee ones there can sometimes be pressure from parents who might expect a certain product at the end of a session – and again, this is why it’s useful for artists to be confident about schemas and how to talk about the benefits of play and exploration and creativity. There are resources on the Starcatchers website you can print or share with parents which can help get this information across.

Back to the highchair. Schema Six. Maybe you said the baby will use the crayons to create a border to keep all their other bits and pieces inside. Or maybe they’ll put all the crayons in the tub and then they *have* to stay in the tub. This is enclosure – I struggled a bit with difference between enveloping and enclosing, but it’s the difference between covering or hiding, and containing. So, think fences around farm animals, or a loop of train track that everything has to be inside.

I remember there was a netball court painted on the floor of the big hall when I was at school, and there was a centre circle marked out...and *everyone* wanted to stand inside that circle. There’s just something really satisfying about boundaries.

Think about den building – another classic activity that children of lots of ages enjoy. What schemas could that be supporting? Is it enclosing, or enveloping?

The truth is it could be both – schemas aren’t always hard and fast rules, you need to look at the intention behind what the wee one is doing, and sometimes that’s about looking at some of the other activities they’re really interested in. If you’re running regular sessions with the same children that might be easier to do, but if it’s a one off, it’s always nice to know that there will be some ideas that will appeal to wee ones who are interested in different schemas.

Okay, back with the baby in the highchair! Schema Seven. Maybe you said the baby would do that thing they do where they try and hang upside down out of the highchair. You know, they try to get their body as far to the side as possible, or twist round, that kind of thing? This is the orientation schema, it's all about looking at the world in a different way.

So, if you were ever given into trouble for sitting upside down on the sofa to watch the telly, you were exploring orientation.

Starcatchers associate artist Katy Wilson has worked on a couple of different projects exploring how wee ones can get the most out of visiting art galleries, and one of the brilliant ideas she explored was getting wee ones to look at the art from between their legs, or lying on their backs and seeing what they spotted from there<sup>5</sup>. She used that need to explore orientation, and it kept wee ones really engaged.

Orientation is great for developing our vestibular system, which gives us our sense of balance and spatial awareness. The vestibular system helps us coordinate our large and fine motor movements and maintain our posture, which is all part of the brain development wee ones are going through in those first few years. It's not a case of wee ones learning to sit still so they can concentrate – they need to learn all the different ways they can move before they learn how to keep their bodies still.

Second to last schema! Schema Eight. Maybe you said the baby wants to put the crayons in the tin, and they never want to let the tin go, and they want to carry the tin to the toilet, and they might even get upset if they can't take the crayons home, even if they have nine thousand crayons at home already. I know I'm stretching the pizza express scenario a wee bit here but go with it - this is transporting schema - it's all about carrying objects from one place to another.

As parents you may briefly go through a stage where your wee one is *delighted* to carry something to Mummy or Daddy or Granny, and you think you have a little butler living with you...and then it's gone, they don't care about that anymore. This is the nature of schemas, they master that schema and move on. For the transportation schema, think about prams, wheelbarrows, dumper trucks, bags and boxes they can loads with different objects – it's all about the journey.

Schema Nine. Maybe they use the crayons, the tin, whatever they can, and they build something – maybe they make a wee Jenga tower of crayons This is the connection schema which, as you might imagine, is about connecting things. The most common example of this is Lego, or anything you can build with. If they had glue or tape, they'd be connecting things that way - jigsaws are another example. It can be really satisfying watching things fit together. This might also be why some wee ones want to mush all the colours of playdough together.

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<sup>5</sup> <https://starcatchers.org.uk/work/wee-wanders/>



I hope you've enjoyed our wee trip to Pizza Express, and I hope this podcast has been a useful introduction to schemas. We've just got one more thing to do – we've pulled together [a short video](#) with some examples of schemas appearing in different Starcatchers productions over the years: [have a wee watch](#) and see what schemas you can spot.

Once we know about some of the schemas wee ones get really engaged in, we can create productions and creative experiences that young audiences are really interested in, and that also help support their development.

For me, I think one of the most important things schemas can do, is help adults make sense of the way wee ones play – if we understand why they might be doing what they do, it can take away a lot of our frustration. And if that play might be veering towards the destructive, or dangerous, we can try and find new ways to help explore that fascination.

Schemas help us work in child led ways – they help us tune into what's really interesting and important to wee ones. And when we support and honour their natural curiosity, we're showing them that we value who they are.

**Catherine Wilson (21:53)**

Thank you so much for listening.

The Creative Skills podcast was hosted by Heather Armstrong.

For each of the nine schemas we've spoken about in this podcast, we've created an accompanying resource which shares creative ideas you explore at home or in your setting. To find out more, head to [www.starcatchers.org.uk/schema-resources](http://www.starcatchers.org.uk/schema-resources)

Our intro music is "Road Building" composed by Abigail Sinar and performed by the RSNO for "Hup" in 2014.

The Creative Skills Podcast is part of Starcatcher's Creative Skills programme: training for the ELC workforce in Scotland funded by the Scottish Government. To find out more head to [www.starcatchers.org.uk](http://www.starcatchers.org.uk) and click on "Training and Development".