

*City of Coral Gables*  
COMMUNITY RECREATION

PLAYGROUND SAFETY  
MANUAL

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## PLAYGROUND SAFETY

### U.S. Consumer Product Safety Commission's Ten Steps toward a Safer Playground

1. **Protective Surfacing:** The surfaces under and around the play equipment should be soft enough to cushion falls. For most play equipment, these surfaces should contain a minimum depth of 12 inches.
2. **Fall Zones:** To cushion a fall, the shock absorbing material should extend a minimum of 6 feet in all directions from stationary pieces of play equipment. In front of and behind swings, the materials should extend a distance equal to twice the height of the suspending bar.
3. **Equipment Spacing:** Play structures should be spaced at least 12 feet apart to allow children space to circulate or fall without striking another structure. Moving pieces of equipment should be located in an area away from other play structures so children have adequate room to pass from one play area to another without being struck by a moving swing or by another child exiting from a slide.
4. **Catch Points and Protruding Hardware:** There should be no dangerous pieces of hardware, such as protruding bolt ends and narrow gaps in metal connections or open "S" hooks at the top and bottom of swings. Exposed hardware can cut children, puncture skin, or catch clothing drawstrings, which could strangle a child.
5. **Openings That Can Trap:** Openings in guardrails and spaces between platforms and between ladder rungs should measure less than 3.5 inches or more than 9 inches. Children can get trapped and strangled in openings where they can fit their bodies but not their heads through the space.
6. **Pinch, Crush, Shearing, and Sharp Hazards:** Equipment should not have sharp points or edges that could cut skin. Moving pieces of equipment, such as suspension bridges, track rides, merry-go-rides, or see-saws should not have accessible moving parts that might crush or pinch a child's finger.
7. **Tripping Hazards:** There should be no exposed concrete footings, abrupt changes in surface elevations, tree roots, tree stumps and rocks, which can trip children or adults.
8. **Guardrails:** Elevated surfaces, such as platforms, ramps, and bridge-ways should have guardrails to prevent falls.
9. **Routine Maintenance:** Find out if your playground has a designated official who periodically inspects the play equipment for preventative maintenance including: replacing missing, broken or worn-out components, securing hardware, checking for deterioration in wood, metal or plastic materials, maintaining the proper 12-inch depth of surfacing material and cleaning up debris.
10. **Supervision:** The play area should be designated so that adults can observe children at play.





## Play Equipment General Requirements

1. **Head Entrapment:** No angle less than **5.5 degrees** should be present in play equipment. The current industry trend is to remove angles where possible.
2. **Finger Entrapment:** No openings larger than 3/8-inch and smaller than 1-inch should be present on play equipment.
3. **Fall Zone:** All equipment over 30 inches high should have an unobstructed fall zone of resilient surfacing which extends 8 feet around it on all sides.
4. **Swings:** For swings, a fall zone distance equal to **two times the height** of the swing crossbeam should be provided both **in front of and behind** the equipment. If a swing crossbeam is the maximum recommended height of 8 feet, a 16-foot fall zone should be provided to the front and back swings measured from the swing set location.
5. **Non-Climbable Enclosure:** Any deck over 30 inches in height should be surrounded by a non-climbable enclosure 38 inches high.
6. **Protrusion:** No element should protrude from a structure in any direction, which might entrap a child's clothing, cause a child to lose his/her balance, or pose a potential impact hazard.
7. **Resilient Surfacing:** All play equipment over 30 inches high must be installed over an 8-foot fall zone of resilient surfacing material. (For swing fall zone, see SWINGS above).



Since falls are the major cause of serious playground injuries, the goal is to reduce the impact of those accidents. A head first fall from the highest point of the equipment onto the play area surface should result in an impact of 200 g's or less.

Many kinds of resilient surfaces are available; they include sand, wood chips, chopped tire, and synthetic mats. Loose surfacing materials should be installed at a 12-inch depth throughout the play area (6 inches for chopped tire).

Manufactured surfaces should be guaranteed by the manufacturer to meet the 200 g criteria for the height of equipment used in the play area. This guarantee should become part of the City's permanent documentation of the play area.

All resilient surfaces require regular maintenance. Loose materials must be raked to keep 12-inches depth throughout the play area and to remove trash and glass. Grass, dirt, concrete, and asphalt are never appropriate fall surfaces for play equipment areas.



### Resilient Surfacing

All play equipment over 30 inches high must be installed over an eight foot fall zone of resilient surfacing material. Loose surfacing materials should be installed at 12 inches depth throughout the play area. For swings, a fall zone distance equal to two times the height of the swing crossbeam should be provided in front of and behind equipment.





## Maximum Equipment Heights

For elementary age children, the maximum recommended heights are:

Balance .....	24 inches
Bars-turning .....	54 inches (minimum 38 inches)
Bars-chinning .....	6 feet (minimum 38 inches)
Bars-parallel .....	48 inches (minimum 36 inches)
Climber .....	6 feet for school-age or 4 feet for preschool age
Chain Climber .....	6 feet for school-age or 4 feet for preschool age
Horizontal Ladder .....	8 feet
Linked Structure .....	8 feet
Moving Bridges .....	56 inches to bridge surface
Playhouse .....	6 feet exterior height (minimum 4 feet interior height)
Ring Trek .....	8 inches
Site built equipment .....	6 inches
Slides .....	6 feet for school-age or 4 feet for preschool age
Slides-banister .....	66 inches
Slides-fire pole .....	64 inches
Slides-tunnels .....	6 feet
Swings .....	8 feet
Tot Swings .....	8 feet

Any deck over 30 inches in height should be surrounded by a non-climbable enclosure 38 inches high.



## Recommendations for Fall Zones

Reference (U.S. Consumer Product Safety Commission Page 22 (1.11...))

1. **Stationary Equipment (11.1.1):** The fall zone should extend a **minimum of 6 feet in all directions** from the perimeter of the equipment.
2. **Slides (11.1.2):** The fall zone **in front** of the access and to the sides of a slide shall extend a minimum of 6 feet from the perimeter of the equipment. The front zone of the exit of a slide shall extend a minimum distance of **6 feet** from the end of the slide chute or for a distance equal to the **height plus 4 feet**, whichever is greater.





- 3. Single Axis Swings (11.1.3):** The fall zone in front of and behind the swing should be greater than the sides of such a swing. It is recommended that the fall zone extend to the front and rear of a single axis swing a **minimum distance of 2 times the height of the pivot point** above the surfacing material measured from a point directly beneath the pivot on the supporting structure. The fall zone to the sides of a single axis swing should follow the general recommendation and extend a **minimum of 6 feet** from the perimeter of the swing structure in accordance with the general recommendation for fall zones. This 6-foot zone may overlap that of an adjacent swing structure.
- 4. Multi-Axis Swings (11.1.4):** The fall zone should extend in any direction from a point directly beneath the pivot point for a **minimum distance of 6 feet plus the length of the suspending members**. In addition, the fall zone shall extend a **minimum of 6 feet from the perimeter of the supporting structure**. The 6-foot zone may overlap that of an adjacent swing structure.
- 5. Spring Rocking Equipment (11.1.6):** The fall zone should extend a **minimum of 6 feet from the "at rest perimeter"** of the equipment, but adjacent spring rockers with a maximum seat height of **24 inches** may share the same fall zone.



## Public Playground Safety Checklist

There are nine important tips for park managers and supervisors to keep in mind to help ensure playground safety.

1. Make sure surfaces around playground equipment have at least 12 inches of woodchips, mulch, sand or pea gravel, or that mats are safety-tested rubber or rubber-like materials.
2. Check that protective surfacing extends at least 6 feet in all directions from play equipment. For swings, be sure surfacing extends in back and front, twice the height of the suspending bar.
3. Make sure play structures more than 30 inches high are spaced at least 9 feet apart.
4. Check for dangerous hardware like open "S" hooks or protruding bolt ends.
5. Make sure spaces that could trap children, such as openings in guardrails or between ladder rungs, measure less than 3.5 inches or more than 9 inches.
6. Check for sharp points or edges in equipment.
7. Look out for tripping hazards, like exposed concrete footings, tree stumps, and rocks.
8. Make sure elevated surfaces, like platforms and ramps, have guardrails to prevent falls.
9. Perform regular inspections to ensure that equipment and surfacing are in good condition.
10. Any equipment, condition, or situation that does not meet these guidelines must be immediately reported in writing to your supervisor and to the City-wide Safety Unit.

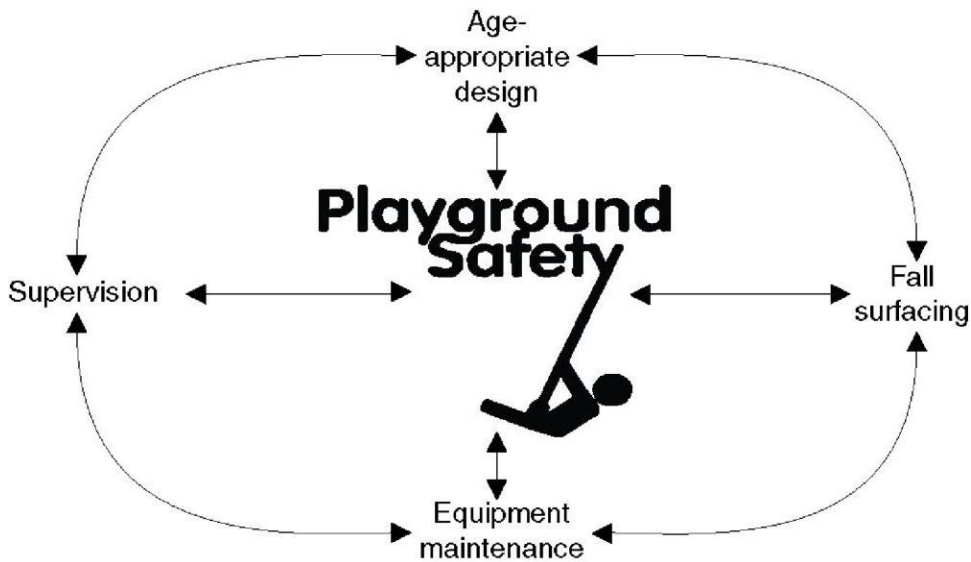




## The S.A.F.E. Model

The S.A.F.E. Model is a simple and convenient way to remind a child-care giver of the guidelines necessary to create a safe environment in a playground. S.A.F.E. is an acronym that represents the following.

- ✓ Supervision
- ✓ Age-appropriate design
- ✓ Fall Surfacing
- ✓ Equipment Maintenance





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Below are some of the considerations that should be made when caring for children in a playground setting.



### Supervision:

Some techniques to provide good supervision are the following.

- ✓ Supervisors should intervene when unsafe behavior occurs.
- ✓ Supervisors should be trained to recognize the difference between
  - a child attempting a task that is within his capabilities
  - a child attempting a task for which she lacks the developmental characteristics
- ✓ Ensure that pre-supervision activities occur before supervision begins.
- ✓ Active monitoring activities occur during supervision.
- ✓ Arrive before the children to make sure the play area is ready.
- ✓ Allow enough time to make sure that all equipment and surfacing materials are in good condition.
- ✓ Move throughout the play environment.
- ✓ Position yourself so that you can see the play environment from different angles.
- ✓ Continually scan the play environment to see children's actions.
- ✓ Limit your interaction with other adults.
- ✓ Wear brightly colored vests or hats for easy identification.
- ✓ Carry an emergency kit.
- ✓ Know what to do in case of emergency.

### Age-appropriate Design:

The age of a child is important when anticipating hazards.

- ✓ Use age-appropriate equipment, separated for children ages 6 to 23 months, 2 to 5 years, and 5 to 12 years.
- ✓ When considering play activities for children, consider that they are all at different stages of growth and development and vary in their physical, emotional, social, and intellectual characteristics.
- ✓ Provide separate areas for children ages 6 to 23 months, 2 to 3 years, and 4 to 5 years.





## Fall Surfacing:

The use of appropriate fall surfacing can dramatically lessen an injury.

- Ensure that there is at least 12 inches of loose fill materials underneath playground equipment (sand, wood products, pea gravel, or shredded rubber)
- Unitary materials can also be used (poured-in-place materials and rubber tiles and mats)
- Some unacceptable surface materials are asphalt, cement, dirt, and grass.
- Ensure that the surfacing material is free of foreign objects and that it drains well.



## Equipment Maintenance:

Hazards can be mitigated by ensuring that playground equipment is maintained well.

- ✓ Ensure that equipment is free of broken and missing parts.
- ✓ Ensure that equipment is free of protruding bolts and inappropriate gaps.
- ✓ Equipment should be free of head entrapments, rust, splinters, cracks, and holes.
- ✓ Daily inspections of the playground should be done.
- ✓ Ensure that spaces are smaller than 3.5 inches (9 cm) or greater than 9 inches (23 cm).
- ✓ Ensure that equipment surfaces are cool enough to touch.



## Summer Camp Supervision Guidelines

### What is Supervision?

- It involves being alert.
- It involves being aware.
- Knowing safe playground rules.
- Intervening when inappropriate behaviors occur.
- Supervision is the active yet unobtrusive monitoring of the play environment.
- It involves motivating the children.
  - Inform them of their wrongdoings.
  - Praise them when they do good.
  - To summarize, it is being proactive.





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### Why does Supervision Matter?

- It involves saving lives.
  - Accidental choking
- It involves preventing injuries.
  - Broken arms, wrists, elbows
- We can avoid litigation.
  - Wasting much needed funds
- We can comply with guidelines and standards.
  - Guidelines exist for everyone's safety



### Children's Play Behavior

- Unsafe Equipment Use
- Young children using equipment designed for older children
- Older children using equipment designed for younger children
- Unsafe Play Behaviors
- Conflicts break out
- Children are injured
- Bullying begins

### Supervisor's Behavior

Supervisors must not be passive when doing their job. Their actions and behaviors of supervisors can play a role in children's safety.

Parents/caregivers have an expectation of picking up their children in the same condition they left them.



### Pre-supervision

- Most injuries occur within the first five minutes of a play period.
- Discuss camp rules and expectations with children.

### Active Monitoring (vs. Passive Monitoring)

- Can reduce inappropriate play behaviors
- Active monitoring and encouraging children to play cooperatively is related to lower levels of aggressive behaviors
- Guide them with positive reinforcement such as a prize
- Take claims of injuries seriously



## City of Coral Gables Community Recreation PLAYGROUND SAFETY MANUAL

### Things you must do:

- Always do a head count before and after field trips
- Ensure that children and yourselves are well hydrated
- Notify the supervisor immediately when any child is injured or if you sustain an injury
- Notify the supervisor immediately if you notice any child with any kind of weapon and or drug paraphernalia
- Be aware of suspicious persons in and around parks

### Things you must NOT do:

- Allow any child to use a microwave oven to heat food
- Allow children to use public restrooms unsupervised
- Get involved in any verbal or physical altercation with children or parents
- Leave items which could be used as weapons lying around without supervision and without securing them
- Share cell phone photos and text messages with children at camp

### General Safety and Supervision Considerations

- Report all accidents and near misses as soon as they occur.
- Contact the Safety Unit in Risk Management if you continue to observe uncorrected hazards.
- Protect yourself – use PPE (Personal Protective Equipment) such as sunscreen and drink plenty of fluids throughout the day.
- You should be a role model of safety and supervision to the children at all times.
- Look for hazards; report them to the Supervisor and Park Manager
- If issues are not corrected, call the Safety Unit

