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CrossFit Kids as a Physical-Education Curriculum: A Pedagogical Perspective

Phil Eich makes a case against traditional physical education, in which sports form the foundation but provide little motivation toward lifelong fitness.

By Phil Eich

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CrossFit Texas

All great teachers want to improve the lives of the students entrusted to their care—the ultimate goal being that the lessons learned during the academic day will carry over into their lives outside school. Teachers want to improve and preserve the physical, emotional and academic wellness of their students.

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As educators searching for the best methods and practices, we need to begin with an educational philosophy. Within the field of physical education, I believe there are two basic pedagogical models: traditional and literal.

The Traditional Model

The traditional model uses sports and games as a pedagogical foundation. Physical education in this model begins with an activity created outside the body (sports and games) in an effort to improve something inside the body (physical skills and fitness). Typically, the curriculum of the traditional model uses sports and games as units, with students learning various rules, strategies and techniques specific to each sport or game throughout their education. The theory behind this model is that exposure to and a basic proficiency in these activities will improve physical well-being and create a desire in children to participate in various health-improving activities outside the classroom and into adulthood.



Functional movements provide an alternative to the sport-specific physical skills most children learn in school.

The Literal Model

Literally, “physical education” means the teaching and learning of the use and care of the body, and so the literal model builds on one of the body’s most basic functions: movement. Traditionally, movements taught within the physical-education class are sport specific (swinging a bat, throwing a ball, shooting a basket). The literal model, however, uses the most basic movements of the body because they have the most direct and broad application to all life’s experiences. Foundational movements of the body—such as squatting, pushing and pulling—are found both in athletic environments as well as within the physical requirements of everyday life. In the literal model, the priority given to the foundational movements of the body will increase proprioception (the internal awareness of movement) and kinesthetic awareness (the external awareness of the body in time and space) as well as work capacity. Developing physical competency in these basic movements translates into increased fitness, improved physical abilities and injury prevention.

A Foundational Comparison of the Traditional and Literal Models

The Traditional Model is Extrinsic

Sports and games are an extrinsic construct imposed upon the human body. Rules, sport-specific skills and movement limitations are created outside the body and interact to create physical constraints that the body is forced to operate under in order to fulfill the criteria or achieve the goals of a specific sport.

While sports and games certainly are necessary, fun and beneficial, within the context of physical education, the traditional model’s foundational use of sports and games is inherently deficient because it attempts to use as a primary method of instruction these limited, extrinsic constructs. The infinite expressions of movement that the human body is capable of producing are not given opportunities for articulation because sports, by definition, carry with them physical limitations. For example, part of what makes baseball baseball is that one person throws a ball, one person swings a bat, a couple of people run, one person makes a catch. Swing, run, throw, catch.

Sports carry with them inherent physical limitations. Although many sport-specific skills have some transfer to life or general athletic movement, the use of sports as a primary mode of physical education creates a danger of overspecializing, which can limit physical development.

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Teaching kids functional movement will be more conducive to long-term health than teaching them how to score a game of bowling.

For example, the exact skill of shooting a free throw is only found in basketball, but being able to throw a ball to a target some distance away certainly has athletic benefits. The danger to overall development is in specializing only in shooting a free throw or in failing to see that throwing various objects with accuracy will make one more suited to many sports and even some aspects of life. A common question in the classroom (usually to the dismay of teachers) is, "When we will use this in life?" If an educator honestly asks this question of sports and games as they are presented in the traditional model, the limited "outside the classroom" benefits of teaching children how to wave a ribbon stick or shake a parachute are immediately seen.

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Traditional P.E. is often only fun for kids who are good at specific sports. CrossFit Kids makes functional movement fun and prepares children for a lifetime of fitness.

Inner West CrossFit



Unlike shooting a basket, functional movements can be scaled to the age and ability of the child.

Some will argue that learning sport-specific skills will make better baseball and basketball players, which will encourage children to participate in sports and therefore improve their physical lives—but remember, the goal is to promote a lifelong love and pursuit of physical health for every child, and it would be short-sighted to think that “being good at sports” is the only way to produce a value of physical health into adulthood. In fact, the most common forms of physical activity performed by adults are not sports but rather walking, gardening and yard work, and other forms of exercise (7).

Sports and Games Cannot Be Differentiated According to Interest and Ability

Before gym class has even started, the teacher using a sport as the primary vehicle of physical learning has created an interest/ability discrepancy: the kids who are able can and will; the kids who are unable can’t and won’t. Without a differentiation of instruction, there is no way to bridge the gap.

Sports and games cannot be differentiated to each individual child’s abilities in the class context. Here is a hoop, there is the ball; the ball needs to make it through the hoop. The children who play on the after-school basketball team or the “big kids” love basketball days in gym class—they know they will be successful because they practice often or are physically mature enough to succeed relative to others in their age group (i.e., the big kids always win). Children who haven’t yet developed the physical strength to even

get the ball to the net have a bad day in gym class because they cannot be successful in the way that basketball primarily defines success—making baskets.

How does a teacher help the low-achieving child in this situation? There is no way to scale this sport to ability level—one is not able to lower the basket, slow the game down or give extra opportunities for practice. So, unable to differentiate instruction, the well-meaning teacher often offers support to the despondent child in the form of platitudes such as, “Just have fun,” not recognizing the triumph of human nature necessary to take enjoyment in doing something embarrassing (something adults have an even harder time with). This is especially true during years of childhood where these sports and games often serve primarily as a social activity.

The Traditional Model Contributes to the Detrimental Effects of Early Sports Specialization

In America, there are currently 30 million children participating in youth sports. In children 14 and younger, 3.5 million of those suffer a sports-related injury (14).

Why is this happening? It is currently the societal thinking that specializing a child in a sport at a young age will yield improved athletic results at a later age (4). Looking at the science of sports performance, this is simply not the case.

Typically, when children specialize in a sport, three things can happen. First, they improve at the sport faster than peers who are not specialized. This is to be expected as

practice makes perfect. However, as children grow older, their rate of improvement decreases and their proficiency begins to balance out with their peers because they lack a comprehensive movement “vocabulary” that can be applied to more advanced movement or used to improve current movement patterns. This idea of acquiring and expanding a physical vocabulary is similar to the necessity of vocabulary expansion in verbal communication. The fourth-grader who talks more than his or her classmates will often be better at communicating. But if that fourth-grader specializes in the vocabulary he or she possesses while ceasing to learn new words, new combinations of words and phrases, or different verbal structures, eventually the rest of the class will catch up and surpass the child in the ability to communicate.

The second possible outcome of early specialization is overuse injury (1,3,11,12). The combination of developing bones, muscles and joints; still-developing technique; and a rigorous, repetitive and sometimes year-long practice

and competition schedule subjects the young athlete to an environment that whittles away physical health. Not only does this place the child at an unethical increased risk of injury, but also when injuries do occur, future athletic potential is limited as the athlete mentally and physically tries to cope with chronic injuries instead of improvement within a sport.

Third, athletes can psychologically burn out (4,15). Their chosen sport ceases to be enjoyable and they quit; here, athletic potential is not hindered by a physical injury but rather a mental one that could ultimately curtail all physical activity.

Subjecting the body to chronic overuse of some movements (and therefore overuse of specific muscles and joints) and chronic underuse of other movements disturbs the natural balance of the body. If all the major movements of the body are not performed and improved at an approximately equal rate, the body progresses out of



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Functional movements mimic patterns seen in daily life, and a good coach can easily scale these movements to the level of each participant in a group.



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*Spiking a volleyball has limited applicability off the court.
Learning how to engage the muscles of the core has infinite value outside the gym.*

balance with a limited physical vocabulary, increasing the risk of injury and limiting physical potential.

All this leads to a question: if traditional sports and games can't be a successful pedagogical foundation, what can be?

Rather than using sports, the educator applying the literal model begins with movements that are intrinsic and naturally occurring.

The Literal Model Is Intrinsic

The literal model is intrinsic (inside the body) because it begins with and allows for the many expressions of natural, functional movement and holds that if functional movements are practiced and performed efficiently, increased fitness and physical potential will follow. In the classroom that builds on the literal model, all the body's foundational movements—pushing, pulling, squatting, lunging, bending—are constantly and consistently performed by every student. These basic movements are not contrived, forcing the body to repeatedly do things it does not naturally do. These movements originate in the natural design of the body and are the most effective and efficient movements the body can produce. Rather than using sports, the educator applying the literal model begins with movements that are intrinsic and naturally occurring, regardless of physical context.

This philosophy of basing pedagogy on natural functioning is similar to the current push for “brain based” learning in other areas of education (2). Understanding how the brain operates allows for an integration of the natural functioning of the brain into an educator’s teaching—increasing learning speed, retention, and ultimately intellectual potential and achievement. The literal model of physical education begins with an understanding of the natural movements of the body, which then can be integrated into teaching—improving fitness, physical ability and athletic potential.

The Literal Model Is the Natural Expression of Physical Learning

My godson Michael is learning how to walk.

In the traditional model, his parents would stand him up and let him fall over and over again until he developed the strength to stand on his feet, the ability to balance himself and the coordination to place one foot in front of the other without falling. The thinking here is that in order to learn how to walk, one must practice walking. They would tell him all the rules of the game of walking—what to do and when to do some things and when not to do other things. Stand and fall, stand and fall, the cycle continues without any crawling or rolling or pushing off the floor—he is learning how to walk and so he must walk. After all this, if he does learn to walk, we will hope that his experience was fun enough that he will want to continue to walk for the rest of his life.

In the literal model, Michael teaches himself how to walk by experiencing many different movements in many different situations. He crawls. He pushes himself off the ground. He uses obstacles to pull himself up. He squats to pick something up off the ground. He will bounce up and down, and up and down, and up

And when he is ready, his brain puts all these foundational movements together and says, “Ahh, this is how you do it.” Because Michael has experienced diverse yet basic movements, he now has the strength to stand, the balance to remain standing and the coordination to put one foot in front of the other. He walks.

We do not teach children how to walk; children teach themselves how to walk using movements they have personally experienced, with occasional guidance from people who have already mastered the skill. Here is the concept of physical constructivism. A constructivist standpoint in the classroom accepts that a learner can

only create meaning from information through his or her own prior experiences (9). A consistently implemented literal-model curriculum gives children the wide and deep kinesthetic experiences that are the foundation for future motor learning. The child who effectively learned and performed lunging and jumping many times in many different ways will be able to learn sprint mechanics on the track faster than a child who hasn’t. The child who has practiced his or her balance and coordination with overhead squats and handstands will be able to learn change-of-direction drills on the football field faster than a child who hasn’t. These varied kinesthetic experiences that help children create meaning in their learning are simply not available to children experiencing the traditional model of physical education. Instead, the same small number of sport-specific movement patterns are hammered again and again in an effort to increase fitness or athletic ability. However, in this process nothing is being added to their physical vocabulary, and no new experiences are being gained that could inform future learning.



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Kids who have fun in a physical environment will likely be inclined to be active as they grow up.

Michael used simple, basic movements to build a rich physical experience that allowed him to achieve the complex skill of walking. This use of something basic and known to build up to something complex and unknown is the physical version of Piaget's scaffolding: the body progressively builds on known skills and abilities to create and learn better, more efficient, and more advanced skills and abilities (8). Introducing sport-specific skills to young children before they are ready is ineffective because it is pedagogically incorrect; it assumes a basic level of physical competency that many children simply don't have. Using the literal model as a basis for a physical-education curriculum ensures that skills are being taught at a developmentally appropriate time—increasing safety as well as improving potential.

In order for effective, rigorous and long-lasting physical learning to take place, an educational framework based on the physiological functioning and cognitive learning of children is needed.

GPP as a Framework

The Body in Balance

The goal of the literal model is to improve general physical preparedness (GPP). This is the ability to perform any kind of physical work. In regard to educational practice, GPP is not simply teaching all children to be athletes, but how to

use and take care of their bodies in any physical endeavor, athletic or otherwise.

Where a traditional curriculum primarily uses sport- and game-specific skills to elicit physiological change, the GPP curriculum uses the basic, natural movements of the body, often called "functional movements." Functional movements are multi-joint movements that can be described as containing a universal recruitment motor pattern—in other words, they can be found in any kind of physical environment. As stated earlier, sport-specific movements can have transfer over to other sports or aspects of life, but the specificity of training only to throw a curveball exactly 60 feet 6 inches could be seen as having less transfer than learning how to sprint. Sports can encourage extreme specialization to the detriment of overall development.

By using all of the functional movements of the body, a student is able to improve fitness as well as gain neurological skills—balance, coordination, agility and accuracy—while protecting the body against injury. Because functional movements are produced across multiple joints and require the use of many different muscles of the body simultaneously, they inherently provide protective support while at the same time possess the ability to create greater physiological improvement than smaller, single-joint movements (6). With the GPP



CrossFit Kids

The ability to squat will serve these children well in sport and in life.

approach to physical education, there are intentionally no movement limitations or specializations, drastically reducing risk of overuse injury, even as children become more physically capable by performing at a relatively high intensity level. Developing muscles and joints are strengthened in balance with one another, allowing the body to learn to protect itself by performing movement in the safest and most efficient way possible (5).

If GPP is effectively used as the foundation for our teaching, the educator has the opportunity to give children something incredibly powerful: the physical ability to do more of whatever they want to do or need to do, regardless of circumstance. Not only will increased GPP contribute to athletic potential and achievement on the court or field, but it will also contribute to children's ability to play outside with their friends or physically defend themselves or escape a dangerous situation.

However, in order for the GPP framework to create long-lasting learning, an effective and progressive curriculum is needed.

Three Basic Qualities of a Physical-Education Curriculum

A teacher can have the most well-constructed lesson plan with the best information, but if it is not fun, kids won't participate or be fully engaged.

First, in order to be effective, a physical-education program needs to be fun. The fact that children associate physical movement with fun cannot be overemphasized. A teacher can have the most well-constructed lesson plan with the best information, but if it is not fun, kids won't participate or be fully engaged. Active engagement is the foundation of physical education, and there is no better way to actively engage kids than to convince them something is fun.



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For many people, activity ends at the conclusion of gym class, which highlights the failure of the traditional P.E. model.

Second, the curriculum needs to be rigorous. It is not enough for a gym class to only be fun; it needs to give students many different skills that improve their lives, for the rest of their lives, while holding them to high standards of performance.

Third, through the engaging quality of fun and the educational benefits of rigor, a curriculum needs to help create a valuation of good health, fitness and physical activity that continues outside the classroom and into the rest of a child's life.

CrossFit Kids

To understand how CrossFit Kids builds on the literal model of physical education, one needs to first look at the definition of CrossFit methodology: constantly varied functional movements executed at high intensity (6).

Constant variation—In order to achieve the high degree of movement proficiency required in CrossFit Kids, the movement requirements of every class period are different. This ensures that all functional movements of the body are



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Learning proper mechanics at a young age will create benefits in sport and life.

being expressed in many different contexts and combinations, increasing GPP while helping to prevent the detriments of early specialization. This progressive and intentional diversity of physical movement has been shown to be one of the most effective methods of increasing long-term motor-learning retention (13).

Functional movement—CrossFit uses the most basic movements of the body—squatting, pushing, pulling, etc.—because they provide the most physiological benefits while being inherently safer than other movements (5). Performing a variety of tasks that use many parts of the body in a functional manner will provide more overall fitness than simply performing one arbitrary sport-specific movement 10,000 times to the exclusion of others.

High intensity—Intensity, or hard work, produces results. Greater intensity—whether it is lifting more weight or the same weight faster or simply “doing more of something” within a given period of time—is one of the ultimate goals of CrossFit Kids. The ability to produce more physical effort in a given amount of time is a primary indicator of fitness. Greater intensity, however, is safely and efficiently created when understanding of technique and proper performance of movement mechanics is mastered and

repeatable consistently over a long period of time. In CrossFit Kids, until a child is ready, intensity takes a back seat to learning and ingraining good movement. Once a child becomes secure in good technique, the student can start progressing toward greater intensity—leading to a greater increase in fitness.

The eventual progression from mechanics to intensity is an important one. Not only does increased intensity integrate into a child’s natural desire to “go faster” or “throw further”—and therefore provide a context for motivation and continued success—but as educators, we also want to teach with the idea that our efforts will produce learning. One of the primary ways learning occurs is through progressive challenge.

At the beginning of CrossFit Kids, physical capacity is developed through the cognitive and psychomotor challenge of learning how to move in new and more efficient ways. Once those challenges are met, physical education continues by learning how to use efficient movement to move faster, execute more repetitions or perform under a heavier load. Going into the gym and “doing some push-ups” without quantitative or qualitative progress is not an education; it’s an activity. Working



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With CrossFit Kids, children discover there's a whole world of physical accomplishment outside traditional sports.

toward movement mastery and then higher intensity ensures that children establish a long-term foundational physical education.

Moving in Functional Ways Is Fun

After my godson discovered he could move, he moved. Everywhere. He was constantly moving everywhere and in every way, laughing and smiling the entire time. He wasn't moving because this was a game to be played or a sport to be won, but simply because the act of moving was fun. If he wasn't sleeping, he was moving simply because movement in all its infinite variations gave him happiness. This ability of movement to bring happiness is sometimes referred to as "muscle joy" (16). In the world of children it is called "playing"; in the world of adults it usually (and unfortunately) goes by "relieving stress." Opponents of the GPP approach to physical education will argue that kids won't have fun "working out," and personally, I agree—if the "working out" going on within a class lacks meaning or is not enjoyable.

Fun is already integrated into CrossFit Kids because it makes fitness a game. It creates a fun learning experience by using big, new, constantly varied movements over the entire duration of the class period—all within a success-driven and positively competitive environment. The foundational movements performed are often unfamiliar (even if they are natural and functional), and so the opportunity to do new things is immediately intriguing.

There is no "standing around and waiting for a turn" in CrossFit Kids. Every child is active all the time. For the physically proficient children, this is fun—they can do as much as they want as often as they want. For the less proficient children, this is fun because the pressure is off—the class isn't staring and evaluating their performance. Kids are also met with challenges at their level and so experience the thrill of success every day. It has been this author's experience that kids are likely to cheer a student's first push-up as much as they root for another child to break the classroom push-up record because they realize, regardless of current level, success is fun for everyone.

**Fun is already integrated
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Moving in Functional Ways Is Rigorous

Not only is this kind of "working out" fun for kids, but it also consistently prepares them to meet the physical reality of daily life—infinite combinations and variations of different physical movements.

In CrossFit, there is a never-ending supply of new skills to be learned or old skills to be practiced. For example, a child can move from "roll-up" push-ups to full push-ups to wall-assisted handstand push-ups to freestanding handstand push-ups. Once the squat is mastered, one can develop the ability to do more squats in shorter amounts of time. This combination of learning increasingly more complex movements and the necessity of practicing already-learned skills ensures a rigorous and progressive education.

The sport-based unit structure of the traditional model does not advance in this way—activities are generally not progressive, just different.

Moving in Functional Ways Has Lifelong Applications

The common element that students share is that, for the rest of their lives, they will have a body. CrossFit educates the students on how to use that body while improving the body's ability to perform, regardless of environment or circumstance. The sport- and game-based curriculum teaches skills and hopes there is a carryover to the rest of a child's life; CrossFit teaches skills and knows there is a carryover.

The CrossFit Kids Curriculum

The typical CrossFit Kids class is divided up into four periods—warm-up, skill, Workout of the Day (WOD), and game.

Whatever activity is used for the warm-up, it is fun and energetic, with every child being physically engaged. This “attention-getter” part of the lesson establishes excitement and momentum for the rest of the class period.

The skill portion of the class is where children learn a new movement or review, refine and practice movements already learned. This portion of the class contains the most direct instruction, but kids remain active and involved, performing the skill as the teacher observes and coaches the mechanics of each child.

In the WOD, children put their movement learning and fitness to the test. A workout might look something like this:

As many rounds as possible in 5 minutes of: 10 air squats, 5 push-ups, 3 broad jumps right into sprinting the length of the gym and back

Notice that the workout is short, creating the opportunity for high-intensity effort that produces results, as well as helping to maintain the attention and participation of the class. In the eyes of the child, this is just long enough to “stay fun,” is competitive enough to produce intensity, and contains enough elements to not be boring while remaining easy to understand. In eyes of the teacher, all children are learning to perform necessary physical skills while giving 5 minutes of their very best effort, all while having fun.



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In a CrossFit Kids class, skills are taught while the entire group is engaged. This is followed by a relatively short and very fun workout that tests what they have learned.

One of the most beneficial attributes of a workout like this is that it automatically scales relative to each child's ability level while still remaining challenging. The child with a high level of fitness and the child with a low level of fitness will both be working hard relative to ability but will simply end up with different scores at the end. The workout is also time for a teacher to assess movement mastery—if a child is unable to maintain technique at a high intensity, more work needs to be done during the skill period. If a child is able to maintain technique at high intensity, the teacher can begin to focus the student on technique refinement and advancing fitness.

Although the children have been playing in various ways up to this point, the final period is the first that is specifically referred to as a "game." This is a CrossFit Kids game or a traditional game with a CrossFit twist. For example, in dodgeball, once a player is out, he or she typically stays out until the next game. In CrossFit Kids dodgeball, the player who is "out" can get back into the game by performing some kind of physical task—10 air squats, 10 push-ups, etc. This further emphasizes the fact that physical activity and hard work are important, not winning or "getting out."

CrossFit Kids Is Effective

The CrossFit Kids curriculum is effective because it creates a physical learning environment that builds on the idea that all children have differing abilities and need to be challenged at their individual point of development in order for effective learning to take place. This differentiated instruction allows a child to continually and efficiently progress, minimizing the risk of frustration or stagnation. Every skill, every movement, every workout and every game can be scaled to a child's ability (made easier or harder) so he or she is challenged by something difficult but not discouraged by something impossible. This not only allows for efficient and effective teaching and learning but also increases students' desire to participate and challenge themselves.

CrossFit Kids uses the natural process of motor development to increase learning effectiveness and efficiency. Instead of confining a child's development with rules and movement limitations of sports while running the risk of contributing to the detrimental effects of overspecialization, CrossFit Kids uses a child's natural propensity for constantly varied movement by using constantly varied movement.

This curriculum provides the direct teaching and assessment of necessary physical skills and is able to monitor progress by providing quantifiable data: movement improves, workout times decrease, number of reps increase, new movements are able to be performed. Where improvement in the traditional physical education classroom is largely subjective, CrossFit lays the groundwork for success, achieves success and is able to prove success is happening. Children are able to perform more advanced movements more times and faster.

To a child, these successes are more than just a good grade, a pat on the back or a participation trophy; they are tangible evidence of accomplishment. The child who is unable to do a full push-up performs one full rep for the first time: success. The child who has done 10 full push-ups does 11: success. Finishing a hard workout: success. Children cheering on the final classmate to finish: success. This feeling of success while working hard and learning something of value is incredibly motivating to a child, and it is perhaps the best educational tool that CrossFit Kids offers.

Kids, like adults, want to do things well. CrossFit Kids gives children the best chance to be able to do things well because it equips them with foundational physical tools that can be applied to any future physical endeavor. It provides a pedagogically sound and effective physical education curriculum that is fun and rigorous and provides lifelong benefits to children.

Improving Lives

As teachers, we have an incredible privilege and responsibility to give the best of what we know to our students. CrossFit Kids provides teachers with the concepts and the curriculum necessary to improve the physical well-being of people from childhood through adulthood in meaningful, life-affirming ways. Where there is always a need for sports and games, using CrossFit to fulfill the literal model of physical education allows the teacher to contribute to the empowerment of every single student's self-determination. Children can begin to live physical lives of choice unconstrained by the restrictions of poor health, unnecessary injury or lack of physical skill.



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