PATTERN LANGUAGE

CAROLINE VERBOOG

TUDelft

Author
Caroline Verboog
4594126
I

INTRODUCTION

Christopher Alexander's pattern language revolutionised the understanding and design of the built environment. Alexander's pattern language is a collection of design solutions, adress a variety of problems or needs within the context of architecture and planning. These patterns are no strict rules, but rather guidelines that can be adapted and combined to suit various situations.

The pattern language encompasses a wide range of scales aiming to foster a sense of place and enhance the human experience. The key aspect of his pattern language, is its emphasis on human needs and desires. The patterns are derived from careful observation and analysis of how people interact with their surrounding. By adressesing fundamental human needs, the pattern language creates environments that are not only aesthetically pleasing but also functional and supportive of well-being.
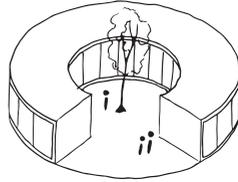
PATTERN SCALES
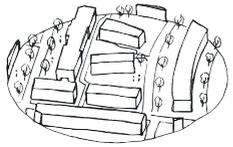
URBAN SCALE

01. Keep distance

15. Kiss and bye

20. Open at all times

21. The heart
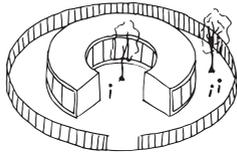
SURROUNDING SCALE

04. Fresh air

05. Sharing is caring

06. Match flooring to play

07. Drop and pick me up here

12. A place for noise

14. Arrival

16. Back to the roots

17. I'll pick a flower for you

18. Made of sugar

19. Shelter in the shade

27. Draw the line

33. Take the leap

BUILDING SCALE

08. Wide stairs

24. Room for extra

25. Read a book

26. Wide hallway

29. Mixed-age community
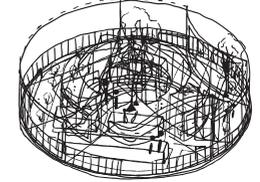
31. Spaces for all

32. Take a deep breath
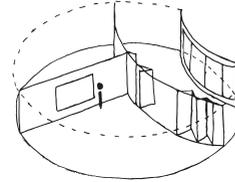
CLASSROOM SCALE

13. Clean your hands

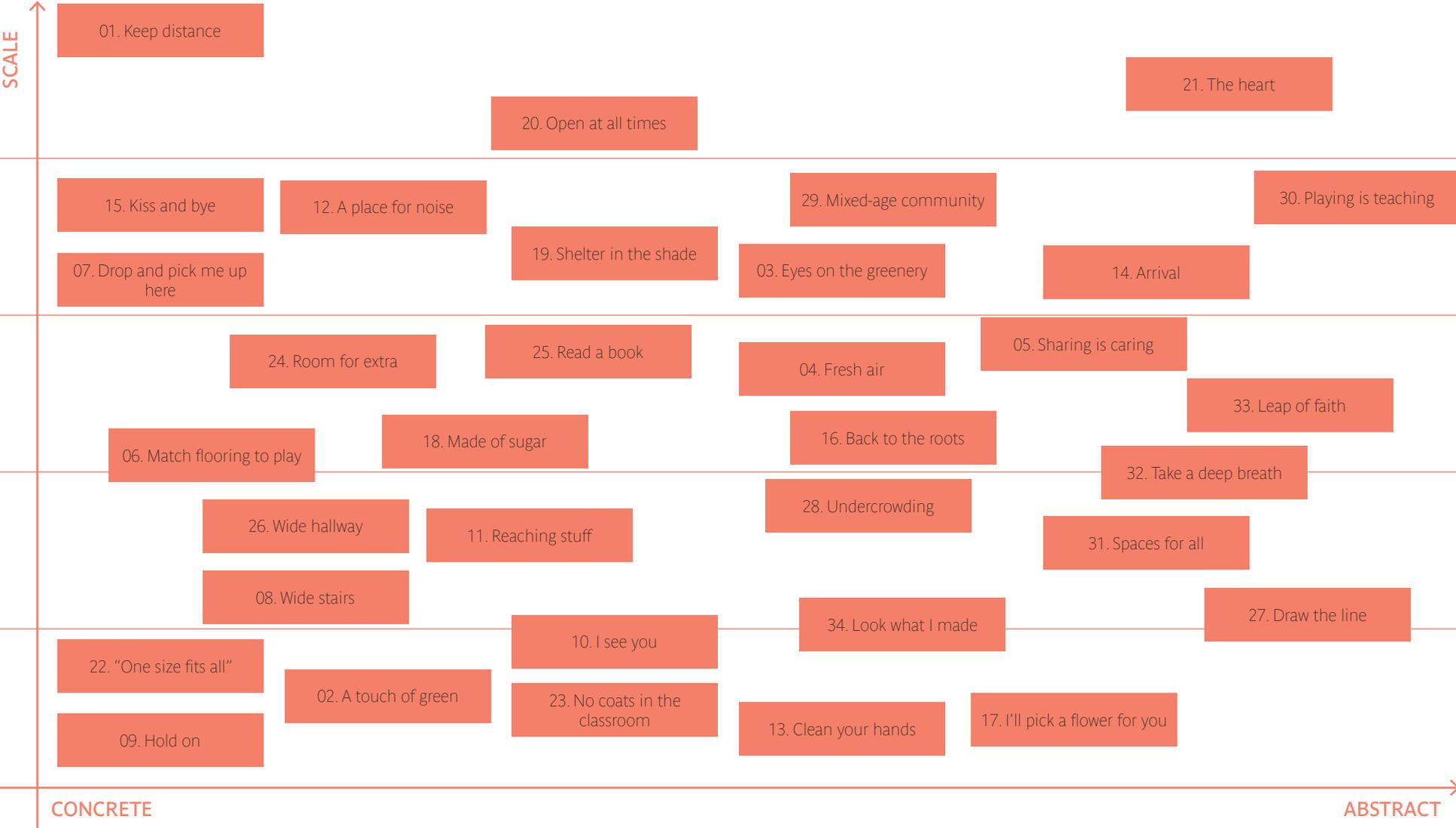23. No coats in the classroom

28. Undercrowding

OBJECT SCALE

02. A touch of green

09. Hold on

10. I see you

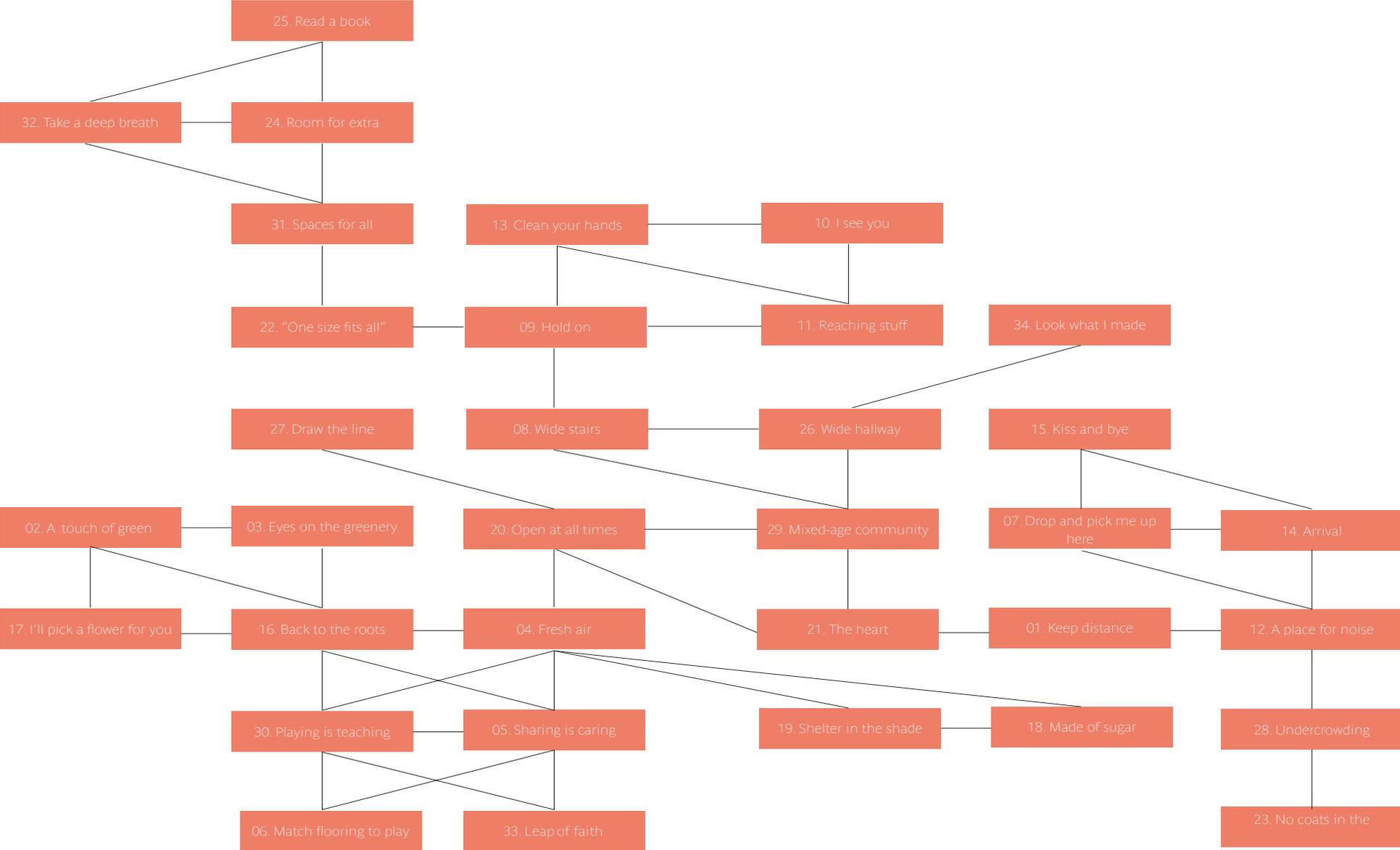11. Reaching stuff

22. "One size fits all"

34. Look what I made

ALL OVER SCALE

03. Eyes on the greenery

30. Playing is teaching

PATTERN FIELD

SCALE

CONCRETE —————————————————————————————————————→ ABSTRACT

01. Keep distance

21. The heart

20. Open at all times

15. Kiss and bye

12. A place for noise

29. Mixed-age community

30. Playing is teaching

19. Shelter in the shade

03. Eyes on the greenery

14. Arrival

07. Drop and pick me up here

24. Room for extra

25. Read a book

04. Fresh air

05. Sharing is caring

33. Leap of faith

06. Match flooring to play

18. Made of sugar

16. Back to the roots

32. Take a deep breath

28. Undercrowding

26. Wide hallway

11. Reaching stuff

31. Spaces for all

08. Wide stairs

34. Look what I made

27. Draw the line

10. I see you

22. "One size fits all"

02. A touch of green

23. No coats in the classroom

13. Clean your hands

17. I'll pick a flower for you

09. Hold on

PATTERN FIELD

25. Read a book

32. Take a deep breath

24. Room for extra

31. Spaces for all

13. Clean your hands

10. I see you

22. "One size fits all"

09. Hold on

11. Reaching stuff

34. Look what I made

27. Draw the line

08. Wide stairs

26. Wide hallway

15. Kiss and bye

02. A touch of green

03. Eyes on the greenery

20. Open at all times

29. Mixed-age community

07. Drop and pick me up here

14. Arrival

17. I'll pick a flower for you

16. Back to the roots

04. Fresh air

21. The heart

01. Keep distance

12. A place for noise

30. Playing is teaching

05. Sharing is caring

19. Shelter in the shade

18. Made of sugar

28. Undercrowding

06. Match flooring to play

33. Leap of faith

23. No coats in the

PATTERN THEMES

SENSE OF BELONGING

Belonging is the feeling of safety and support in an environment in which a sense of acceptance evolves which sets a strong foundation for a child's growth and development. . The sense of belonging results in a sense of belonging and identity as the individual feels included in a group of people.It enables the child to feel as if they belong to a certain community and social group, which is a basic human need that individuals must satisfy to maintain their identity and mental health.

Fostering a sense of belonging at school can create an environment where children thrive to learn. Children should be able to feel like they are part of the school on a physical and social level. When learning feels open and collaborative, children develop a feeling of safety and inclusiveness in an environment they can share ideas and thoughts with. As children feel a certain security and trust from surrounding people, they flourish with a greater motivation to succeed. Similarly, the physical environment should respond to children's needs and make them perceive the school as their's. When these physical and social needs are met, children develop a sense of belonging.

SOCIAL INTERACTION

In the process of development, children learn through interactions between people and their environment. Social interaction plays a crucial role in child growth as they learn best by observing and imitating the people around them. Children who have opportunities to interact with peers, older children and adults, develop better communication skills, conflict resolution skills and emotional intelligence. Interaction helps children to build social relationships which provide opportunities to develop friendships, empathy and emotions. This results in good school results as they feel comfortable interacting both in and out of the classroom environment.

COMMUNITY

Community is the feeling of fellowship with others, resulting from sharing common attitudes, interests, environments or goals. Children begin to understand wider society by developing within their smaller community, such as the class or school. They reflect on possible impacts of actions and shared values. A sense of community brings together their surroundings as well as the individuals in those surroundings.

DIDACTIC

Didactics is part of pedagogy and deals with the rules and art of teaching. It provides tools to motivate childre. Teaching is not solely passing on knowledge, but forming children that are capable of doing new things rather than repeating what previous generations have done. The role of education is not increasing the amount of knowledge, but to create conditions that allow children to invent and discover things.

INDEPENDENCE

Promoting the development of independence in children enables them to become active participants in their own learning as well as becoming confident members in their community. Allowing children to be independent by allowing them to do things on their own, informs them they are valued and enables them to grow up with a sense of self-belief. It fosters children to be confident and competent communicators, curious explorers and creative problem solvers.

SAFETY

It is important to keep children safe from an early age, especially in school environments where parents are concerned if their children are safe. Young children require the right amount of supervision and a safe environment as they are not completely able to recognise dangerous situations.

INDIVIDUALITY

All children are different and unique. Individuality and diversity is central in children's development and each child progress is individual and does not happen in all areas at the same time. It is crucial to give all children the opportunity to respond to their individual needs and diverse requirements. Flexible and varied environments allow children to flourish according to their own individuality.

CROWDING

The density of people and objects per room is crucial for the effect of crowding on children's development. It has an effect on interpersonal behaviours, mental health, motivation and cognitive development. Children may cope with overstimulating environments by withdrawal of behaviour and reduction of concentration. A high number of children or objects in an activity area results in more distractions and less constructive learning among children.

CREATIVTY

Creativity is defined as the journey through children use and develop their imagination and problem-solving abilities.

STRESS REDUCTION

Learning to cope with adversity is an important part of healthy child development. Children encounter three responses to stress: positive, tolerale and toxic. Positive stress is a normal and an essential part of healthy development. Tolerable stress activates the body's alert system and allow the brain and body to recover from the effects. Toxic stress however, can occur when children experience strong, frequent or prolonged adversity. This can disrupt the development of the child's brain that may results in physical and cognitive distress, even up till adulthood. A supportive environment can prevent or reverse the damaging effects of toxic stress response.

CONCENTRATION

Concentration is the ability of having single-minded attention on a topic or activity. Children should acquire the expertise to absorb information efficiently and do well in academic tasks. Concentration and focus are beneficial to children's results at school as it facilitates learning and memorisation. Children do not have the capability to concentrate well at a young age. Their attentionspan is quit short and they get easily distracted. The average attention period of a child between the ages of four to eight years old, is between 15 to 30 minutes. Children who have to ability to focus are more able to recall knowledge which directly results learning and growth.

NOISE

Ongoing and temporary exposure to noise has an impact on cognitive development of children, particularly affecting long-term memory during complex tasks. When faced to chronic noise, children adapt by disregarding or ignoring auditory stimuli. However, this coping strategy can lead to unintended implications, such as tuning out speech. This results in children's reading abilities to be affected, as well as their abilities for tasks that require speech perception. Children exposed to loud noise also experience physical discomfort, such as blood pressure and stress hormone elevations.

PHYSICAL HEALTH

Physical health is defined as the normal functioning of the body. It revolves around the overall well-being of children.

MATERIALS

Materials respond to the exploration of children through the five senses of touch, sight, smell, taste and hearing. Learning and acquiring knowledge occurs by stimulating senses with the entire body. Engagement of the five senses helps children to learn about their surrounding as well as enhancing their ability to learn or influencing their behaviour.

PLAY

Play is a fundamental and natural part of children's lives that plays a crucial role in their learning and development. Play is not solely a form of entertainment but a valuable educational tool that supports child's growth Play provides possibilities for children to explore, experiment and make sense of their surroundings. It enhances their creativity and problem-solving abilities, as well as critical thinking.

Play is not limited to structured activities or specific toys, but rather encompasses a wide range of types of play; imaginative play, pretend play, physical play, construction play, outdoor play, group play, individual play. Each type of play contributes to different aspects of child development, therefore a wide variation of play opportunities are important for all aspects of their learning and development; physical, social, emotional and imaginative.

Engaging in play helps children physical development as they work on their fine and gross motor skills while building confidence for more active play. Socially and emotionally, play promotes important skills such as listening, attention, conflict resolution and the ability to built relationships. Through peer interaction, children work on their literacy and language skills as they learn new words, interpret meaning and practice communication. Play also has a positive impact on stress levels by reducing cortisol levels as well as giving children a break from education.

PATTERNS

01 *Keep distance*

Schools are better for child health when positioned at a great distance from roads.

Related patterns

12. A place for noise
21. The heart

Theoretical back-up

Road pollution causes health risks within 300 meters from a motorway. Children's lungs are still developing and extra sensitive to pollution. Children attending schools near busy roads have more respiratory problems and are more likely to develop asthma. Air pollution has a negative effect on lung development in children (Overheid, 2023).

Practical implication

When chosing a new location for a school, keep in mind to keep a minimum distance of 300 meters from highways and 50 meters from inner-city roads.
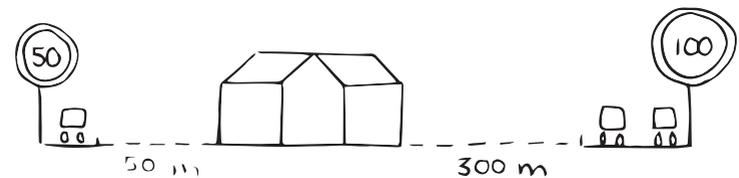
02 *A touch of green*

Plants in the classroom promote learning motivation.

Related patterns

03. Eyes on the greenery
16. Back to the roots
17. I'll pick a flower for you

Theoretical back-up

Plants use photosynthesis to absorb carbon dioxide and light energy through their pores. This helps to adverse CO_2 in the air by discharging oxygen, which improves brain productivity. Additionally, plants contribute to the psychological wellbeing and development of children. They can reduce anxiety, sickness and absenteeism.

Plants in classrooms raise awareness for the preciousness of nature when taking care of growing plants. It creates a sense of ownership for living beings (Teach Starter, n.d.)

Practical implication

Place plants with thick leaves in classrooms and common areas. These plants will not need a lot of care and are able to reduce CO_2 in the space.

Parkschool, Delft (May 22, 2023)

03 *Eyes on greenery*

A view on nature enhances children's concentration

Related patterns

02. A touch of green
16. Back to the roots

Theoretical back-up

As children concentrate on a task, they must actively resist various distractions, whether they originate from the surrounding environment or from thoughts inside their own mind. These distractions constantly compete for attention, leading to fatigue. Over time, this mental exertion leaves a child feeling mentally drained.

Kaplan's Attention Restoration Theory (ART) asserts individuals can enhance their concentration abilities by spending time in nature or simply observing natural scenes. Natural environments offer a multitude of captivating elements that can be effortlessly contemplated, leading to a state of "soft fascination" and improved attention (Li, 2016).

Practical implication

Arrange classroom layout and other extra educational spaces to offer views of the outside environment, such a windows overlooking green spaces with trees and other vegetation.
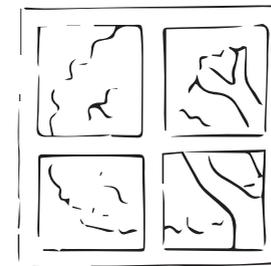
04 *Fresh air*

Outdoor playing boosts classroom concentration.

Related patterns

05. Sharing is caring   30. Playing is teaching
16. Back to the roots
18. Made of sugar
19. Shelter in the shade
20. Open at all times

Theoretical back-up

Creating an environment where children experience unstructured play, supports children's physical health, as well as increasing their chances to succeed in the classroom. Children pay more attention to academic tasks when they are given frequent, brief opportunities for free play. While playing outside promotes curiosity, creativity and critical thinking, it also has a calming effect that helps with disciplinary issues and impulse control (Landscape structures, 2023)

Practical implication

All schools should have a designated outside area that is used as a playground for children to play on during recess.
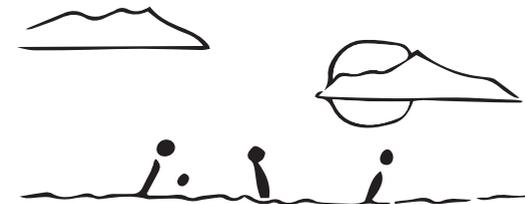
05 *Sharing is caring*

Outdoor playing enhances children's physical and mental health development.

Related patterns

04. Fresh air
06. Match flooring to play
16. Back to the roots
30. Playing is teaching
33. Leap of faith

Theoretical back-up

Children need various types of play in order to support and facilitate meaningful learning opportunities as they develop language, motor, social and cognitive abilities.

Cognitive:
Play stimulates the brain connections between nerve cells helping children develop both gross motor skills, such as walking, running and jumping, as well as fine motor skills like writing and manipulating small tools.

Social and emotional:
Playground interactions with other children and playground equipment teach children to be patient, cope with frustration, share with others and to retrieve empathy.

Physical:
Movement play stimulates fitness while also increase muscle strength, agility, balance and motor skills.

Practical implication

A well designed, sensory-rich playground, supports children's development across multiple domains. To allow this multidisciplinary development, there should be enough space and, appropriate and varied playing equipment to allow all seven types of play to take place.

06 *Match flooring to play*

Different types of ground materials on the playground allow different types of play.

Related patterns

05. Sharing is caring
30. Playing is teaching
33. Leap of faith

Theoretical back-up

Different materials can be used to support play. Safe and soft flooring enables children to safely play in, for example, climbing frames and slides. They are installed as shock-absorbing surfaces and prevent children from serious injuries. Hard surfaces, such as tarmac and paving stones, create opportunities for ball games, push and pull rollertoys, and crayon art. Grass and other similar soft materials facilitate plays such as ball games, resting and running. Lastly, nature grounds, are a place for interaction with nature.

Practical implication

Ensure a playground consists of different types of ground materials to allow different types of play. Have a range various areas constisting of soft to hard materials, as well urban to natural surfaces.

Parkschool, Delft (May 22, 2023)
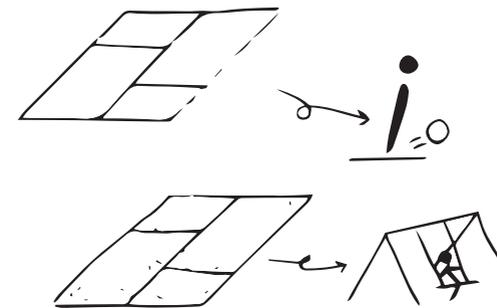
07 *Drop and pick me up here*

Children are able to be dropped and picked up by their parents in a safe manner.

Related patterns

12. A place for noise
14. Arrival
15. Kiss and bye

Theoretical back-up

A school day begins and ends at the same time for all classes. During those moments chaos arises at the entrance of school and crowding takes over.

During this period, children are running all over the place and it is difficult to keep overview of the safety of children.

Practical implication

Be certain to have a square in front of school which is unaccessible for cars and has clear boundaries. Keep this area as empty as possible to be able to keep overview.
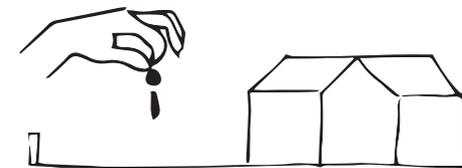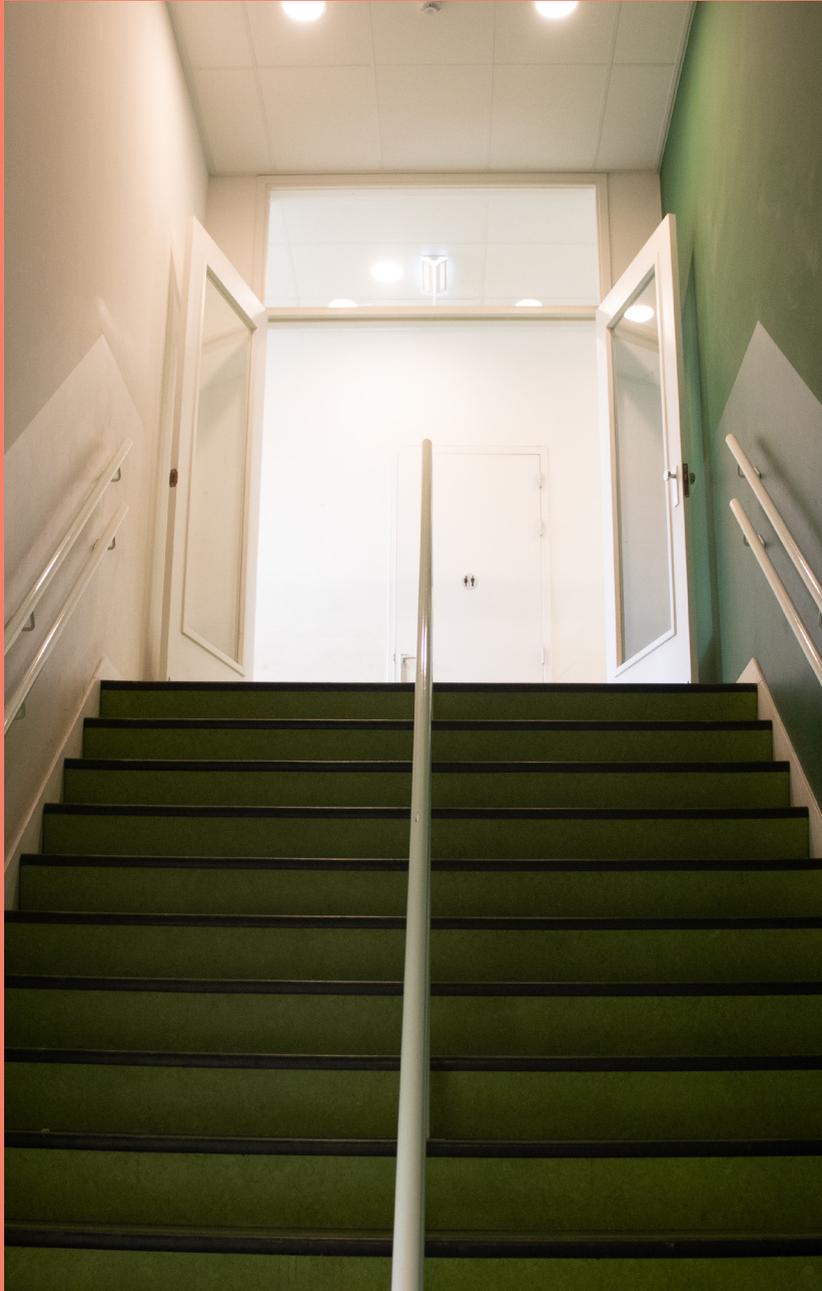
08   *Wide stairs*

WIde stairs allow easy accessibility and interaction.

Related patterns

09. Hold on
26. Wide hallways
29. Mixed-age community

Theoretical back-up

Children move from and towards classrooms in pairs while holding hands. Stairs should enable classes to stay in line, while keeping pairs side by side. Having wide staircases enables a class to go down, as well as a class to go up at the same time.

Spaces outside of classrooms are also places of interaction with children and teachers. By creating wide staircases, children can meet and make conversation, as well as having enough space to play in on the stairs.

Practical implication

In order to keep staircases from causing mayhem, a school should have staircases from at least 2 x 1.20 meters with a railing in the middle to ensure children can safely walk up and down the stairs.
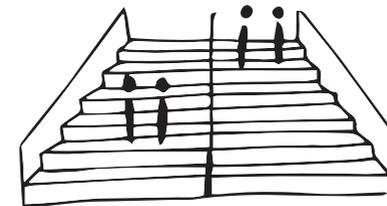
09 *Hold on*

Stairs must have railings on child- and adult height.

Related patterns

08. Wide stairs
11. Reaching stuff
13. Clean your hands
22. "one size fits all"

Theoretical back-up

Children want to feel independend and feel like it is also their world. Furniture should be at their own height in order to fulfill tasks without help of adults.

Practical implication

Make sure stairs have railings which can be reached by adults, as well as children.

10 *I see you*

Doors should have window from top to bottom.

Related patterns

11. Reaching stuff
13. Clean your hands
26. Wide hallways

Theoretical back-up

Glass panels in doors at child height promotes transparency and inclusivity as well as communication between classrooms and common areas. It encourages an open and transparent atmosphere within the school, fostering a sense of community and social interaction.

Practical implication

Install doors with windows from top to bottom.
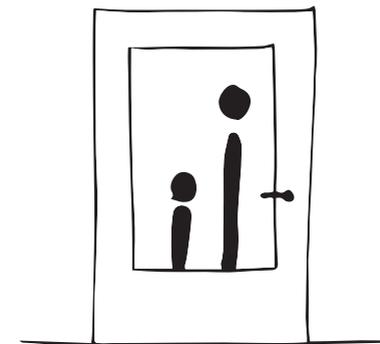
11 *Reaching stuff*

Cupboards should be at child height.

Related patterns

09. Hold on
10. I see you
13. Clean your hands

Theoretical back-up

Placing cupboards at appropriate heights for children, ensure they can acces material easily and safely without the help of an adult. It allows children to retrieve and store materials or personal belongings without the need for assistance or climbing on furniture. It promotes independence, self-sufficiency and a sense of ownership over their belongings.

Practical implication

Cupboards should not exceed a height unreachable for children.
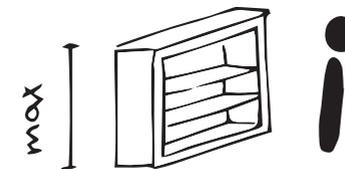
12   *A place for noise*

Children can maintain higher levels of concentration when they are not exposed to noise from playgrounds.

Related patterns

01. Keep distance
07. Drop and pick me up here
14. Arrival
15. Kiss and bye

Theoretical back-up

Playgrounds can generate a significant amount of noise which can be disruptive to learning environments in nearby classrooms. The noise levels can interfere with concentration and make it difficult for children to understand the teacher or fellow pupils.

Practical implication

Try to optimise the floor plans to avoid placing classrooms next to the playground.

13 *Clean your hands*

All classroom should have a sink at child height.

Related patterns

09. Hold on
10. I see you
11. Reaching stuff

Theoretical back-up

Sinks at child height promotes children to develop self-help skills and independence. As children can easily reach the sink, turn on water, wash their hands or fill their water bottle, they can manage personal hygiene and care without relying on adult assistance. It also enables children to engage in practical tasks independently, such as cleaning materials or filling up water bottles. Sinks at child height supports age-appropriate learning experiences that are tailored to the physical abilities of young children.

Practical implication

Provide sinks at child height in classrooms. Children can access them easily during classes without the neccessity of leaving the classroom. This enables them to fill up their water bottles or respond to personal hygiene needs, such as blowing their nose, without disruption.

Parkschool, Delft (May 22, 2023)

14 *Arrival*

The school's entrance is a make-it or break-it element for children's arrival.

Related patterns

07. Drop and pick me up here
12. A place for noise
15. Kiss and bye

Theoretical back-up

The entrance of a building is the first point of interaction for children entering a school as it sets the initial impression and atmosphere for the learning environment. It plays a crucial role in fostering a sense of belonging if the entrance communicates the school's values, identity and creates a space where children feel connected to the school community.

A well-designed entrance helps children navigate the school environment effectively. Clear signs and visual cues facilitates smooth movement and reduces confusion. Children will feel more comfortable and confident as they move around the building, promoting independence and self-assurance (Day, 2007).

Practical implication

The school's entrance should be visual appealing and reflecting inclusivity and diversity. The entrance should be prominent and recognisable with a school logo for example. Providing the entrance with a glass facade enhances openness and security.
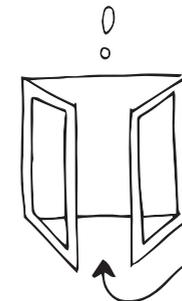
15 *Kiss and bye*

A school must have a kiss & ride to pick-up and drop-off children.

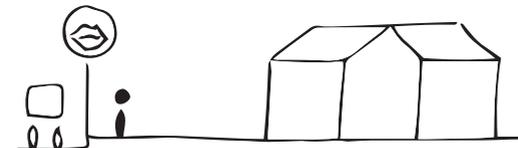### Related patterns

07. Drop and pick me up here
14. Arrival

Theoretical back-up

Not all children have to possibility to walk or cycle to school. Those children are often picked-up and dropped-off by parents by car. During peak hours, Kiss & Ride areas help to manage the flow of traffic around the school to minimize disruptions to neighbouring streets.

Practical implication

Provide a designated zone where parents or gardians can safely stop their cars to allow children to enter or exit the car without the need to cross a street.

16 *Back to the roots*

Children need access to nature during recess.

Related patterns

02. A touch of green
03. Eyes on the greenery
04. Fresh air
05. Sharing is caring
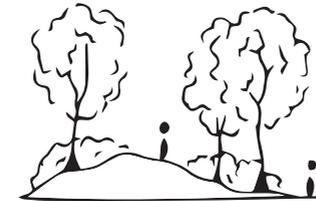17. I'll pick a flower for you
30. Playing is teaching

Theoretical back-up

Interacting with natural environments allows children to think, question and make hypotheses. They develop their inquisitive minds. Traditional play structures create a sense of monotony that decrease the urge to try unscripted play and creative thinking. Natural playgrounds encourages children to think outside the box, which builds their critical thinking and aptitude for abstract reasoning.

Practical implication

Create a nature centered area on the playground. Allow nature to grow as freely as possible within child safety limits. Provide a diverse range of elements such as trees, bushes, logs, water etc.

17 *I'll pick a flower for you*

Children love flowers.

Related patterns

02. A touch of green
16. Back to the roots

Theoretical back-up

Children are drawn to flowers due to their curiosity. Flowers are visually captivating with their vibrant colours, shapes and delicate appearance. As children are naturally attracted to bright colours, flowers capture their attention and stimulates their curiosity.

Practical implication

Plant flowers on the school ground. Children enjoy observing them and showing them to others.

18 *Made of sugar*

Covered playing areas enable children to play outside regardless of the weather.

Related patterns

04. Fresh air
19. Shelter in the shade

Theoretical back-up

Weather significantly impacts outdoor playtime. During light rain or drizzle, children wearing a coat are allowed to use the playground. However, drenching rain forces schools keep children inside during recess. A covered area allows children to utilize the playground during less favorable weather conditions. During heavy rain, children will have the opportunity to stay dry as they are getting some fresh air and releasing energy.

Practical implication

Provide a covered area on the playground that allows children to play outside during harsh weather conditions.

De Bergse Zonnebloem , Rotterdam (May 17, 2023)

19 *Shelter in the shade*

Children need shading on the playground.

Related patterns

04. Fresh air
18. Made of sugar

Theoretical back-up

The period between 10.00 and 16.00. tends to have the most intense sun exposure. There hours are often the preferred playtime for children, especially during school days. Safe amounts of sun exposure allows our bodies to metabolize vitamin D which keeps bones healthy and strong. However, excessive exposure can lead to sunburns and overheating, making playtime less enjoyable.

Practical implication

By incorporating trees and canopies into the playground, a more enjoyable environment can be created for children. It provides natural shade, offering relief from the sun's heat, allowing children to enjoy the playground comfortably.
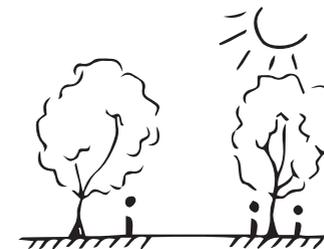
20 *Open at all times*

A public playground contributes to the neighbourhood.

Related patterns

04. Fresh air
21. The heart
27. Draw the line
29. Mixed-age community

Theoretical back-up

Community playgrounds are important shared outdoor spaces that bring members of a neighbourhood together, while providing a place for children and adults to be active and interact. Open school playgrounds are more than educational spaces; they can represent valuable, important meeting points for all age groups. It is a space that can host activities that contribute to the social fabric of the neighbourhood.

Practical implication

Keeping the school playground open after school hours extents it's use beyong school activities.

Consider choosing a playground design that does not include fences, or alternatively, ensure that any existing fences can be opened.
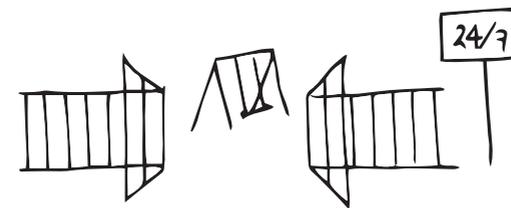
21 *The heart*

A school is the heart of the neighbourhood.

Related patterns

01. Keep distance
20. Open at all times
29. Mixed-age community

Theoretical back-up

Schools contribute to the social environment of a neighbourhood as children interact and build friendships, while adults form a social network through their children. Generations of families come together, creating a shared history and sense of continuity. Schools become the face of a community's identity, shaping the character and spirit of the neighbourhood.

Practical implication

Locate schools in a central area within a neighbourhood, ensuring convenient accessibility for all. Additionally, facilitate the school's ability to host activities beyond regular school hours, keeping the school active throughout the day.
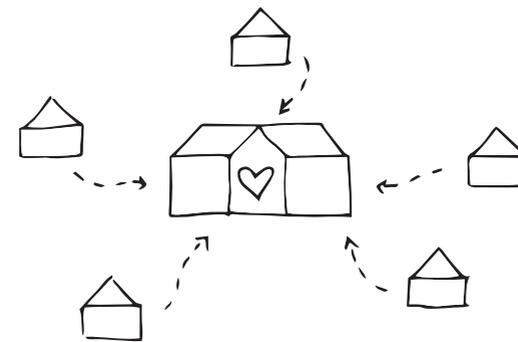
22 *"One size fits all"*

Comfortable furniture for children results in focussed children.

Related patterns

09. Hold on
31. Spaces for all

Theoretical back-up

Appropriately sized furniture promotes engagement and focus during class time. Comfortable children that are able to rest their feet on a flat surface and have their bodies properly positioned can direct their attention towards learning without unnecessary distractions. Adapted furniture also conveys a message of inclusivity and value of the individual child's need. It creates an environment where children are feeling acknowledge, fostering a positive attitude.

Practical implication

Provide children with appropriate furniture according to their height, age and preference. Some children might deviate from standardised furniture for them to be able to relax and focus.

23 *No coats in the classroom*

Children need accessible spaces for their coats and bags.
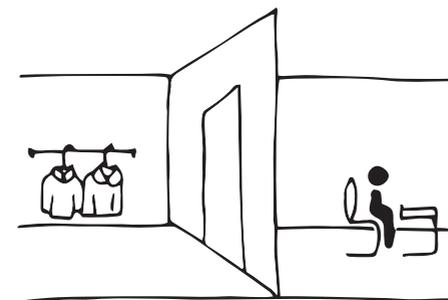
Related patterns

28. Undercrowding

Theoretical back-up

An organised classroom helps children focus on tasks and feel more in control of their learning. It enhances effective teaching and learning as it creates an environment that promotes focus, efficiency and engagement. The reduction of distractions and visual clutter allows children to concentrate on their tasks.

Furthermore, coat areas outside classrooms keeps spaces clean as dirt and drenched coats won't reach further than the hallway.

Practical implication

Each room needs a conveniently located designated space for children's coats and bags before entering the classroom. Use lice bags to avoid spreading lice infestation or create individual and assigned cabinets for all pupils. This keeps the school and its classrooms well organised.

24 *Room for extra*

Schools need additional rooms for additional functions.

Related patterns

25. Read a book
31. Spaces for all
32. Take a deep breath

Theoretical back-up

Elementary education is meant to be for all children. However, not all children retrieve information at the same speed or have equal capabilities. Some children need to receive individualized attention and support from staff.

Practical implication

Educational facilities should have the opportunity to dedicate spaces for child support services such as rooms for counseling and extra tutoring.

Vrije school Widar, Delft (May 17, 2023)
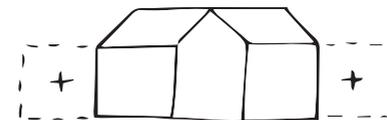
25 *Read a book*

A school should have a library.

Related patterns

24. Room for extra
32. Take a deep breath

Theoretical back-up

Children love reading. Reading allows children to immerse in the realm of imagination and escape from reality into stories. It ignites their fantasy and expands children's knowledge and understanding of the world. Through reading, children develop their language and communication skills and enhance their ability to express themselves.

Practical implication

Create a dedicated space specifically designed for books and reading. Ideally, this space would have the function of a library that offers children the opportunity to either borrow books or find a comfortable spot where they can enjoy reading their books at school.

26 *Wide hallway*

WIde hallways have multiple functions.

Related patterns

08. Wide stairs
29. Mixed-age community
34. Look what I made

Theoretical back-up

Children move from and towards classrooms in pairs while holding hands. Hallways should enable classes to stay in line, while keeping pairs side by side.

Spaces outside of classrooms are also places of interaction with children and teachers. By creating wide hallways children can meet and make conversation, as well as having enough space to play or study in hallways.

Practical implication

Hallways should become a place of interaction and individual study rather than a passage way.
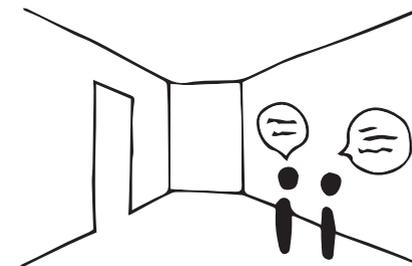
27   *Draw the line*

Children understand boundaries.

Related patterns

20. Open at all times

Theoretical back-up

Enclosed spaces have to be created to define an inside space that contrasts the surrounding area (Rieh, 2020).

These enclosed spaces do not need to be formed through well defined borders, such as fences, but can also be created by existing elements. An invisible line can be created between two objects, which children can interpret as a boundary.

Practical implication

Natural or artificial physical features can establish the function of a boundary, as long as an invisible boundary is well communicated to the children.
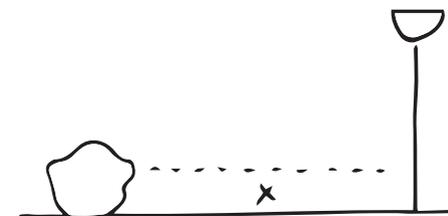
28   *Undercrowding*

Reducing class size increases children's achievement.
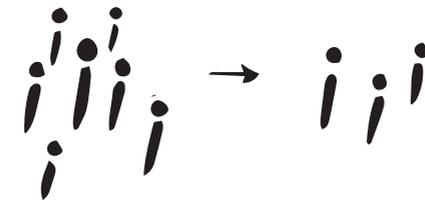
Related patterns

23. No coats in the classroom

Theoretical back-up

Smaller classes provide the opportunity for teachers to give more individualised attention, identifying and adressing the specific needs of every child.

Overcrowded classrooms can cause distractions and limit the experience with active materials and freedom to play.

Practical implication

Limit the amount of students to a maximum of 20 in a classroom.

Vrije school Widar, Delft (May 17, 2023)

29   *Mixed-age community*

Children learn from each other.

Related patterns

08. Wide stairs
20. Open at all times
21. The heart
26. Wide hallway

Theoretical back-up

Children learn through peer-to-peer interaction with other age groups. Younger children can receive help and lessons from older peers, giving them motivation to achieve the same level in education. At the same time, older children experience the benefit of reviewing what they have learned. By teaching younger children, they can discover gaps in their own knowledge which can be solved through student-teacher interaction.

Practical implication

Create opportunities for children to mingle with other age groups.

Vrije school Widar, Delft (May 17, 2023)

30 *Playing is teaching*

Children learn through play.

Related patterns

04. Fresh air
05. Sharing is caring
06. Match flooring to play
16. Back to the roots
33. Leap of faith

Theoretical back-up

Play allows children to explore, experiment and make sense of the world surrounding them. It fosters creativity, imagination and problem solving skills as children engage in open-ended activities. Play allows children to interact with peers, as well as learning to make decisions, think critically and develop their language skills through communication and story telling.

Play is what pulls together the logical and creative parts of the brain.

Practical implication

Give children the opportunity to express themselves through the element of play throughout the entire interior and exterior of the school.
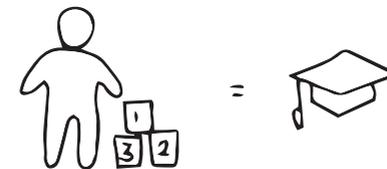
31 *Spaces for all*

Children have different requirements for learning environments.

Related patterns

22. "One size fits all"
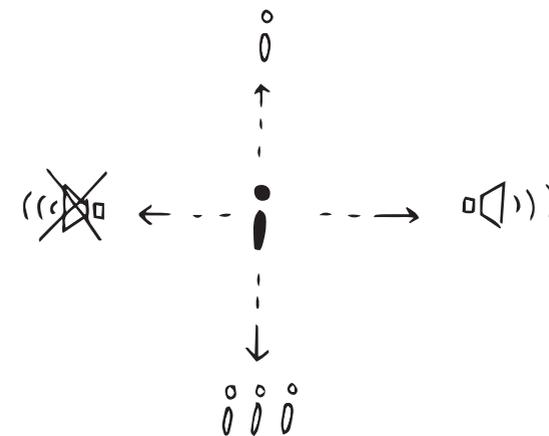24. Room for extra
32. Take a deep breath

Theoretical back-up

Flexible working spaces accommodate diverse learning styles and preferences, allowing children to engage in learning environments that best suit their needs. Some children might require quiet spaces which revolve around independant study to be able to concentrate, whereas other children thrive in collaborative, interactive environments.

Practical implication

Create flexible working spaces outside the classroom for children to work quietly and individually or actively in groups.

32 *Take a deep breath*

Children need spaces for relaxation where they can withdraw from the educational aspect of school.

Related patterns

24. Room for extra
25. Read a book
31. Spaces for all

Theoretical back-up

Schools need spaces for relaxation to support the holistic well-being of students. These spaces can help to reduce stress, anxiety and emotional fatigue. It allows children to take so time and distance from the educational function of a school to regain composure and recharge.

Short periods of relaxation or mindfulness activities can refresh children's minds, leading to improved attention and productivity as the return to their academic task.

Practical implication

Create spaces with comfortable seating, soothing visuals and sensory elements that promote relaxation and emotional well-being.
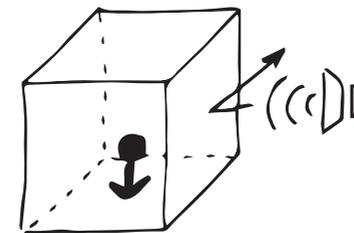
33   *Leap of faith*

Children need exposure to elements risk to learn to be careful.

Related patterns

05. Sharing is caring
06. Match flooring to play
30. Playing is teaching

Theoretical back-up

Allowing children to take risks in their play gives them the opportunity to develop judgement. Risk is a necessary part of learning to be safe and careful.

Risky play exposes children to situations they fear or motivation by the sense of exhilaration. It has an important role in the development of self-concept and confidence, mitigating the development of phobias and mediating factors which contribute to anxiety.

Practical implication

Instead of keeping children "as safe as possible", which may limit their development and ability to learn to keep themselves safe, children should be kept "as safe as necessary".

34 *Look what I made*

Children need exposition spaces for their work.

Related patterns

26. Wide hallway

Theoretical back-up

Displaying children's work strengthens their sense of pride and sense of belonging. It boosts children's self esteem while also making them feel that their work and effort is worth it. It contributes to a positive and inclusive learning environment that involves all children.

Practical implication

Allow walls to stay empty to display children's works in common spaces as well as in classrooms.