


CALMING



ALERTING






# ITZ Strategy Toolkit

PART ONE & PART TWO

A PROGRAM TO ASSIST STUDENTS WITH COMPLEX LEARNING NEEDS

1






CALMING








## ITZ Strategy Toolkit PART 1

Tutorial presented by Natasha Sansoni  
Consultant Occupational Therapist to  
Clarke Road School and The Hills School  
July 2020

ALERTING



2



### Pathways to investigate “what?” “why?” and “how?”

Student: Ben  
Diagnosis: ASD, ADHD  
Presents as: anxious, avoidant, sensitive, in pain.

Challenges at school:  
Unsettled, dysregulated, self-injurious and aggressive behavioural responses difficult to engage, avoids interaction.

How can we understand Ben and support him to get from “surviving” to “thinking”?

Observe, analyse, interpret, plan.  
We need to gather more information, then develop tools and strategies.

Levels of alertness/self regulation

Processing of sensory information- take a sensory lens

Foundations for learning framework – whole person- whole brain lens

Levels of Alertness data tool & tutorial


ITZ student response checklist & tutorial

Focus on Surviving brain and self/co-regulation

Strategy toolkit

Strategy toolkit

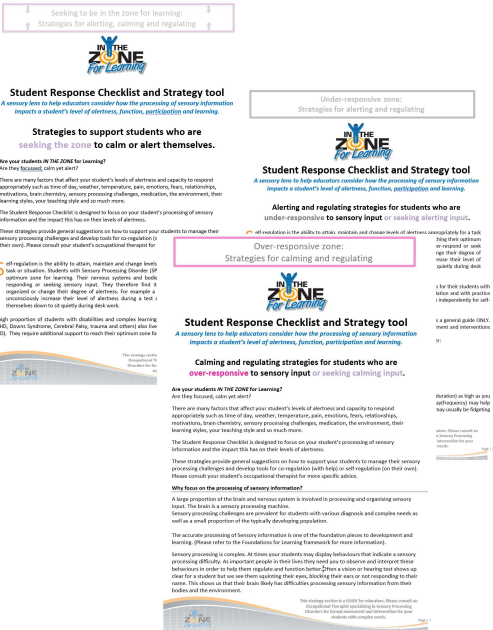
Strategy toolkit




### Refer to the ITZ Strategy Booklets

for ways to support students who present as:

- over-responsive,
- under-response or
- seeking the zone.






**Student name: Ben**  
**Age: 9 years old**

*Please refer to ITZ student story - Ben*

Diagnosis:

- Autism Spectrum Disorder (ASD)
- Attention Deficit Hyperactive Disorder (ADHD)
- Verbal and motor Dyspraxia
- Speech and language delay,
- Intellectual Delay (ID)

Ben seems stressed and anxious.  
Ben sometimes enjoys swimming and bush walking.



5

**“Kids do well if they can” Dr. Ross Greene**  
How can we help our students do as well as they can?

**HOW?**

**Get to know Ben.**  
**Understand his internal world**

Observe

Analyse

Interpret


Plan

**sensory-motor/regulatory tools**

**Design a schedule and classroom environment that meets Ben’s needs in the context of the whole class**

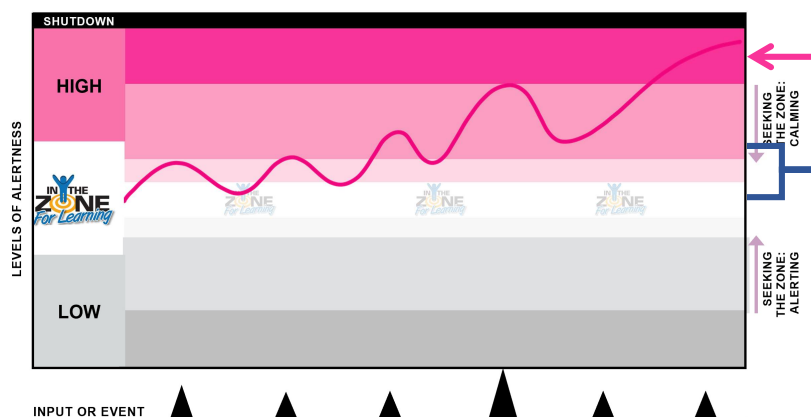
**Evaluate effectiveness and benefit to student and whole class.**

Greene, R. W. (2005). *The Explosive Child*. New York, NY: HarperCollins Publishers.



6

### Ben's ITZ levels of alertness data



- over-responsive.
- Sensory sensitivities
- Fright/flight/fight mode
- narrow window of tolerance
- Sometimes seeking ways to calm down = self-regulation tools/co-regulation

7

Students with sensory sensitivities need strategies to:

- prevent: e.g. reduce volume in the classroom, reduce talking, lower volume of voice, have tolerable background music so sudden sounds aren't a painful shock. 50- 70 beats per minute (human heartbeat) can be organising and regulating for concentration.
- compensate: e.g. wear noise cancelling or noise limiting headphones for short periods of time, a beanie can be helpful, limit time in noisy places.
- remediate: e.g. more vestibular movement can impact auditory processing and gradual, respectful graded exposure to sound especially made by self e.g. playing musical instruments, blowing whistles, crunchy food...



**Fright/flight/fight**  
**Sensitive to sound**



*Refer to the ITZ strategy Toolkit for strategies on all the 7 senses*

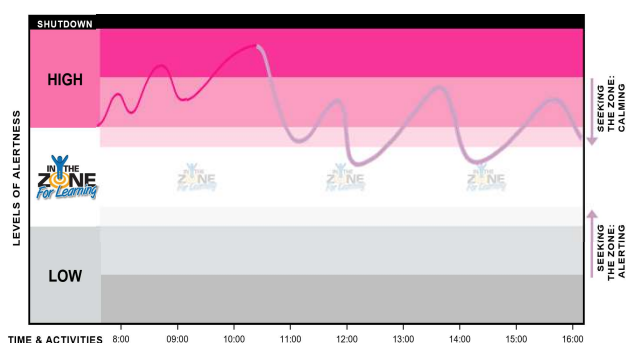


[www.sensamart.com.au](http://www.sensamart.com.au)  
Noise cancelling/limiting  
headphones

8



Ben presents as being **over-responsive** and in a **high** level of alertness. Ben needs regulatory tools (**seeking the zone**) so his brain can rewire from “surviving” to “thinking” and he can learn with joy and meaning.



#### Prepare his brain and body before:

- Trampoline, Weighted items
- Heavy muscle work, walking/running
- Clear transition with visuals/object symbol

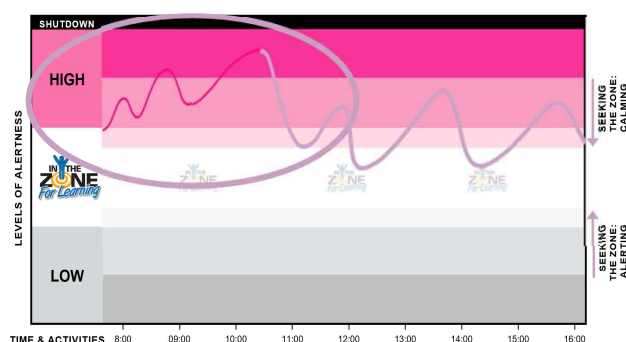
#### During an activity:

- Incorporate heavy muscle work and movement
- Tactile input that is meaningful- water, shaving cream, sandpaper
- Structured environment, activity with a clear beginning, middle and end

#### Transition (potentially dysregulating time)

- Quiet time alone to process and regulate with effective regulatory tools.

9



#### Prepare his brain and body before:

- Trampoline, Weighted items
- Heavy muscle work, walking/running
- Clear transition with visuals/object symbol

10



**Ben needs vestibular input** through movement opportunities (which stimulate the inner ear – vestibular system)










Modified bike by [www.freedomwheels.org.au](http://www.freedomwheels.org.au)




11


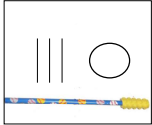
**Self-regulate then concentrate.**




**FIRST**

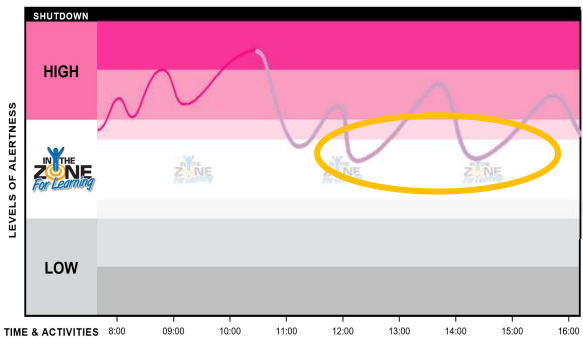


**THEN**

<p><b>first</b></p>  <p><b>jump</b></p>	<p><b>then</b></p>  <p><b>Draw (chewy pencil)</b></p>
--	--

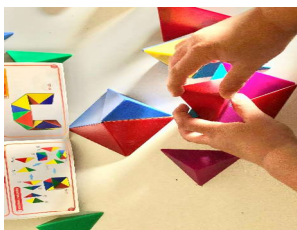


12

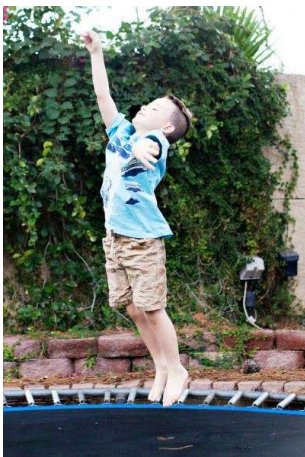


During an activity:

- Incorporate heavy muscle work and movement
- Tactile input that is meaningful- water, shaving cream, sandpaper
- Structured environment, activity with a clear beginning, middle and end



**Ben's regulatory tools can be learning tools**



When he is calm yet alert, Ben can also learn concepts while engaging in some of these sensory-motor activities e.g. making shapes in the shaving cream, learning to ride a bike or diving for colour and number sinkers in the pool.





Ben needs whole body, heavy muscle, activity -proprioception



When he is calm yet alert, Ben can also learn concepts while engaging in some of these sensory-motor activities e.g. counting while doing wall push ups, learning to garden and bake, colour matching while rolling over a gym ball...

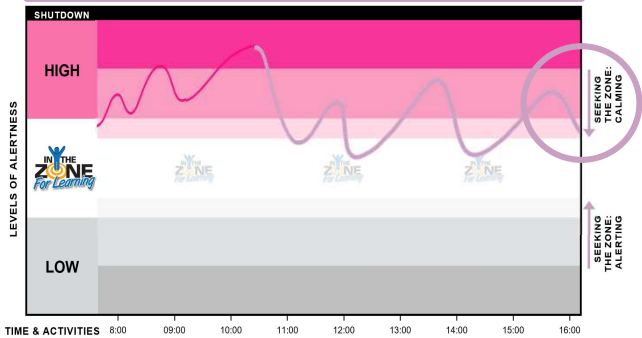


Wall push-ups  
Image from [www.hep2go.com](http://www.hep2go.com)



Transition (potentially dysregulating time)

- Quiet time alone to process and regulate with effective regulatory tools (deep pressure input, linear vestibular movement, quiet space)



Compression blanket  
[www.thetherapystore.com.au](http://www.thetherapystore.com.au)



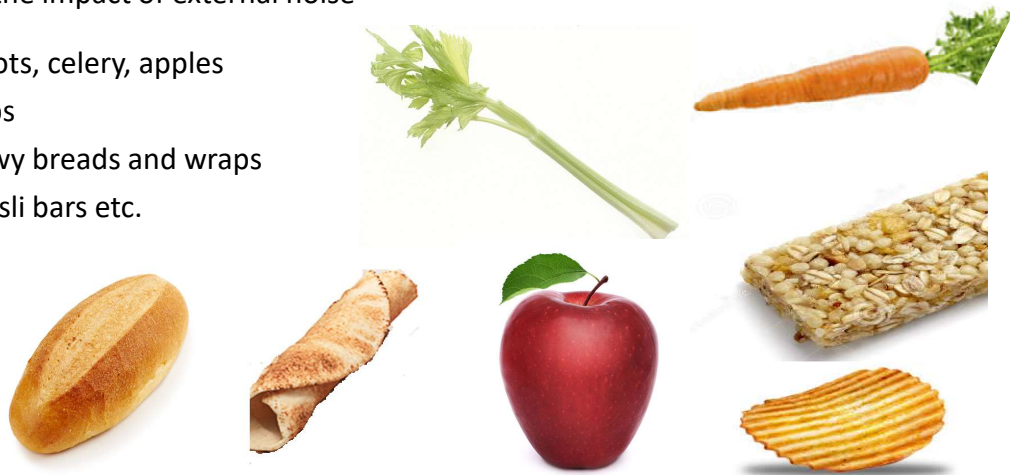
Clarke Road School -  
Hornsby, NSW



### Crunchy and chewy food can be effective

- to slow down and regulate his breath
- to provide input to the muscles and joints of the jaw
- to reduce the impact of external noise

- Carrots, celery, apples
- Crisps
- Chewy breads and wraps
- Muesli bars etc.



17



**The GOAL for us all:**

The brain works best when calm yet alert and wide open for learning!



18

Think about your own strategies for self-regulation.  
What is soothing for you?  
What do you use to calm or alert yourself?



19

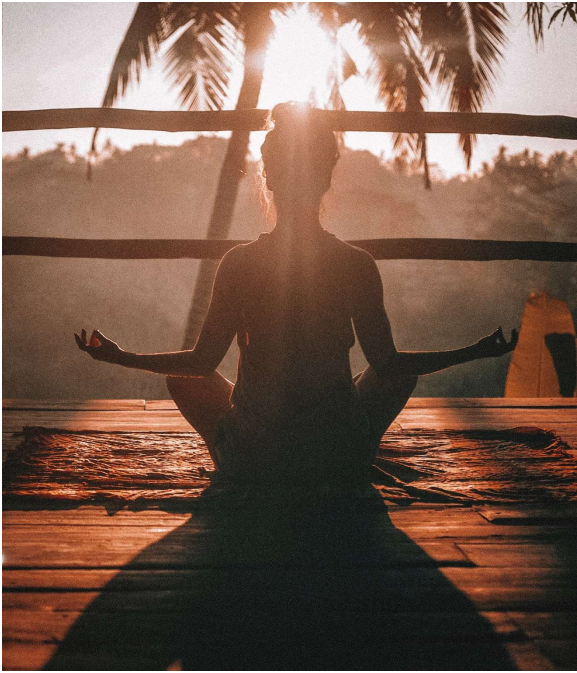


20





21



22





23

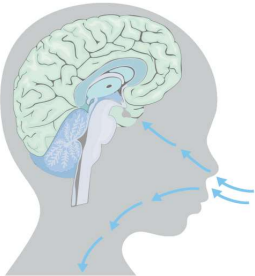
Through meaningful experiences we learn and remember what is soothing, calming and pleasing to our senses and what is alerting, exciting, invigorating to our senses.



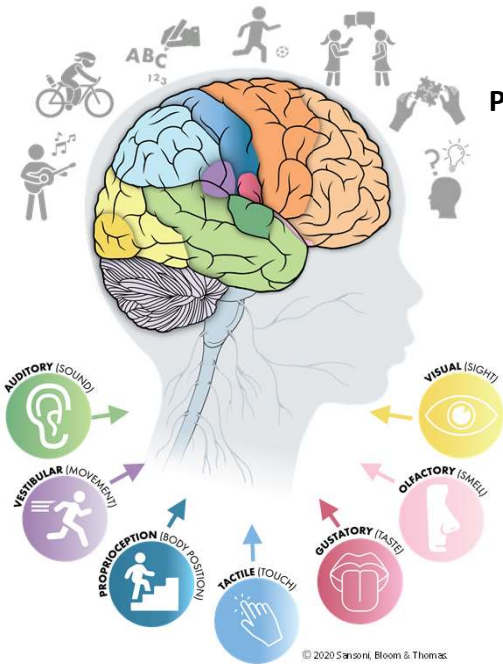
24

“Subtle” tools for regulation

- Chewing gum
- Drinking coffee
- Clicking pen
- Deep breathing
- Moving around/ fidgeting
- adjusting position
- Walking, pacing
- Positive self talk
- Talking it through with others
- and much, much more...



25



PROCESSING OF SENSORY INFORMATION

OUTPUT- active participation  
functional skill development  
joyful learning

Sensory discrimination

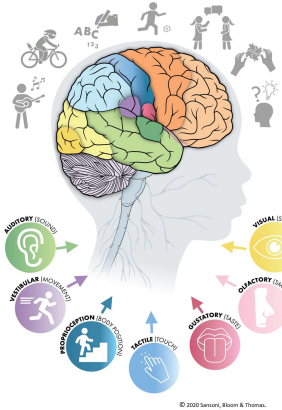
Sensory modulation

INPUT – Registering sensory information







26



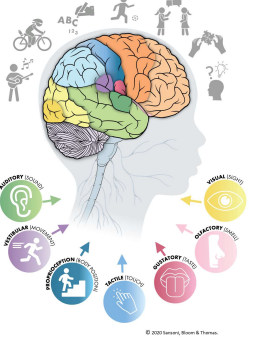


### We can experience meaning, joy & soothing through our sensory systems.

- When sensory processing is accurate and organised - pleasurable sensations can change our brain chemistry and wiring to be calm, happy, invigorated, connected...
- Heavy muscle work and proprioceptive input, deep pressure tactile input, linear vestibular movement, soothing sounds, delicious food and calming fragrances can be helpful sensory input for feeling regulated, calm and soothed.

27



### Sensory Modulation (tuning in / tuning out)

A student needs to tune into sensory information that is important for the task while simultaneously tuning out sensory information that is unimportant.

- focus, attend, learn

**Some students need help to tune into what is important:**

- Simplify and organise each activity.
- Minimise visual clutter and noise/sounds.

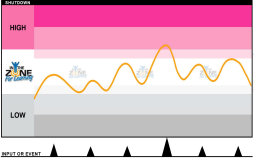

**Some students need more time to process**

- Slow everything down. Wait for them to process.

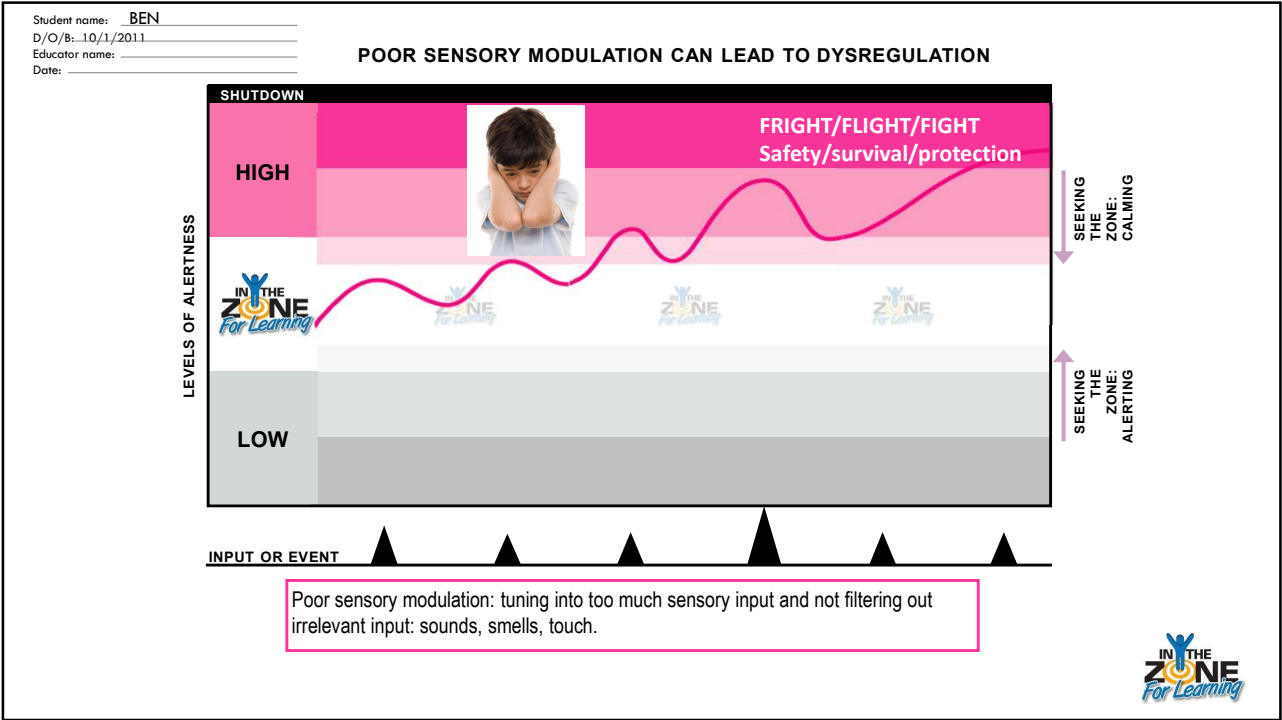
**Sensory Modulation helps us attain and maintains a regulated state:**

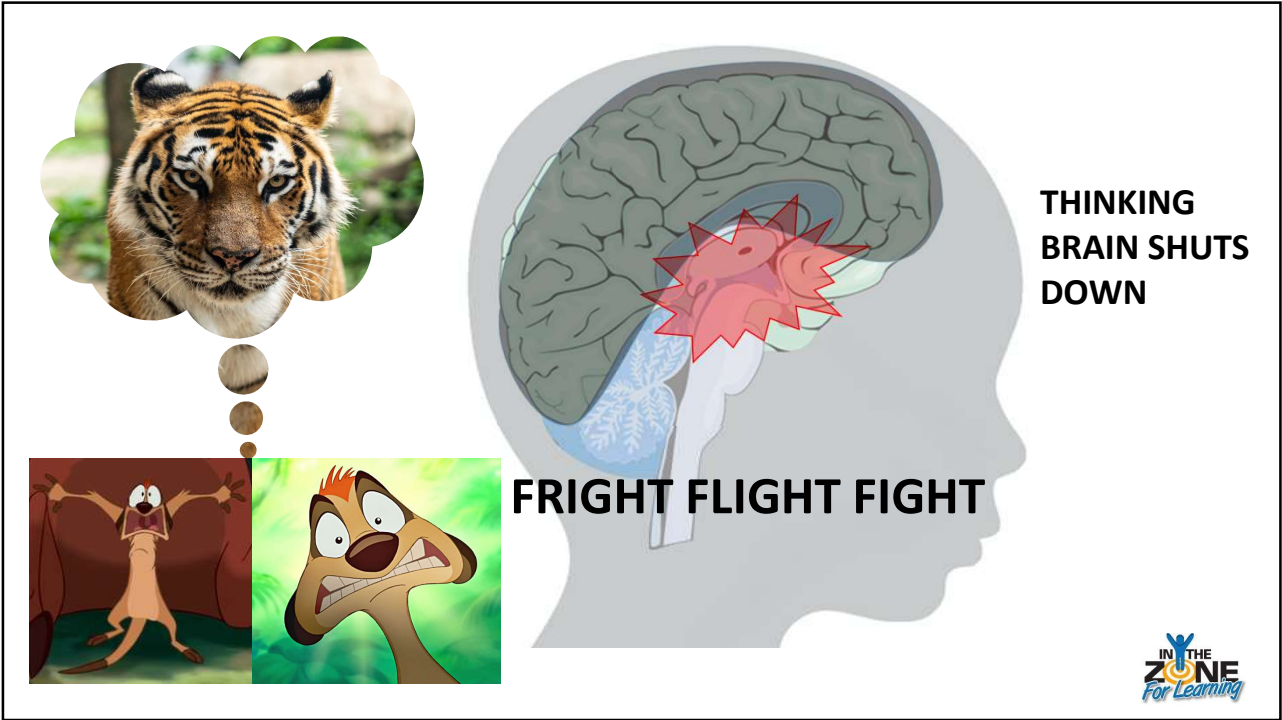
Calm yet alert
Respond - recover

Provide regulatory tools and movement breaks for their brain to flow with positive neurotransmitters and experience the world more accurately.

28



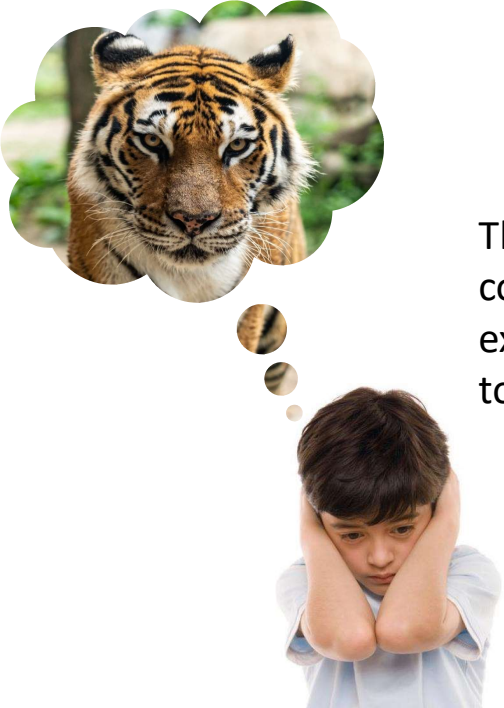


31




32

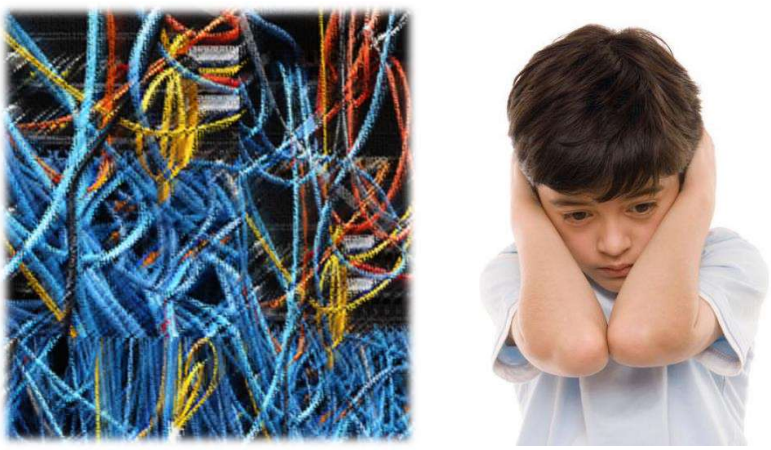


A young boy with dark hair, wearing a light blue shirt, is shown from the chest up. He has his hands pressed against his ears, looking down with a sad or distressed expression. Above his head is a thought bubble containing a close-up image of a tiger's face, looking directly forward. The thought bubble is connected to the boy by three small circles of decreasing size.

The cycle of fright/flight/fight is compounded for Ben by having no past experience of problem solving or refined tools for self regulation to draw on.

The logo for 'IN THE ZONE For Learning' is located in the bottom right corner. It features the words 'IN THE' in small blue letters above a large, stylized 'ZONE' in blue and yellow, with 'For Learning' in a smaller blue font below it.

33

On the left side of the slide is a square image showing a dense, tangled mass of thin, colorful wires in shades of blue, yellow, and red, resembling a complex neural network or a chaotic wiring diagram. To the right of this image is a smaller version of the boy from the previous slide, also covering his ears with a distressed expression.

**BEN's BRAIN CAN BECOME WIRED THIS WAY.**  
**His behavioural responses reflect his internal state.**  
**HE DOES WHAT HE NEEDS IN ORDER TO SURVIVE.**

34

↑

ADRENALLIN, CORTISOL, STRESS HORMONES

↓

THINKING

FEELING

MOVING


SURVIVING

4

3

2

1




↑



SENSORY PROCESSING. REGULATION OF ALERTNESS & BEHAVIOURAL RESPONSES

↓

Inaccurate processing of sensory information. Dysregulation of alertness and behavioural responses.



Foundations for learning framework - developed for special educators to better understand their student's complex learning needs by Bloom, Y & Sansoni, N (2020) derived from Perry, B.D (2009); Siegel, D.J & Bryson, T (2020); Wallis, N (2017); Taylor & Trott (1991) as cited in Williams & Shellenberger (1996); Willbarger, P (1991)



35

↑

ENDORPHINS, SEROTONIN, DOPAMINE, OXYTOCIN, MELATONIN & GABA

↓

THINKING

FEELING

MOVING


SURVIVING

4

3

2

1




↑

SENSORY PROCESSING. REGULATION OF ALERTNESS & BEHAVIOURAL RESPONSES



↓

Wiring  
Firing  
Integrating  
Connecting.

Accurate processing of sensory information is needed for this.



Foundations for learning framework - developed for special educators to better understand their student's complex learning needs by Bloom, Y & Sansoni, N (2020) derived from Perry, B.D (2009); Siegel, D.J & Bryson, T (2020); Wallis, N (2017); Taylor & Trott (1991) as cited in Williams & Shellenberger (1996); Willbarger, P (1991)



36

Student name: \_\_\_\_\_  
D/O/B: \_\_\_\_\_  
Educator name: \_\_\_\_\_  
Date: \_\_\_\_\_

WHEN IS MY STUDENT IN THE ZONE FOR LEARNING?

SHUTDOWN

HIGH

LOW

LEVELS OF ALERTNESS

TIME & ACTIVITIES

8:00 09:00 10:00 11:00 12:00 13:00 14:00 15:00 16:00

SEEKING THE ZONE: CALMING

SEEKING THE ZONE: ALERTING

Record the student's levels of alertness throughout the day.  
When is my student calm yet alert, focused and in the zone for learning?

Seeking the zone – when is my student using self-regulation strategies and when did I use co-regulation strategies for calming or alerting?

High – when is my student's level of alertness too high, over-responsive, dysregulated, anxious, or in fright/flight/fight?

Low – when is my student's level of alertness too low, dysregulated or under-responsive?

Please refer to the:  
- descriptors on page 2 or 3 for more details  
- online tutorial and ITZ student response checklist for a detailed sensory lens on over-responsive, under-responsive and seeking the zone.  
- ITZ strategy tool for ways to support your students.

37



Please consult a medical or allied health professional if you are concerned about your student's health or wellbeing.

HOW DOES DYSREGULATION AFFECT MY STUDENT'S LEVEL OF ALERTNESS AND ABILITY TO LEARN?				
	PROCESSING OF SENSORY INFORMATION	EMOTIONAL REGULATION	COGNITIVE REGULATION	INTERNAL/ PHYSIOLOGICAL REGULATION
LEVELS OF ALERTNESS	SHUTDOWN	EXTREME SENSORY OVERLOAD	FREEZE/SHOCK	SHUTDOWN
	FRIGHT/FLIGHT/FIGHT			
	HIGH	<ul style="list-style-type: none"><li>unable to tolerate</li><li>defensive /protective</li><li>overwhelmed/vigilant</li></ul>	<ul style="list-style-type: none"><li>angry</li><li>distressed</li><li>confused/worried</li></ul>	<ul style="list-style-type: none"><li>overwhelmed</li><li>frustrated</li><li>confused/puzzled</li></ul>
	SEEKING THE ZONE: CALMING	<ul style="list-style-type: none"><li>over-responsive/sensitive</li><li>heightened</li><li>distracted</li><li>seeking sensory input to attain and maintain a calm state</li></ul>	<ul style="list-style-type: none"><li>jealous/irritated</li><li>easily excitable</li><li>nervous/giggly/flighty</li><li>seeking connection and co-regulation for comfort</li></ul>	<ul style="list-style-type: none"><li>over-responsive</li><li>heightened</li><li>distracted/unfocused</li><li>seeking to calm/relax/focus</li></ul>
	LOW	<ul style="list-style-type: none"><li>processing sensory info</li><li>calm yet alert</li><li>focused</li></ul>	<ul style="list-style-type: none"><li>happy</li><li>confident</li><li>content</li></ul>	<ul style="list-style-type: none"><li>thinking/concentrating</li><li>attending</li><li>processing</li></ul>
SEEKING THE ZONE: ALERTING		<ul style="list-style-type: none"><li>seeking sensory input to attain and maintain an alert (move, crunch)</li><li>registering sensory input</li><li>under-responsive</li></ul>	<ul style="list-style-type: none"><li>animating/ motivating self</li><li>flat affect/expression</li></ul>	<ul style="list-style-type: none"><li>seeking to alert/increase focus</li><li>repetitive</li><li>unmotivated</li><li>bored/aimless</li></ul>
		<ul style="list-style-type: none"><li>not detecting sensory input</li><li>asleep</li></ul>	<ul style="list-style-type: none"><li>sad/melancholy</li><li>depressed</li><li>asleep</li></ul>	<ul style="list-style-type: none"><li>seeking to feel well/alert</li><li>lethargic</li><li>unwell</li><li>tired</li><li>exhausted</li><li>asleep</li></ul>
	PROCESSING OF SENSORY INFORMATION	EMOTIONAL REGULATION	COGNITIVE REGULATION	INTERNAL/ PHYSIOLOGICAL REGULATION

38

Please consult a medical or allied health professional if you are concerned about your student's health or wellbeing.



HOW DOES DYSREGULATION AFFECT MY STUDENT'S LEVEL OF ALERTNESS AND ABILITY TO LEARN?

	PROCESSING OF SENSORY INFORMATION	EMOTIONAL REGULATION	COGNITIVE REGULATION	INTERNAL/ PHYSIOLOGICAL REGULATION
LEVELS OF ALERTNESS	SHUTDOWN			
	HIGH			
X Not true for Ben	SEEKING THE ZONE: ALERTING	 self		
	LOW	?		
	PROCESSING OF SENSORY INFORMATION	EMOTIONAL REGULATION	COGNITIVE REGULATION	INTERNAL/ PHYSIOLOGICAL REGULATION

39

Please consult a medical or allied health professional if you are concerned about your student's health or wellbeing.

HOW DOES DYSREGULATION AFFECT MY STUDENT'S LEVEL OF ALERTNESS AND ABILITY TO LEARN?

	PROCESSING OF SENSORY INFORMATION	EMOTIONAL REGULATION	COGNITIVE REGULATION	INTERNAL/ PHYSIOLOGICAL REGULATION
LEVELS OF ALERTNESS	SHUTDOWN	EXTREME SENSORY OVERLOAD	FREEZE/SHOCK	SHUTDOWN
	HIGH	← FRIGHT/FLIGHT/FIGHT →		
X Not true for Ben	SEEKING THE ZONE: CALMING			
	SEEKING THE ZONE: ALERTING	?	?	
	LOW			
	PROCESSING OF SENSORY INFORMATION	EMOTIONAL REGULATION	COGNITIVE REGULATION	INTERNAL/ PHYSIOLOGICAL REGULATION

40



Use a sensory lens to interpret the behavioural responses we observe.  
Focus on the processing of sensory information.

IN THE ZONE FOR LEARNING STUDENT RESPONSE CHECKLIST

A sensory lens to help educators consider how the processing of sensory information impacts your student's level of alertness, function, participation and learning

Name of Student

Ben example

Date of Birth

1/1/2011

Name of person completing checklist

Natasha

Date of Completion

1/6/2020

LEARNING THROUGH BODY POSITION AND AWARENESS - PROPRIOCEPTION

LEARNING THROUGH TOUCH - TACTILE PROCESSING

LEARNING THROUGH MOVEMENT - VESTIBULAR PROCESSING

LEARNING THROUGH SOUND - AUDITORY PROCESSING

LEARNING THROUGH SIGHT - VISUAL PROCESSING






LEARNING THROUGH TASTE - GUSTATORY PROCESSING AND LEARNING THROUGH SMELL - OLFACTORY PROCESSING



- ITZ Student Response Checklist results:
- Ben is over-responding in 6 sensory systems.
  - His nervous system is bombarded by input through touch, sound, visual, smell and taste.
  - His brain is getting inaccurate messages about the world around him.
  - He is in a state of fright/flight/fight throughout the day.
  - But he is giving us clues about what he needs. Look at the purple seeking columns for the clues.
  - He is attempting to self-regulate through movement, body position, whole-body, heavy muscle, oral-motor and certain touch input.








Please consult a medical or allied health professional if you are concerned about your student's health or wellbeing.






HOW DOES DYSREGULATION AFFECT MY STUDENT'S LEVEL OF ALERTNESS AND ABILITY TO LEARN?					
LEVELS OF ALERTNESS	PROCESSING OF SENSORY INFORMATION		EMOTIONAL REGULATION	COGNITIVE REGULATION	INTERNAL/ PHYSIOLOGICAL REGULATION
	SHUTDOWN	EXTREME SENSORY OVERLOAD	FREEZE/SHOCK	SHUTDOWN	SHUTDOWN
	FRIGHT/FLIGHT/FIGHT				
	HIGH	<ul style="list-style-type: none"><li>unable to tolerate</li><li>defensive /protective</li><li>overwhelmed/vigilant</li></ul> 	<ul style="list-style-type: none"><li>angry</li><li>distressed</li><li>confused/worried</li></ul>	<ul style="list-style-type: none"><li>overwhelmed</li><li>frustrated</li><li>confused/puzzled</li></ul>	<ul style="list-style-type: none"><li>excruciating pain</li><li>internal distress</li><li>pain</li></ul>
	SEEKING THE ZONE: CALMING	<ul style="list-style-type: none"><li>over-responsive/sensitive</li><li>heightened</li><li>distracted</li></ul>  <ul style="list-style-type: none"><li>seeking sensory input to calm</li></ul>	<ul style="list-style-type: none"><li>jealous/irritated</li><li>easily excitable</li><li>nervous/giggly/flighty</li></ul> <ul style="list-style-type: none"><li>seeking connection and co-regulation for comfort</li></ul>	<ul style="list-style-type: none"><li>over-responsive</li><li>heightened</li><li>distracted/unfocused</li></ul> <ul style="list-style-type: none"><li>seeking to calm/relax/focus</li></ul>	<ul style="list-style-type: none"><li>unwell</li><li>discomfort</li></ul> <ul style="list-style-type: none"><li>seeking relief/comfort</li></ul>
LOW					
	PROCESSING OF SENSORY INFORMATION		EMOTIONAL REGULATION	COGNITIVE REGULATION	INTERNAL/ PHYSIOLOGICAL REGULATION
	<ul style="list-style-type: none"><li>processing sensory info</li><li>calm yet alert</li><li>focused</li></ul>		<ul style="list-style-type: none"><li>happy</li><li>confident</li><li>content</li></ul>	 <ul style="list-style-type: none"><li>thinking/concentrating</li><li>attending</li><li>processing</li></ul>	 <ul style="list-style-type: none"><li>well</li><li>alert</li></ul>

43

CALMING



ALERTING



- Tactile: soft, warm, firm, rhythmic touch input.
- Vestibular: rhythmic, linear, constant movement.
- Visual: dim lighting, soft, natural, stationary visual input.
- "Just-right" input through the 7 senses can promote "feel good" neurotransmitters that can boost mood, motivation and attention.






- Whole body, heavy muscle movement is powerful in regulating and can be both calming and alerting.
- Deep breathing and oral-motor movement such as chewing, sucking and blowing is regulating and can be calming or alerting.


Please refer to the ITZ Strategy Toolkit and Foundations For Learning Framework for more ideas about calming and alerting.

44



CALMING










ALERTING

# ITZ Strategy Toolkit PART 2

Tutorial presented by Natasha Sansoni  
Consultant Occupational Therapist to  
Clarke Road School and The Hills School  
July 2020



## FOUNDATIONS FOR LEARNING

A framework for special educators supporting students with complex learning needs

MY STUDENT'S PRIMARY BRAIN AND BODY FUNCTIONS

WAYS TO SUPPORT MY STUDENT

THINKING

- \*in the zone for learning
- \*self awareness
- \*independence
- \*daily living skills
- \*academic learning
- \*executive functioning
- \*attention
- \*critical thinking
- \*decision making
- \*reasoning
- \*problem solving
- \*impulse control
- \*short term/working memory
- \*social skills
- \*speech/language
- \*imagination/creative thinking
- \*sensory information influences higher order processes

FEELING

- \*emotional memory and long-term memory processing
- \*emotions/brain chemistry
- \*secure attachment to build relationships
- \*understanding context
- \*motivation
- \*reward system
- \*habit formation
- \*trigger fear/stress response of fright/flight/fight
- \*sensory information influences emotional and behavioural responses

MOVING

- \*sensory information used for motor action
- \*coordination of breathing with other actions
- \*reflex integration/maturity
- \*muscle tone
- \*body awareness and coordination
- \*bilateral awareness and control
- \*postural control and balance
- \*fine and gross motor skills
- \*hand-eye coordination
- \*motor learning and motor memory
- \*refinement of planning, timing, sequencing and executing motor tasks with feedback

SURVIVING

- \*registering and tuning into movement, body position, touch, taste, smell, sound and visual sensory information
- \*interoception
- \*hunger
- \*thirst
- \*bladder/bowel control
- \*digestion/vomiting
- \*sleep-wake cycle
- \*arousal/alertness
- \*temperature
- \*heart rate
- \*breathing
- \*pain
- \*coughing and sneezing
- \*hormone and chemical balance

4

3

2

1

- \*Explicit teaching to enhance academic, leisure and daily living skills.
- \*Individualised tools for learning based on strengths and learning styles e.g. visual, tactile, kinesthetic, auditory.
- \*Continued support to get in the zone for learning with tools for self regulation and co-regulation when needed.
- \*Careful planning of the environment, activity and interaction for learning, managing stress and building resilience.
- \*Allow for processing and response time to think and learn.

- \*Daily routines full of meaningful interactions to connect with others.
- \*Emotional support to build a secure sense of self.
- \*Co-regulate to get in the zone for learning - to be calm and alert.
- \*Support to regulate and control behavioural responses of fright/flight/fight and develop coping/calming strategies.
- \*Support to develop helpful habits and establish strong motivators.
- \*Considered use of sensory input to influence mood and emotions e.g. smell, touch, movement
- \*Visual and other multi-sensory tools for memory storage and retrieval.
- \*Provide processing and response time with patience and empathy.

- \*Rhythmic, meaningful, whole body movement.
- \*Coordination of breathing with vocalising and other mouth and body movements.
- \*Develop self/co-regulation strategies through movement.
- \*Enhance learning through all the senses by actively participating.
- \*Practice and refine motor skills in meaningful and motivating routines.
- \*Develop strength, endurance, stability and flexibility.
- \*Facilitate mirroring, imitation and copying skills.
- \*Accommodate for processing and response time to learn by moving.

- \*Support to feel safe, protected, secure and comforted.
- \*Support to regulate from a fear/stress response of fright/flight/fight.
- \*Safe spaces in classroom and school to calm down and regulate.
- \*Calm, soothing and joyful sensory experiences.
- \*Ways to make sense of their world and learn through all the senses.
- \*Predictability and consistency in routines and interactions.
- \*Daily rhythms for rest - digest. Tools to assist calm breathing.
- \*Support for smooth digestion/elimination.
- \*Support to tune into bladder/bowel needs.
- \*Allow for processing and response time by simplifying and slowing down.

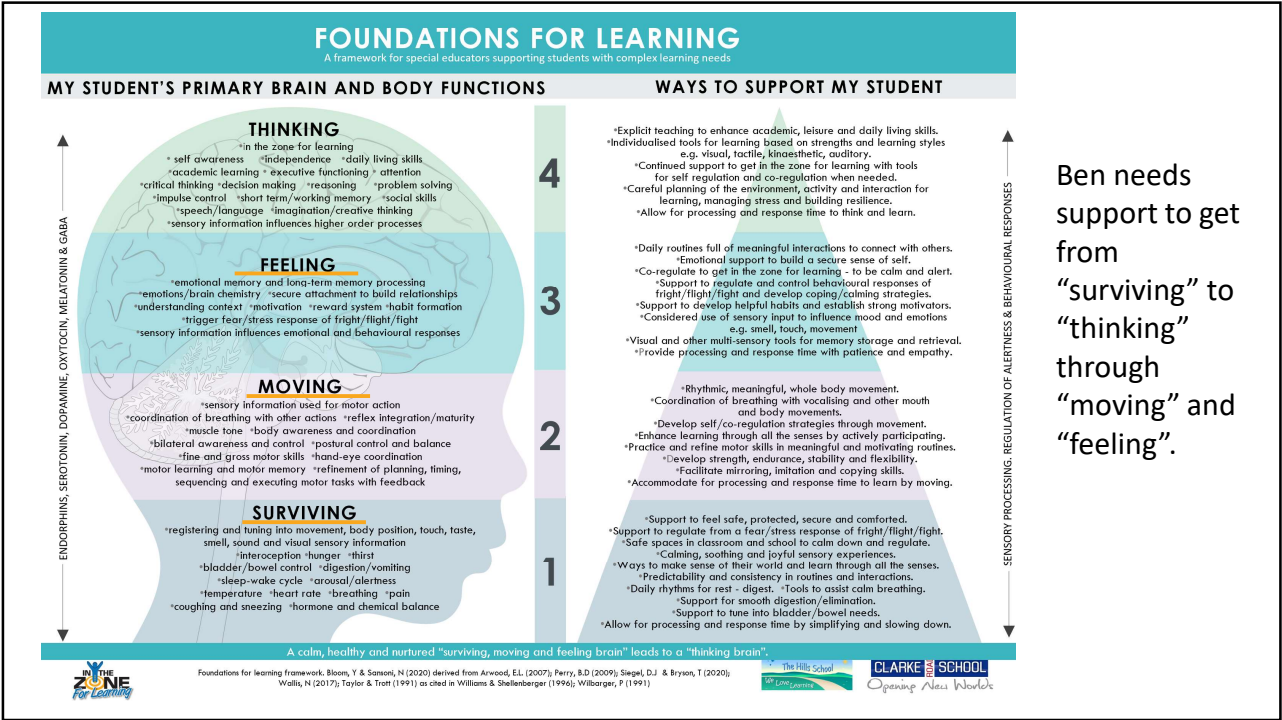
Lots of great strategies and ways to support your students





A calm, healthy and nurtured "surviving, moving and feeling brain" leads to a "thinking brain"

Foundations for Learning Framework, Bloom, Y & Sansoni, N (2020) derived from Arnold, EL (2007); Perry, B.D (2009); Siegel, D.J & Bryson, T (2020); Wallis, N (2017); Taylor & Toot (1991) as cited in Williams & Shellenbarger (1996); Willinger, P (1991)

The Hills School  
Clarke Road School  
Opening New Worlds


46






### Positive neurotransmitters

- Joyful sensations
- Meaningful interactions
- Purposeful activities



49




### Positive neurotransmitters through antecedent exercise

- Components of the exercises taught step by step
- Repeated at regular intervals throughout the day
- Build in choice to increase motivation
- Aerobic exercise, whole body, heavy muscle exercises are powerful in regulating a student’s brain and body for calm-alert engagement.

Consider exercise as a “treatment dose.”  
Frequency: every day  
Duration: 1 longer round 30 to 40-minute each day and short movement breaks throughout the day.

Intensity: moderate to vigorous where:

- heart rate goes up
- breathe harder and faster
- sweat
- muscles feel a little tired



50



Types, intensity and duration of exercise found in the literature about antecedent exercise:

aerobic exercise and skill-based exercise (Tarr, Rineer-Hershey, & Larwin, 2019).  
Liu, Fedak, and Hamilton (2016) concluded that 15 minutes of physical exercise reduced stereotypic behaviours for 2.5 hours before returning to baseline.

Types of exercise	Intensity of exercise	Duration of Exercise
Jogging/Running	Vigorous	15-20 minutes
Jumping on Trampoline	Vigorous	5-15 minutes
Hydro therapy	Moderate	60 minutes
Exaggerated dancing	Light/Low	15-20 minutes
Cycling/Stationary bike	Light/Low	10-20 minutes
Sitting/standing 10 times	Light	10 reps/2 sets
Martial arts	Vigorous	30-90 minutes

Please refer to the information on antecedent exercise, the literature review and bibliography for more information.



Use antecedent exercise to feel calm yet alert and in the zone for learning by beginning the day with a routine morning walk around the school.



The Hills School- Northmead, NSW



Use antecedent exercise to reduce dysregulation and behaviours of concern

**Antecedent exercise -especially aerobic activity and heavy muscle work at regular intervals throughout the day has been shown to:**

- increase the flow of positive neurotransmitters (endorphins, dopamine, serotonin).
- reduce the chemistry of stress (cortisol and adrenalin)
- reduce self-injurious, disruptive and aggressive behaviours
- increase on-task, productive and focussed behaviours.

(Losinski et al., 2017; Sons & Jeon, 2017; Neely et al., 2015; Ziereis and Jansen, 2015; Neely, Rispoli, Gerow & Ninci, 2014).



The Hills School- Northmead, NSW

53

## Wheelchair accessible movement options

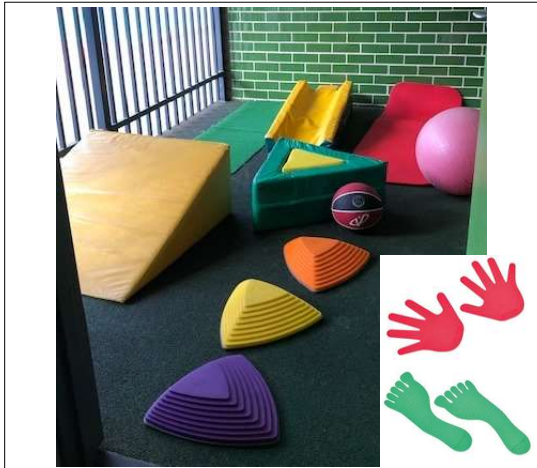


The Hills School- Northmead, NSW



54

Whole body input for students with physical limitations-  
incorporate more weight bearing, more passive movement, stretching,  
deep pressure touch and trial vibration and other sensory strategies.



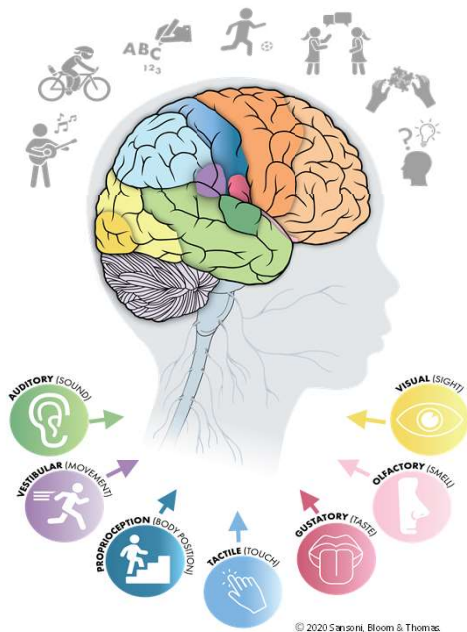
Obstacle course to roll and crawl over  
[www.hartsport.com.au](http://www.hartsport.com.au)



Lycra body sock



Vibrating massage mat (can be calming to some  
and alerting for others) [www.bigw.com.au](http://www.bigw.com.au)



Antecedent exercise and sensory-motor  
activities activate different parts of the brain  
and influence brain function, regulation of  
alertness and behavioural responses.





# Prepare for the needs of all your students



## ITZ checklist and timeline analysis tool for my students

Record results from your student's individual checklist and timeline in the table below to analyse the sensory and regulatory needs of your class.  
You may like to code with the colours or letters OR, UR, SC, SA. Some of your students with complex learning needs will have mixed results.

Student's name	Tactile	Proprioception	Vestibular	Visual	Auditory	Olfactory	Gustatory	Interception	
Ben	Over-responsive OR	Under-responsive UR	Seeking to calm SC	Seeking to alert SA	SEEKING TO CALM	SEEKING TO ALERT			Needs Calming
Ursula	Under-responsive UR	Under-responsive UR	Seeking to calm SC	Seeking to alert SA	SEEKING TO CALM	SEEKING TO ALERT			Needs Calming
Ken	Over-responsive OR	Under-responsive UR	Seeking to calm SC	Seeking to alert SA	SEEKING TO CALM	SEEKING TO ALERT			Needs Calming
Mary	Under-responsive UR	Under-responsive UR	Seeking to calm SC	Seeking to alert SA	SEEKING TO CALM	SEEKING TO ALERT			Needs alerting

57

## Whole class management- this is tricky !! Educators share what has worked for them:

- Work as a team – communicate and support each other
- Divide and conquer – prepare small group sessions. Consider small groups combined with other classes.
- Engineer your environment. Use the different zones in your classroom.
- Utilise safe, enclosed outdoor spaces.
- **Be prepared!!**
- Plan preventative strategies rather than reactive strategies
- Have regulatory tools ready, calming activities and spaces ready.
- Prepare a combination of learning activities that have a clear process (puzzles) and others that are open ended (shaving cream, playdough, tactile tubs, doodling/drawing, music on headphones, construction)
- Plan for the times of day that are particularly challenging
- Communicate with all the people in the student's life – these strategies have a 24 hour timeframe.
- Regulatory tools are developed and refined throughout your life. Students needs consistency and continuation throughout their time at school.



58

### Be prepared: engineer the classroom



- Calm classroom
- Clear zones for various activities
- Desks facing the wall to minimise distraction
- Obstacle course for movement breaks
- Variety of seating
- Lighting issues and glare minimised
- Visual distractions minimised



59

### Break-out space with regulatory tools:

- Crash pit -whole body tactile input and compression
- Tent or hide out space (with items that glow in the dark)
- Hammock/stretchy swing
- Weighted cushions, lycra sheet or body sock
- Vibration – whole body input that can be relaxing
- Lava lamp or bubble tube (visual tool)
- Tactile tools: something to squeeze, squash, pinch, poke without getting into trouble!
- Soothing music (be mindful of auditory sensitivities)
- Visual sequence of suggestions on how to self-regulate, e.g. jump on trampoline, crash into crash pit, squeeze a stress ball, deep breaths while counting to 10.
- The student's own regulatory/sensory tools.
- Timer: to indicate when break-out/chill-out time is over.



Compression blanket  
[www.thetherapiststore.com.au](http://www.thetherapiststore.com.au)



Clarke Road School -  
 Hornsby, NSW



60

**Equipment for deep pressure tactile, compression – squeeze force and vestibular movement.** Precautions must be taken to ensure safe and correct use. Supervision is needed.

Ensure the student can freely get in and out of the furniture/equipment and it is not considered restrictive practice. Obtain permission from parents/carers/guardians.



[www.southpaw.com/steamroller-deluxe.html](http://www.southpaw.com/steamroller-deluxe.html)



[harkla.co/blogs/special-needs/deep-pressure-therapy](http://harkla.co/blogs/special-needs/deep-pressure-therapy)



[prezi.com/jgqsfhqu19pr/temple-grandin-the-advantage-of-having-autism/](http://prezi.com/jgqsfhqu19pr/temple-grandin-the-advantage-of-having-autism/)



Norix rocksmart soothing rocking chair



[www.ikea.com/au/en/p/ikea-ps-loemsk-swivel-armchair](http://www.ikea.com/au/en/p/ikea-ps-loemsk-swivel-armchair)



Prepare the classroom environment with a variety of seating options for compression and calming movement.



PeaPod and gym ball chairs [www.specialneedsaustralia.org](http://www.specialneedsaustralia.org)



[www.thetherapystore.com.au](http://www.thetherapystore.com.au)  
Hokki Stool



Balance cushion/move and sit. Gym ball with ring. Hammock. Child pod hammock. [www.sensorytools.net](http://www.sensorytools.net)





Use visuals and minimise unnecessary verbal/auditory input.  
Use timetables, schedules, routines, first-then, timers etc.



63

**Every person has a unique brain and individual sensory needs.**

The sensory strategies will be useful when you strike a balance between:

- type
- time
- intensity
- frequency
- duration

*Please consult your student's Occupational therapist for advice.*



64

Tactile tools for calming and alerting

- Tactile calming/integration - tactile textures, water tray, sand tray, rice, shaving cream, slime, or edible tactile activity for students who mouth (jelly, bread crumbs, whipped cream) or fragrant tactile items e.g. Bio dough.
- Use the student’s strongest sensory system or the sensations they are seeking out to motivate, engage and maintain focus for longer.



Kinetic/Moon sand



Lots of ideas at [www.growinghandsonkids.com](http://www.growinghandsonkids.com)



[www.fantasticfunandlearning.com](http://www.fantasticfunandlearning.com)



[www.biodough.com.au](http://www.biodough.com.au)

65

General learning tools with enhanced sensory input



Sandpaper letters [www.smartkids.com.au](http://www.smartkids.com.au)



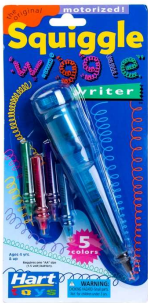
Safe, large marble run [www.teaching.com.au](http://www.teaching.com.au)



Outdoor construction [www.teaching.com.au](http://www.teaching.com.au)



[www.thetherapystore.com.au](http://www.thetherapystore.com.au) Magnatab and squiggle writer



Mag blocks and other magnetic construction- with the magnets securely sealed. [www.teaching.com.au](http://www.teaching.com.au)



66

General classroom tools



Stretchy chair and table bands  
[www.elizabethrichards.com.au](http://www.elizabethrichards.com.au)



[www.specialneedsaustralia.org](http://www.specialneedsaustralia.org)



Tactile fidgets  
[www.sensorytools.net](http://www.sensorytools.net)



Bottle with straw or spout



67

General calming input : Deep, firm, even, pressure



Compression or Weighted blankets and vests, cushions, toys, balls etc.  
[sensorytools.net](http://sensorytools.net)  
Seek recommendation from Occupational Therapist

Calming deep pressure input through tools and equipment as well as physical support from an educator is sometimes necessary.

The process:

- Assessment and safety checks
- Permission from carers and the student
- Plan and protocol (who, how, what, where)
- Ongoing evaluation of effectiveness
- Develop independence at school from co-regulation (being hugged or massaged) to self-regulation (independent strategies).
- Offer choice for students – “more”, “finish”, “yes”, “no”, which tool, where etc.



[sensorytools.net](http://sensorytools.net)



Therapressure protocol – to be carried out with specific training by a qualified OT.

68





## PRECAUTIONS

- Get to know the physical abilities, fitness levels and health restrictions of your students before engaging in these strategies and exercises.
- Go slow and teach the skills step by step.
- Gradually build stamina, strength, flexibility and motor coordination.
- Make sure there is enough space to move around without bumping into each other.
- Set clear timeframes and expectations.
- Use visuals, finish symbol, sequence photos and video modelling to teach skills and set expectations.
- Some tools can dysregulate for certain students e.g. too much spinning
- Be aware of choke hazards and items that can be chewed: batteries, small parts, items that disintegrate or can be bitten easily

**CLOSE SUPERVISION IS NEEDED**



69

## Calming pressure touch and reduced tactile irritation in clothing

[www.caringclothing.com.au](http://www.caringclothing.com.au)  
[www.jettproof.com.au](http://www.jettproof.com.au)  
[www.mydiffability.com.au/collections/clothing](http://www.mydiffability.com.au/collections/clothing)  
[www.calmwear.net](http://www.calmwear.net)  
[sensorytools.net/collections/calming-clothing](http://sensorytools.net/collections/calming-clothing)

**JETTPROOF**  
Wearable Therapy, perfect for  
Autism, Anxiety, ADHD and Sensory Needs  
JettProof is an NDIS provider



[www.sensorytools.net/products/pressure-vest-medium](http://www.sensorytools.net/products/pressure-vest-medium)



70



Calm deep breathing is a powerful calming tool.



**Deep Belly Breath**

© Kids Yoga Stories



Refer to the ITZ Calm Breathing tutorials 1 &2.

**IN THE ZONE For Learning**

Suppliers: [www.sensorytools.net](http://www.sensorytools.net) , [www.aass.org.au](http://www.aass.org.au) , music stores and variety stores.

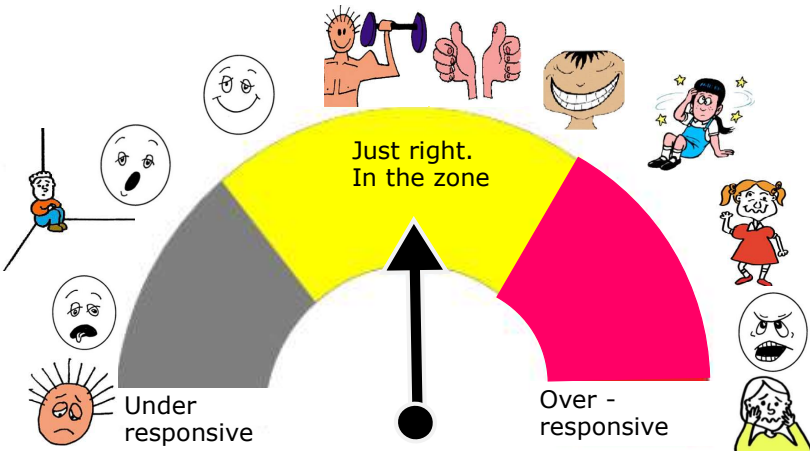
71

Develop self-awareness and self-regulation skills

**Student response speedometer**

too much sensory input → over responsive

too little sensory input → under responsive



Adapted from The ALERT program – how does your engine run?  
Mary Sue Williams and Sherry Shellenberger.

Softpic images  
Ylana Bloom

**IN THE ZONE For Learning**

72

### The ZONES of Regulation®

<b>BLUE ZONE</b> Sad Sick Tired Bored Moving Slowly	<b>GREEN ZONE</b> Happy Calm Feeling Okay Focused Ready to Learn	<b>YELLOW ZONE</b> Frustrated Worried Silly/Wiggly Excited Loss of Some Control	<b>RED ZONE</b> Mad/Angry Terrified Yelling/Hitting Elated Out of Control

© 2011 Think Social Publishing, Inc. All rights reserved.  
From The Zones of Regulation® by Leah M. Kuypers • Available at [www.socialthinking.com](http://www.socialthinking.com)

73

### What zone am I in?

REST AREA

GO

SLOW

STOP


### Use tools to get in the green zone


<http://stingersgrade3.weebly.com/class-blog/self-regulation>

74



Back to the IEP goal : e.g. Ben will engage for 5 minutes during a group activity to follow a story.

- For Ben, this goal needs to be broken down and expanded on
- Ben will attend for 5 minutes
- Attend in a group activity
- Follow a personalised story
- First make sure he is calm yet alert and feeling safe and soothed.
- Ben will engage for 5 minutes during an explicit gardening activity that has step by step instructions with a clear beginning, middle and end- that involves water – his special interest.
- Ben will sit in a group if you provide him with a peapod chair or bean bag, a weighted item, some fidgets and show him videos or photos of people he knows (including classmates) doing things he understands and enjoys such as swimming, bush walking, gardening...



75

Let's go for a bush walk

Visual aids for the bush walk activity:

- Icons of a person pointing, a bush, and a person sitting.
- A photograph of a forest path.
- A cartoon illustration of two children walking in a bush.
- Word cards: "I", "see", "a", "bird" with corresponding icons (a person, an eye, a bird, and a bird).
- A photograph of a bird flying.
- A photograph of a bird in a tree.
- Icons of a bird flying and a tree.

A personalised story for Ben's class about their bushwalk.

Visual aids for the personalised story:

- A 4x4 grid of images: spiders, butterflies, and birds.
- A rainbow icon and the text "What colour bird?".
- Three colored bird icons (yellow, green, black) with empty boxes for labeling.
- Three colored bird icons (blue, red, white) with empty boxes for labeling.



76



Ben is learning to be productive in the garden at home and school—this meets some of his sensory needs for heavy muscle movement and tactile input.



77

Ben is productive in the **Life Skills program at school**. Ben understands the cooking activities because they have a clear beginning, middle and end; are repetitive, consistent and provide him with success and satisfaction.



He is learning number, colour, texture, clean/dirty, actions, size, turn taking and other concepts and skills.



78






Ben is developing connections, attachment & relationships through shared engagement in activities that are meaningful to him and meet his sensory needs.







79

Ben now loves the beach and shares his joy with his sister



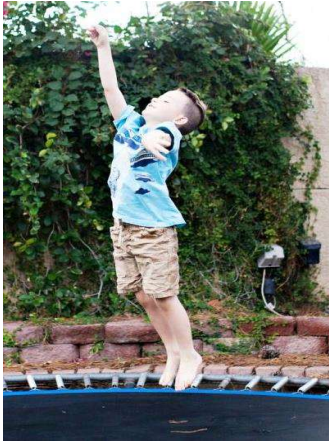




80



**Self-regulate then concentrate.**  
Ben continues to require sensory-motor regulatory tools.




FIRST



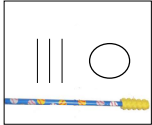
THEN

first



jump

then



draw



NOTE: Any change can bring a storm cloud or a novelty effect. Our students have very sensitive nervous systems. It might feel like 2 steps back then 5 steps forward. Work as a team with the family and other support services to support each other through.

When we clean out the closet – at first there’s a chaotic mess. But then all the items are organised in perfect order in their rightful place and it all makes sense.

It’s like this when re-wiring the human brain and re-shaping behaviour. Don’t give up. Take small steps in the right direction.



BEFORE



AFTER

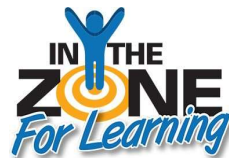




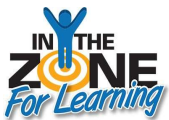
Thank you for coming on this learning journey.

Thank you for the time and energy you put into supporting your students with complex needs.

We hope this tutorial has been useful in providing some information and tools to get yourself and your students In The Zone for learning!!



85



## Acknowledgements

- Thanks to Ylana Bloom, Dr. Simone Thomas and Jemimah Vedamonickam, for their invaluable contributions.
- Deep gratitude and respect to Vikrant Todankar and Roshan Singh for turning the ITZ Student Response checklist into an online tool.
- Thanks to our Graphic designer Jessica Forrester.
- Thanks to Clarke Road School, The Hills School and the Success for Complex Learners (S4CL) cluster for their leadership and support.
- A special thanks to all the students, teachers, families and carers who have inspired and taught us so much.

86



