



# **The S.A.F.E. Framework Approach to Prevent Injuries and Health Risks to Support Play Areas for Children**

December 10, 2025



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# The S.A.F.E. Framework Approach to Prevent Injuries and Health Risks to Support Play Areas for Children

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Executive Director, National Program for Play Area Safety

**Sara Kreiss**

Founder, Spaces for Play

Hosted by  
Children's Safety Network

DEC 10, 2025



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# Purpose of Webinar

1. Importance of Play Areas for Today's Children
2. Health Risks and Injuries Remain a Concern
3. Current Events and Projects to Help At the Local Level
4. Keeping Children S.A.F.E.
  - **S**ite Location
  - **A**ppropriate Design
  - **F**all Surfacing
  - **E**quipment Maintenance
5. Resources and Information

[playgroundsafety.org](https://playgroundsafety.org)



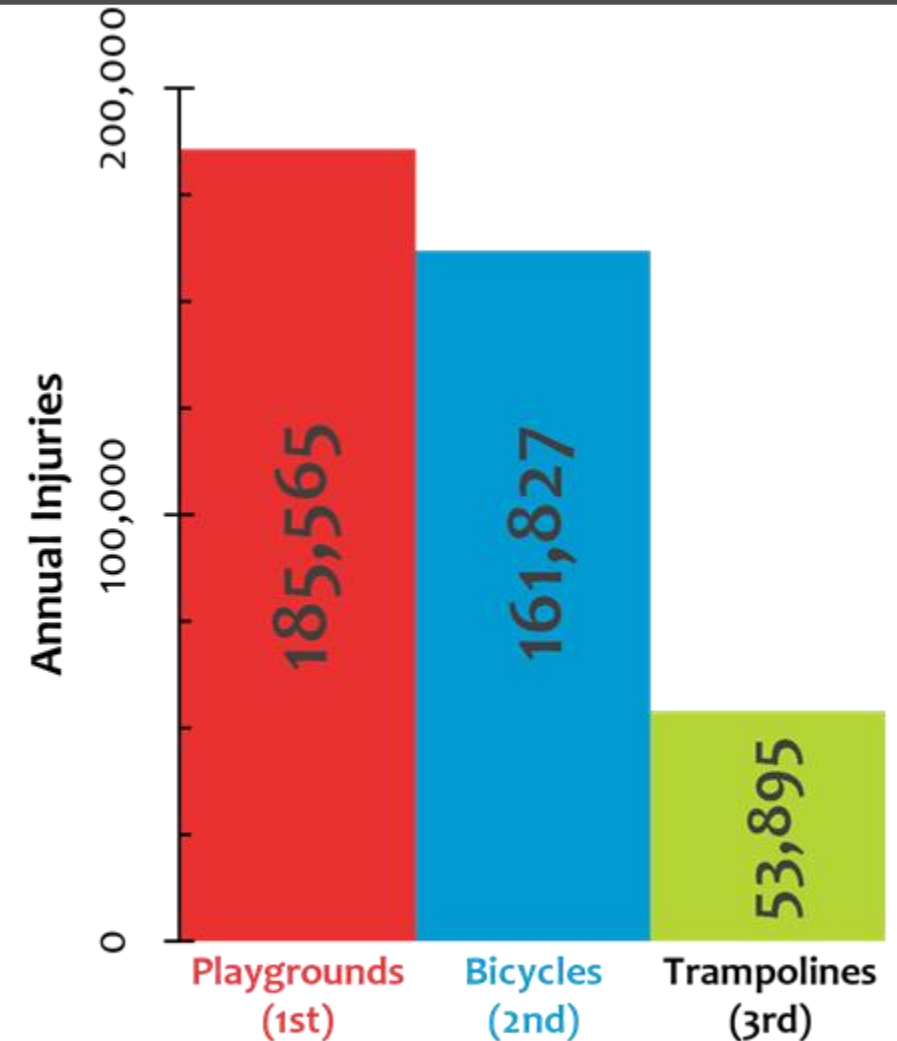


Outdoor play for children isn't  
just fun — it's a foundation.

# Are Playground Injuries A Problem?

## ***The Problem:*** Playground-Related Injuries Remain Stagnant

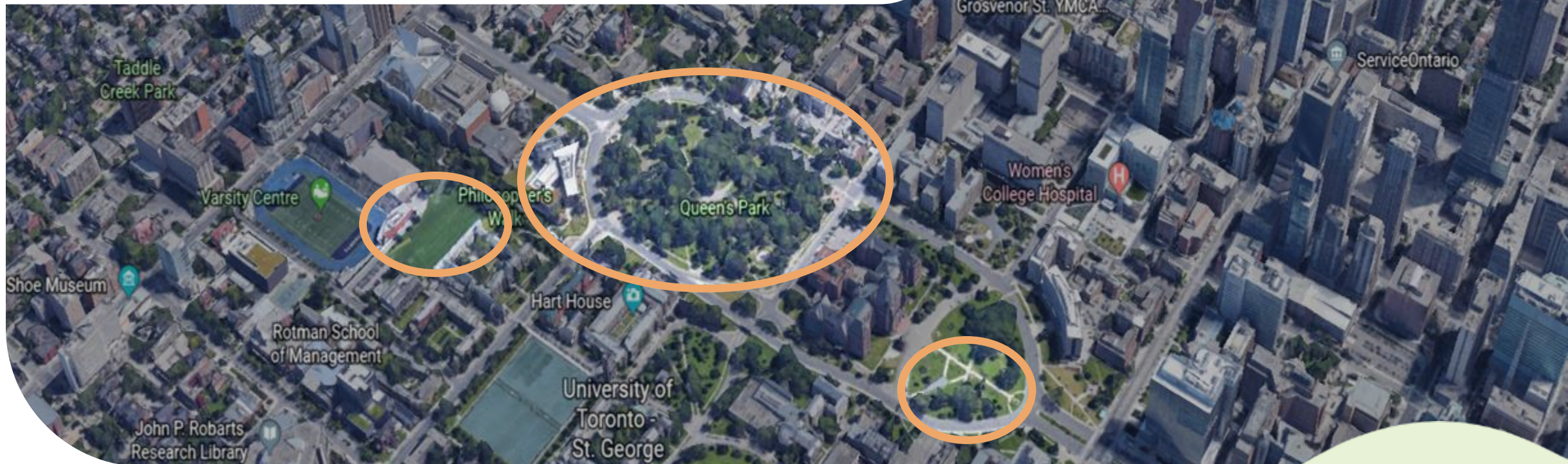
- Each year in the US, over 200,000 children are injured on playgrounds seriously enough to seek emergency room treatment (Hanway 2016; Tuckel et al. 2017).
- Upper extremity and head and neck injuries are a concern. Fractures of an upper limb account for approximately half of medically treated injuries, while head and neck injuries account for one third of all injuries (Adelson et al. 2018; Tuckel et al. 2017; Loder 2008).
- Annually 20,000 children visit U.S. emergency departments for traumatic brain injuries on playgrounds (Cheng et al. 2016).



(Schwebel & Brezaussek 2014)

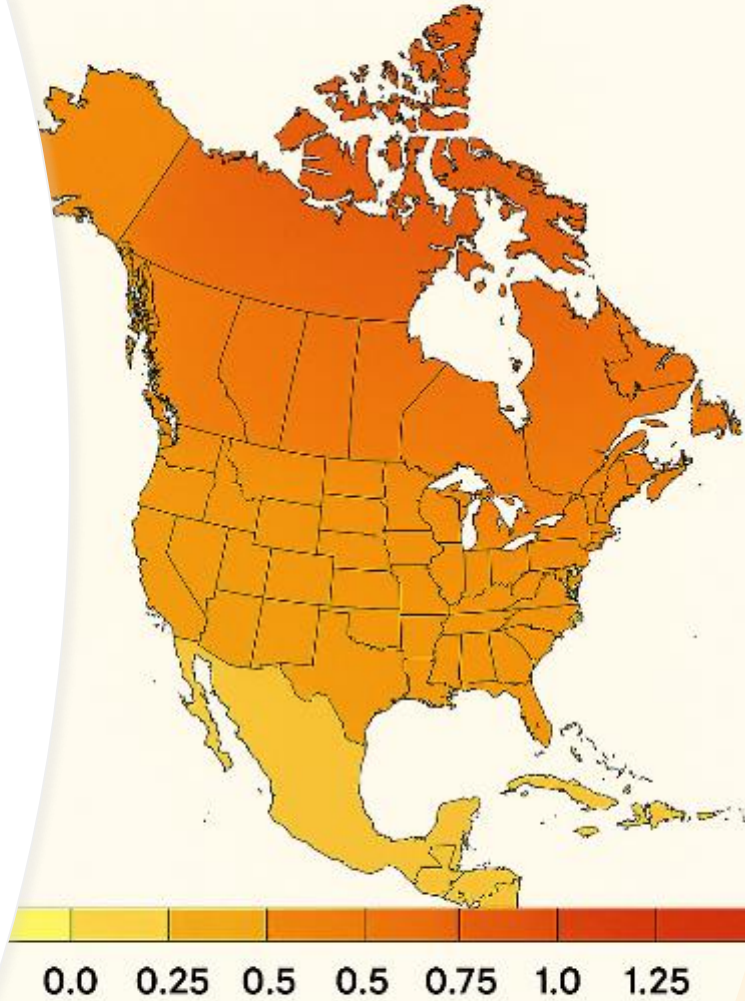


Play Areas for Children are a central hub for child play, fun for families, and spaces for vibrant cities.

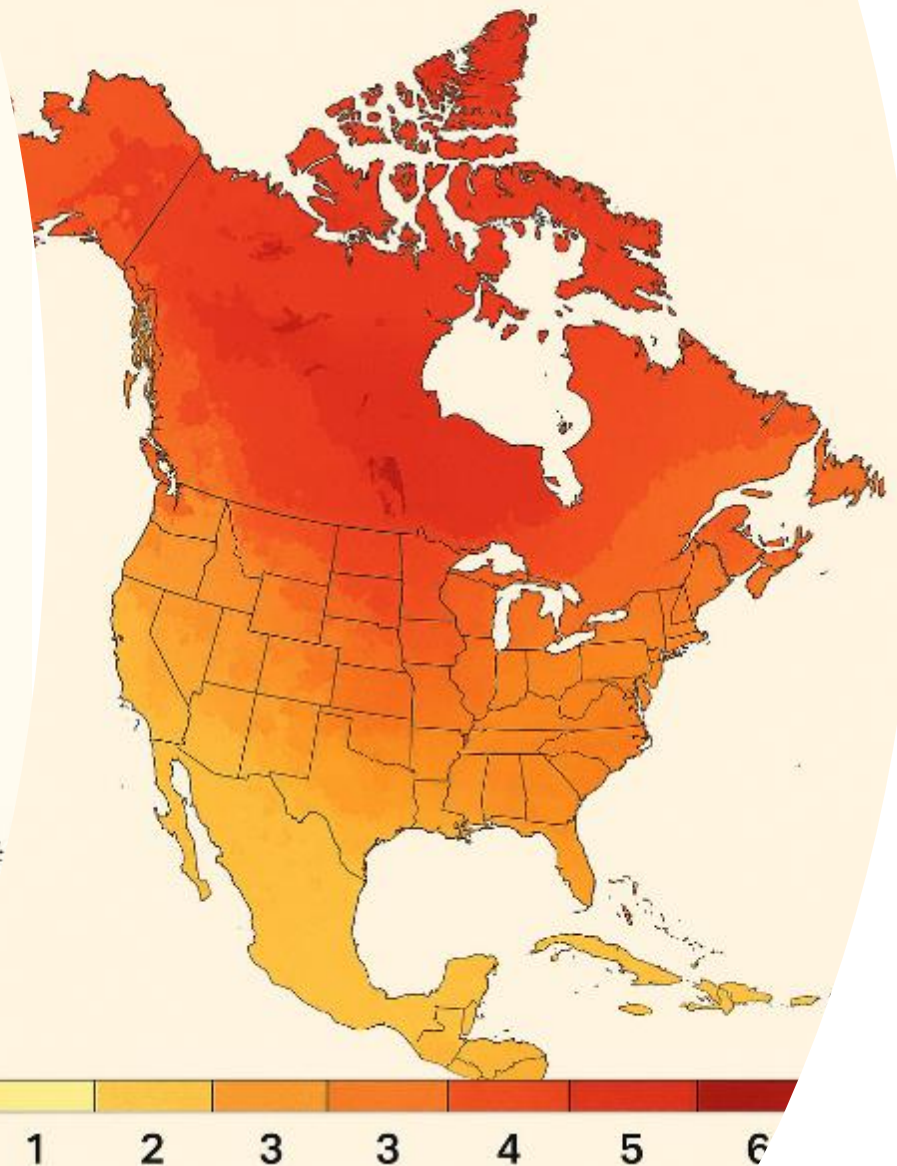




Temperature Change  
1940-1990



Temperature Change  
2051-2081



Play Areas for  
Children are  
being affected





Photo courtesy of the City of Toronto

# Where are playgrounds and who has access?

## PAST

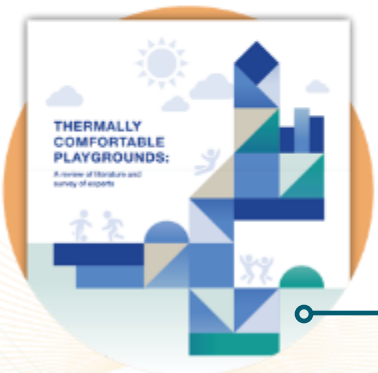
Public playgrounds for children have existed since 1800s.

## PRESENT

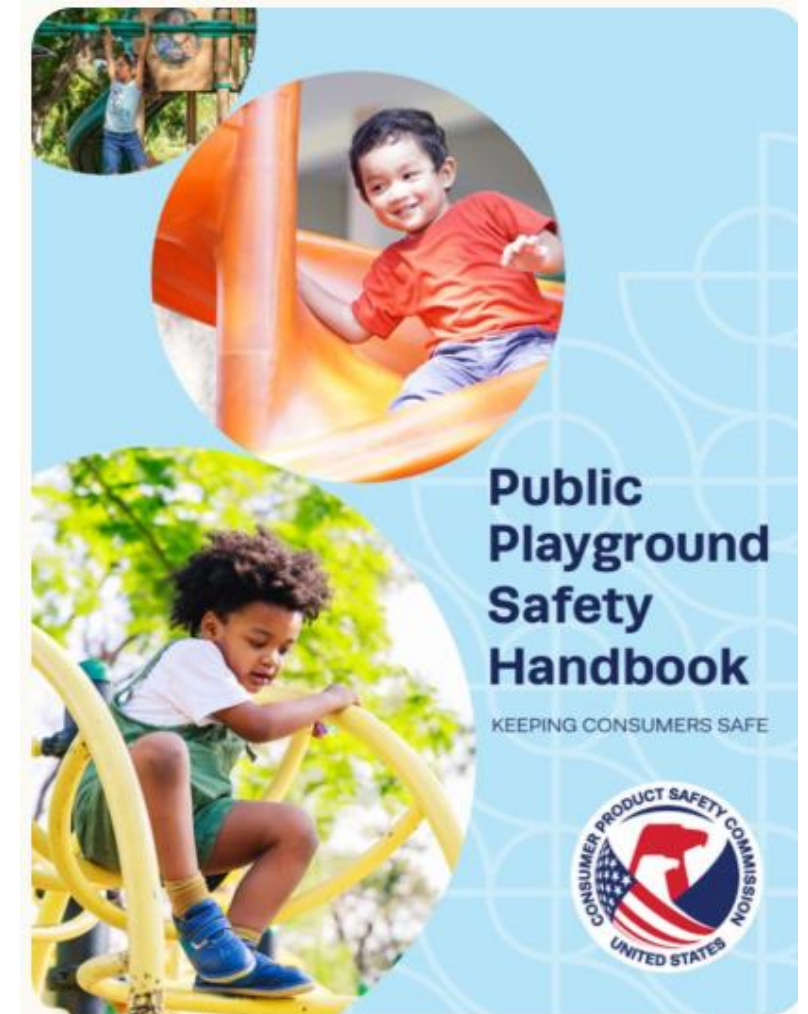
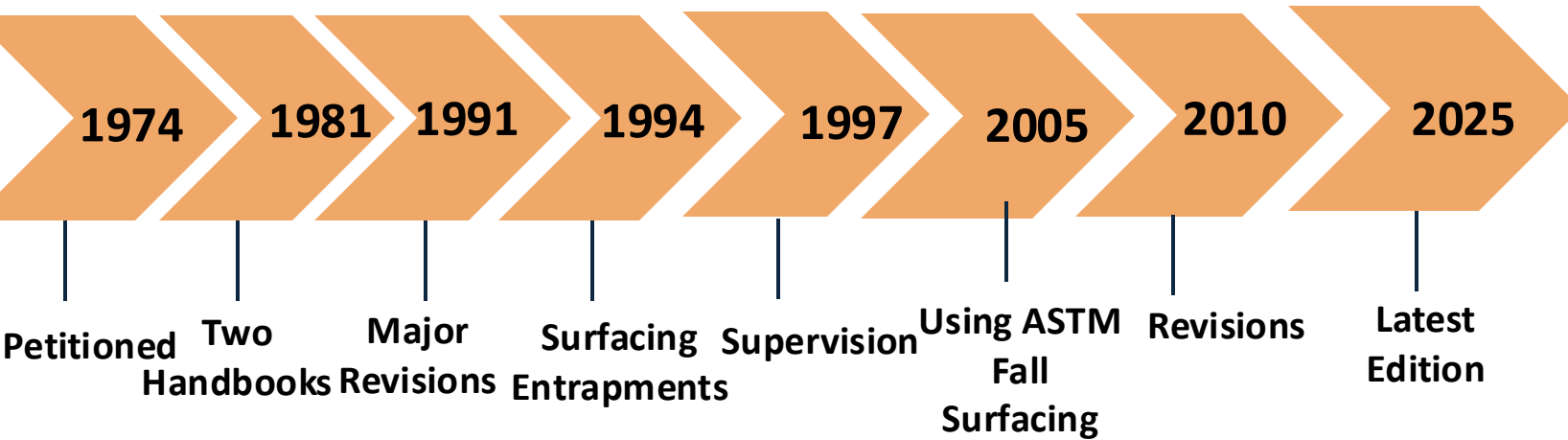
Historical influences have prioritized minimizing serious acute injuries by providing technical requirements for the design, construction, installation, and inspection of playground equipment and surfacing.

## FUTURE

New and upgraded playgrounds should not only be designed to reduce serious acute injuries, but also to be safe from changes in climate.

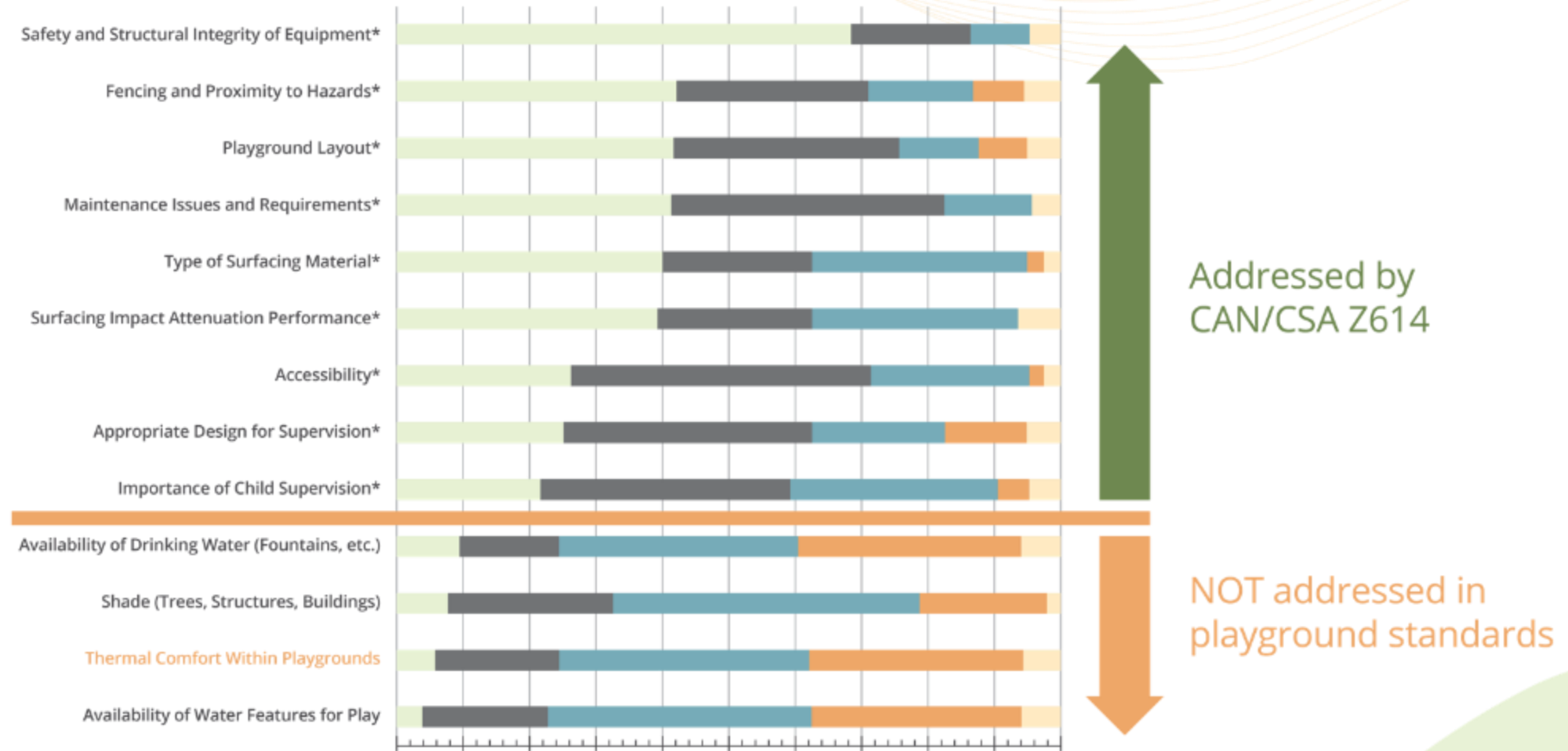


# Consumer Product Safety Commission





# What Has Been Prioritized Within Playgrounds?





# S.A.F.E. Injury Prevention Framework





## Site Location





A photograph of a child's hand touching a teal-colored play structure. The child is wearing a grey t-shirt. The background is slightly blurred, showing other parts of the play area and a person in the distance. The image has a semi-transparent grey overlay with text.

**NPPAS Charge:**

**Appropriate  
Design**

**A more holistic view of health and safety  
of play areas for children to promote short  
and long-term health.**





## Fall Protection

Installation over a hard surface such as asphalt, concrete, or packed earth may result in serious injury or death from falls (ASTM & CPSC).

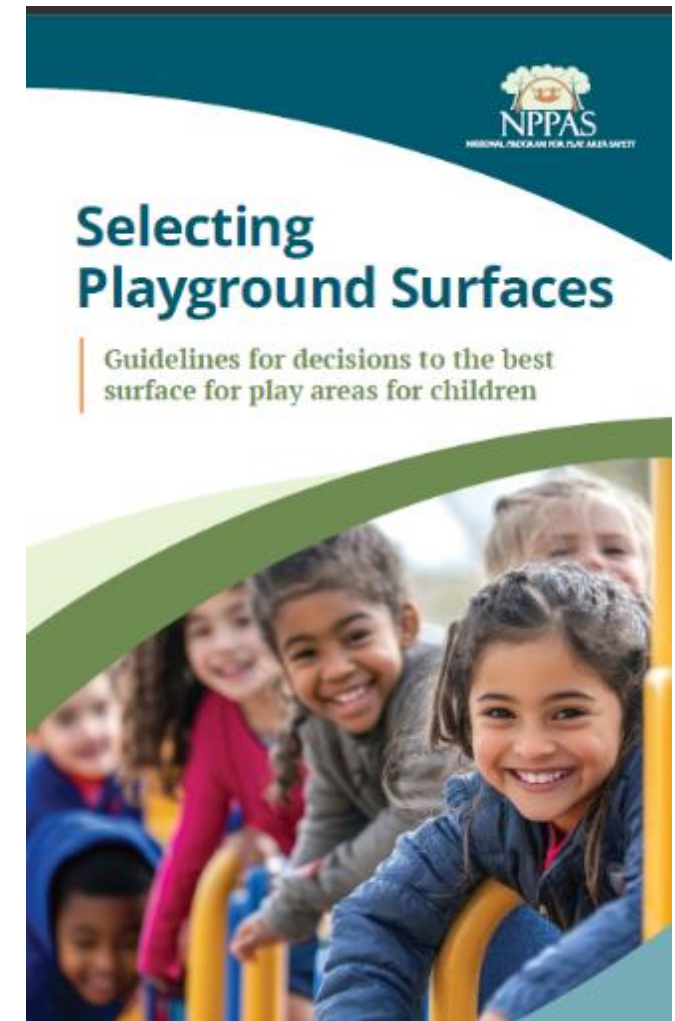


# NPPAS's SAFE™ Surfacing Decision Making Model



Figure 1. The S.A.F.E. surfacing decision model

[playgroundsafety.org](https://playgroundsafety.org)





# Maintenance Is More Than Fixing Something

Equipment  
&  
Environment  
Maintenance





Who is the report card for?

Playground owners and managers, directors, and users

## Does Your Playground Make the Grade?

Use this self-assessment report card to learn how your playground can be safe and more comfortable in all seasons.



Partial contributions from

SCC CCN

Canada

Health Canada

Santa Clara

PlaygroundSafety.org

## EXPLANATION OF THE RISK FACTORS

### SITE LOCATION

1. A form of a secure barrier should be provided around play areas to protect children from adjacent roads and nearby busy streets.
2. To properly supervise children, the playground design must permit for them to be seen and heard.
3. Since equipment with suspension children can swing high, the playground design must allow for supervision.
4. During the summer months, playground equipment can heat up surfaces and make ambient air temperature keep things cool.

## PLAYGROUND REPORT CARD

### Does Your Playground Make the Grade?

Questions for playground owners, operators, administrators, designers, educators and users to keep children safe for all seasons of play.

Directions: Check your playground using the following questions. Answer "Yes" or "No" for each statement below. Explanations of the questions are described on the back of this sheet. If any of the highlighted boxes are marked "NO", the potential of a life-threatening injury is significantly increased. Contact the owner/operator.

SITE LOCATION	YES	NO
Location of the playground is protected from motorized hazards*		
Children can be easily viewed on equipment and throughout the playground		
The site location is designed to encourage active supervision		
Shade (natural, structure, building) is available at least 70% of time during play		
Signs are posted to check surfacing and equipment temperatures		
APPROPRIATE DESIGN	YES	NO
The playground area is designed for an environment for increased thermal comfort.		
Trees, plants, or other appropriate landscaping is present		
The playground has a variety of play experiences for different ages of children		
Placement of equipment does not interfere with other play activities		
Play equipment is designed to discourage children from climbing outside the structure*		
Platforms allow children to change directions for getting off of the play structure		
Accessible routes are present allowing children to access the playground and equipment		
FALL AREA PROTECTION	YES	NO
Substrate surfacing materials are present		
Appropriate depth of loose fill material is present*		
Use zones have appropriate surfacing*		
Concrete footings are covered*		
Shade links temperatures of surfaces during prolonged sun exposure		
ENVIRONMENT & EQUIPMENT MAINTENANCE	YES	NO
The play area is inviting to users		
The play area is well-maintained		
The playground and equipment are free from foreign objects		
Equipment is free from strangulation hazards*		
Equipment is free of head entrapment hazards*		
Equipment is free of protruding bolts and fasteners		
Equipment is free of broken or missing parts		
TOTAL POINTS		

### SCORING SYSTEM

For every "yes" your playground receives one point. Tally up the number of points for each section.

- Site Location
- Appropriate Design
- Fall Area Protection
- Equipment Maintenance
- Total

A: 24-19

Congratulations, the playground is likely safe and thermally comfortable.

B: 18-15

The playground is on its way to providing a safe and thermally comfortable play area. Work on the areas checked "No".

C: 14-11

The playground is potentially not thermally comfortable or has unsafe conditions. Take corrective measures.

D: 10-7

The play area is potentially less unsafe and unhealthy conditions. Start today to make plans for improvements.

F: 6 & below

Make decisions for improvements for safe and healthy play for children.



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direction throughout the year at the site will help in orientating the playground. Choose shady playgrounds for more information, or radiation and lowering air and surface temperature. Appropriately used equipment and materials in playgrounds designed for appropriate play and thermal comfort should not interfere with other play activities. Here or unintentional falls off elevated platforms. Immediate standing surface where a decision can be made to fall.

Accessible spaces and play equipment.

ability of a child getting injured, falls from 1 foot (30.48 centimeters) play equipment should have a protective surface. Appropriate fall, inappropriate surface materials, directly under elevated

cushion falls. An inch of sand upon hard packed dirt will not use fill material under and around playground equipment for

ed extend 6-8 (1.8) meters in all directions, with the exception

toths or permanent disabilities have occurred from children

es from overheating.

more visually appealing. Plastic equipment may crack or new must be treated on a regular basis to avoid weather

to injuries and unsafe situations. Trash can attract pests. Objects like broken glass can be a safety hazard.

ing get caught in gaps. Pay close attention to the ants on

berry becomes stuck in an opening or gap in playground

as when they involve the head or neck, as they can lead

is more than 3.5 inches (8.9 centimeters) then it must

ent or catching clothing.

Equipment is broken, measures need to be taken to

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playgroundsafety.org/report-card



# Training & Certifications

## Ensure Safe and Quality Play Areas & Playgrounds with Expert Training

### Training

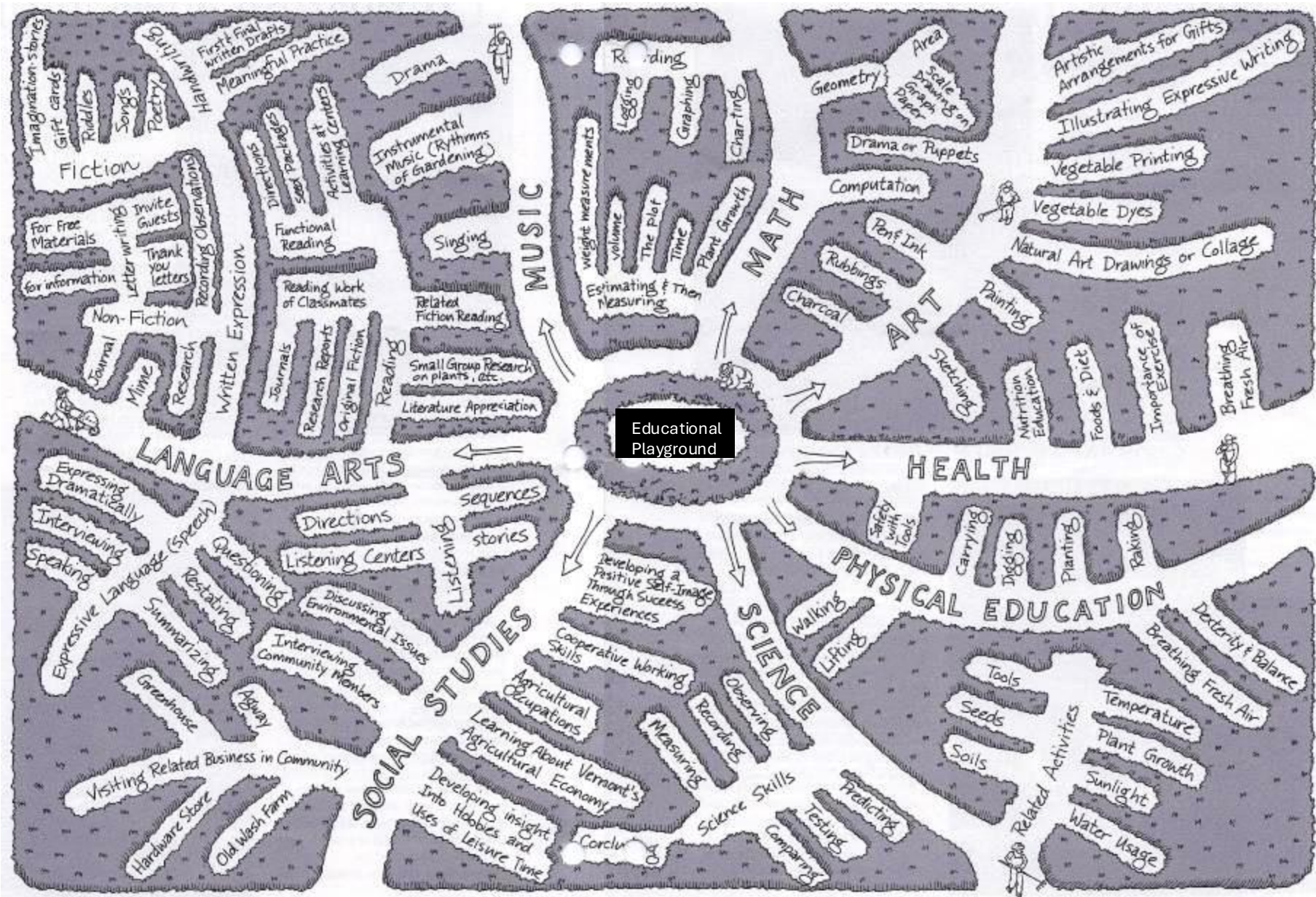
NPPAS's offers onsite and virtual trainings and workshops customized. From supervision, planning, playground safety guidelines & standards, safe and age-appropriate play, maintenance, to the importance of play, we customize training topics and hours to agency needs and budget.

[Learn More](#)

### Become Certified

NPPAS's Online certification training is presented live with an experienced and qualified trainer. Through this comprehensive training, you'll be equipped with the knowledge and skills to inspect outdoor play areas in early childhood settings for infants, toddlers, and preschoolers. You'll learn how to inspect the playground overview, physical layout for safety and supervision, playground considerations, age-appropriateness, playground hazards, equipment specifications, surfacing requirements, accessibility, maintenance concerns, parts of the playground, playground testing, and the safety of loose parts and play components.







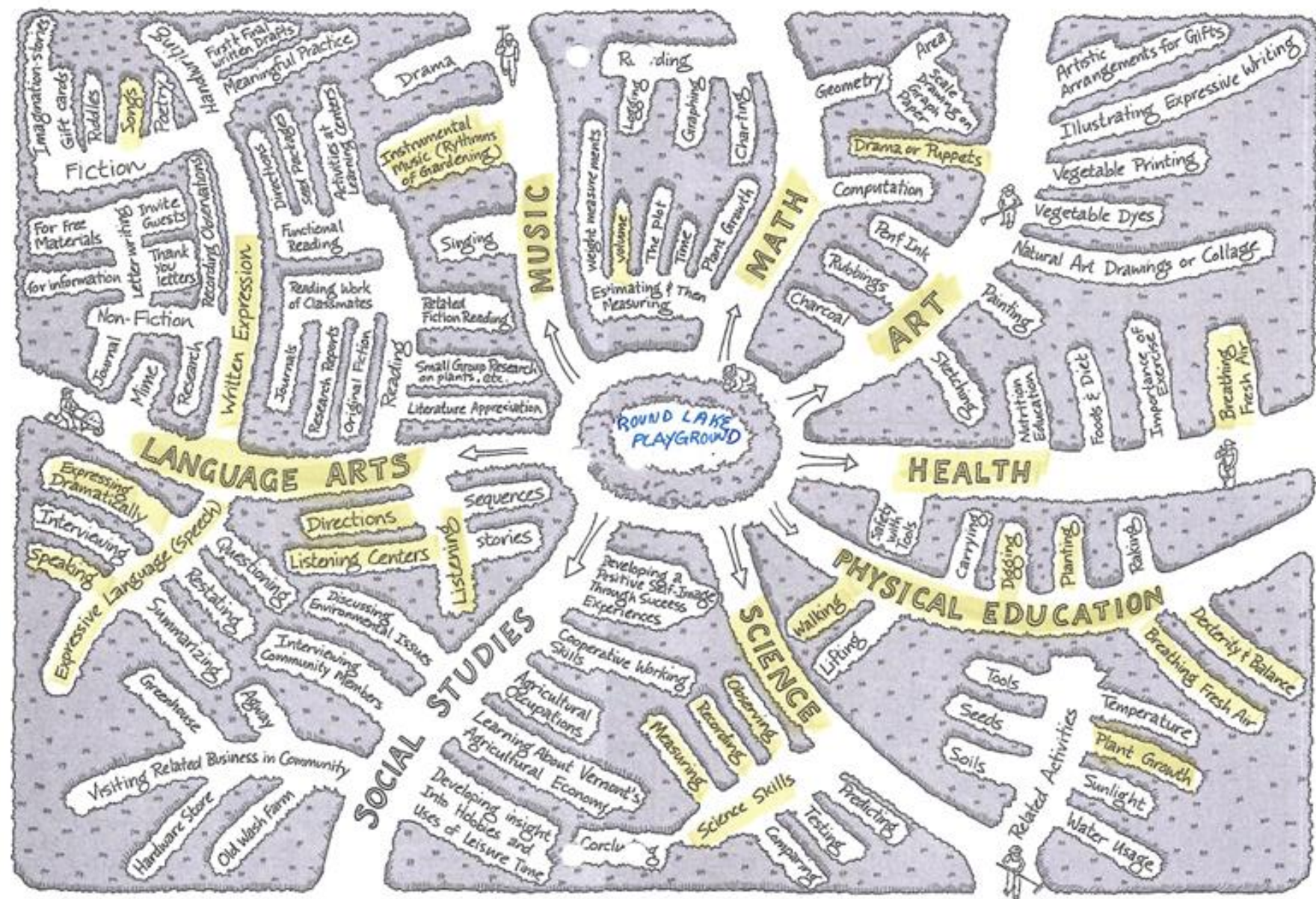














## SPACES FOR PLAY CLIMBING STRUCTURES PROVIDE GROSS MOTOR CHALLENGES

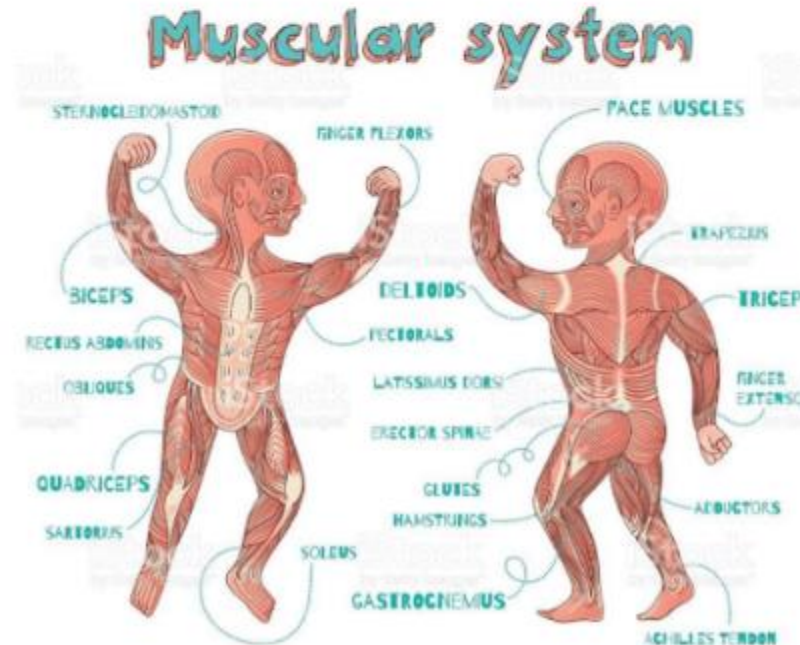
### ROUND LAKE ECC

#### Gross Motor Movements


Our goal at *Spaces For Play* is to design a climbing structure that strengthens gross motor development. SFP uses a variety of motor challenges and limits the repetition of the same type of climbing opportunities. SFP climbing structures strengthen a variety of muscles as shown below in the **Muscular System** diagram below.

Pronation and Supination motor challenges refer generally to body and mind challenges at the wrist and are considered special movements for children. Other upper muscles, such as the biceps, triceps and deltoids of the arms and shoulders allow the child to hoist him/herself up into the climber structure.

Lower body muscles such as the quadriceps, adductors, abductors and gastrocnemius help in propelling the child's entire body up and down the climbing structures which also enhances muscular strength and endurance. In the middle of the upper and lower body muscle regions, known as the core muscles, tie together all the child's movements. Muscles such as the rector abdominis and oblique muscles contract when the child climbs which helps the child develop a sense of balance and coordination.





	<p><b><u>Oblique Block Climber/Cable Climber</u></b></p> <p>This climber is similar to the Block Climber. Uneven spacing of the blocks requires eye-hand coordination, forces visual focus acquisition, release, and re-acquisition, and develops motor planning. The rope creates an optional added upper body challenge, utilizing outward rotation of the arm in grip position challenges, postural muscle strengthening of the back and shoulders as well as the forearms, hands, and wrists.</p>
	<p><b><u>90° Bedrock Climber</u></b></p> <p>This rock wall is similar to the Block Climber with rock shaped random grips and steps. Hip and shoulder flexors and extensors are lengthened and shortened promoting strength and flexibility. The uneven spacing of blocks requires eye-hand coordination, forces visual focus acquisition, release, and reacquisition (similar to the visual skill required in reading), and develops motor planning. Preschool and School-agers.</p>
	<p><b><u>Vertical Cable Climber</u></b></p> <p>Challenges upper body strength and engages hip flexors. This is a balance challenge as well as core strength and confidence builder. Recommended for older Preschooler and School-agers.</p>
	<p><b><u>Cleat Climber</u></b></p> <p>Unique foot and hand positions (supination of foot and outward rotation of hips and shoulders). Wide stance challenges balance and initiates use of inner/outer leg muscles (adductors and abductors). It has two vertical posts with blocks attached on the facing sides and is the only climber requiring children to push out in order to use the climber. It works the shoulders, triceps of the arms, stretches the leg muscles and involves motor planning.</p>

# PLAY THEORY IN RELATIONSHIP TO PLAYGROUND DESIGN

## Ages, Dominant Types of Play and Materials for Play

Ages	0	1	2	3	4	5	6	7	8	9	10	11	12
Types of Play Materials Needed	Sensori motor play (e.g., rattles, bells, mobiles)												
	Object play, exploration (e.g., grasping toys, blocks, push-pull toys, textures, sounds)												
	Exercise, gross motor play (e.g., composite structures, slides, swings, climbers, overhead apparatus, balancing units)												
	Make-believe, symbolic play (e.g., playhouses, wheeled vehicles, vehicle tracks, sand, water, loose parts)												
	Construction play (e.g., tools, lumber, blocks, sand, water)												
	Organized games (e.g., balls, nets, goals, grassy fields, paved areas)												
	Work-play activities (e.g., nature areas, gardens, construction materials, tools)												
Storage—essential for most forms of play, located on the playgrounds													









































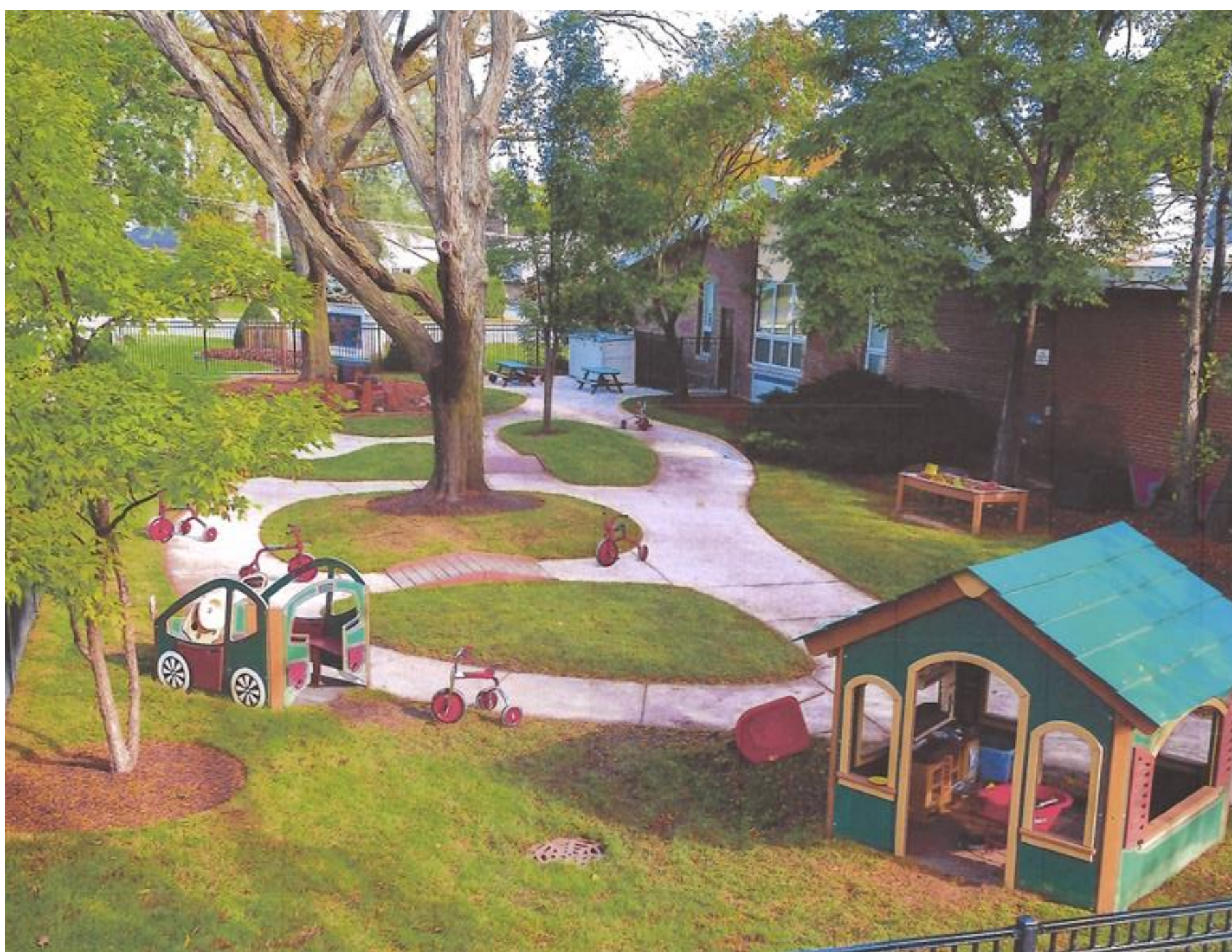


















Roundlake

<https://www.youtube.com/watch?v=jfEJag9SWRo>

Timothy Christian

<https://www.youtube.com/watch?v=WDSflhcoRz4>

Riverbend Head Start – Edwardsville

[https://www.youtube.com/watch?v=\\_GHfq0U9KUo](https://www.youtube.com/watch?v=_GHfq0U9KUo)

# Roundlake





# Why Design for Thermal Comfort at Playgrounds?

Many playgrounds were developed prior to standards that address weather influences. Extreme weather conditions and record-breaking temperatures are a concern for keeping children active and safe.

## Playgrounds can be climate ready!

Integrate these 7 design ideas and standard CSA Z614-20 Annex K into your planning processes.

### Designing Climate-Ready Playgrounds



Scan this QR code to download a more detailed playground design guide for thermal comfort.



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scc | con | Canada | Health Canada | Canada

[playgroundsafety.org/thermalcomfort](https://playgroundsafety.org/thermalcomfort)



# Stay Cool While Playing

1

Wear sunscreen and light clothing.



2

Wear a hat and sunglasses.



3

Always touch the equipment before you go for a ride. If it's HOT, do NOT use.



4

If you feel hot find some shade.



5

Drink plenty of water.



6

If you feel sick or dizzy, take a break and tell an adult.



*Stay Cool. Stay Safe. Have Fun.*

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# Thank you!

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***Interested in partnership, sponsorship, or collaboration?*** *Contact us at [PlaygroundSafety.org](https://PlaygroundSafety.org)*

***Get Certified*** become equipped with the knowledge and skills to inspect and provide expertise in your communities

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# Questions



Please enter your questions in the Q/A section at the bottom of your screen



# Thank you!

1

Please fill out our brief evaluation:



3

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[childrenssafetynetwork.org](https://childrenssafetynetwork.org)

2

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