

Designing for Success with Children

Adults are from earth, children are from the moon

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Consultants, designers & producers for location-based family & children's leisure & learning venues

- Family entertainment centers
- Children's edutainment (*discovery play*) centers
- Family eatertainment facilities
- Adventure & discovery play gardens (playgrounds)
- Childcare and pre-K centers
- Children's enrichment & informal learning venues
- Agritainment facilities

16 years experience with 350 clients worldwide

Myth #1

Children are little adults



Child Development

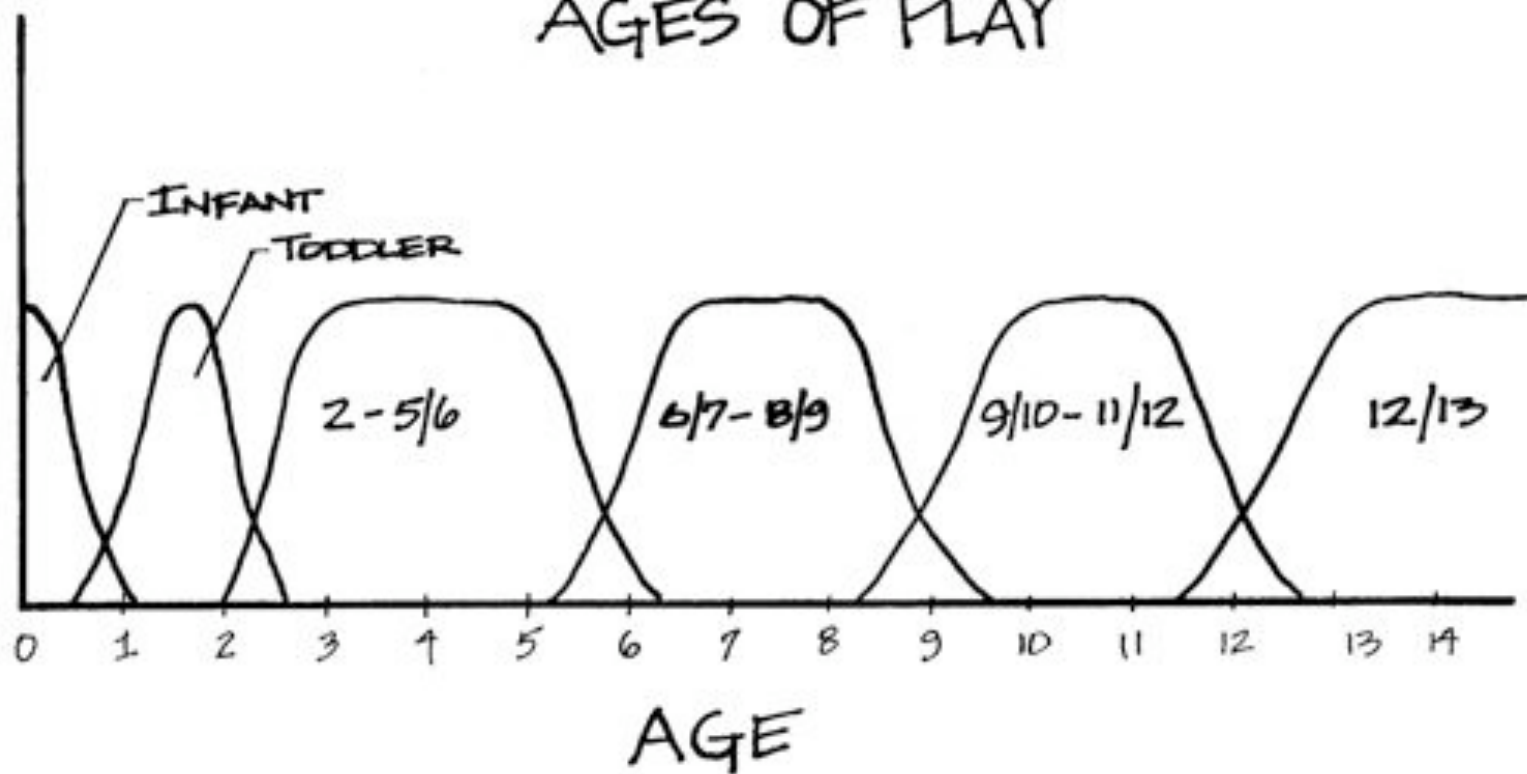
Understanding it is key to successfully
designing for children



Children's ages of development (play)

Infants	up to 10± months old
Older Infants & Toddlers	10± months – 23± months
Two-year-olds	24± months – 35± months
Preschoolers	3± years – 5/6 years
Early Grade Schoolers	6/7 years – 8/9 years
Tweens	9/10 years – 12± years
Young Teenagers	13± years – 15± years
Older Teenagers	15± years – 17/18 years

AGES OF PLAY



Children's basic age groupings for play & entertainment

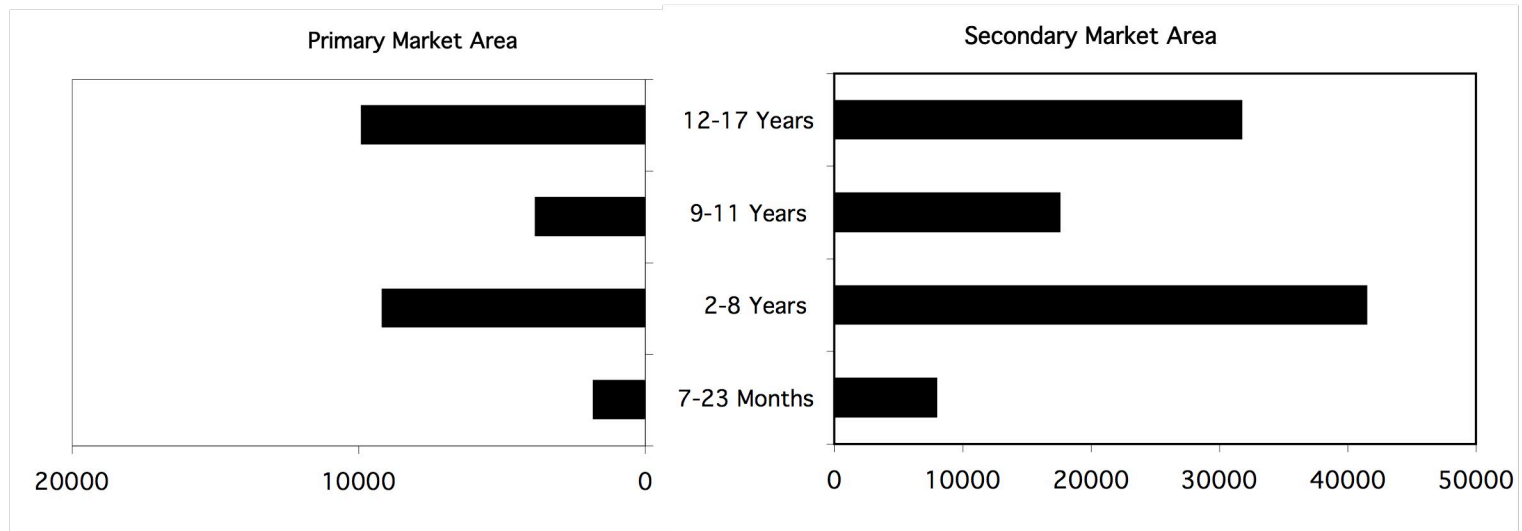
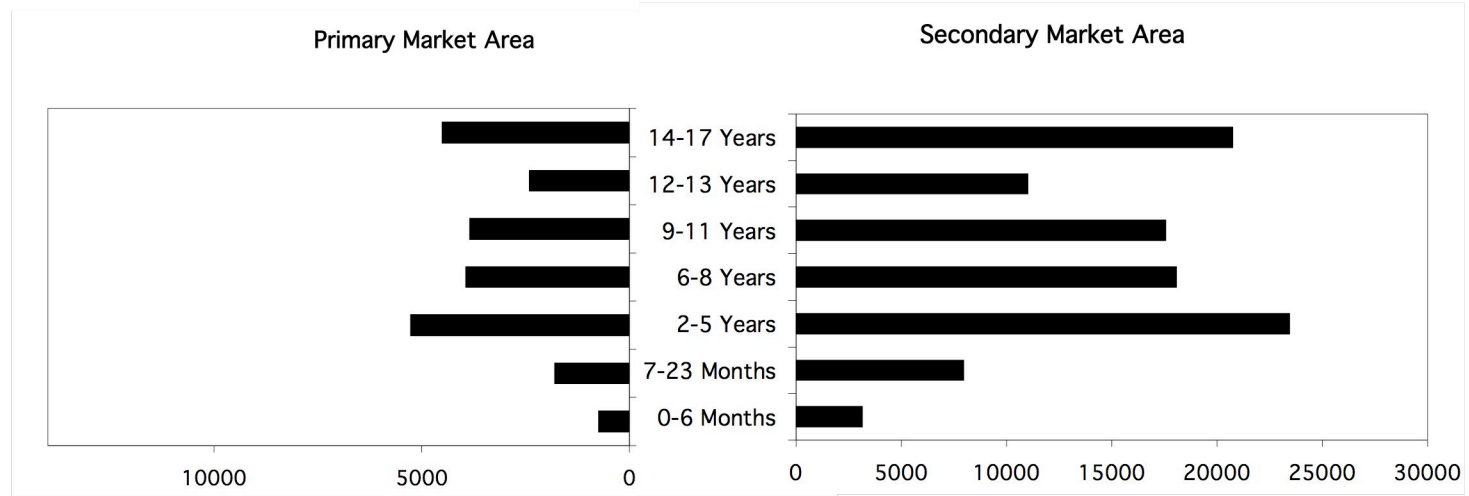
toddlers & 2's (strollers)

3 - 7/8 year-olds

8/9 - 11/12 year-olds (tweens)

teenagers

AGES OF PLAY - 2001 CHILDREN



Children read environments differently than adults

Adults see the environment as the background for events. They experience it vicariously; they enjoy its form, shapes, and aesthetics. They understand its socially acceptable use.

Children & the environment

Children look for the environment's affordances – opportunities the environment “*affords*” them to do things – how they can interact with it.

Children interpret the environment in terms of its possible interactive function rather than its form.

Children are biologically programmed to explore and interact with the environment as a part of their development.

How a child sees a rock

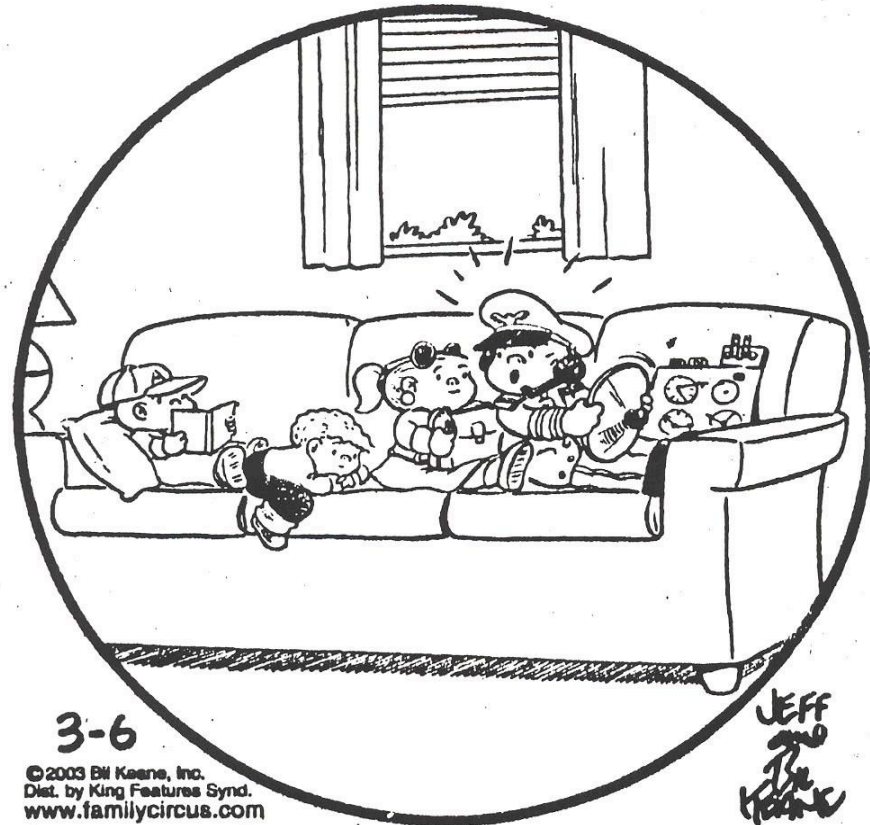


Small rock *affords*
grasping & throwing



Large rock *affords*
stepping on, looking
under or climbing on

Uses for
a couch



“Just a minute, Mommy! We’re on final approach!”

Also good for bouncing on, sprawling out on,
climbing on, jumping over and hiding behind

What does a long hall *afford* a child?



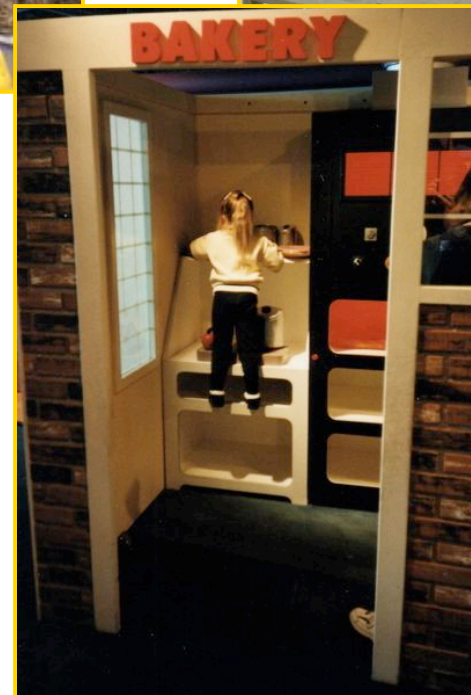
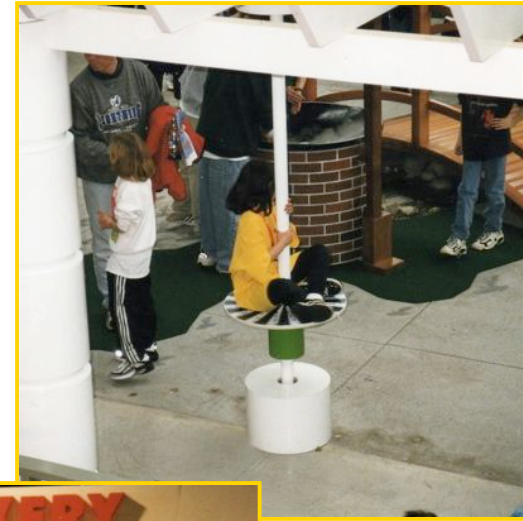
Child not misbehaving

Doing exactly what her brain is biologically wired to do, based upon the environment's affordances and her developmental age.

Fulfilling her developmental task - to explore and interact with the environment

When a child behaves in an environment in a way adults see as improper, most often it is the adults' fault for not designing the environment appropriately for the child

Adults' challenge is to design the environment to obtain the desired behavior--to plan the *affordances* by design





Myth #2

Young children have
short attention spans

Children's Boredom

- Mismatch between what children have ability to do and what they are expected or want to do
- If challenged beyond their ability, become anxious and claim boredom as a defense
- If not challenged enough, they're bored
- In both cases, bored child will find ways to be challenged by climbing, running or other activities that match their ability

Children need environments
with high degrees of:

- challenge
- diversity
- novelty
- complexity

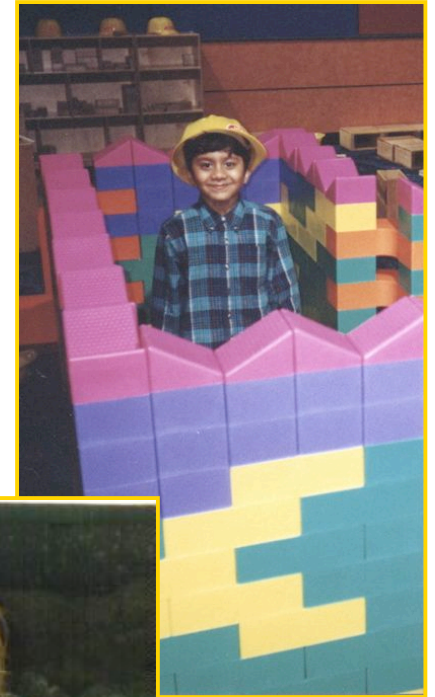
Children's developmental tasks and skill levels change as they age

Their physical, intellectual & social skills are constantly advancing

Environments must offer
graduated challenges

Children want to explore,
manipulate and transform
the environment, to have
control over it

Loose parts that children can manipulate, move and construct with are much more engaging than static equipment





Children's imaginations

Environment needs to:

- promote and support imaginative pretend play with props and loose parts
- be open-ended so children can use their imaginations to develop their own play scripts

Children are biologically wired for pretend play

Pretend play is nature's way of programming children with a pleasurable activity that teaches them about the world around them and how to become a part of society

One of the unique qualities of pretend play is that it has high repeat appeal

Children create their own play scripts

The scripts constantly change, so the play is different every time



Open-ended with loose parts and continually changing play scripts



Myth #3 Design highly themed environments for children

Highly themed, scripted and structured environments stifle children's creativity, short-circuit extended play and quickly lead to boredom



Myth #3 cont.

Eye candy doesn't equate to
play quality

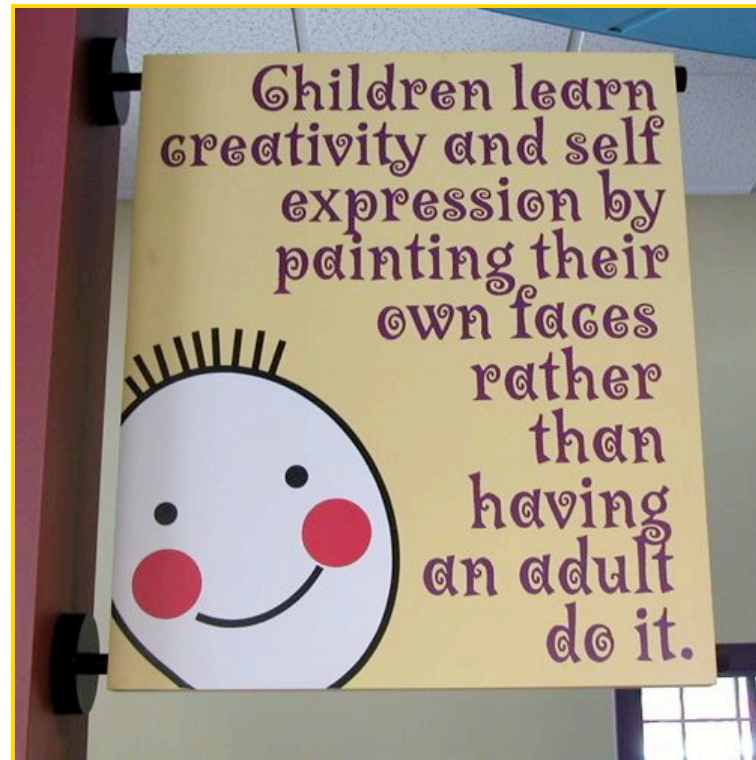
Children are more interested in the process of using the environment and loose parts than achieving an end result



Developmentally appropriate play

- Highly pleasurable
- Process-oriented, non-goal directed
- Child-initiated and self-initiated
- Activity of the mind, the imagination
- Free of imposed tasks or adult-imposed rules
- Hands-on, participatory
- Open-ended

Need to separate children
from their parents



Children love animals

Young children feel a natural kinship with and are drawn to animals, especially baby animals

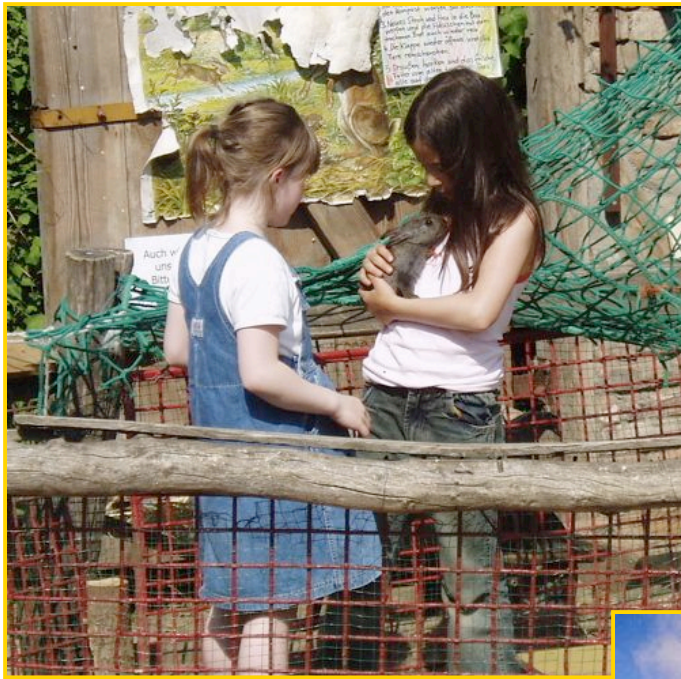
Children instinctively interact with animals

Children > 6 years – 80% of their dreams are about animals

90% of characters in preschool children's books are animals

Dominant appeal is to children 2 to 7 years-old





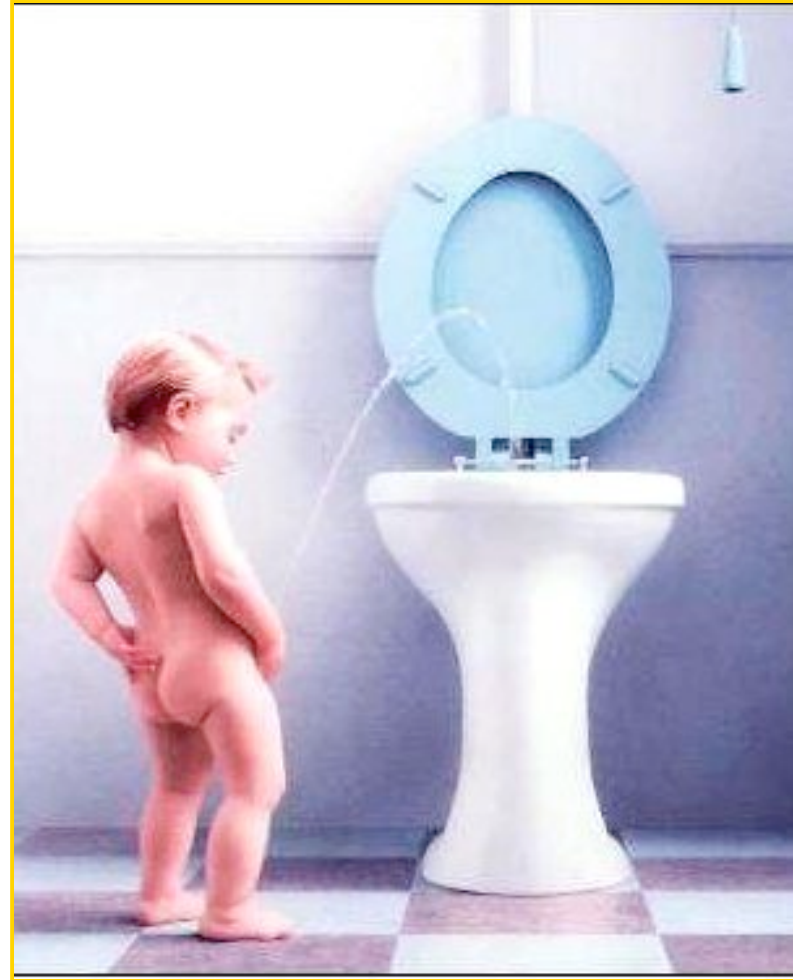
Children love things
smaller than
themselves &
larger than themselves



Anthropometrics
&
ergonomics
are very important

Warning

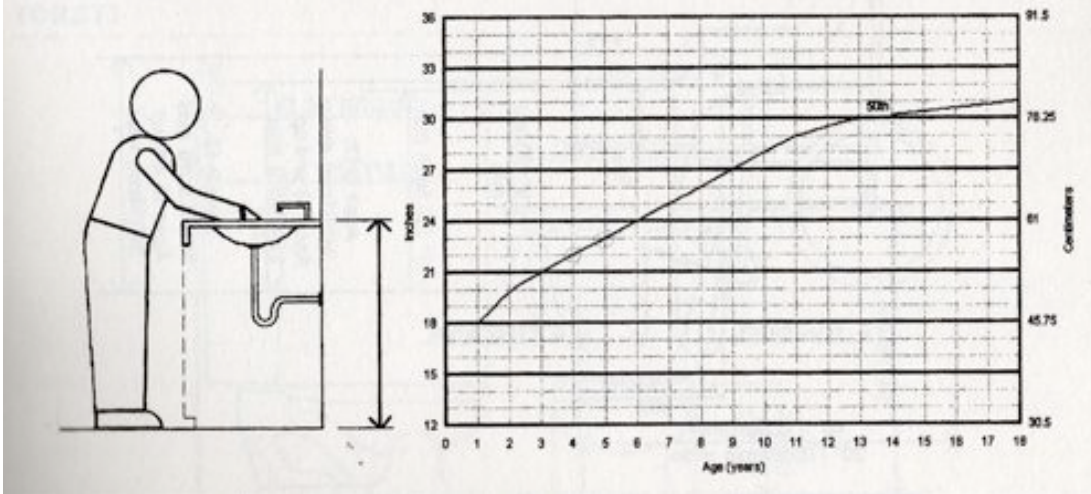
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Audience discretion advised.



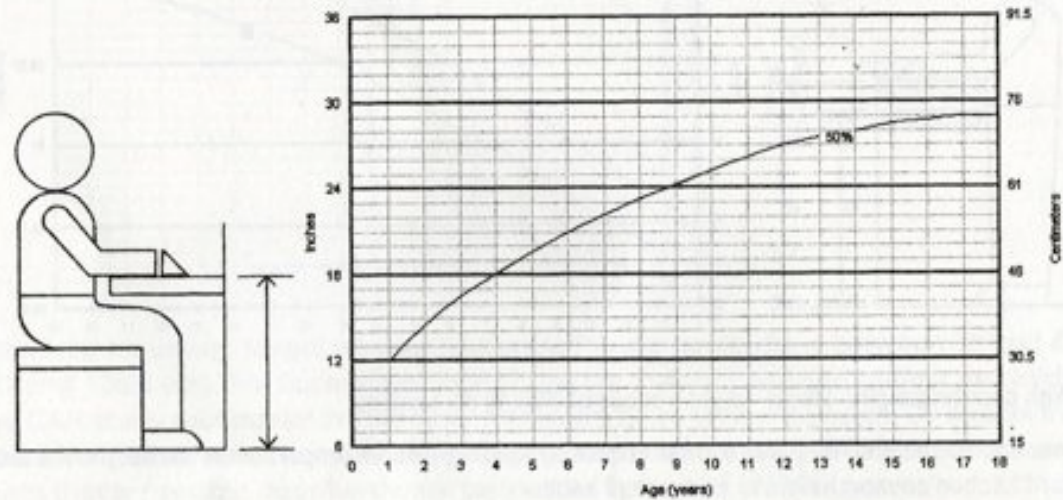
Anthropometric issues

- height
- reach
- grip
- eye level
- seating
- step height
- restrooms

SINK HEIGHT



Seated Worktop Height



4.5-year-olds' view



Inches make a difference



Wrong
dimensions
can be
dangerous



For young children, transitioning is a challenge

this

not

this



Environment needs to offer a
variety of options

Howard Gardner's 9 Multiple Intelligences

- ♦ **Linguistic**
Skill with language
- ♦ **Logical-Mathematical**
Skill in reasoning, mathematics or scientific investigation
- ♦ **Spatial**
Ability to create & think in images
- ♦ **Musical**
Sensitivity to sound, melody & rhythm
- ♦ **Bodily-Kinesthetic**
Skill in movement & coordination
- ♦ **Naturalist**
Ability to read & understand the natural environment
- ♦ **Interpersonal**
Ability to understand and work effectively with other people
- ♦ **Intrapersonal**
Deep self awareness
- ♦ **Existential**
Capturing and pondering the fundamental questions
Of existence

Variety must also address
differences between
girls & boys

Myth #4

Institutional size design with large entries, lobbies and public spaces and tall ceilings



Child-scaled environment

- Higher the quality and complexity of play
- More focused play
- Lengthens duration of play (delays boredom)



Different activity areas need to be well defined with child-identifiable boundaries



Undefined open areas are not successful



Proper adjacencies & zoning

- quiet
- active
- messy
- age



Children prefer the outdoors,
especially the natural
environment, to the indoors



Myth #5

Vegetation isn't important



Predictability and routine
are important to children

Balance between
sameness and changes

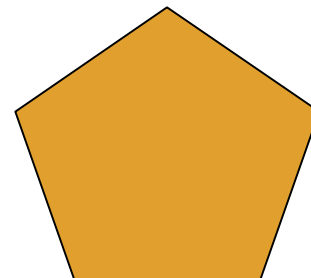
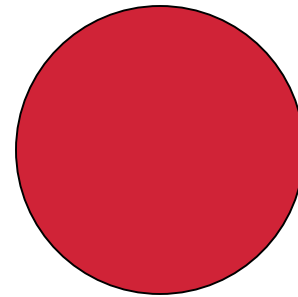
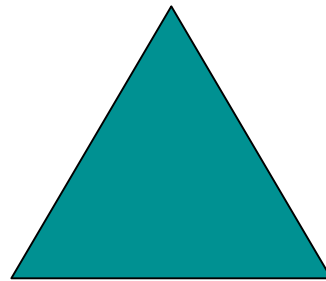
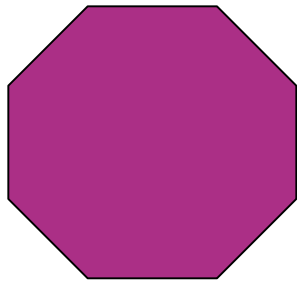
Differences-within-sameness

Myth #6

Children prefer
primary colors



Children prefer complex colors



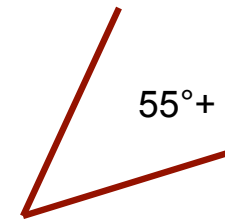
Safety

- Design environment to prevent unsafe behavior (watch for affordances)
- Design to minimize injury if incident occurs
- Avoid situations where child can't evaluate risk - head and finger entrapment, choking hazards
- To be interesting, environment must present risks, but ones child can evaluate
- Risk varies with age - age zoning
- Supervised vs. unsupervised areas

Head Entrapment (other than infants)

No openings between 3.5" and 9". Openings bounded by the ground are exempt.

Angles running horizontally that are created by adjacent components should be greater than 55 degrees.



Finger Entrapment

No openings between 5/16" and 1"

Choking Hazard

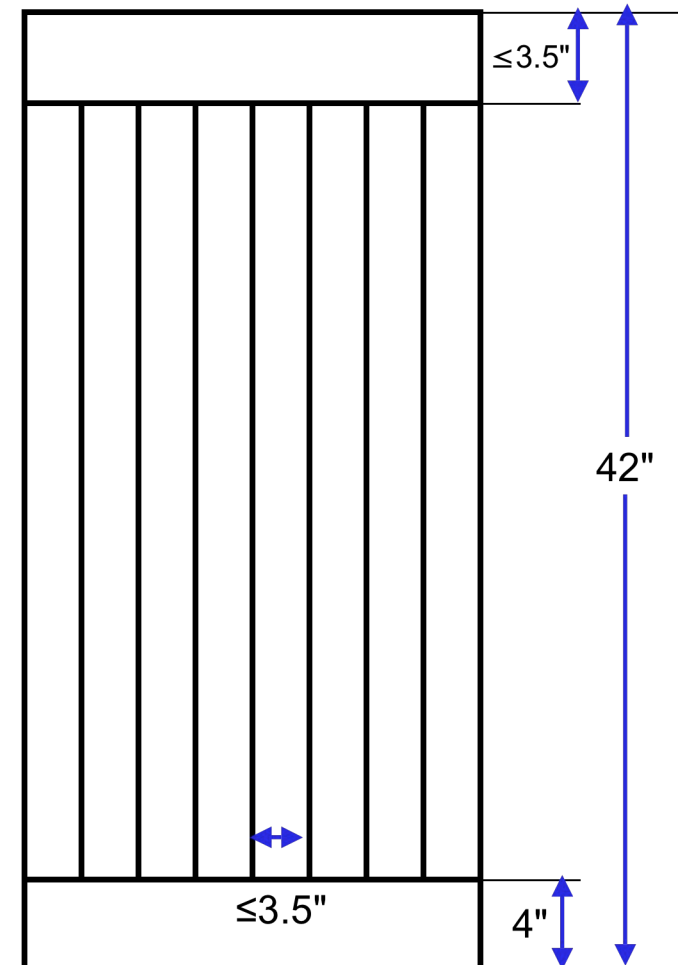
Use choking tube to measure
(toilet paper roll tube)

Guardrails

Each year 15,000 children ≤ 10 years are injured by falls or jumps from guardrails



Child Safe Guardrail



Safety/Design Standards

ASTM - *Standard Consumer Safety Performance Specification for Playground Equipment for Public Use*

CPSC - *Handbook for Public Playground Safety*
Model Law on Public Play Equipment and Areas

ADA - *Accessibility Guidelines for Play Areas*

Myth #7

Loud & noisy places are good as
they are stimulating and fun

Accessibility Universal design

"Universal design is an approach to design that honors human diversity. It addresses the right for everyone—from childhood into their oldest years—to use all spaces, products and information in an independent, inclusive, and equal way. It is a process that invites designers to go beyond compliance with access codes -- to create excellent, people centered design."

Elaine Ostroff, Founding Director,
Adaptive Environments (1999)

Americans with Disability Act (ADA)

Only a minimum standard

- Adult ADA doesn't work
- Optional children's ADA doesn't work for many able bodied children



Need to use three or more
standards for environments
for both
adults and children

Children's reach ranges per ADA

FORWARD OR SIDE REACH	AGES 3 AND 4	AGES 5 – 8	AGES 9 – 12
High (maximum)	36 inches	40 inches	44 inches
Low (minimum)	20 inches	18 inches	16 inches

Family households with children

In 2003 - 25 million US families

60% with children >12 yrs.

39% with children 6–11 yrs.

37% with children >6 yrs.

33% with children >5 yrs.

Let's not forget the parents



Mom's should be your primary target market



Women control

- 83% of all product purchases
- 92% of family vacation decisions
- Probably 90%± of family decisions to visit your leisure venue

Gen-X and Gen-Y parents have a different attitude about their children's leisure than Baby Boomer parents:

Boomer parents tended to separate their children's playtime and learning time

Gen-X and Gen-Y parents want their children to learn as they play (now 2/3s+ of all preschool parents)

Today's Gen-X and Gen-Y families make decisions differently than Baby Boomers

Baby Boomers

parent decision + child nag factor

Gen-X & Gen-Y

collaborative decisions

Things parents (moms) want

- Clean
- Secure & safe
- Family friendly seating
- Good visibility for monitoring
- Room for strollers & kid paraphernalia
- Zoning for young children
- Family-friendly restrooms
- Dedicated diaper changing table with sink
- Shade
- Fun & educational for children

Family-friendly restrooms



- child size & height sinks
- children's toilet
- clean & bright
- room for strollers
- family restroom
- potty parity

Dedicated diaper changing

Permanent counter
with space for:

- changing
- paraphernalia
- hand wash sink

Not this



Universal
design
urinal



Stay-at-home moms

- 30% of all married-couples with children >15 years
- 35% of all married-couples with children >6 years
- In many suburban areas, 45%+ of all married-couples with children >6 years

Today's stay-at-home mom

- No Harriet



- 2/3's preschool moms are Generation Y
- May have already succeeded at a career
- Helicopter mom
- High expectations
- Uses internet to research family destinations

Children's food

- Control - choices, ergonomics
- Separate children's menu, not dumbed down menu
- Language of children - pictures
- Sophisticated tastes
- Bold flavors
- Colorful - eye candy
- Not talk down to them or defer to their parents
- Things adults dislike







this

High chairs

not this



Booster seat



Infant cradle



Thank you

Randy White, CEO



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