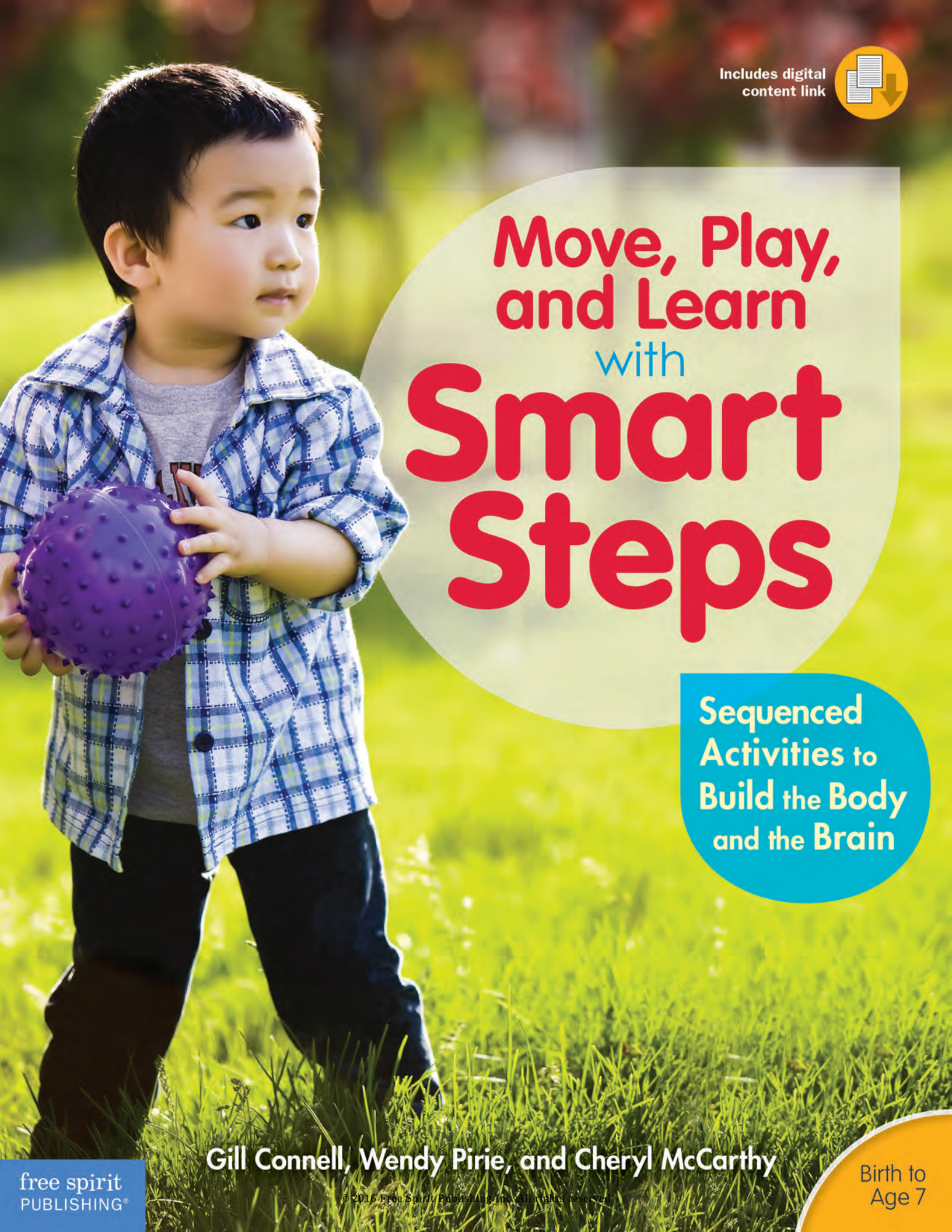

Move, Play, and Learn with Smart Steps

Move, Play, and Learn with Smart Steps

Sequenced Activities to Build the Body and the Brain

Gill Connell, Wendy Pirie, and Cheryl McCarthy

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Dedication

Over my many years of teaching I've stood in awe of children's intuitive ability to create what they need through the pure act of play. Each time they play, they learn. Each time I play with them, I learn more than they do.

To my favorite playmates and greatest life teachers: Becky, Milly, Lucy, Caitlin, Jacob, and the twinkles of joy I have yet to meet but hold in my heart for the day we will play together.

G.C.

To my three children, Kaleb, Max, and Carter, who wow me every day with their inspiration, joy in being active kids, and amazing attitude toward life.

To my husband Colin, whose motivation, drive, and energy I could not live without.

W.P.

To my sister Jill, for your unyielding, relentless belief in me. I love you.

To Gill, for showing me that changing the world is simply a matter of choice. Thank you for choosing me. TBIABS.

C.M.

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Intuition

Power

List of Digital Reproducible Forms

See page 209 for information about how to access the PDFs.

Digital content includes **all the activities in Part 2** as well as the following:

Introduction

Welcome to *Move, Play, and Learn with Smart Steps*!

It may not look like it, but every wiggle and every giggle of early childhood is power packed with learning. That's right. *Learning.* That's because movement and play are nature's chosen tools for developing the body *and* the brain. Strengthening and supporting that natural development is what *Move, Play, and Learn with Smart Steps* is all about.

Smart Steps is a developmentally based step-by-step activity series designed to provide young children from birth through age seven with a well-balanced physical "diet" of movement and play—in order to optimize their physical, cognitive, social, and emotional foundations for early learning and school readiness.

Wiring the Brain for Learning

In our companion book, *A Moving Child Is a Learning Child*, we talk in detail about the role movement plays in early brain development. During early physical and sensory experiences, the brain is recording information that builds the child's unique understanding of his* world. Through that very process, movement is literally wiring millions of neural pathways in the brain—pathways it will use for a lifetime to take in, process, and respond to stimulation and information. In other words, physical experiences and play activities in early childhood help lay down the cognitive wiring that will one day help the child learn to read, hold a pencil and write his name, reason through a math problem, paint pictures, play the piano, and all the other things he will accomplish and enjoy throughout his lifetime.

Automaticity

While that wiring is going on, something else is happening at the same time. Through movement, the body and brain are learning to communicate with each other, creating a seamless, instant, "smart" relationship. In fact, that relationship is so important that one of the brain's primary goals in the early years is to *automate* movement—to make movement something the child *doesn't* have to think about. We call this *automaticity.*

Of course, a smart relationship between the body and brain creates efficiencies and harmonies that make most movement patterns effortless. In and of itself, that's worth striving for. But in the natural order of things, automaticity is also the key that unlocks the brain's power for higher-level thinking, reasoning, creativity,

* When referring to children in this book, we alternate the use of male and female prounouns section by section. The information applies to girls and boys alike.

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and learning. That's because of the way the brain is designed.

The human brain is capable of doing only *one* thinking task at a time. This means that when the brain needs to think about moving, it *can't* think about learning—or anything else, for that matter. So, in order to free up the brain's full attention, automated movement has to come first. In short, without automated movement, a child would not be able to fully focus, think, or learn.

Apple Is for *A*

When a child is born, the world comes to her: Mommy smiling into the crib, a rattle placed in the child's hand, a ride in the stroller, Grandpa rocking her in his rocking chair. As passive as these experiences may seem, to a young infant they are rich in physical and sensory information about the world she's been launched into. Later, independent movement exponentially increases her information-gathering abilities, even if the quest for knowledge only takes her to the potted plant across the room.

This process of compiling tangible, physical, real-life, in-the-moment experiences one on top of the last is the essential first step in early learning. And the reason is simple. All learning, at any age, stands on the shoulders of prior knowledge—*from the known to the unknown.* We call this the "Apple Is for *A*" principle.

As children build up a bank of experiences with their bodies and through their senses, the brain is busy learning how to store, associate, analyze, and retrieve information. For instance, if a child has lots of varied experiences with apples, she's built a baseline familiarity—something *known*—about apples. She can then use this knowledge when presented with something related to apples, such as the letter *A*. She might not yet fully grasp what that squiggle *A* is all about, but she stands a better chance of grasping and remembering that the apple she *knows* has something to do with this new, *unknown* squiggle.

Smart Steps has been designed to foster and support this natural, experiential, physical-first style of learning—not by providing the apple, but by building the capabilities to successfully reach for the apple.

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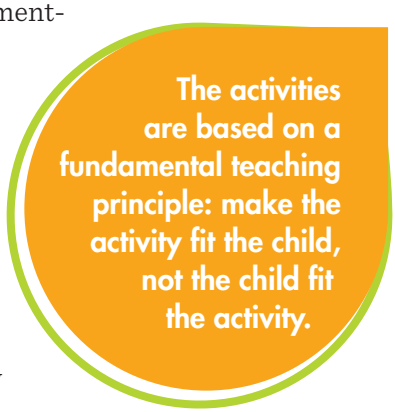
About This Book

Move, Play, and Learn with Smart Steps is for educators, childcare providers, and parents with young children birth to seven years old. Designed for large- or small-group settings or one-on-one interactions, the Smart Steps activities take children on a sequential journey of physical development structured for optimal learning impact.

The activities are based on a fundamental teaching principle: make the activity fit the child, not the child fit the activity. To that end, Smart Steps is composed of 50 activity sequences, each with 18 steps tailored to children's natural development. That's 900 play-filled, learning-rich activities in total.

Our goal is to provide children with a well-balanced daily diet of physical activity that builds the body *and* the brain. To achieve that, Part 1 of the book gives you a foundational understanding of movement and its role in early learning and development. In addition, we provide guidance for implementing Smart Steps, including observational assessment tools, activity selection tips, and individualization techniques to help children make the most of each wiggle and giggle.

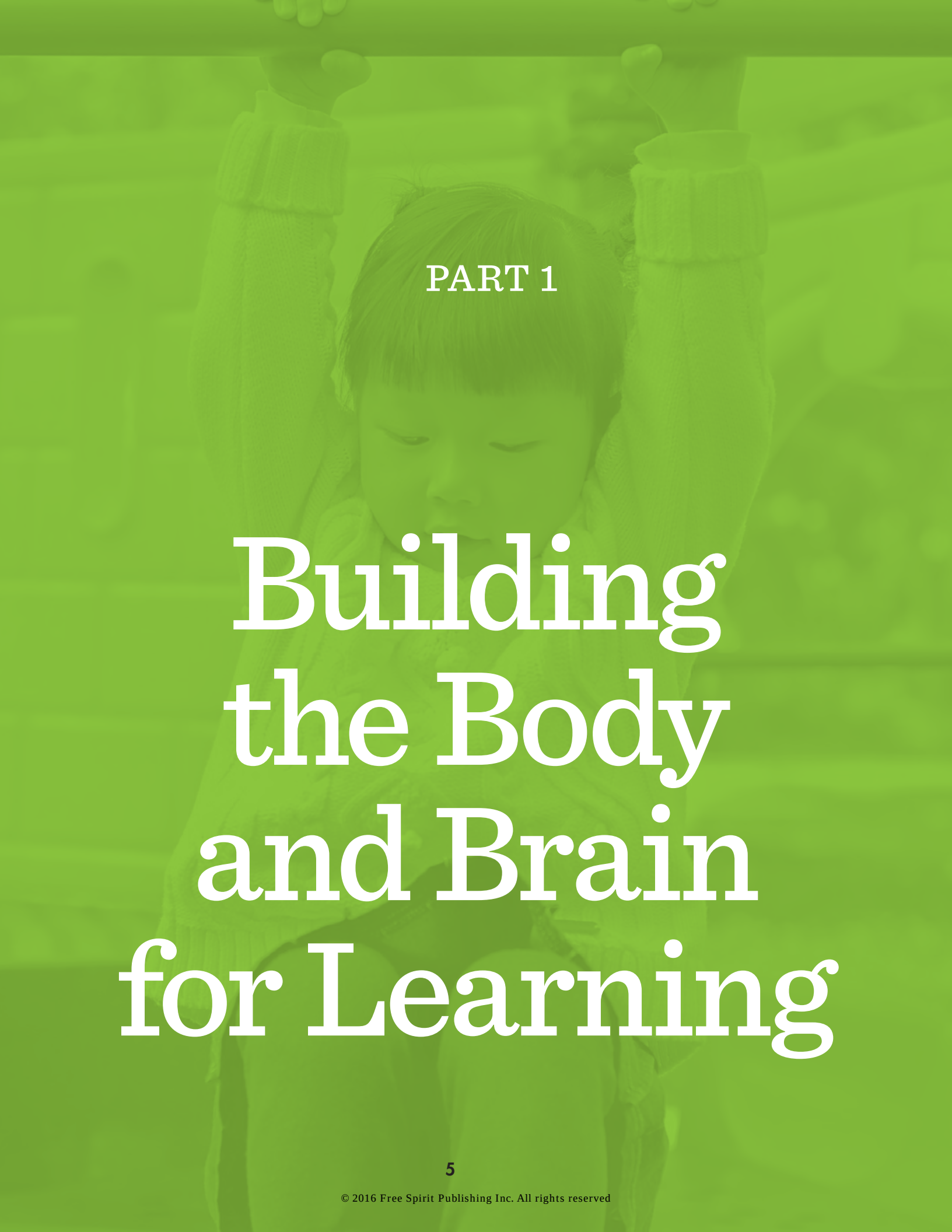


From there, it's on to Part 2, where you'll find an at-a-glance guide to the Smart Steps activities followed by the activities themselves.

At the back of the book you will find "Additional Resources" (which provides song and rhyme lyrics, game rules, ideas and strategies for getting kids moving in a variety of ways, and more) and a glossary of key terms related to early development and movement.

We'd like to hear about your experiences using the Smart Steps activities. Please write to us at in care of our publisher: help4kids@freespirit.com.

It's plain to see: in early childhood, learning never sits still. So let's get moving!



PART 1

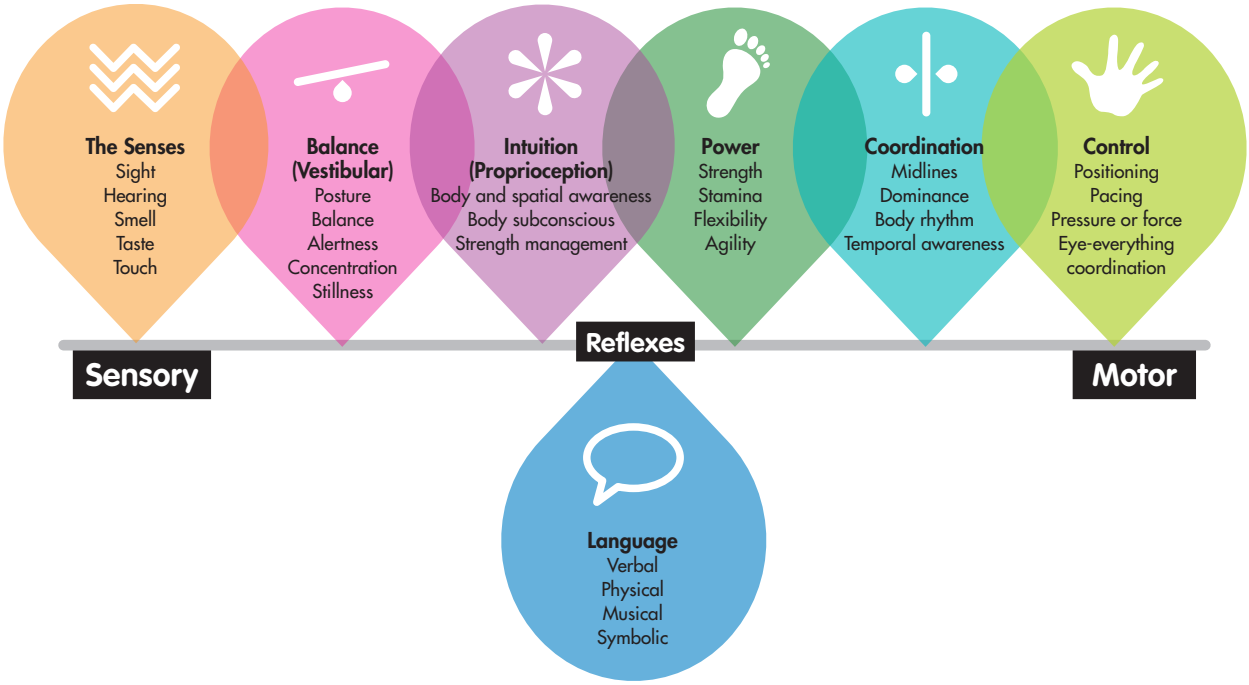
Building the Body and Brain for Learning

CHAPTER 1

The Kinetic Scale: An Overview

In order to understand how movement underpins early childhood development, we need a deeper understanding of movement itself. So let's start by breaking down the basic elements of movement—the raw ingredients. To do that, we've devised a tool to help you visualize those ingredients and the dynamic relationship between them. We call it the Kinetic Scale.

The Kinetic Scale



The key components of the Kinetic Scale are reflexes, six physicalities (the senses, balance, intuition, power, coordination, and control), and language.

Reflexes

The reflexes are nature's way of assisting babies at critical junctures in the early years of life and throughout life as needed. First, early reflexes known as the primitive reflexes assist baby in utero and during the birthing process. After birth, they trigger important involuntary movements babies need for their survival, such as grasping or pushing away. This, in turn, begins to build strength in the muscles, tendons, and ligaments for independent movement a little later on. Primitive reflexes

eventually integrate and give way to postural reflexes, which assist baby to get himself upright for crawling and walking.

All early movement depends on reflexes, so in the Kinetic Scale diagram, you'll see they serve as the platform for what we call the six physicalities.

The Physicalities

Three sensory tools (the senses, balance, and intuition) and three motor tools (power, coordination, and control) make up the six physicalities of the Kinetic Scale. Together, they ensure a rich, daily movement diet that builds the body *and* fosters the deep and intricate neural wiring in the brain that occurs in the early years.

As you'll see when you look at the Smart Steps activities in Part 2, we've provided an at-a-glance guide to the kinetic value of each activity so that you'll be able to prepare a well-balanced progression of move-to-learn activities for the children in your care. We'll get into more detail on activity planning a little later. But for now, let's briefly take a look at the six physicalities.

The Senses

The senses are how children perceive the sights, sounds, smells, tastes, and textures of our world—the physical, tangible experiences of life. In the early years, sensory stimulation provides the child's brain with the essential information it needs to learn to navigate and interact with the people, places, and things in the child's environment. In other words, the senses are the origins of learning.

Balance

Balance underpins virtually everything we do. It provides us the stability we need for everything from everyday tasks (like staying upright while you're reading this) to extraordinary feats of physical skill and daring. Governed by what's called the vestibular system, it is our internal sense of what feels in and out of balance. It works in conjunction with our sense of intuition (the proprioceptive sense), continually evaluating and calibrating our orientation so we always know which end is up!

Intuition

Intuition (also known as proprioception) is our sense of the external conditions of our environment—the space and the objects in it. Think of it as the body's internal GPS system. It provides us with a sense of our physical selves by answering important questions such as: "How big am I?" "What shape am I?" In turn, this gives us the intuitive sense of how to navigate the space around us: "How tall is that step?" "Will I fit through that tunnel?"

Intuition also gives us the tools we need to interact with our environment: "How hard do I need to push to open the door?" For adults, all of this happens without conscious thought. That's because we've had literally millions and millions of physical interactions over our lifetimes. Children's intuition is still very much in

training, so "clumsiness" from time to time is to be fully expected. (After all, we adults still miss a curb occasionally, too!)

Power

To achieve fully automated movement, muscles need strength, stamina, flexibility, and agility. And not just the big muscles we think of as "gross motor." All muscles—big and small—need to be able to carry out whatever the brain asks them to do. But helping children achieve their optimal physical power is more than a matter of fitness. Early on, children begin to adopt attitudes and behaviors about their own power—enthusiasm, willingness, perseverance, resilience, kid-sized courage, and a sense of experimentation and adventure—that will serve them well on the playground, in the classroom, and in life.

Coordination

Putting one foot in front of the other seems easy unless you've never done it before. Coordinated movement—moving two or more parts of the body in synergy—is how we get things accomplished, and it's dependent on the development of the *midlines* in the early years. Imagine the body divided by three lines. One line separates left

The Midlines

from right. Another separates top from bottom. The third separates front from back. The midlines serve as the central pivot points for the body's sophisticated coordinated movement patterns.

Coordinated movements come in many forms:

- With mirrored or *bilateral* movement, both the left and right sides of the body move together in a similar way at the same time. For example, babies hold their bottles with both hands.
- One-sided or *homolateral* movement requires one half of the body to move while the other half stays still. Writing with one hand while the other hand remains still or scooting on a scooter are examples of homolaterality.
- Opposition or *lateral* movement occurs when one side of the body moves in the opposite manner of the other. Think walking—right foot front, left foot back.
- Crossover or *cross-lateral* movement is when one part of the body crosses over to the other side—as when you reach your left hand over your right shoulder to scratch your back.

Control

Self-control begins for children when they can master their own body and achieve the goals they set for themselves. This means highly refined control of muscle movement. And again, it doesn't matter whether the muscles are big or small. All muscles need the ability to adapt their speed, direction, and force, whether for running across a field or typing on a keyboard.

Language

Perhaps the most surprising element of the Kinetic Scale is the inclusion of language. Language in all its forms enriches the learning power of movement by providing the brain with the stimulation it needs to translate tangible experience into new concepts and, eventually, into abstract thinking. For instance, when a child lifts a heavy object, you might say, "The box is heavy. You are strong to lift that box." Three concepts come into play in that one scenario:

1. What does *heavy* feel like?
2. What does *strong* feel like?
3. The words *heavy* and *strong* relate to each other.

Later, the child may struggle to push open a door, and you might say, "That door is heavy. You need to be strong to open that door." Hearing *heavy* and *strong* in a different context gives him more physical evidence of the words' meanings. But more important, he begins to understand that those words can apply to more than one object or situation. And that is the very beginning of nuanced, conceptual thinking.

In short, continuous, in-the-moment exposure to rich and plentiful language optimizes and makes real a child's understanding of human communication. In other words, movement brings language to life. (Please see pages 36–38 for more information on how to supercharge learning with movement and language.)

Measuring Child Development: What Can the Child *Do*?

On its own, the Kinetic Scale provides broad guidance for planning the right balance of activities for young children. But of course, little ones are growing and changing all the time. And that means their movement needs are growing and changing, too. To provide for that, the Kinetic Scale is designed to "tilt" to meet those needs at each stage of development.

Now, the most common way to establish a child's stage of development is chronological age. But given all the "moving parts" of early childhood development, age may actually be one of the most misleading variables to consider in evaluating a child's movement needs. After all, some children walk at eight months, others at sixteen months. Some children can catch a ball when they're two years old, while some four-year-olds still can't. So instead of chronological age, the Kinetic Scale uses a criterion that is simple and easy to see: What can the child *do*?

The "Can-Dos" of Movement

As you know, there are many observable developmental changes in young children as they move through the early years, acquiring new levels of capabilities, or "can-dos," along the way. And while the exact progression of these can-dos may vary a little or a lot from child to child, nature's wisdom provides an orderly and cumulative sequence of events that occurs broadly across six stages of movement development:

Snugglers (birth to rolling over). The snugglers phase spans the time infants progress from nonmobile, full dependence on others to the first glimmers of **intentional, self-directed movement**—the very beginnings of self-discovery.

Squigglers (rocking, crawling, sitting up). Children discover **mobility independence** throughout this period, unlocking a wide range of early investigative explorations—the seeds of curiosity.

Scampers (pulling up to walking). The final evolutionary steps from horizontal to vertical occur in this period, bringing children to steady-on-their-feet upright—along with an explosive period of **new perspectives** and capabilities all now within reach.

Stompers (running and jumping). Full of experimental energy, children gain a larger sense of **confidence** as they test the limits of what their bodies can do. Speed, strength, and daring define this period, as stompers redefine what's possible and quite literally learn to defy gravity.

Scooters (hopping and climbing). Ever more complex and sophisticated whole-body **coordination** is emerging, sparking huge advancements in physical, cognitive, social, emotional, and communicative capabilities.

Skedaddlers (skipping, leaping, cooperative games, and dance). As the body and brain become one, **self-control** comes easier now. And with that control comes the freedom to achieve even more.

Age may actually be one of the most misleading variables to consider in evaluating a child's movement needs.

The diagram on pages 12–13 vividly illustrates the journey of capabilities children follow as they progress from primitive reflexes to automated coordinated movement.

Tilting the Scale

With a baseline understanding of how children's can-dos unfold, we're ready to explore how the Kinetic Scale enables this progression. Note how the Kinetic Scale rebalances the physicalities as children move through each step. Broadly, a very young child's needs tilt toward the sensory tools—the senses, balance, and intuition. Over time and as she grows, the Kinetic Scale tilts toward the motor tools—power, coordination, and control.

But, the operative word here is *tilt*. This is *not* an on-off switch.

Nor is the Kinetic Scale a checklist. At every stage of development, reflexes, physicalities, and language are continuously interwoven, helping the child develop holistically as nature intended. The proportions change over time, but all of the ingredients are active parts of a daily, well-balanced physical diet throughout the early years.

Now, as we've said, the Kinetic Scale is guided by what the child can do, not by her age. But for clarity, in the diagram on pages 14–15 we have indicated approximate ages when these stages generally occur. For instance, we've identified the squiggler stage at approximately six to fourteen months. But please also note, the squigglers stage actually overlaps with the scampers stage at nine to twenty-four months. These overlaps are designed to account for the wide variation in children's individual developmental timetables.

And please remember, this or any other evaluation tool is just a guide. It's more important to be guided by the child. What a child does with her body tells you what her brain is trying to figure out. That is nature's course, and working "with the grain" of nature is the best course you can take.

The Journey of Can-Do

Prenatal primitive reflexes: involuntary movement

Snugglers

Primitive reflexes in place at birth

Head control: first attempts

Awakening of senses with touch, massage, and skin-to-skin contact

Hand and foot recognition

Pincer grip

Crawling

Changing hands

Releasing grasp voluntarily

Sitting independently

Scampers

Navigating small spaces

Pulling up to stand

Cruising

Marching

Balancing on one foot

Handedness: early signs

Scooters

Temporal awareness

Hopping

Climbing in opposition

Galloping

Midlines developing

Hand and foot dominance developing

Skedaddlers


Hip tips: attempting to roll over


Sensory discoveries: especially mouth


Rolling over onto tummy


Pushing up from tummy

Squigglers


Postural reflexes emerging


Studying facial expressions


Grasping


Mouthing things


Commando crawling


Up on all fours


Rocking


Bobbing up and down, aided


Standing, unaided


Climbing up furniture or stairs


Eye-hand coordination: self-feeding


Walking unaided

Stompers


Running


Bobbing up and down, unaided


Jumping on two feet


Upper body strength developing


Jumping forward on two feet


Manipulative skills emerging


Automated coordinated movement


Skipping


Leaping from running


Crossing the midline


Leaping from standing

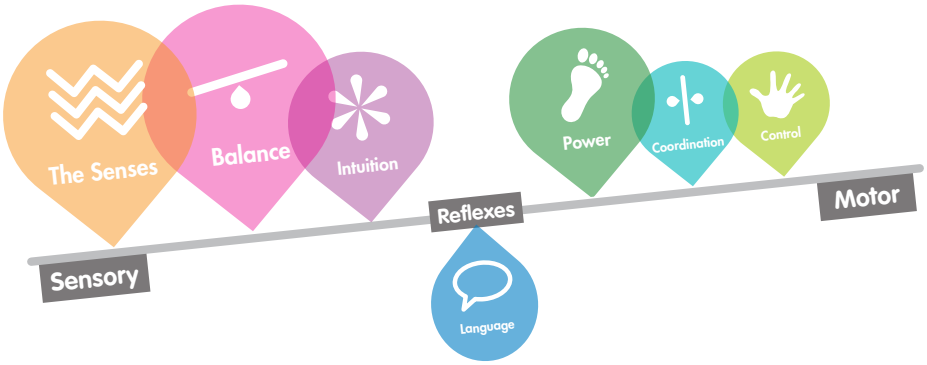
The Kinetic Scale Stage by Stage

Snugglers

Birth to rolling over

Approximate age: 0–6 months

Infants learn about the world largely through sensory information. Balance development is also essential right from the start to serve as the foundation for current and future whole-body movement.

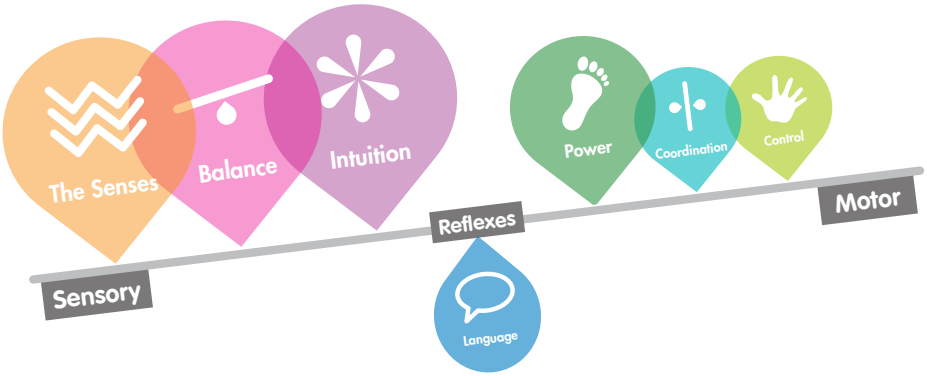


Squigglers

Rocking, crawling, and sitting

Approximate age: 6–14 months

Squigglers continue to understand their world principally through their senses. Balance and intuition development accelerates as rolling, sitting independently, and crawling emerge.

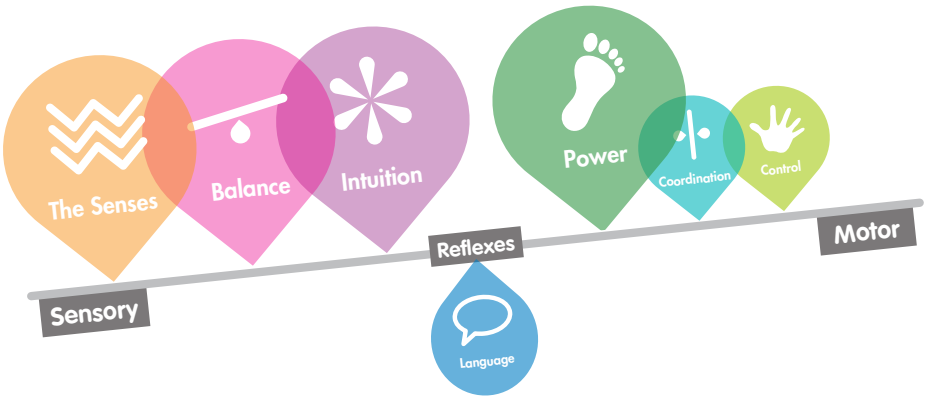


Scampers

Pulling up to walking

Approximate age: 9–24 months

The senses now act even more as the fuel for movement, and movement as the fuel for the senses. Balance, intuition, and power are in full gear as baby works toward vertical—standing and walking.

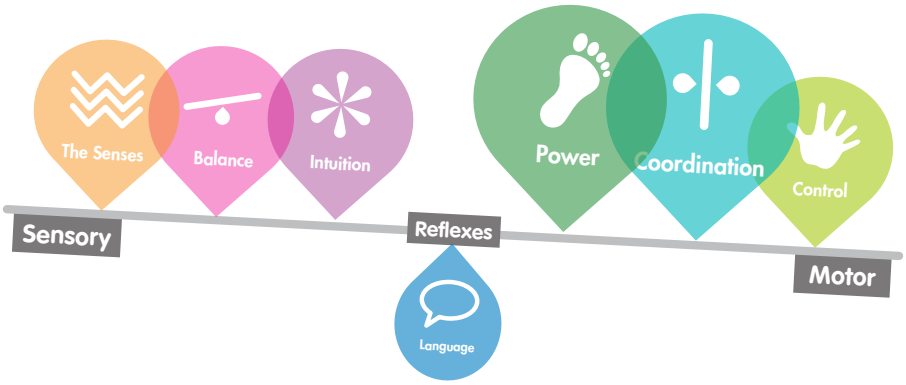


Stompers

Running and jumping

Approximate age: 20 months–3½ years

Stompers are picking up speed and endurance as they do more and more things on their own. Note how the scale now tilts to the motor side where whole-body coordination is emerging.

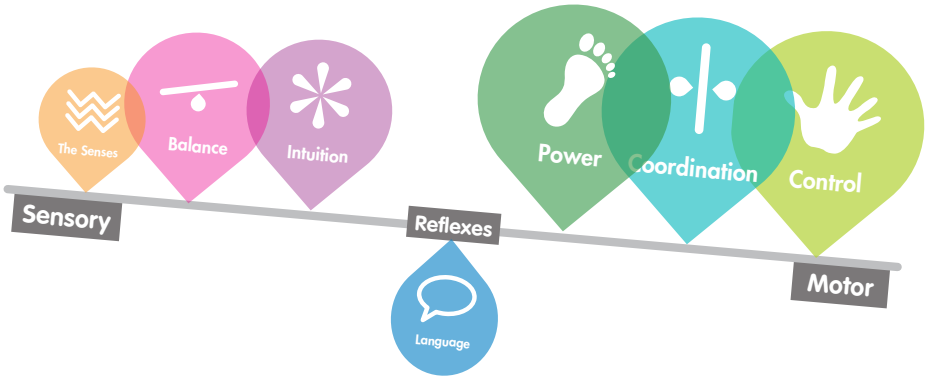


Scooters

Hopping and climbing

Approximate age: 3–4 years

Big, whole-body movements are the jet fuel for this stage, building power in the muscles to climb ever-more-challenging movement mountains. And of course, with power comes the important need for more and more control.



Skedaddlers

Skipping, leaping, cooperative games, and dance

Approximate age: 4 years and older

The three motor physicalities are in full focus for skedaddlers, who are nearing the finish line of foundational movement development and achieving full automaticity.