4 Critical Factors for **Child Development**

Move **Touch** Connect Nature



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Goals

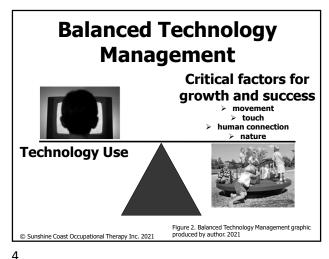
Profile the following 4 critical factors for child and youth development and relate deficit to screen overuse.

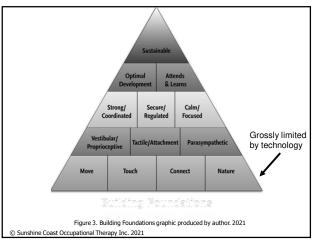
- 1. Movement: fitness/cardiovascular, core stability/strength, motor coordination.
- 2. Touch: deprivation, anxiety reduction.
- 3. Human connection: attachment formation.
- 4. Nature: calming, mental focus.

TECHNOLOGY MANAGEMENT 4 Critical Factors for Child Development

Part 1 Movement, touch

3





Movement

Give a child a device and they sit; take it away and they move.

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Movement Benefits

- Cardiovascular
 - > Obesity/diabetes
 - Stroke/heart attack
- Builds strong core
- Motor coordination
 - > Right/left
 - Upper/lower
 - Eye/hand for printing

- ➤ Mental health Ratey 2008

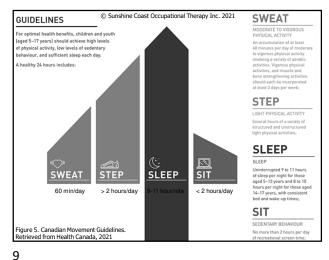
BYE TURNER BEI Video 1. Pumping Up the Brain – Connection between m

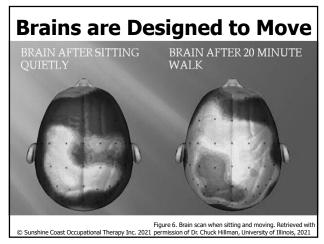
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8



> Eye/eye for reading Spatial for math > Attention/learning





Canada Movement Guidelines

60 min/day

< 13% of children

meet the Canadian

Effects of sedentary

Canada \$70 billion per/year in

healthcare costs.

Canadian Society for Exercise Physiology 2018, National Institute of Health 2018

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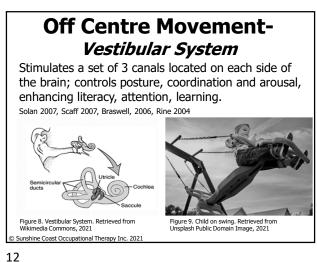
Movement

Guidelines.

lifestyle costs

10

Brain Health Depends on Movement ➤ Weighs 3 lbs.; 2% of total Not good to Be sedentary! body weight, yet... Consumes 25% of body's caloric intake, ➤ 20% of oxygen, > 25% of blood flow. > Contains 100 billion brain Lose 85,000 brain cells per day when stressed. Figure 7. Brain weight lifting. Retrieved from DLPNG free download, 2021 D. Amen TED TALK 2017 © Sunshine Coast Occupational Therapy Inc. 2021



Heavy Work Movement – Proprioceptive System

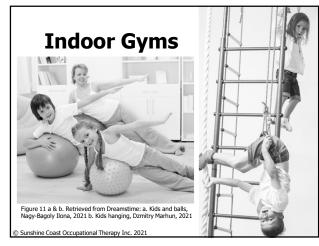
Figure 10. Child on rope ladder. Purchased from

© Sunshine Coast Occupational Therapy Inc. 2021

- Located in the joints and muscles.
 - Activate with heavy resistance or work e.g. push, pull, lift and carry.
- Refines movement patterns for literacy, sports.
- 'Prop' is often very calming and relaxing, great for anger/energy release.

Ratev 2008

13



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Let Them Build Things...



© Sunshine Coast Occupational Therapy Inc. 2021 Figure 12. Retrieved from Dreamstime, James Granger, 2021

The second section of the sec

16

Touch

Device use deprives children of touch.

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Touch Benefits

Touch is a BIOLOGICAL NECESSITY.

© Sunshine Coast Occupational Therapy Inc. 202

- Without early touch, infants die (orphanages).
- Adequate touch produces secure, gentle, relaxed infants and toddlers.
- Inadequate touch results in fearful, anxious and agitated infants and toddlers. Hopper 1957, Montagu 1978



Figure 13. Crying child being comforted. Purchased from Dreamstime, 2021

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Touch Counteracts sympathetic charge

- > Skin is the largest and oldest organ in the body; 20 sq. ft. in adults, 12% total body weight.
- > Touch lowers cortisol, adrenalin, regurgitation, promotes development.
- > When the need for touch isn't satisfied, abnormal behavior will result.

Bigelow 2006, Montagu 1978

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Figure 14. Dad on phone pushing stroller. Purchased from Dreamstime, 2021

Karyn Purvis Institute of Child **Development**

child.tcu.edu



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Figure 15. TCU Institute for Child Health DVD co Healthy Touch. Purchased by author, 2011

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TCU Institute for Child Development

Video 2. Healthy Touch. Shown with permission from Karyn Purvis Texas Christian University Institute for Child Development , 2021

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Deep Pressure Touch

- > Firm, sustained pressure to the backs of hands, forearms or shoulders.
- Procedure:
 - 1. Make an observation "I see you are..."
 - Ask permission "Would you like a shoulder squeeze?"
 - Position your body AWAY and TO THE SIDE of child's body.
 - Check in "How are you doing?"

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- Sustain for ~ one minute, or until child tells you that is enough.
- Look for an adaptive response e.g. calmer, less anxiety

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At Home? Get a Pet

Cris Rowan's list of pets:

➤ 9 dogs

21

- ➤ 1 ferret
- ➤ 1 rabbit
- > > 10 hamsters
- > > 20 cats
- > Loads of fish
- > 2 birds (caique, love bird)
- 2 horses

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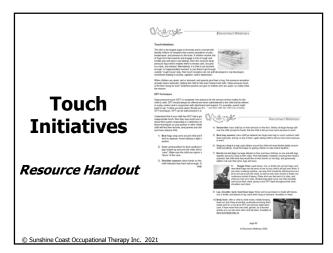


Figure 16. Basil, authors favorite pet. 2013

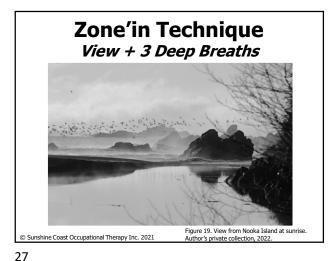
Couch Forts







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TECHNOLOGY MANAGEMENT
4 Critical Factors for
Child Development

Quiz 1 *Movement, touch*

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TECHNOLOGY MANAGEMENT
4 Critical Factors for
Child Development

Part 2

Human connection, nature

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Human Connection

The origin of child mental wellness

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C



Attachment Benefits

- > Attachment is a biological need without which we die.
- Failure of attachment is #1 causal factor for mental illness.
- Children aren't born mentally ill, we make them that way through abuse, neglect, trauma.
- Attachment is the foundation for all relational behavior.
- Parents role model healthy relationships (or not).

Montagu 1978, Insel 2001, Waddell 2007, Houtrow 2014, Crittenden 2015

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Co-Regulation 1st **Self Regulation 2nd**

- ➤ 0 2 weeks critical for primary attachment formation.
- > Infant must achieve attachment with primary parent to ensure survival.
- > Job of parent is to meet all needs of infant 1st two wks,
- only then, can infant relax, and begin to self regulate.



Figure 21. Baby with Mom. Retrieved froi Dreamstime Public Domain Image, Adam Borkowski, 2021

© Sunshine Coast Occupational Therapy Inc. 2021

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Attachment is an **Adaptive Strategy**

- > Attachment is a selfprotective 'strategy'.
- Attachment types are different 'strategies':
 - ➤ Type A Avoidant
 - > Type B Secure
 - > Type C Ambivalent
 - > Type D Disorganized
- > When child stressed... child defaults to the strategy. Crittenden 2015 © Sunshine Coast Occupational Therapy Inc. 2021



Figure 22. Crying baby. Retrieved from Dreamstime Public Domain Image, 2021

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Attachment Developmental Stages

- > Two roles of the parent in attachment formation:
 - Safe Haven: 0 6 mo. and thru life span of child.
 - Secure Base: > 6 mo., launch child into world, support self-exploration. Bowlby 1975
- Trauma is a loss of connection, failure of functional attachment.

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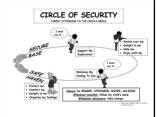


Figure 23. Circle of Security graphic. Retrieved from www.circleofsecurity, 2021

Trauma is a Spectrum

- > Trauma can originate from abuse or neglect – or – arise from a traumatic experience e.g. medical procedure, car accident.
- Trauma is not what happens to a child (external), but rather what happens inside the child (internal).
- > Trauma is perhaps the most avoided, ignored, belittled, denied, misunderstood and untreated cause of human suffering. Peter Levine

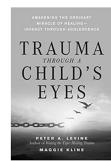


Figure 24. Trauma Through a Child's Eyes book cover. Retrieved from Pub Domain, 2021

© Sunshine Coast Occupational Therapy Inc. 2021

Trauma Informed Lens

> Instead of asking "Why did you do that?" we should be asking "What happened to you?"

Bruce Perry, Oprah Winfrey 2021

- > Parents are not to blame! Trauma is multi-generational.
- > We pass onto our kids what we haven't resolved in ourselves.
- > Trauma (PTSD) is an underlying causal factor for problematic child behaviours and/or what we term 'mental illness'.

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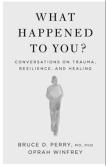
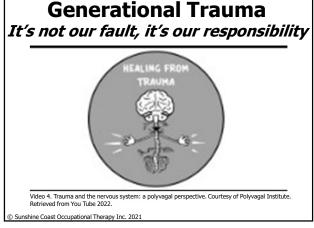


Figure 25. What Happened to You? book cover. Retrieved from Public Domain, 2021



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Attachment Questionnaire Resource Handout

DARK

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Adverse Childhood Experiences (ACE)

> Adults with difficult or adverse experiences in childhood had a greater risk of both physical and mental health problems during adulthood.

> The risk increases significantly for people with larger number of adverse experiences in their childhood.

Figure 26. ACE's Pyramid. Retrieved from Public Domair 2021

© Sunshine Coast Occupational Therapy Inc. 2021

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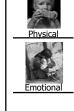
ACES Questionnaire Neglect Abuse







© Sunshine Coast Occupational Therapy Inc. 2021













Divorce

ACES Research Study

What is the ACES?

- Developed by Centre for Disease Control and Kaiser Permanente in 1995.
- Identify connection between childhood abuse, neglect, trauma experiences and later physical and mental illness as adults.

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> 17,000 participants.

ACES Results

- ➤ 40% exposed to 2 or more ACES.
- > 12.5% (1 in 8) exposed to at least 4 ACES.
- > 4 + ACES's have:
 - > 11 X more IV drug use.
 - 4.5 X more depression.
 - 14 X more suicide attempts.
- ➤ People with 6 + ACE's die 20 years earlier.

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Cycle of Adverse Childhood Experiences

- Children raised by ACE adult 1000 X more likely to suffer own ACE.
- > 2/3 of adults with one ACE:
 - > 2 X physical health issues.
 - > 3 X mental health issues.
 - > 87% have multiple ACE's.
- Identifying children with ACE's helps adults understand problematic behaviors.

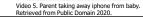


Figure 28. Lonely child. Purchased from Dreamstime, 2021

© Sunshine Coast Occupational Therapy Inc. 2021

Attachment to Screens

- In the absence of the primary parent, children are forming unhealthy attachments to screens...
- ...and detaching from humanity.
- When detached, children can't think rationally or feel their bodies.
- Detached children are very difficult to manage.



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Detached Foster Children

- Absence of primary attachment to biological parents...trauma present.
- Device offers control, choice predictability, entertainment, escape (from painful self).
- Foster children as a default, replace biological parent with device.
- Slippery slope to addiction.
- Foster children need human connection, not a device.

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Figure 29. Girl alone watching sunset. Displayed by author with permission from child's Mom, 2021.

To Do's at Home - Dance Night



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Make Dinner Together



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Create Outdoor Social Centres Surround seating fire pit



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To Do's at School

"Whatever is out there is in here" (the classroom) - Phyllis Dyson, teacher

- Use a trauma informed lens when addressing problematic behaviours.
- Review the 10 Red Flags of Trauma (next slide).
- Consider using 10 ACE's as guide to assess level of trauma.
- Create different strategies for trauma kids:
 - Don't put them on the spot.
 - Allow some control/choice.

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Figure 33. Photo of anxious girl. Purchased from Dreamstime, 2022

10 Red Flags of Trauma

- 1. Signs of physical/sexual abuse or neglect (hungry, poor hygiene).
- Shock body (frozen energy, deer in the headlights).
- 3. Bolts, runs away.
- 4. Decreased cognitive processing: attention, focus, memory.
- 5. Impulsivity, constant movement.
- 6. Tense/rigid: carry tension from home to school.
- 7. Panic attacks.
- 8. Act out (anger) or act in (sad).
- 9. Aggression, conflict, chaos.
- 10. 'Light switch' on/off moods.

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Figure 34. Photo of traumatized girl. Purchased from Dreamstime, 2022

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Connection Initiatives

Resource Handout

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The risk of large plants precise in a child's like is then pured. Childhos look to be the Pill's a study by execute of the child in the child in the child in the child in the childhos Pill's plants of the child in the childhos and the childhos and the childhos childhos and childhos and childhos and childhos and childhos and childhos childhos and child process within a resear and though and with plants of the childhos passed.

The childhos and childhos

> Parents who use a lot of technology often express fear, or feel uncomfortable connecting with their children, and possibly even their partners. This fear of socializing is understandable when er realize how loaded from each offere we have all baccome. Gaining social confidence and kill with your children is best done through loting, as there really ear no rules, and ways of play are samply endless. The following play tow will help parents as they explored different ways of the teaming the same of the

- Follow the child's lead. Ask them what activity they would like to do with you and let
- them take the lead and tell you what to do.

 Listen closely and ask questions if you don't understand. Try to be the follower, and
- Offer suggestions, but only if the child asks or indicates they are unsure.
 Keep it simple, at least to start. Don't make play complicated.
 Do physical activities first involving rough-n-tumble play such as play wreating, pillow fights, building forts with couch cushions, foot ball, soccer. This allows your child an
- 6) Bring on the gamest Board games, cards, reading, arts and crafts, building tree forts, cooking, dancing, and even chores such as cleaning rooms together can be a fun and bonding experience.
- bonding experience.

 7) Family theme nights can be a fun way to connect with your children e.g. Monday is
- () Prohibit technology from the car, an hour before bed, and during dinner prepleat/clean-up, or meals in restaurants. These are important times to bond with your
- children and hear about their day.

 9 Create regular together times. No matter what you do, your children will love you for i Your children are an investment in the future. Start your investment today by playing will you
- your child every day!

Page 7 © Reconnect Webinars 2022

Meet Phyllis Dyson

- Elementary school teacher in Sunshine Coast, BC, Canada.
- BA in music, grad diploma in special education: inclusive learning communities.
- Member of the BC Schizophrenia Society.
- Author of Among Silent Echoes: A Memoir of Trauma and Resilience.
- Featured in BC Teachers Federation (BCTF) magazine, Understorey Magazine, The Coast Reporter and by the BC Schizophrenia Society.

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Figure 35. Photo of Phyllis Dyson. Used with author permission, 2022

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Interview with Phyllis



© Sunshine Coast Occupational Therapy Inc. 2021 Video 6. Interview with Phyllis Dyson by Cris Rowan, 2022

Phyllis's Resources

- Among Silent Echoes: A Memoir of Trauma and Resilience book.
- Pathways to Care Child and Youth Mental Health/Substance Use brochure created by school district. www.sd46.bc.ca
- Foundry BC mental health Figure 36. Among Silent Eth book cover. Retrieved from Public Domain, 2022 services, medical services...

© Sunshine Coast Occupational Therapy Inc. 2021

www.foundrybc.ca



Final Supplier Community Services of Division of

Figure 37. Pathways to Car brochure. Retrieved from www.sd46.bc.ca, 2022

Nature

When did nature become unsafe?

© Sunshine Coast Occupational Therapy Inc. 2021

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Parental Fear

- Parents who fear 'outside' have children with higher tech usage.
- Yet...screens are not safe!
- High anxiety of parents projected onto child.
- Yet...risk reduces anxiety!
- Everything fun got taken to the dump.

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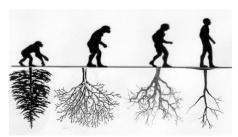
Figure 38. "Tully" painted by Grandma Linda Patrick Courtesy of child's Grandma and Mom, 2021

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"Play Again" Video 6. "Play Again" trailer shown c/ permission of producer Tonje Hessen Schei 2021. Distributor Bulldog Ellms; Eacebook. © Sunshine Coast Occupational Therapy Inc. 2021

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Mother Nature



What they do not value, they won't protect.
What they can't protect, they will loose.
Charles Jordan; quote from "Play Again" film

© Sunshine Coast Occupational Therapy Inc. 2021 Figure 39. Evolution/Devolution. Produced by author, 2021

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Nature Benefits

Nature exposure increases physical activity and sunlight, reducing risk and progression of:

- > Myopia: decreases 2% for every 1 hr. outside.
- > Obesity: more movement.
- > Sleep disorders: improved sleep sustenance.
- Depression/anxiety: improved mood.
- > Problematic behavior: reduced.
- Cognitive impairment: improved attention.
- > Cardiovascular: reduced stroke, heart attack.

Children's Health in the Digital Age - Dresp-Langley 2020; Ngurah Edi Putra, 2020, Hale 2018

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Nature

- Backpackers scored 50 percent better on a creativity test after spending 4 days in nature screen-free.
- Students showed improved cognitive memory and affect (anxiety) after 50 min. rural walk.
- 20 min per day access to 'green space' significantly reduces adhd and improves attention and behavior. Strayer 2012, Bratman 2015, Faber-Taylor 2004.

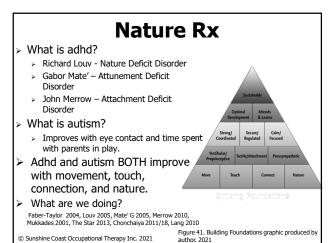
Yuchi 2022.

© Sunshine Coast Occupational Therapy Inc. 2021



Yuchi 2022. Figure 40. Forest trail. Royalty free from Dreamstime, Desertgirl, 2021

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Outdoor Play Reverses Screen Time Effects

> JAMA Pediatr, 2023 Jan 23. doi: 10.1001/jamapediatrics.2022.5356. Online ahead of print.

Outdoor Play as a Mitigating Factor in the Association Between Screen Time for Young Children and Neurodevelopmental Outcomes

Conclusions and relevance: Higher screen time at age 2 years was directly associated with poorer communication at age 4 years. It was also associated with daily living skills, but frequency of outdoor play at age 2 years 8 months alleviated it, suggesting outdoor play mitigated the association between higher screen time and suboptimal neurodevelopment. Future research should specify the nature of the associations and intervention measures, enabling targeted interventions that reduce the potential

M Sugiyama et al, 2023

Fig. 42. Outdoor Play as a Mitigating Factor in the Association Between Screen Time for Young Children and Neurodevelopmental Outcomes. Retrieved from JAMA Pediatrics. doi:10.1001/jamapediatrics.2022.5356.

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Adventure Playground The Yard, Governors Isl. NY



Figure 43. Children in free play. Courtesy of Play: GroundNYC, www.play-ground.nyc 2021

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No Parents Allowed!



Figure 44. Natural playground. Courtesy of Play:GroundNYC, www.play-ground.nyc 2021

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Put Up a Basketball Hoop



Figure 45. Basketball hoop. Retrieved from Dreamstime, Strauski, 2021

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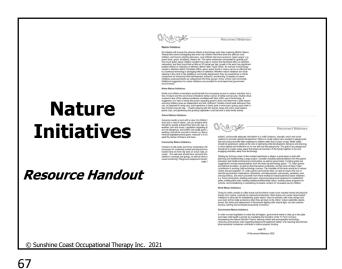
Budding Biologist

- We're not raising little adults, we are creating life long memories of childhood for our children.
- Maybe we just need to back off, let our kids explore, play, take risks, and be imaginative in their youth.
- "The source of knowledge is experience". Albert Einstein



Figure 46. Pic of small child with binoculars. Display by author with permission from child's Mom, 2021.

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All together now...

How to Play with Your Children

The root important presents in a childri Silo in the present. Children look to their parents and only large and the present and only large and the present and only large and the present and

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100 Things to Do Other Than Screens Resource Handout

Active Activities	Resting Activities	Social Activities	ACHIEVEMENT ACTIVITIES
Weight-Lifting	Reading (to self or sibling)	Invite Friends Over	Chess
Mountain Biking	Creative Writing	Make Home Made Pizza	Build a Model Airplane/Car
Gymnastics	Drawing (sketch daily)	Make Cookies as a Family	Paint by Numbers
Camping	Art	Do Stand-Up Improv	Learn an Instrument
Backpacking/Hiking	Crafts	Write a Song	Produce Music
Fishing/Hunting	Cooking, Baking	Form a Band	Geocaching
Skating, Golf	Meal Preparation	Play Hide-N-Seek	Contact Juggling
Street Hockey	Graphic Design	Play Flash Light Tag	Learn Public Speaking
Basketball Pick-Up Game	Painting	Play Capture the Flag	Birdwatching/Identification
Baseball, Football, Soccer	Lego, Blocks, Snap Circuits	Plan Scavenger Hunt at Park	Mushroom Identification
Archery, Juggling	Magic Tricks	Start a Club	Wildlife Identification
Paintball	Shoot Pool	Join a Local Choir	Plan Next Family Trip
Martial Arts, Boxing	Fix Something	Join a Sports Team	Learn New Language
Spin Classes	Do at Home Projects	Plan Street Hockey Pick-Up Game	Learn Astronomy
Jogging	Origami	Plan Basketball Pick-Up Game	Plan Easter Egg Hunt for Siblings
New Sport/Recreational League	Still Life Photography	Board Games	Chart Family Ancestry
Rock-Climbing Gym	Interior Design	Card Games	Build a Bird House
Geocaching	Woodworking/Carpentry	Charades	Make Christmas Decorations
Join a Cooking Class	Cardboard Box Building	Outdoor Adventure Races	Write a Family Cook Book
Amusement Parks	Mechanic/Car Restoration	Body-Building Competitions	Organize Kitchen Drawers
Join a Dance Class	Plan Business Start-Up	Take an Improv Class	Plant Own Garden Plot
Boy Scouts/Girl Guides	Poetry/Spoken Word	Take a Stand-Up Comedy Class	Rearrange Living Room
Adventure Races	Meditation	Visit Museums with Friends	Make Chore Calendar
Wildlife/Sports Photography	Yoga	Go to Events with Friends	Build Arcade with Big Boxes
Outdoor Adventure with Friends	Collect Something (stamps, coins)	Volunteer at SPCA	Perform a Play for Neighbors
Build Forts (in/out), Skate Board Ramp	Public Speaking	Car Games-Spy with my little eye	SSS - Get a Paper Route, Mow Lawn
Treasure or Scavenger Hunt	Sudoku, Cross Word Puzzles	Rock/Paper/Scissors Game	Shovel Snow, Babysit
Clean Your Room Night to Music		Vegetable/Mineral/Animal Game	Do Household Chores!!
	© Reconnect	Webinars 2022	

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Meet Dr. Kerry Crofton

- > PhD in Psychology.
- > Author of 3 books.
- Heart MD Institute Contributing Editor and member of the International EMF Alliance.
- Co-founder and Executive Director of the International Advisory Board of *Doctors for Safer Schools*.

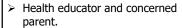




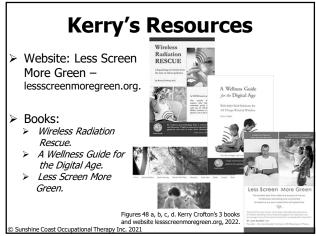
Figure 47. Photo of Kerry Crofton displayed with her permission, 2022.

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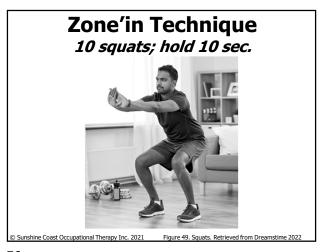
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TECHNOLOGY MANAGEMENT 4 Critical Factors for Child Development

Quiz 2 *Human connection, nature*

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