

Jumping rope supports academic and athletic foundations

A guide to early skill development

Jumping rope is such a popular childhood pastime all around the world that it may escape attention just how beneficial this activity can be for the physiological development of growing children, as well as for a school's academic program. During this period of social distancing it's especially important to note that jump rope routines can still provide a great curriculum cornerstone. Classes can work in distanced stations with individual ropes, to learn and practice skills and tricks – perhaps even without masks if there is enough space outdoors. And when/where appropriate, groups of three taking turns in long-rope or double dutch skills can maintain at least six feet of separation. Distance restrictions aside, regular periods of learning and practicing in the early grades will always provide your students with a “super boost” of capacity-strengthening benefits, including increased focus and self-regulation, and deeper organization for writing, reading and math capacities. In short, vigorous activity sets the stage for quiet learning.

The internet is a rich source of all the things that can be done with jump rope tricks and skill building once learners are past the beginning phases; a youtube video is worth a thousand words in this regard. The purpose of this article (parts of which are adapted from my book *Educating for Balance and Resilience*¹) is to offer further insights about the lesser-known ways that skipping contributes to athletic and academic foundations, as well as how to look for and help overcome some of the many little obstacles that your early beginners might display.

Rising popularity for young and old

Especially in recent years, schools around the world have “jumped on” a Heart Association educational and fundraising program that's become one of their premier annual events. Hundreds of schools across the USA participate in “Jump Rope For Heart”². It has four simple goals:

- Get kids active (by having them jump rope).
- Educate kids about their hearts, and heart-healthy habits.
- Raise money for cardiovascular research and outreach programs.
- Teach kids the value of community service.

The program does this by involving elementary and middle school kids in a 3 to 4 week learning block, usually conducted during PE classes. The gymnasium and school are decorated with fun heart health posters and educational materials. Along the way, kids are encouraged to fundraise by asking friends and family for donations that will be sent to the American Heart Association to support research and education programs. (It has raised more than \$1.2 billion since its start in 1978.) As a grand finale, students present their parents and community a jump rope performance.

The adult fitness industry is also in a jump rope upswing. One online company leading this wave, crossrope.com, touts speed-rope routines as the world's most efficient workout, burning more than 1,000 calories in an hour of intervals and recruiting a complete upper-body and lower-body effort. Compared with distance running on pavement, skipping is much easier on the knee joints. This fact might be important to consider in the design of PE curriculum for students who have not yet reached the age when growth plates close.³

Benefits for athletic foundations

The cardio, strength and endurance benefits of jumping rope are obvious. But perhaps less so would be the fact that the footwork agility it builds will strongly transfer to and improve performance in almost any current or future athletic specialty. You probably know all boxers devote hours and hours to their incredible skipping routines. But take a closer look at the perpetual-motion flying and gliding footwork of almost any athlete, from quarterbacks to tennis and basketball players, and you'll quickly see how skipping rope just "has to be" part of the learning/training equation!

Benefits for academic foundations in the early grades

In the six-to-ten years range, many interrelated aspects contribute to a child being physiologically and emotionally ready to cope with and thrive in an academic setting. Interestingly, almost all of these factors of internal readiness can be observed in a child's outward movements: in the elements of the new motor tasks he or she finds easy, and in the particular ways that obstacles big or small show up and require more time or assistance.

Here are just a few of these readiness challenges you might see – and then help remediate – through jump rope periods. (Even children without these challenges greatly benefit from recapitulating and further strengthening developmental capacities.) A more detailed discussion of these factors is at the end of this article, under the Notes on Developmental Considerations.

1. ***The Hyper Rope - Self-Regulation and Composure:*** Classroom success very strongly depends on the integrated ability to transition between active and quiet phases throughout the day. To move and look out into the world; and then to reflect, consolidate and remember.

Success in the basics of skipping recruits self-regulated, rhythmic pacing and offers the kind of vigorous exercise the lower brain requires as a prerequisite for down-regulating to a state of quiet listening and attention. Every child is different in how much is needed in this respect; but without an effective individual “dose” of vigorous physical activity, the lower brain will tend to hijack the learning process. In early jump rope lessons, younger students should be (as much as possible) kept to jumping with a double bounce, i.e., with two quick hops for each rotation of the rope. Not only does this make the beginner’s task easier; it also creates a rhythm similar to the beating of the heart. Experience shows that, very often, children ages five to seven or eight who have difficulty staying with the double bounce or who insist on bypassing this jump rope mode and moving right into quick single-bounce speedy skipping are the very ones who have trouble sitting still and poised for classroom learning. (They may even up the pace as they jump, until they trip themselves or become prematurely fatigued.) Most younger children will stick with a harmonious double bounce for a year or two if that’s the way they’re introduced to the jump rope. So, I suggest, pick your battles, but do your best to require the rhythmic double bounce.⁴

2. ***The Offside Rope - Movement Patterns and Stages:*** Fish-like wriggling movement is characteristic of animals and children in the earliest stage of development; movement on one side of the body is automatically accompanied by the opposite movement on the other. You may occasionally see (as I have) a first or second grade student whose struggle with learning to jump rope reveals a mild vestige of this trunk-stage pattern. If you stand straight in front or back as she swings her rope, you can notice that one arm extends farther from the torso than the other and the rope is asymmetrically looping around at a slight angle away from the child’s midline, causing tripping up. Retention of this asymmetric movement pattern will also make it more difficult to focus and carry out a number of tasks in a classroom setting, so jumping rope will help such a student to move ahead to the Symmetry Stage, a movement pattern typical of the four-to-seven year old. Bring to consciousness the need for the rope to stay straight and have him or her jump perpendicular to a line, or give some other target for the rope to hit as it crosses under the feet.
3. ***The Sleepy Feet - Balancing Gravity and Levity:*** Typical play in toddlers and young children is all about integrating movement in the plane of above and below: hopping off a step, swinging on swings, sliding on slides, etc. But some children get to the age of 5 or 6 or even more still somewhat bound to the earth, not exactly awake to the world. What such kids feet do (or, rather, don’t do) in the early stages of jumping rope will show a little “cry for help”. The feet

don't seem to know that a rope is coming around, and/or can't find a rhythm. You almost feel like you should check to see if there's a pound of sand in each sneaker! Help with this aspect requires working first with a long rope; the rope swingers should just sway the rope rhythmically back and forth under the feet until the child can remain in the right spot (i.e., not hopping away from where the rope hits the floor) and get some air under those feet in a rhythmic manner.

Recommended Skills Progression for Ages 5 to 7

Here is a general guide to jump rope steps to success from kindergarten and up. For all of these, use traditional verses and counting-up rhymes to promote fun and provide the benefits of integrating movement and speech.

1. Hopping over a swaying long rope until mastery of hopping in time. When rhythm and big-little hop are well-established, begin swinging rope overhead.
2. Continued practice with a long rope until rhythm is pretty well mastered. Begin to use rhythmic verses.
3. Begin with single rope, by walking and swinging it over as while walking/stepping through. Progress to ability to continuously forward step around the room or play area.
4. Single rope forward jumping (feet together).
5. Single rope backward jumping.
6. More advanced single and long rope tricks and verses. Also introduce choral speaking of verses while jumping.

Sample verse for beginners with long rope – help beginner to learn rhythmic hops while staying at middle of rope, by swaying the rope side to side until student is ready for the rope to swing over:

Back and forth the rope does swing • Can you do the jumprope thing? • Hop your feet and count your toes • Now you're ready and over it goes! • 1 -2 -3 etc.

Baseline Goals for Grades 2 and Above

Many interrelated developmental factors contribute to a child in the six-to-ten years range being physiologically ready to thrive in the classroom. Childhood skill challenges reflect deeper developmental needs, and meeting these inner situations through outer movement will increase academic readiness.

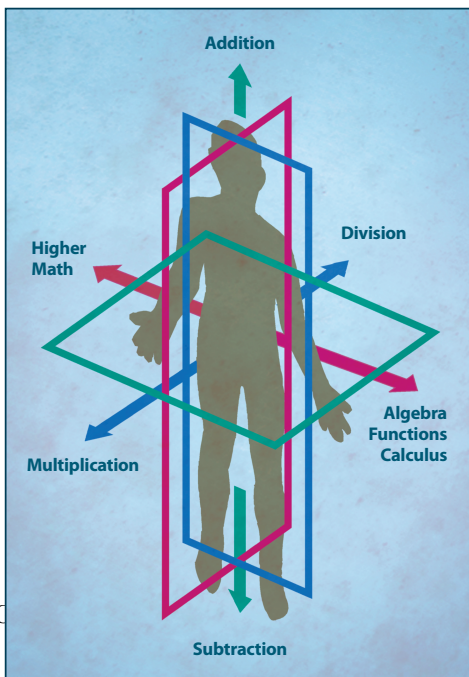
- Gr. 1:** Able to maintain rhythm and continuous jumping up to at least a dozen times, both long and single rope.
- Gr. 2:** Cross jump rope; begin double dutch.
- Gr. 3:** Single rope tricks; at least half of class can double dutch.
- Gr. 4 and 5:** Mastery of above. Double-hop rhythm may transition to single hop.

Gr. 6 and up: All of the above plus introduce interval cardio sessions (e.g., 90 second intervals with students striving for 70 seconds jumping and 20 second rest). School performances include double dutch tricks.

Notes on Developmental Considerations

As described in greater detail in *Educating for Balance and Resilience*, many interrelated developmental factors contribute to a child in the six-to-ten years range being physiologically ready to thrive in the classroom. Childhood skill challenges reflect deeper developmental needs, and meeting these inner situations through outer movement will increase academic readiness.

1. **Movement Patterns or Stages:** Animals at the earliest stage of development respond to surroundings chiefly at a fear-based reflex level, and fish-like wriggling movement is characteristic. In human infancy, we see these same characteristics of response and movement: reflexive responses for suckling and other aspects of touch; and for threats to balance and safety (loud noises, unfamiliar faces, etc.). Many specialists use the label Trunk Stage Movement for the wriggling, somewhat fish-like mobility typical of this phase of development. For instance, the infant crawls on his abdomen in a homolateral pattern that resembles the swaying of an elephant's trunk: leg and arm on one side extending; and opposite movement on the other side, arm and leg flexing, and twisting at the waist. Notably, crawling in this manner places one eye and ear at a time toward the floor, so that vision and hearing of the surroundings are similarly homolateral, alternating from side to side. Students who retain this movement pattern have not achieved independence of left and right arms and hands; therefore tasks like handwriting or drawing will be impaired. At a desk, splinter skill work-arounds may include planting the non-dominant elbow on the desk and possibly also holding the chin or head, or moving work to one side of the body, and/or turning the torso.



2. **Math Readiness - Spatial Organization and Vestibular Stimulation:** As noted, early childhood movement begins with conquering the transverse plane of our above/below spatial environment; with overcoming gravity in order to stand and take those first steps. Two more phases need completion for full spatial integration: the frontal plane of forward/back, and then the sagittal plane of left/right crossing. There may be some poetic license in suggesting that these three planes have a math-learning connection:

that addition/subtraction are related to higher/lower, multiplication/division to faster-farther or fractionally less, and algebra/equations to the balance of left and right. However, isn't it true that a certain amount of clumsiness or sluggish gross motor movement often does accompany a sleepy lack of alacrity in thinking, perhaps especially in arithmetic? Related to this three-dimensional integration, and what is established, is that vestibular stimulation is one key to progress in math learning.⁵

3. **Classroom Focus: “Shutdown, Fight and Flight”:** Today's schools are placing renewed emphasis on helping student with self-regulation; some are incorporating mindfulness practices in their curricula. In order for the higher brain (at any age) to be in a state of readiness for learning, the lower brain, nervous system and breathing need to be down-regulated or they will hijack learning focus. Depending on the student's constitution and a multitude of circumstances, this hijacking will manifest as shutdown (giving up, shame), fight (stubborn attitude or oppositional behaviors), or flight (the spectrum of behaviors including ADHD). Vigorous and rhythmic activity like jumping rope gives the lower brain a chance to have the fun and excitement it craves and then be ready to take a rest while the learning zones explore with focus.

¹ Tunkey, Jeff: *Educating for Balance and Resilience*, Steiner Books, 2020

² See https://www2.heart.org/site/SPageNavigator/khc_resources_search.html

³ See <https://www.sciencedirect.com/science/article/abs/pii/S0966636218316515?via%3Dihub> by authors JessicaMcDonnell, Kevin Zwetslootb, Joseph Houmard and PaulDeVita

⁴ A good presentation of this is at https://www.youtube.com/watch?v=KNuuncNIT_A

⁵ See for instance: <https://www.sciencedirect.com/science/article/abs/pii/S0028393217304086>