

ReadyBodies LearningMinds

Katie Mangus, MOT, OTR/L, CPDPE

Occupational Therapist

Certified Positive Discipline Parent Educator

spedot@gwacademy.org

Ready Bodies, Learning Minds©
(RBLM) provides children with a
strong foundation of the basic
knowledge and use of their bodies

Developed by Athena Oden, PT

Katie Mangus, MOTR/L, CPDPE



- Pediatric school based occupational therapist for 11 years
- Dream is to teach self regulation and provide motor labs as a curriculum in schools
- LOVE “Ready Bodies Learning Minds”
- LOVE working with teachers and parents
- LOVE my students
- Love smoothie bowls and rom com movie previews

Beginning with the end in mind

Today's objectives:

Have you leave with a new understanding, feeling inspired and supported.

Understand:

- What students and teachers are up against in 2021
- Learning pyramid
- Sensory integration and motor control drives learning and the performance of our children

Inspired to:

- Have a paradigm shift on the importance of sensory and motor experiences
- PROVIDE!

Supported:

- Motor lab for K-2 students
- Have resources
- Get support with your students

Troubling Trends

- More and more of our students appear uncoordinated
- More students:
 - Bouncing around the classroom
 - Chewing on their shirts
 - Falling out of their chairs
- Difficulty with reading and handwriting
- Don't have the motor skills to learn!
- Their immature skills hinder their learning
- Delays due to the soft close

What has changed over the last 40 years?

- Lots of sitting- sedentary lifestyle
- Managed playtime and sports- not free lengths of time
- Fear of safety prevents unrestricted play
- Back to sleep- limited tummy time
- Both parents working
- Less manual labor- under-developed
- “Small” childhood



Limited childhood experiences

Carriers- “the invisible cage”

Screen time

National epidemic of childhood obesity

Increased academic demand

COVID- What has changed over the last 2 years?

A year without parks and social play

Virtual school- less movement

Masks limit you from being active because you can't breathe well



BIG CHILDHOOD

Rolling down hills

Risky play

Playing outside till the dinner bell

Standing on swings

Going barefoot

Climbing trees

Riding bikes to school

Playing in the mud

Raking leaves

Pushing a heavy vacuum



Play today

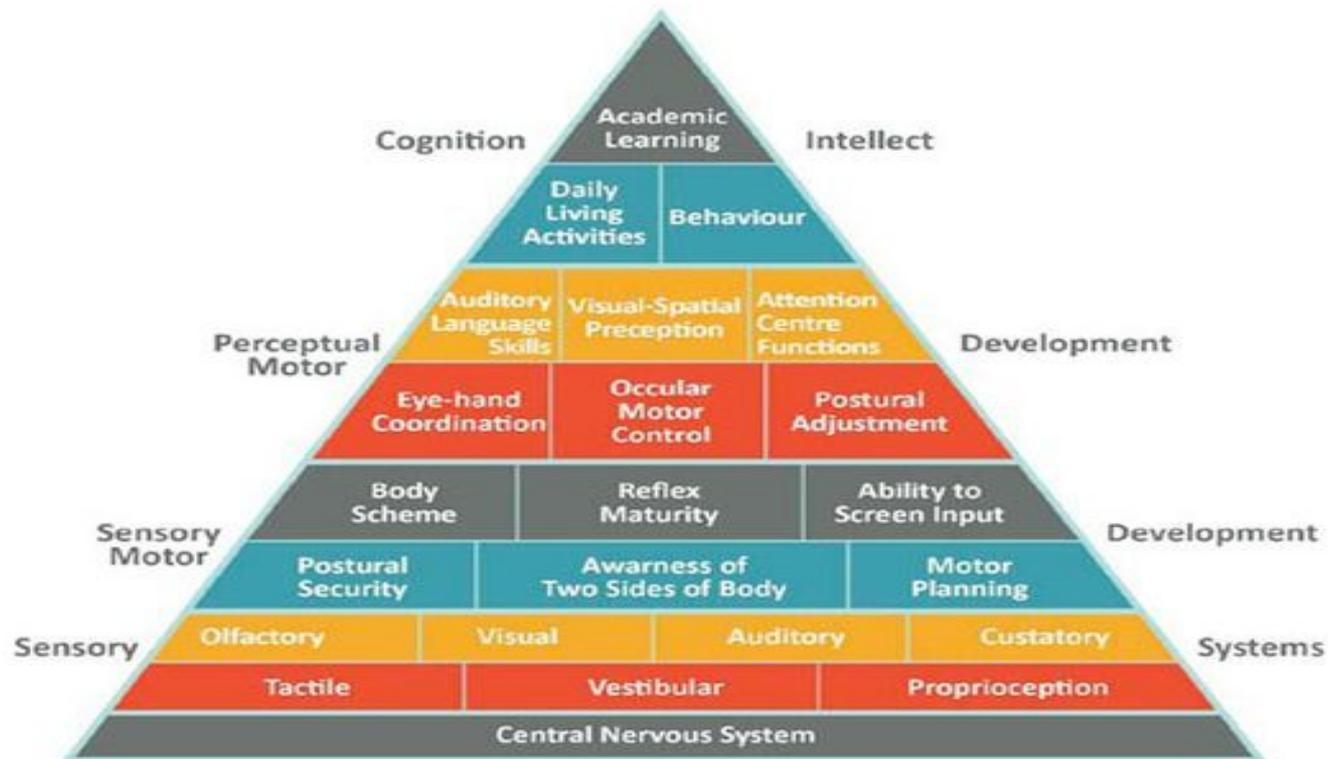


Be Proactive

The circumstances are
different and WE need to
be different!

PROVIDE! PROVIDE! PROVIDE!

PYRAMID of LEARNING



PROPRIOCEPTIVE PROCESSING

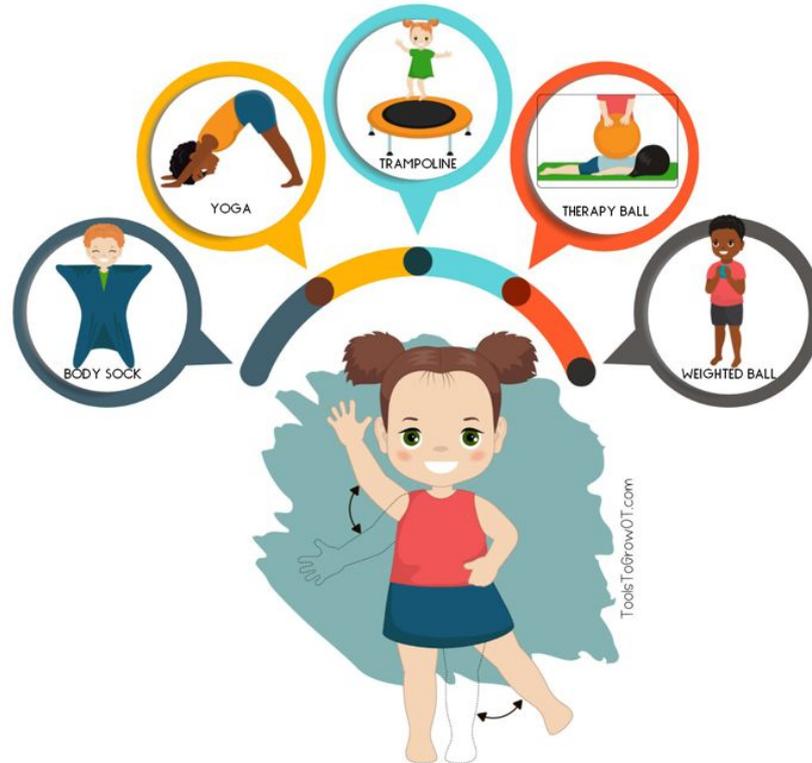
“BODY AWARENESS”

- The body’s position in space
 - We know where are body parts are without looking!
 - Processed through joint receptors
- Important part of coordinated movements (ex: kicking a ball, holding a pencil)
 - Difficulty Manifests as: appearing clumsy, playing too rough, always moving, etc.
- *Nose to fingertip activity*



PROPRIOCEPTION

The sense that helps a child with body awareness is known as proprioception.



VESTIBULAR PROCESSING

“BALANCE AND MOTION”

- Our body's ability to sense speed and direction of movement with respect to gravity
 - Detected through the inner ear
- Difficulty manifests as:
 - Uncoordinated movements, appears weak or clumsy, fear of feet off the ground, rocks back and forth, avoids movement, etc.



VESTIBULAR

The sense that detects movement through sensory receptors in the inner ear.



Reflexes

“A reflex is an automatic, instinctual movement that assists in development, growth and survival... “primitive reflexes”—surface in the womb and infancy and are designed to become inactive after the toddler stage. Two familiar primitive reflexes are sucking and grasping with the hand. Ideally, primitive reflexes merge into more sophisticated movements, and become integrated. An integrated childhood reflex is no longer active.” (Story, 2007)

“From the womb on, the childhood reflex movements literally grow the brain. Repetitive, automatic reflex movements are essential for the development of balance, mobility, vision, hearing, speaking, learning and communicating. Reflex movements are the first foundations of the nervous system.” (Story, 2007).

Reflex Integration

“When reflexes are active, body parts cannot easily move independently. A movement of the head causes an automatic movement in the limbs, hands or feet.

Extra limb movements happen below the surface level and cause confusion in the neuro-sensory-motor system. This confusion creates difficulties with growth, coordination, reading, writing, speaking and thinking.” (Story, 2007).

We integrate the reflexes by doing the opposite movement of the reflex

TLR

TLR
TONIC LABYRINTHINE



- Purpose:
 - Primitive reflex to gravity
 - Postural stability- learning to develop flexor and extensor muscle tone. (Tummy time time integrates this reflex!)
- To integrate you need to:
 - Have your babies do tummy time and do not put them in to sitting prematurely!
- If retained we see:
 - not writing, can't read, toe walking, poor handwriting, etc.
- Exercises:
 - Superman
 - Popcorn

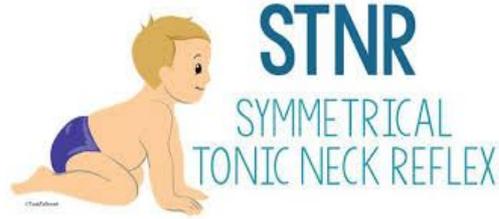
ATNR



- Purpose:
 - Develops the right vs. left side of your body
 - Helps baby to move out of birth canal
 - Makes sure they can breathe when placed on tummy
 - Eye-hand coordination
 - Helps body to work in opposition (flexion in one side and extension on the other)
- To integrate you need to:
 - Provide vestibular (spinning) movement and perform opposite movement of the reflex
- If retained we see:
 - Difficulty with balance, crossing midline, handwriting, grasp, etc.
- Exercise:
 - The Rocking Horse
 - Wall Lean



STNR



- Purpose:
 - Helps child get off the floor and in to a quadropod position to prepare for crawling
 - Trains your eyes to converge (see near) and diverge (see far)
- To integrate
 - You need to crawl!
- If retained we see:
 - can not crawl, their hands, pelvis and shoulder girdle are not developed or strong and a weak corpus callosum. *Lack of crawling is highly associated with learning disabilities. (The corpus callosum myelinates and sends messages across the brain).
- Exercise:
 - Giraffe Stretch

Culture of “make them sit still so we can teach them!”

How can they learn difficult academic tasks when they have had little time to develop critical motor and sensory systems?

Sitting still is a high level skill! Requires movement training to move well and effectively against gravity.

Lack of development causes wider gaps and splinter skills

More problems with mental health and negative behaviors. Skills build self-esteem!

Help children develop skills to develop readiness!

Example of a highway and neural pathways

Example of tying shoes

THE NEED FOR MOVEMENT

- The areas of the brain in charge of movement are also in charge of cognition and attention span. So we need to move to learn!
- Movement breaks improves mood and cognitive performance because it triggers the brain to release our “happy mood” neurotransmitters dopamine and serotonin.
- When in doubt, prop it out! (do heavy work) EG: pushing, pulling, carrying, etc.



Research

Doctoral Dissertation Reported:

20 minutes every other day in the Ready Bodies Motor Lab

70% Increase in reading proficiency in elementary children compared to control lab who did not use the motor lab

Physical Activity and Performance at School

A systematic Review of the Literature Including Methodological Quality Assessment Sing, et al. Arch Pediatr Adolesc. Med. 2012 (Amsterdam)

*"Conclusion: Participation in physical activity is positively related to academic performance in children."

Motor Lab

3 areas we are working on:

1. Motor Control
2. Sensory Integration
3. Kinesthetic awareness

RTI program

CDC and WIC Guidelines for physical activity

Improved reading and behavior reported by schools who have implemented it



*McCall Spears-
Coordinator*

mspears@gwacademy.org



Motor Lab- Room 208

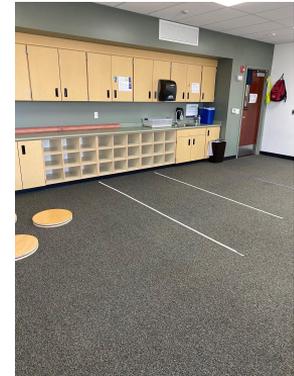
Task-oriented circuit training that lasts a total of 20 minutes (or less)

Group always does a warm up with the “Key activities” which are for reflex integration

Each station lasts 90 seconds and then they move to the next station

10 stations with 2-3 pieces of equipment per station so that no child is idle at any time!

2-3 children at each station



Motor Lab- cont.

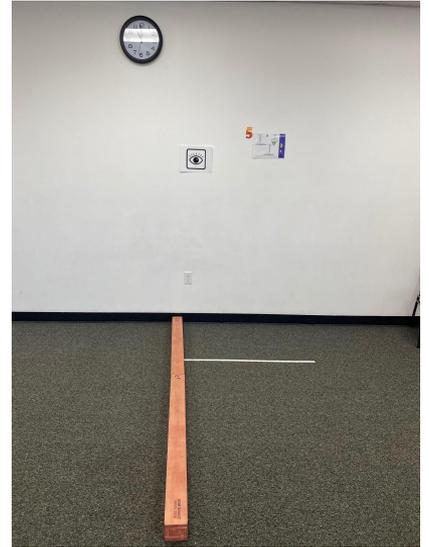
Stations cover 10 areas and vary in level of difficulty and intensity level

Motor lab tech's will update the motor lab activities each week

A short cool down time time is important

Scheduled times for K-2 classes

Each grade has a group of referral students who attend daily



Motor Lab stations

1. Vestibular boards
2. Handwriting
3. Locomotor
4. Proprioceptive
5. Tactile
6. Balance
7. Motor Control
8. Vestibular
9. Eye-Hand-Foot
10. Ball Work



Provide! Play!

Looking at my family's day yesterday as an example of how to make it natural:

- Wrestled in the front room
- Chasing each other to play lava monster on the playground
- Made an obstacle course through the rocks and trees
- Jumped on the tramp while dad threw them the ball to catch
- Kids took apart the play place to build a way for the ball to roll down in to the bucket



Beginning with the end in mind

Did we meet today's objectives?:

Understand:

- What students and teachers are up against in 2021
- Learning pyramid
- Sensory integration and motor control drives learning and the performance of our children

Inspired to:

- Have a paradigm shift on the importance of sensory and motor experiences
- PROVIDE!

Supported:

- Motor lab for K-2 students
- Have resources
- Get support with your students

RESOURCES- WEBSITES

Institute for Neuro-Physiological Psychology (INPP)-*Research on Central Nervous System*

<https://www.inpp.org.uk/intervention-adults-children/more-information/reflexes>

Ready Body Learning Minds- *Curriculum to implement movement in to learning*

<http://www.readybodies.com/>

Sensory Processing Disorder Foundation- *Resources*

www.spdfoundation.net

The Zones of Regulation- A curriculum designed to foster self-regulation and emotional control

<https://zonesofregulation.com/index.html>

Tools to Grow OT- Sensory diet visuals and pediatric therapy resources

www.ToolsToGrowOT.com

REFERENCES

Ayres, A. J. (2005). *Sensory integration and the child, 25th anniversary edition*. Los Angeles, CA: Western Psychological Services.

Hillman et al, (2014, September) Effects of the FITKids Randomized Controlled Trial on Executive Control and Brain Function. *Pediatrics*

Miller, L.J., & Lane, S. J. (2000). Toward a consensus in terminology in sensory integration theory and practice: Part 1: Taxonomy of neurophysiological processes. *Sensory Integration Special Interest Section Quarterly*, 23(1),1-4.

Parhan, L.D., Ecker, C., Miller Kuhaneck, H., Henry, D.A., & Glennon, T.J. (2007). *Sensory Processing Measure (SPM): Manual*. Los Angeles: Western Psychological Services.

Sing, et al. Arch Pediatr Adolesc. Med. 2012 (Amsterdam)

Story, Sonia. (2007). The Importance of Integrating Reflexes.

https://www.moveplaythrive.com/images/pdf/integrating_reflexes.pdf

Williamson, G. G., Anzalone, M. E. (2001). *Sensory Integration and Self Regulation in Infants and Toddlers: Helping Very Young Children Interact With Their Environment: 1st Edition*.