

California Preschool/
Transitional Kindergarten
**Learning
Foundations**

**Physical
Development**



For Three-to-Five-and-a-Half-
Year-Old Children in Center-Based,
Home-Based, and TK Settings

Table of Contents

Introduction	3
Organization of Physical Development Domain	4
Strands and Sub-Strands	4
Foundations Statements	4
Age Levels	5
Use of Examples	5
Diversity in Children’s Physical Development	6
How Teachers Can Support Children’s Physical Development	8
Setting Up Environments for Physical Movement	8
Planning Activities Around Specific Skills	8
Creating Opportunities for All Children to Engage in Physical Activity	9
Endnotes	10
 Preschool/Transitional Kindergarten Learning Foundations in the Domain of Physical Development	 11
 Strand: 1.0 — Fundamental Movement Skills	 12
Sub-Strand — Balance	12
Foundation 1.1 Balancing While Still	12
Foundation 1.2 Balancing in Motion	13
Sub-Strand — Locomotor Skills	14
Foundation 1.3 Walking with Balance	14
Foundation 1.4 Running	15
Foundation 1.5 Jumping	16
Foundation 1.6 Varied Locomotor Skills	17
Sub-Strand — Manipulative Skills	18
Foundation 1.7 Gross Motor Manipulative Skills	18
Foundation 1.8 Fine Motor Manipulative Skills	19
Foundation 1.9 Hand Preference	21
 Strand: 2.0 — Perceptual–Motor Skills and Movement Concepts	 22
Sub-Strand — Body Awareness	22
Foundation 2.1 Knowledge of Body Parts	22
Sub-Strand — Spatial Awareness	23
Foundation 2.2 Spatial Awareness	23



Sub-Strand — Directional Awareness	25
Foundation 2.3 Directional Understanding	25
Foundation 2.4 Directional Movement	26
Foundation 2.5 Object Locations	27
Strand: 3.0 — Active Physical Play	28
Sub-Strand — Active Participation	28
Foundation 3.1 Physical Activity	28
Sub-Strand — Cardiovascular Endurance	29
Foundation 3.2 Cardiovascular Endurance	29
Sub-Strand — Muscular Strength, Muscular Endurance, and Flexibility	30
Foundation 3.3 Strength, Endurance, and Flexibility	30
Glossary	31
References and Source Materials	33

Introduction

Physical development and **physical activity** play an important role in children’s health and development throughout their life. Physical development, including **fundamental movement skills**, **perceptual–motor skills**, **movement** concepts, and active play, provides the foundation for much of what preschool children do throughout the day. Children’s physical skills and involvement in physical activities allow them to interact with others, explore, learn, and play.



Physical development includes how children learn to move their bodies, control their movements, and navigate spaces. Children’s physical development is influenced by their physical growth (for example, height, muscle development, general body mass) and their experiences and interactions with the world around them. Because physical development is recorded in growth charts, it is often thought of as something that happens naturally, with all children achieving skills in the same way or predetermined order. However, young children’s physical development is much more complex than growth charts suggest.¹ While the California Preschool and Transitional Kindergarten Learning Foundations (PTKLF) in Physical

Development each describe one discrete skill or behavior, these skills develop within a larger context. Physical development does not happen in isolation, but rather is influenced by a child’s culture, community, and experiences, and by their own body.

The PTKLF provide guidance to all California early education programs, including transitional kindergarten (TK), federal and state preschool programs (for example, California State Preschool Program, Head Start), private preschool, and family child care homes, on the wide range of physical development knowledge and skills that children age three to five and a half typically attain when attending a high-quality early education program. Teachers can use the PTKLF to guide their observations and set learning goals for children and plan for developmentally appropriate, equitable, inclusive practice, including how to design learning environments and create learning experiences that promote children’s learning and development in the Physical Development domain. Early education programs can use the PTKLF to select and implement curricula aligned



with the PTKLF, guide the selection of assessments aligned with the PTKLF, design and offer professional development programs for educators to support understanding and effective use of the PTKLF, and enhance preschool to third grade (P–3) continuity across learning goals and practice in physical development.

Organization of Physical Development Domain

Strands and Sub-Strands

The PTKLF in Physical Development are organized into three strands: Fundamental Movement Skills, Perceptual–Motor Skills and Movement Concepts, and Active Physical Play. Each strand has three sub-strands, which provide more detail on the development within that strand.

- **Fundamental Movement Skills:** This strand covers milestones in the development of **balance**, or the stability of the body across contexts, **locomotor skills**, also known as **gross motor skills** (large body movements, such as climbing on a play structure), and **manipulative skills**, also known as **fine motor skills** (controlled, fine movements of the hands, such as drawing with a crayon).
- **Perceptual–Motor Skills and Movement Concepts:** This strand includes skills centered on the relationship between the senses and the body moving through space. Young children also develop perceptual skills related to their body in space and the development of strength and endurance needed for physical play and activity.
- **Active Physical Play:** This strand covers how children participate in movement activities, the relations between cardiovascular function and play, and how children develop **muscular strength, endurance, and flexibility** in their movements.

Children with disabilities might not show the skills described in these foundations but can use other avenues to reach the same goals. For example, not all children will learn to walk independently, but children can navigate through their environment in many different ways, for example, using **assistive devices** such as wheelchairs, walkers, or crutches. The foundations have been worded universally, when possible, to highlight the strengths of all children. At times, it may be necessary to consider how a child with physical disabilities navigates their environment or uses their body and tools and what goals that individual child is working on.

Foundations Statements

Within each sub-strand in the Physical Development domain are individual foundation statements that describe the competencies—the knowledge and skills—that children can be expected to



demonstrate in a high-quality early education program. Children develop these competencies at different times and in different ways within their home, school, and community contexts. The foundation statements are intended to help teachers identify learning opportunities they can support.

Age Levels

Age-based foundation statements describe what children may often know and be able to do as a result of their experiences and unique physical development. These statements are presented in two overlapping age ranges with full recognition that each child's development progresses over the early years with growth spurts and periods of skill consolidation in different domains at different points in time:

- An “Early Foundation” addresses knowledge and skills that children often demonstrate between three and four-and-a-half years of age.
- A “Later Foundation” addresses knowledge and skills that children often demonstrate between four and five-and-a-half years of age.

Use of Examples

For each level of any given foundation, examples illustrate the diverse ways children may demonstrate their knowledge and skills. Examples across the Early and Later foundation levels show development over time. The first one or two examples in each foundation are aligned across the Early and Later age levels. Examples show how children may demonstrate a developing skill or knowledge as part of their everyday routines, learning experiences, and interactions with adults and peers. Examples also provide different ways in which children may demonstrate their developing skills in different contexts, whether indoors or outdoors, and in a range of activities throughout the day.

Multilingual learners possess foundational language abilities developed in the context of their relationships in their homes and communities. The use of their home language in the early education program serves as a powerful tool, supporting children's sense of belonging, bridging connections to their existing knowledge, and fostering deeper ties to their homes and communities. Examples in the home language of multilingual learners illustrate how multilingual children can further develop these foundational abilities by using their home language as part of their learning and daily interactions with peers and adults in the early education program. In instances where a teacher may not be fluent in a child's home language, various strategies can

encourage multilingual learners to use their home languages, allowing them to leverage all of their linguistic capacities. To facilitate communication and understanding, the teacher can partner with staff or family volunteers who speak the child's home language. The teacher can also use interpreters and translation technology tools to communicate with families and gain insights about what a child knows and is able to do. All teachers should communicate with families about the benefits of bilingualism and how the home language serves as a critical foundation for English language development. Teachers should also encourage families to promote their child's continued development of the home language as an asset for overall learning.

The examples should help teachers gauge where a child's development is, consider how to support development within their current skill level, and build toward the next skill level in that foundation. Furthermore, while the examples may provide teachers with valuable ideas for how to support children's learning and development as children build their knowledge or skill in physical development, the examples are a small subset of all the different strategies teachers may employ to support children's learning and development in this domain. At the end of this introduction, the section How Teachers Can Support Children's Physical Development offers ideas on ways to support children's learning and development in physical development.

Diversity in Children's Physical Development

The Physical Development domain is inclusive of children from different cultural backgrounds and races, multilingual learners, and children with disabilities.

There has been a long-held belief in the field of physical development that most children go through the same stages of motor development at around the same age, regardless of culture and background.² However, recent research suggests that cultural practices influence motor development from infancy onward.³ For example, children learn





cultural practices around movement, such as dance, sports, and even some religious practices. As children observe adults in their communities, move through complex dances, or perform coordinated actions in sports, they learn about what their own bodies can do.

Children also bring into preschool programs cultural knowledge of tools and other fine motor skills. At home, children may experience a variety of eating utensils, cooking tools, and tools related to self-care. For example, some children have experience with hair braiding and may share that experience by practicing braiding yarn or doll hair. Other children may be able to teach classmates how to basket weave, hold chopsticks, or use a tortilla press. Children bring to the classroom funds of knowledge around culturally specific movements and may engage in play that reflects experiences in their communities.⁴ In classrooms where children come from a diversity of backgrounds, children should be encouraged and supported to use this knowledge and share it with each other.

The languages children speak also influence how they think about their bodies and describe their own movements. Children learning English may learn to use different verbs to describe specific types of movements (for example, running, jumping, sliding), while children learning other languages, such as Spanish, may learn verbs that describe the path of movement (for example, *salir* [go out], *subir* [move up]). Languages also have different ways of describing where things are, sizes of things, and whether people usually describe direction relative to their own body with words like left and right, or relative to the world, like north and south. Multilingual learners may describe movements or directions based on vocabulary and grammar in their home language or other languages they know.

In describing children's physical development, major motor milestones are presented as steps that children achieve in a certain order at specific ages, but for some children, development does not follow these steps. Children with disabilities may develop motor skills more slowly or may move in different ways from other children. For example, cerebral palsy is a motor disability related to how the brain controls muscle movements. Children with **cerebral palsy** have different physical development from other children and may use assistive devices to help with movements.⁵ Children with disabilities that are not directly related to movement may also follow different steps in their physical development than other children. For example, children with autism may move their bodies in different ways and may benefit from support toward motor milestones.⁶ For some children with autism, accommodations such as extra time engaging with certain movements, like swinging, wearing weighted vests in the classroom, or support from specialists such as occupational or physical therapists may support physical development and participation in classroom activities.



Supporting motor development in children with autism may also support their development in other areas, including language and social–emotional development.⁷ Teachers should reference the Individualized Education Program (IEP) for children with disabilities and regularly communicate with a child’s IEP team to assist in making accommodations. Regardless of a child’s diagnosis, within early education programs, children need opportunities to practice their motor skills, explore, and move in spaces that allow them to do so independently.

Additionally, children who have experienced trauma such as interpersonal trauma or other traumatic events, for example, challenges or discrimination faced during migration, relocation, or immigration, may engage in less physical movements that involve exploration of new or more challenging movements. Teachers should support resilience and flexibility with children who have experienced trauma by creating safe spaces where children can move and interact in ways that fit their current needs.

How Teachers Can Support Children’s Physical Development

Setting Up Environments for Physical Movement

Children need space to explore bodily movements such as walking, running, jumping, skipping, and galloping.⁸ Spaces to move safely and freely can be indoors and outdoors. For example, outdoors, children may be challenged to jump off surfaces of different heights. Natural spaces offer opportunities for children to explore new ways to move, such as climbing up a large log or up a hill.⁹ Hallways can also be arranged to be indoor spaces for active play. Markings on the floor (for example, temporary markings made with tape) can allow for a variety of structured games like stop and go and hopscotch. This type of structured indoor play increases children’s active playtime during the day and allows for many different types of movement.¹⁰

“Teacher” refers to an adult (for example, lead teacher, assistant teacher, child care provider) with responsibility for the education and care of children in an early education program, including a California State Preschool Program, a Transitional Kindergarten program, a Head Start program, other center-based programs, and family child care homes.

Planning Activities Around Specific Skills

Activities should be planned around the specific skills children are working on and how they might be supported in the program’s spaces. When planning activities around exploring locomotor



skills, in addition to considering the developmental milestones children are working toward, modifications may need to be made to activities or spaces to allow all children to engage fully in play, based on their needs and abilities. For example, a textured ball might help a child with minimal dexterity to grip the ball, or an obstacle course that can be crawled or walked could help a child who does not walk to join in an activity. Outdoor activities are a good opportunity for all children to move and can be adapted so that children using mobility aids or adaptive equipment can play with their peers, for example, for activities that involve climbing, including elements on ground level where they can be accessed by children in wheelchairs, such as an obstacle course that a child could weave their chair between.

In addition to exploring locomotor skills, children need time and opportunities to practice manipulative skills. Children develop more flexible and fine-tuned manipulative skills when offered opportunities to explore varied tools and utensils during activities such as cutting, eating, painting, or beading. In some cultures, fine motor skills are highly valued and encouraged. It's important to learn about families' values related to fine motor activities and any specific types of tools or activities young children experience at home.

Creating Opportunities for All Children to Engage in Physical Activity

Children with disabilities can benefit from adaptive materials to engage in manipulative skills. For example, children with coordination disorders, low muscle tone, or limb differences may benefit from adaptive scissors, which allow children to practice cutting without having to do the exact finger movements needed for regular scissors. In addition to support staff such as occupational or physical therapists, families can be a valuable support in selecting and supporting the use of adaptive tools and utensils, helping to find ways to support children using the eating utensils and foods from their home culture, including using spoons, forks, or chopsticks, or eating with their hands. Adaptive materials can also support children in using other tools such as writing implements and art materials or toys. Children also may find it easier to use tools with different parts of their body, such as their feet.

Physical play offers the opportunity for children to freely engage with other children across cultures, languages, and abilities. Shaping learning spaces to allow all children to move freely and engage with each other will facilitate active physical play, an important part of learning and development during early childhood.

Endnotes

- 1 Karen E. Adolph and Scott R. Robinson, “Motor Development,” in *Handbook of Child Psychology and Developmental Science, Volume 2, Cognitive Processes*, 7th Edition, eds. Lynn S. Liben, Ulrich Mueller, and Richard M. Lerner (Hoboken, NJ: John Wiley & Sons, 2015), 113–157.
- 2 L. B. Karasik and Y. A. Kuchirko, “Talk the Talk and Walk the Walk: Diversity and Culture Impact All of Development—A Commentary on Kidd and Garcia,” *First Language* 42, no. 6 (2022): 779–783.
- 3 Karasik and Kuchirko, “Talk the Talk and Walk the Walk,” 779–783.
- 4 N. González, L. C. Moll, and C. Amanti, eds., *Funds of Knowledge: Theorizing Practices in Households, Communities, and Classrooms* (New York, NY: Routledge, 2005).
- 5 E. Beckung et al., “The Natural History of Gross Motor Development in Children with Cerebral Palsy Aged 1 to 15 Years,” *Developmental Medicine & Child Neurology* 49, no. 10 (2007): 751–756.
- 6 R. B. Wilson, P. G. Enticott, and N. J. Rinehart, “Motor Development and Delay: Advances in Assessment of Motor Skills in Autism Spectrum Disorders,” *Current Opinion in Neurology* 31, no. 2 (2018): 134–139.
- 7 H. C. Leonard and E. L. Hill, “Review: The Impact of Motor Development on Typical and Atypical Social Cognition and Language: A Systematic Review,” *Child and Adolescent Mental Health* 19, no. 3 (2014): 163–170.
- 8 P. T. Katzmarzyk et al., “Results From the United States of America’s 2016 Report Card on Physical Activity for Children and Youth,” *Journal of Physical Activity and Health* 13, no. 11, supplement 2 (2016): S307–S313.
- 9 N. Kabisch et al., “Urban Natural Environments and Motor Development in Early Life,” *Environmental Research* 179 (2019): 108774.
- 10 M. Boz, I. Hürmeriç Altunsöz, and Y. Altinişik, “Impact of Teacher-Implemented Activities and Free Play on Preschool Children’s Physical Activity at Indoor Playground Markings,” *Southeast Asia Early Childhood Journal* 11, no. 1 (2022): 18–34.

Preschool/Transitional Kindergarten Learning Foundations in the Domain of Physical Development

Children communicate their physical development knowledge and skills in a variety of ways, both verbally and nonverbally. Their communication may include verbal ways of communicating in their home languages, the language of instruction, or a combination of languages, or through the use of augmentative and alternative communication devices. It may also include nonverbal ways of communicating such as drawing and modeling with different materials or expressing through movement, actions, or role play.



Strand: 1.0 — Fundamental Movement Skills

Sub-Strand — Balance

Foundation 1.1 **Balancing While Still**

Early **3 to 4 ½ Years**

Maintain balance while holding still; sometimes may need assistance.

Later **4 to 5 ½ Years**

Show increased balance and control when holding still.

Early Examples

■ A child stands still while holding onto a walker or other assistive device they routinely use.

A child pretends to be a flamingo by standing balanced on one foot for several seconds using their arms to balance, sometimes with assistance.

A child freezes in position after being tagged in freeze tag. Their arms move slightly to maintain balance.

Later Examples

■ A child sits still in their wheelchair or other sitting assistive device while balancing a bean bag on their head.

A child stands on one leg without assistance and maintains balance as part of an activity with a grandparent demonstrating tai chi.*

A child holds their body still while holding their arms at their sides when the song says “stop” in their home language.

*Tai chi is an internal Chinese martial art.



Foundation 1.2 **Balancing in Motion**

Early **3 to 4 ½ Years**

Maintain balance while in motion when moving from one position to another or when changing directions, though balance may not be completely stable.

Early Examples

■ A child walks on the edge of the sandbox, sometimes wobbling and correcting their steps and posture.

A child keeps balance when bending forward to reach their toes or an object on the ground.

A child sways their upper body from side to side to dance to music while sitting upright in their wheelchair.

Later **4 to 5 ½ Years**

Show increased balance control while moving in different directions and when transitioning from one movement or position to another.

Later Examples

■ A child walks on the edge of the sandbox with little or no wobbling, using arms outstretched for balance.

A child moves using a walker from one circle to another circle drawn on the ground with chalk.

A child switches positions without losing balance during quick-moving games such as hopscotch and *Lukochuri* (hide and seek in Bengali) and games that require freezing in place.



Sub-Strand — Locomotor Skills

Foundation 1.3 Walking with Balance

Early
3 to 4 ½ Years

Walk with balance, not always stable. Sometimes swing their arms opposite their legs while walking (for example, step with the right foot, swing their left arm forward).

Later
4 to 5 ½ Years

Walk with balance and swing their arms opposite their legs (for example, step with the right foot, swing their left arm forward). Exhibit narrower space between feet while walking.

This foundation mainly describes children who can locomote without assistive devices (for example, wheelchairs, walkers, crutches, or other devices). When thinking about children who do not walk and/or who use assistive devices, consider how they may uniquely accomplish mobility skills.

Early Examples

■ A family member shares that the child walks up the stairs, using alternating feet, without support.

A child plays *la cuerda floja* (tight rope in Spanish) using a line on the floor, walking with one foot in front of the other, waving their arms to keep their balance.

A child with leg braces walks downstairs holding onto the handrail or using the wall for support.

Later Examples

■ A family member reports that the child walks down the stairs, using alternating feet, without support.

A child marches in place, stepping with one foot and swinging their opposite arm forward.

During a class activity on the practice of head carrying,* a child balances a bean bag on their head while they walk around the classroom.

*Head carrying is a common cultural practice of balancing heavy loads on the head for transportation.

■ Matching icon indicates alignment of examples across age-ranges



Foundation 1.4 Running

Early 3 to 4 ½ Years

Run with a short stride length and feet off the ground for a short period of time. May have difficulty stopping on time. Show inconsistent swinging of the opposite arm and leg together while running.

Later 4 to 5 ½ Years

Run with a longer stride length and each foot off the ground for a longer period of time. Show more control when stopping running. Swing their arm while stepping with the opposite leg more consistently.

Early Examples

- A child runs with feet flat on the ground.

A child runs unevenly, one arm may pump more.

During a game of *el escondite* (hide and seek), a child runs to *tapo* (home, or safe, in Spanish) but has a hard time stopping at the intended location.

Later Examples

- A child runs lightly landing on heels and pushing off with toes.

A child runs evenly, arms pumping in opposition.

During a game of *el escondite* (hide and seek), a child runs directly to and stops at *tapo* (home, or safe, in Spanish).



Foundation 1.5 **Jumping**

Early **3 to 4 ½ Years**

Jump on two feet for height and distance, including jumping up from the ground or down off a raised surface.

Later **4 to 5 ½ Years**

Jump on two feet for height and distance with increased competence, including jumping up from the ground or down off a raised surface. Swing arms to propel themselves while jumping.

Early Examples

■ A child jumps from one “lily pad” to another (close distances), squatting and imitating a frog.

Jumps to the rhythm of the song “I Got the Rhythm.”

A child jumps up to touch the banners of *papel picado** hanging from the ceiling for Día de los Muertos.**

A child jumps off a curb or step, landing on one foot quickly followed by the other.

**Papel picado* is a type of folk art originating in Mexico in which intricate designs are cut into colorful tissue paper.

**Día de los Muertos (Day of the Dead) is a holiday honoring friends and family members who have died, celebrated in Mexico and communities of Mexican heritage.

Later Examples

■ A child jumps from one chalk circle drawn on the playground to another circle two to three feet away, bending their knees and swinging their arms upward for more lift.

A child jumps off the edge of a sandbox and says, “I’m doing gymnastics like Simone Biles.”

A child jumps up a stair onto the stage during a performance celebrating Black History Month.

A child jumps and crosses the finish line in a potato sack race.



Foundation 1.6 Varied Locomotor Skills

Early 3 to 4 ½ Years

Demonstrate a variety of new locomotor skills in a basic way that build on (and go beyond) walking and running, such as **hopping**, galloping, skipping, **side-sliding**, and leaping.

Later 4 to 5 ½ Years

Demonstrate increased ability in performing locomotor skills that build on (and go beyond) walking and running, including engagement in hopping, galloping, skipping, side-sliding, and leaping.

Early Examples

■ A child runs toward and tries to leap over a curb on the playground, although they may not be successful in clearing the curb.

A child side-slides while pretending to roller-skate across the carpet.

During an animal dance activity, a child pretends to be a bear by moving on their feet and hands.

A child hops on one foot during dance time while holding on to their walker for support.

Later Examples

■ A child hops forward on one foot with the other leg bent beside the hopping leg during a game of hopscotch.

When pretending to ride a horse, a child gallops across the room smoothly and in a rhythmic pattern, saying, “I’m a cowboy. Like at the Black rodeo.”

A child demonstrates a side-slide during a hula dance show-and-tell on Polynesian culture.

Sub-Strand — Manipulative Skills
Foundation 1.7 Gross Motor Manipulative Skills
**Early
3 to 4 ½ Years**

Show gross motor manipulative skills that involve using arms, hands, and feet to interact with objects.

**Later
4 to 5 ½ Years**

Show increased ability to perform gross motor manipulative skills that involve using arms, hands, and feet with increased coordination to interact with objects.

Ways children interact with objects include rolling a ball underhand, tossing underhand, **bouncing**, catching, **striking**, throwing overhand, and **kicking**.

Early Examples

■ While playing catch with a classmate, a child catches the ball by trapping it against their body with their arms while in their wheelchair.

A child kicks a stationary ball with the kicking leg bent at the knee during the backswing, leaning slightly forward, with little follow-through of the leg and limited arm action.

A child plays independently during playtime by tossing a ball in the air underhand and catching it, using one or both hands.

Later Examples

■ A child catches a large ball with their hands away from their body while in their wheelchair.

A child runs up to a foam ball and kicks it by planting the foot that is not kicking to the side of the foam ball, swings the kicking leg, and moves their arms in opposition to their legs.

A child tosses an object underhand onto a large target drawn on the ground in chalk about 3 feet away.

A child bounces a basketball using both hands. They bounce the ball multiple times before it rolls away.



Foundation 1.8 Fine Motor Manipulative Skills

Early
3 to 4 ½ Years

Show some fine motor manipulation skills that involve using hands and fingers to interact with objects used in daily life.

Later
4 to 5 ½ Years

Demonstrate increased fine motor manipulation skills using hands and fingers with increasing competence and precision to interact with objects needed for daily life.

Early Examples

■ A child holds and uses scissors to cut out an approximation of a circle in their Diwali* lantern.

A child buttons and unbuttons one button on their sweater.

A child holds a pencil between the thumb and the pad of the index finger to write and draw during class activities.

After reading a book about pyramids in Egypt, a child manipulates and stacks small blocks together to make their own pyramid.

*Diwali is the festival of lights, celebrated in Indian religions including Hinduism, Jainism, Sikhism, and Newar Buddhism.

Later Examples

■ A child holds scissors with their thumb through the top hole and the index finger (and middle finger if there is space) through the bottom hole and follows along the lines to cut out a leaf for a paper flower lei.

A child puts on a jacket, latches the zipper, and zips it.

A child independently uses a fork, a spoon, or chopsticks when eating.

A child uses a piece of naan** to scoop up *dahl**** during a meal.

**Naan is a traditional Indian flatbread found in South and Central Asian cuisine.

****Dahl* is a stew of legumes, lentils, beans, or dried peas found in South Asian cuisine.

(continued on following page)

■ Matching icon indicates alignment of examples across age-ranges



(continued)

Foundation 1.8 Fine Motor Manipulative Skills

**Early
3 to 4½ Years**

**Later
4 to 5½ Years**

Early Examples (continued)

A child places beads on a pipe cleaner to make a bracelet.

During a group activity with craft sticks, a child creates squares of different sizes with the craft sticks on the ground while participating in a discussion about the geometric qualities of the shape.

Later Examples (continued)

A child folds paper in half and then in half again to make a small book when learning about origami.

A child lines up beads next to each other for a necklace craft project in the order they want to place them on a pipe cleaner.

A child with a disability opens and closes the adaptive loop handle scissors to cut along a line while the teacher holds the paper.



Foundation 1.9 Hand Preference

Early 3 to 4 ½ Years

Tend to show a preference for using one hand more than the other within a task and sometimes across multiple tasks.

Later 4 to 5 ½ Years

Demonstrate a consistent preference for using one hand more often than the other within and across different tasks.

Children will show a preference for using their right or left hand. Either hand preference is valid. Most children will show a clear preference for one hand over the other, but some children may show some flexibility in using their nondominant hand. It is important to support the hand preference the child is showing.

Early Examples

■ A child typically uses their right hand for writing and drawing, but when unscrewing a bottle of finger paint uses their left hand on the lid.

A child uses their right hand to grab crayons while holding the crayon box with their left hand. Later, they use their right hand again to grab a snack from a bag held in their left hand.

A child uses their left hand to draw and stabilizes the paper with their right hand.

A child uses their right hand to press buttons on their augmentative or alternative communication device. They use the same hand later to reach and grab for a marker that is rolling away.

Later Examples

■ A child uses their right hand for writing and drawing and uses their right hand to turn the pages of a book while holding the book with their left hand.

A child holds scissors with their left hand while holding paper in their right hand to cut out a shape for their Chinese dragon mask project. They also use their left hand for cutting out shapes when doing other crafts and for writing and drawing.

A child uses their left hand to move the clapper stick and their right hand to keep the beat.

A child uses their right hand for other precision tasks like putting a straw through a juice pouch hole.



Strand: 2.0 — Perceptual–Motor Skills and Movement Concepts

Sub-Strand — Body Awareness

Foundation 2.1 Knowledge of Body Parts

Early 3 to 4 ½ Years

Demonstrate knowledge of the names of basic body parts.

Early Examples

■ As part of an activity to learn about classmates’ cultural backgrounds and traditional attire, a child names where hats, pants, and other pieces of clothing go on a body.

A child touches their *mũi* (nose in Vietnamese) correctly when directed during a game of *Tôi bảo* (I say), a Vietnamese playground game.

A child who is nonverbal points to the foot in the drawing when the teacher asks, “Where is her foot?”

Later 4 to 5 ½ Years

Demonstrate knowledge of more and a greater variety of body parts.

Later Examples

■ A child creates a body with many yarn pieces and names body parts when prompted.

A child touches their *balakang* (hip in Tagalog), *bukong-bukong* (ankle), or other less frequently mentioned body parts when directed during a game of *Sabi ni Simon* (Simon Says in Tagalog).

A child uses a communication tablet to tell their teacher they hit their elbow on the slide.

Sub-Strand — Spatial Awareness**Foundation 2.2 Spatial Awareness****Early
3 to 4 ½ Years**

Use their own body as a reference point when locating or relating to other people or objects in their immediate environment.

Early Examples

■ A child sits on their spot on the rug to listen to a story and, with guidance and assistance, maintains space around themselves without touching or bumping into others.

A child maintains appropriate space on the carpet during a read-aloud with the use of a visual boundary made with tape on the floor.

A child reaches out and holds the hand of a peer during circle time as they sing a traditional Mexican folk song in Spanish.

**Later
4 to 5 ½ Years**

Use their own body, general space, and other people's space when locating or relating to other people or objects in their immediate environment.

Later Examples

■ A child navigates a human obstacle course, using their wheelchair or walker, avoiding contact with others.

A child maintains space around themselves, in general, during movement activities, but sometimes needs to be reminded to watch out for other children.

A child whose home language is American Sign Language signs that a figurine is to the left of the toy truck, while building a toy city with a peer.

(continued on following page)

■ Matching icon indicates alignment of examples across age-ranges

(continued)

Foundation 2.2 **Spatial Awareness**

Early
3 to 4½ Years

Early Examples (continued)

During a hiding game in which peers hide a toy, a child continues to move in the same direction when told they get closer to the object as they move around the classroom.

When prompted in their home language while playing with a hula hoop, a child climbs in and out of the hula hoop.

Later
4 to 5½ Years

Later Examples (continued)

A child tries tossing a ball underhand to a peer. They ask their peer to come closer using a mix of their home language and English.

Some languages like Spanish, Japanese, Korean, and others differ grammatically from English in how they describe actions or directions. Multilingual learners may sometimes mix languages and grammar from their home language and other known languages when describing movements. The overall goal for this foundation is that children understand and physically engage with spatial concepts when hearing or describing actions in one of their languages or using a combination of them.



Sub-Strand — Directional Awareness

Foundation 2.3 Directional Understanding

Early
3 to 4 ½ Years

Distinguish the direction of movements that are up and down and to the side of the body.

Later
4 to 5 ½ Years

Understand and distinguish between the sides of the body (without necessarily understanding right and left).

Early Examples

■ When learning about the different plants and crops grown by the Serrano tribe,* a child points or looks down to the ground when asked where to plant the seeds.

A child looks to one side and then the other in the same sequence when a teacher demonstrates looking at the person sitting to one side and then the other.

When talking about the sky and clouds during an outdoor science activity, a child looks or points up when the teacher asks, “Where are the clouds?”

When playing with a parachute, a child follows simple instructions to place their hand over or under the parachute.

Later Examples

■ When asked which knee got hurt, a child reaches across the body to show their injured knee.

While holding a shaker instrument, a child listens and correctly moves the shaker up to their head and from one side of their body to the other as instructed by an adult.

When displaying their traditional *jutti* slippers from India, a child shows one foot, then when asked to show the other slipper, shows the other foot.

When told to go the other way, a child turns and goes in the opposite direction.

*The Serrano tribe is from Southern California.



Foundation 2.4 **Directional Movement**

Early **3 to 4 ½ Years**

Move forward and backward or up and down easily.

Later **4 to 5 ½ Years**

Change directions, moving forward and backward, side to side, or up and down, quickly and with more accuracy.

Early Examples

■ A child moves backward or forward through a tunnel or climbs up and down a slide during playtime.

In a game of Red Light, Green Light, a child moves their wheelchair forward on the green light.

A child says, “*Bajemos a jugar con los carritos* [Let’s go down to play with the cars],” before going down the slide.

Later Examples

■ A child plays a game of tag by running away from and dodging the child who is “it.”

A child learns the choreography for a short stepping routine and quickly transitions through the dance moves.

A child uses their walker to travel along a zigzag pattern taped to the floor.



Foundation 2.5 **Object Locations**

Early **3 to 4 ½ Years**

Demonstrate an ability to place an object on top of or under something with some accuracy.

Later **4 to 5 ½ Years**

Demonstrate an ability to place an object or their own body in front of, to the side of, or behind something else with accuracy.

Early Examples

■ A child places their Chinese dragon mask project on top of their cubby when asked.

A child places their book bag under the table when told in their home language, "Put your book bag under your table."

A Deaf child places their drawing on a table when asked to in American Sign Language.

A child places toys in a row on top of an outdoor bench.

Later Examples

■ A child places their wheelchair behind a classmate while dancing in a line.

During hide and seek around the jungle gym, a child hides together with their peer who tells them in Arabic, "Let's hide under the slide."

A child refers to a visual prompt and stands in front of classmates when lining up at the door.

A child standing back-to-back with another child turns to one side and gives them a bean bag, then twists to the other side to receive it from them, repeating these movements several times.



Strand: 3.0 — Active Physical Play

Sub-Strand — Active Participation

Foundation 3.1 Physical Activity

Early 3 to 4 ½ Years

Initiate or engage in simple physical activities for a short to moderate period of time.

Later 4 to 5 ½ Years

Initiate more complex physical activities for a sustained period of time.

Early Examples

■ During outside play, a child engages a peer to race to the fence and back.

A child uses their wheelchair to race peers on their tricycles for a short distance, from a fence to the sandbox.

A child communicates to a peer in their home language, “Let’s go up the ladder,” inviting them to climb the jungle gym ladder.

Later Examples

■ A child kicks a foam ball and runs with a group of other children.

A child uses their wheelchair to race peers on their tricycles for a fairly long distance, from one end of the basketball court to the other.

A child stays in step with the basic movements of a dance routine when learning about the stepping dance form.



Sub-Strand — Cardiovascular Endurance

Foundation 3.2 Cardiovascular Endurance

Early
3 to 4 ½ Years

Engage in frequent bursts of active play that involves increased activity of the heart, lungs, and **vascular system**.

Early Examples

■ A child plays a game running with classmates pretending to be lions, expending a lot of energy and tiring quickly.

In a game of Red Light, Green Light, a child with a walker moves quickly toward the finish line when given the green light.

Learning about traditional Brazilian samba dance, a child attempts the dance steps, moving their feet and legs to imitate the dance movement.

Later
4 to 5 ½ Years

Engage in sustained active play of increasing **intensity** that involves the heart, lungs, and vascular system.

Later Examples

■ A child plays chase with classmates during the entire afternoon outdoor play period.

As part of show-and-tell, a child shows classmates some of the steps to a fast-paced traditional Mexican Jarabe Tapatío* dance.

A child finishes an obstacle course during a field day using their wheelchair or other assistive device.

*Jarabe Tapatío, also known as the Mexican hat dance, is the national dance of Mexico.



Sub-Strand — Muscular Strength, Muscular Endurance, and Flexibility

Foundation 3.3 Strength, Endurance, and Flexibility

Early
3 to 4 ½ Years

Engage in active play activities that enhance muscular strength throughout the body, **muscular endurance**, and flexibility.

Later
4 to 5 ½ Years

Engage in increased active play activities that enhance muscular strength throughout the body, muscular endurance, and flexibility.

Early Examples

■ A child bends, stretches, twists, and turns, with or without music, through a limited range, sometimes losing balance.

A child helps classmates lift and move boxes from one location to another by putting them on their lap and moving their wheelchair from one side of the classroom to the other.

During stretching or mindful meditation time, a child holds some stretches and poses. They are sometimes a little shaky in maintaining their pose while they learn.

Later Examples

■ A child bends, stretches, twists, and turns without losing balance in big movements as part of a dance or game.

A child helps move and rearrange chairs in the classroom to help set up for their circle time presentation about Holi, a Hindu festival.

During the Lunar New Year* school parade, a child holds and walks, moves, and dances with their portion of the class-made Spirit Dragon.**

*The Lunar New Year is a celebration of the beginning of the lunar calendar and is celebrated widely around the world on the first new moon of the year.

**Spirit Dragon is a dance that is often part of celebrations or festivals in East Asian communities, with a long and colorful dragon on sticks being moved by a group of people to bring luck to the community.

Glossary

assistive device. An umbrella term for tools and devices used by people to perform activities in their daily lives. Assistive devices include mobility devices such as wheelchairs, braces, walkers, and other tools or adaptive equipment used as an adaptation or modification for people, such as glasses or hearing aids.

balance. The ability to maintain body control while remaining still or moving.

bouncing. A gross motor skill that involves giving force to an object with one or both hands and receiving its energy back with one or both hands.

cardiovascular endurance. The capacity for sustained, active play and participation in activities that involve the heart, lungs, and vascular system.

cerebral palsy. Cerebral palsy (CP) describes a group of permanent disorders of the development of movement and posture, causing activity limitations, attributed to nonprogressive disturbances that occurred in the developing fetal or infant brain. The motor disorders of cerebral palsy are often accompanied by disturbances of sensation, perception, cognition, communication, and behavior, and by epilepsy and secondary musculoskeletal problems (according to the Cerebral Palsy Foundation).

directional awareness. The understanding of direction in relation to one's own body. For example, children's understanding of the left, right, front, and back of their own body and where objects or other people are in relation to their body.

fine motor skills. Physical activity with smaller muscle groups—primarily the fingers, hands, and wrists—for activities such as using crayons, stacking blocks, and cutting with scissors.

flexibility. The range of motion of a joint and the elasticity of muscles and connective tissues.

fundamental movement skills. Observable patterns of motor behavior that require the coordination of different body parts. Fundamental movement patterns have three classifications: locomotor skills, such as running and jumping; manipulative or object-control skills, such as throwing and catching; and balance skills, such as standing on one foot or walking on a narrow beam. Fundamental movement skills are the building blocks of more complex future movements.

gross motor skills. A physical activity that uses the major muscle groups of the arms, legs, and trunk, such as throwing, striking, running, and jumping.



hopping. Projecting the body into space by taking off on one foot and landing on the same foot. Hopping is a more complex version of jumping and requires a higher degree of strength and finer adjustments in balance.

intensity. Engaging in physical activity that involves maximal effort.

kicking. A gross motor skill that is a form of striking in which one foot applies force to an object.

locomotor skills. The ability to move the body into or through space.

manipulative skills. Also known as object control skills in which the arms, hands, legs, and feet are used to give force to an object (for example, throwing a ball) or to receive and absorb the force from an object (for example, catching a ball).

muscular endurance. The ability to exert force against an object external to the body for several repetitions without tiring.

muscular strength. The amount of force the muscles can produce. Strong-effort activities involving different muscle groups or the whole body are key factors in muscular strength.

perceptual–motor skills. The coordination between movements and senses, such as hand–eye coordination, timed movements, and body awareness.

physical activity. Any body movement produced by skeletal muscles resulting in the expenditure of energy.

side-sliding. Demonstrating a form of galloping in which the child steps purposefully in a sideward direction.

spatial awareness. How a child moves their body in space and awareness of how much space the body takes up; the body’s relationship to objects or other people in the environment; and the ability to project the body into space.

striking. A gross motor skill that involves giving force to an object by propelling it in the air with a hand or an implement, such as a paddle, racket, or bat.

vascular system. The heart and the blood vessels (arteries, veins, and capillaries) distributing blood throughout the body.

References and Source Materials

- Adolph, K. E., and S. R. Robinson. 2015. "Motor Development." In *Handbook of Child Psychology and Developmental Science*, Volume 2, Cognitive Processes, 7th ed., edited by L. S. Liben, U. Mueller, and R. M. Lerner. Hoboken, NJ: John Wiley & Sons.
- Aivazidis, D., F. Venetsanou, N. Aggeloussis, V. Gourgoulis, and A. Kambas. 2019. "Enhancing Motor Competence and Physical Activity in Kindergarten." *Journal of Physical Activity and Health* 16 (3): 184–190.
- Beckung, E., G. Carlsson, S. Carlsdotter, and P. Uvebrant. 2007. "The Natural History of Gross Motor Development in Children with Cerebral Palsy Aged 1 to 15 Years." *Developmental Medicine & Child Neurology* 49 (10): 751–756.
- Boz, M., I. Hürmeriç Altunsöz, and Y. Altinişik. 2022. "Impact of Teacher-Implemented Activities and Free Play on Preschool Children's Physical Activity at Indoor Playground Markings." *Southeast Asia Early Childhood Journal* 11 (1): 18–34.
- Bull, F. C., S. S. Al-Ansari, S. Biddle, K. Borodulin, M. P. Buman, G. Cardon, C. Carty, J. -P. Chaput, S. Chastin, R. Chou, P. C. Dempsey, L. DiPietro, U. Ekelund, J. Firth, C. M. Friedenreich, L. Garcia, M. Gichu, R. Jago, P. T. Katzmarzyk, E. Lambert, M. Leitzmann, K. Milton, F. B. Ortega, C. Ranasinghe, E. Stamatakis, A. Tiedemann, R. P. Troiano, H. P. van der Ploeg, V. Wari, and J. F. Willumsen. 2020. "World Health Organization 2020 Guidelines on Physical Activity and Sedentary Behaviour." *British Journal of Sports Medicine* 54 (24): 1451–1462.
- Chaput, J. -P., J. Willumsen, F. Bull, R. Chou, U. Ekelund, J. Firth, R. Jago, F. B. Ortega, and P. T. Katzmarzyk. 2020. "2020 WHO Guidelines on Physical Activity and Sedentary Behaviour for Children and Adolescents Aged 5–17 Years: Summary of the Evidence." *International Journal of Behavioral Nutrition and Physical Activity* 17 (1): 1–9.
- Folio, M. R., and R. R. Fewell. 2000. *Peabody Developmental Motor Scales: Examiner's Manual*. 2nd ed. Austin, TX: Pro-Ed.
- Gallahue, D. L., and J. C. Ozmun. 2006. *Understanding Motor Development: Infants, Children, Adolescents, Adults*. 6th ed. Boston, MA: McGraw-Hill.
- Gerber, R. J., T. Wilks, and C. Erdie-Lalena. 2010. "Developmental Milestones: Motor Development." *Pediatrics in Review* 31 (7): 267–277.
- Gonzalez, S. L., V. Alvarez, and E. L. Nelson. 2019. "Do Gross and Fine Motor Skills Differentially Contribute to Language Outcomes? A Systematic Review." *Frontiers in Psychology* 10: 2670.

- González, N., L. C. Moll, and C. Amanti, eds. 2005. *Funds of Knowledge: Theorizing Practices in Households, Communities, and Classrooms*. New York, NY: Routledge.
- Hagan, J. F., J. S. Shaw, and P. M. Duncan, eds. 2017. *Bright Futures: Guidelines for Health Supervision of Infants, Children, and Adolescents*. 4th ed. Elk Grove Village, IL: American Academy of Pediatrics.
- Kabisch, N., L. Alonso, P. Dadvand, and M. van den Bosch. 2019. "Urban Natural Environments and Motor Development in Early Life." *Environmental Research* 179: 108774.
- Karasik, L. B., and Y. A. Kuchirko. 2022. "Talk the Talk and Walk the Walk: Diversity and Culture Impact All of Development—A Commentary on Kidd and Garcia." *First Language* 42 (6): 779–783.
- Katzmarzyk, P. T., K. D. Denstel, K. Beals, C. Bolling, C. Wright, S. E. Crouter, T. L. McKenzie, R. R. Pate, B. E. Saelens, A. E. Staiano, H. I. Stanish, and S. B. Sisson. 2016. "Results From the United States of America's 2016 Report Card on Physical Activity for Children and Youth." *Journal of Physical Activity and Health* 13 (11 s2): S307–S313.
- Leonard, H. C., and E. L. Hill. 2014. "Review: The Impact of Motor Development on Typical and Atypical Social Cognition and Language: A Systematic Review." *Child and Adolescent Mental Health* 19 (3): 163–170.
- Malina, R. M. 2004. "Motor Development During Infancy and Early Childhood: Overview and Suggested Directions for Research." *International Journal of Sport and Health Science* 2: 50–66.
- Nelson, E. L., J. M. Campbell, and G. F. Michel. 2013. "Unimanual to Bimanual: Tracking the Development of Handedness from 6 to 24 Months." *Infant Behavior and Development* 36 (2): 181–188.
- Nelson, E. L., S. L. Gonzalez, J. M. El-Asmar, M. F. Ziade, and R. S. Abu-Rustum. 2019. "The Home Handedness Questionnaire: Pilot Data from Preschoolers." *Laterality* 24 (4): 482–503.
- Piek, J. P., L. Dawson, L. M. Smith, and N. Gasson. 2008. "The Role of Early Fine and Gross Motor Development on Later Motor and Cognitive Ability." *Human Movement Science* 27 (5): 668–681.
- Rachwani, J., B. E. Kaplan, C. S. Tamis-LeMonda, and K. E. Adolph. 2021. "Children's Use of Everyday Artifacts: Learning the Hidden Affordance of Zipping." *Developmental Psychobiology* 63 (4): 793–799.
- Sexton, D., M. Lobman, and J. Oremland. 1999. "Learning Accomplishment Profile-Diagnostic Standardized Assessment (LAP-D)." *Diagnostique* 24 (1–4): 183–196.
- Shusterman, A., and P. Li. 2016. "Frames of Reference in Spatial Language Acquisition." *Cognitive Psychology* 88: 115–161.

- Slobin, D. I. 2004. "The Many Ways to Search for a Frog: Linguistic Typology and the Expression of Motion Events." In *Relating Events in Narrative, Volume 2: Typological and Contextual Perspectives*, edited by S. Strömquist and L. Verhoeven. New York, NY: Psychology Press.
- Suggate, S., E. Pufke, and H. Stoeger. 2019. "Children's Fine Motor Skills in Kindergarten Predict Reading in Grade 1." *Early Childhood Research Quarterly* 47: 248–258.
- Talmy, L. 2000. *Toward a Cognitive Semantics*. Vol. 2. Cambridge, MA: MIT Press.
- Ulrich, D. A. 2000. *Test of Gross Motor Development 2*. Austin, TX: Pro-Ed.
- van der Fels, I. M. J., S. C. M. Te Wierike, E. Hartman, M. T. Elferink-Gemser, J. Smith, and C. Visscher. 2015. "The Relationship Between Motor Skills and Cognitive Skills in 4–16 Year Old Typically Developing Children: A Systematic Review." *Journal of Science and Medicine in Sport* 18 (6): 697–703.
- Williams, H. G., K. A. Pfeiffer, M. Dowda, C. Jeter, S. Jones, and R. R. Pate. 2009. "A Field-Based Testing Protocol for Assessing Gross Motor Skills in Preschool Children: The Children's Activity and Movement in Preschool Study Motor Skills Protocol." *Measurement in Physical Education and Exercise Science* 13: 151–165.
- Wilson, R. B., P. G. Enticott, and N. J. Rinehart. 2018. "Motor Development and Delay: Advances in Assessment of Motor Skills in Autism Spectrum Disorders." *Current Opinion in Neurology* 31 (2): 134–139.
- Zubler, J. M., L. D. Wiggins, M. M. Macias, T. M. Whitaker, J. S. Shaw, J. K. Squires, J. A. Pajek, R. B. Wolf, K. S. Slaughter, A. S. Broughton, K. L. Gerndt, B. J. Mlodoach, and P. H. Lipkin. 2022. "Evidence-Informed Milestones for Developmental Surveillance Tools." *Pediatrics* 149 (3): e2021052138.