



TEACHER & FACILITATOR MANUAL

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ENDLESS POSSIBILITY

Nüdel Kart creates an instant, stimulating space to play with endless possibilities - anywhere, anytime. With infinite configurations, it has been designed to supercharge the brain, maximise learning and development and increase student and teacher wellbeing.

Nüdel Kart teaches what cannot be taught but needs to be experienced.

“

Can we do it every day?!”

- Child, 5 yrs, Coburg North Primary School



WORLD WIDE PRIORITIES

Nüdel Kart wasn't developed just for fun – Nüdel Kart was designed with some big goals in mind. We wanted all children, everywhere, to grow and gain.

Here's what we set out to do:

1. Increase the executive function of children through play.
2. Support the United Nations' 17 Sustainable Development Goals to address poverty, inequality and climate and environmental degradation, and promote peace and justice (UN, 2018).
3. Create flexible education opportunities designed to empower students through voice, agency and leadership.

Across the globe, government curricula focus on the social, emotional and physical development of children.

Nüdel Kart supports educational approaches that aim to develop skills increasingly in demand in our rapidly changing world in disciplines such as science, technology, engineering, the arts and mathematics (STeAM).



The Australian Curriculum is designed to help all young Australians to become successful learners, confident and creative individuals, and active and informed citizens.'

– (ACARA, 2010)

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WHY PLAY WITH NÜDEL KART?



01. WHAT IS NÜDEL KART? WHO IS IT FOR?

Nüdel Kart is a mobile playground, a kart that comes apart into many different pieces, and is filled with loose parts that children can manipulate, build and play with. Nüdel Kart can be used in many settings, indoors and outdoors. It works across age groups from 3 yrs to 12 yrs and beyond, is not gender or culture specific and is highly supportive to people of all abilities.



I found that the Nüdel Kart doesn't compare to anything we've seen before."

– Teacher, Coolaroo South PS Kindergarten

Nüdel Kart:

- / Focuses on loose parts, not fixed equipment
- / Is mainly made from natural materials
- / Can be expanded with additional Nüdel parts and local materials
- / Is child-led, not activity based
- / Is interactive
- / Is designed fundamentally to encourage the highest forms of learning: imaginative, creative, problem-solving, and social play
- / Can go anywhere, into any place, including refugee camps
- / Doesn't require infrastructure or power
- / Is long-lasting and made from the most durable materials
- / Is small enough to store indoors, so it can be protected from harsh weather, theft and misuse
- / Children are able to set up and pack up the cart on their own.

02. WHY DID WE DEVELOP NÜDEL KART?

Our vision is for a world in which children get the stimulation their brains and bodies need, to learn the critical skills required not just to survive, but to thrive, especially those living in disaster, conflict-affected and disadvantaged environments.

Having said this, Nüdel Kart was not designed for children labelled as 'poor'. In the most affluent parts of the world there are deficits. Because of standardised testing, parental pressure, over-scheduling and many other factors, even the world's most affluent children are lacking time in a hands-on environment to experience and learn about how the world works, how to socialise, solve problems and innovate.



Nüdel Kart was developed to answer a very difficult question:

How can we provide quality play experiences for all children, worldwide?

Building on over ten years of global experience creating stimulating spaces for child development, non-profit organisation Playground Ideas developed Nüdel Kart in collaboration with a global team of industrial designers. The aim to fulfill both the critical developmental needs of children in early life and to solve some of the many hurdles educators and carers face in responding to those needs.

Children across the globe live in hugely different places and situations, but their developmental needs are remarkably similar. Children have powerful internal tools to drive their own development, which is often unrecognised.

Nüdel Kart has been designed, prototyped and trialed in some of the most divergent contexts for children on earth, from crowded refugee camps to privileged western schools. Nüdel Kart has proven to do what it was designed for: an intuitive, easy to use tool for free play and developmental learning. Nüdel Kart makes it easy for teachers to create an environment for children to learn skills that need to be experienced in the real world and that can't be taught from a textbook.

03. LET THEM PLAY: ALL CHILDREN NEED PLAY TO LEARN

Children must play to thrive

Children have an unstoppable urge to explore, experiment, imagine and play. Play is fundamental to the healthy development and wellbeing of individuals and communities. It helps children to learn about the world around them and their place in it. When they are in a 'play space', they are engaged, curious and experimental. Play helps children to process what's happening in their world. (Lester, S. and Russell, W., 2010)

Play comes naturally

Play is a process that is freely chosen, personally directed and intrinsically motivated. Children don't need to be taught to pick up a stick and make it a magic wand or a walking stick or anything else (Real Play Coalition, 2018).

Unlocking potential

When playing, children can be anyone or anything. They are problem solvers and problem posers. Play unlocks the imagination, stimulates and quenches curiosity and reveals talents. For those who have experienced trauma, they can relax, be safe and have fun while developing crucial life skills for the 21st century (World Economic Forum, 2018).



You can make whatever you want. You can go deep, deep into your imagination.”

– Child, 8 yrs, Moonee Ponds West Primary School

What's with the 'loose parts'?

Loose parts are simply stimulating materials that children can use to learn how the world works. Unlike 'normal' playgrounds or most toys, loose parts are open-ended and reusable in an infinite number of ways. It is precisely because of their open-endedness that loose parts engage the highest forms of thinking and interaction such as creativity, problem solving, social skills and emotional intelligence (Leichter-Saxby, M., & Law, S., 2015). Nüdel Kart has taken the concepts and principles of loose parts and refined them to create a powerful combination of elements proven to work together to maximise an endless array of activities.

04. NÜDELLING AROUND: HOW NÜDEL KART SUPPORTS A RANGE OF PLAY TYPES



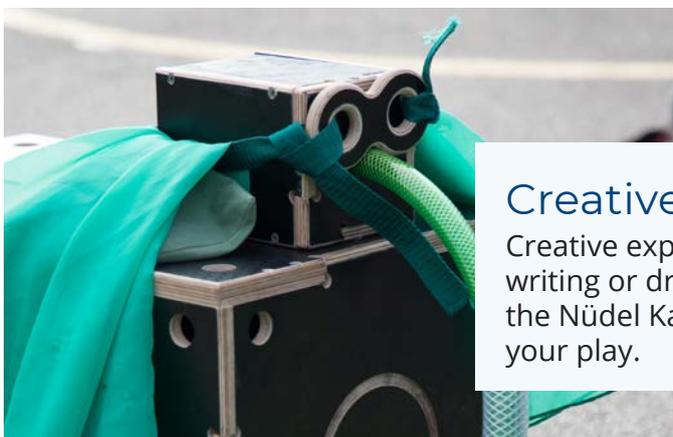
Active Play:

Moving and being active in your body. Twirl a scarf, jump off a box, dance and roll and slide.



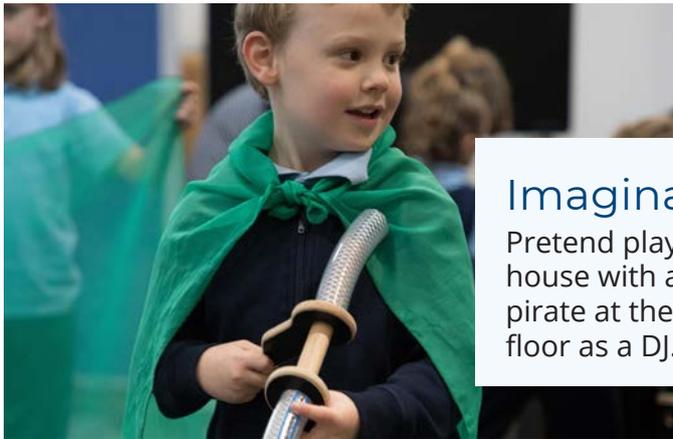
Sensory Play:

Exploring smell, sight, sound, touch and feel. Feel the smooth wood surface, create sound using the tubes as trumpets, notice the angles and colours around you.



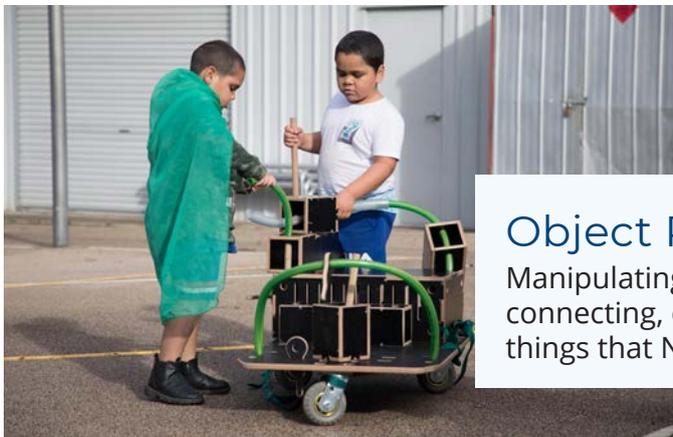
Creative Play:

Creative expression such as singing, dancing, writing or drawing. Make a sculpture from the Nüdel Kart pieces, write and draw about your play.



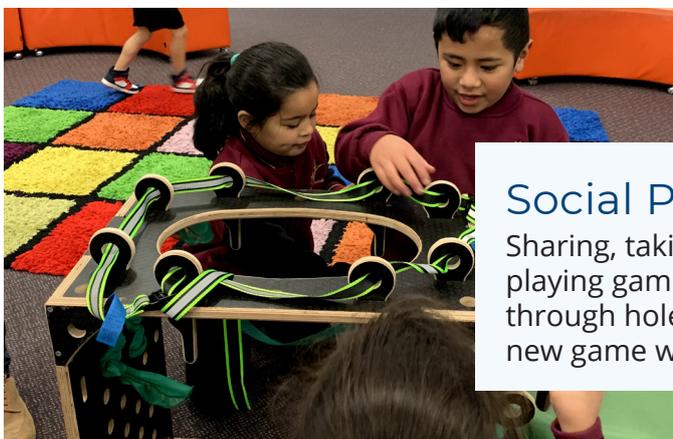
Imaginative Play:

Pretend play and make-believe. Create a house with a kitchen and bedroom, be a pirate at the helm of a ship, rock the dance floor as a DJ.



Object Play:

Manipulating objects by building, stacking, connecting, combining elements – all the things that Nüdel Kart does best!



Social Play:

Sharing, taking turns, talking to each other, playing games with rules. Toss bean bags through holes, add a scoreboard, create a new game with rules and teach it to a friend.

There are lots of other ways to play, too.
Researchers currently refer to 16 different “types” of play (Hughes, B., 2002).

05. DEVELOPING YOUR NÜDEL: PLAY AND COGNITIVE DEVELOPMENT

Everything a child experiences shapes their development - how their brains connect and grow, how they respond to others and how they master physical tasks. Child development is a complex process involving physical, social-emotional and cognitive development.

Children play in remarkably similar ways across the world. This tells us that play is developmentally crucial, a deep evolutionary drive that allows humans to adapt, learn and be in a complex, social system (Whitebread, D. Et al., 2017). Put simply play is learning.



Play in the early years of life has a profound and lasting influence on a child's health, wellbeing, and long-term development. Studies have shown early play experiences to shape a child's physical growth, capacity for learning, chances of finishing school, future employability, and even income."

- The Case for Play, Playground Ideas, 2015, p.7

The amount of unstructured (real) play that children are now engaging in has decreased over time and is having an impact on child development and their future potential. For example, the ability to engage with others and believe in themselves, to communicate, focus, imagine, cooperate, negotiate and to develop their own identity and self-belief (Grey, 2013). All of these skills are developed through play.

Importantly, play is recognised as a 'universal' right by the United Nations Convention on the Rights of the Child (CRC). Article 31 of the CRC states that all children have the right to, 'rest, leisure, play, recreational activities, cultural life and the Arts'. (CRC, 2013)

From its inception, Nüdel Kart was designed to support all of the above.

06. WHAT ARE THE BENEFITS OF NÜDEL KART?

Nüdel Kart has been tried and tested in some of the widest variety of children's situations on earth. It works for multi-ability, multicultural and multi-age groups. It is non-gendered and non-themed.

Nüdel Kart itself and the research-backed stimulating materials within it, combine to:

- / Strongly encourage child agency and intrinsic learning motivation.
- / Supercharge the brain and evoke higher order thinking skills.
- / Support critical life skills such as problem solving, resilience and socialisation.
- / Support psychosocial development.
- / Create close and caring relationships between parents, carers/educators and the child.
- / Give children confidence and success in their own abilities creating a strong sense of wellbeing.

When these objectives are unlocked, children are free to take dramatic leaps in development.



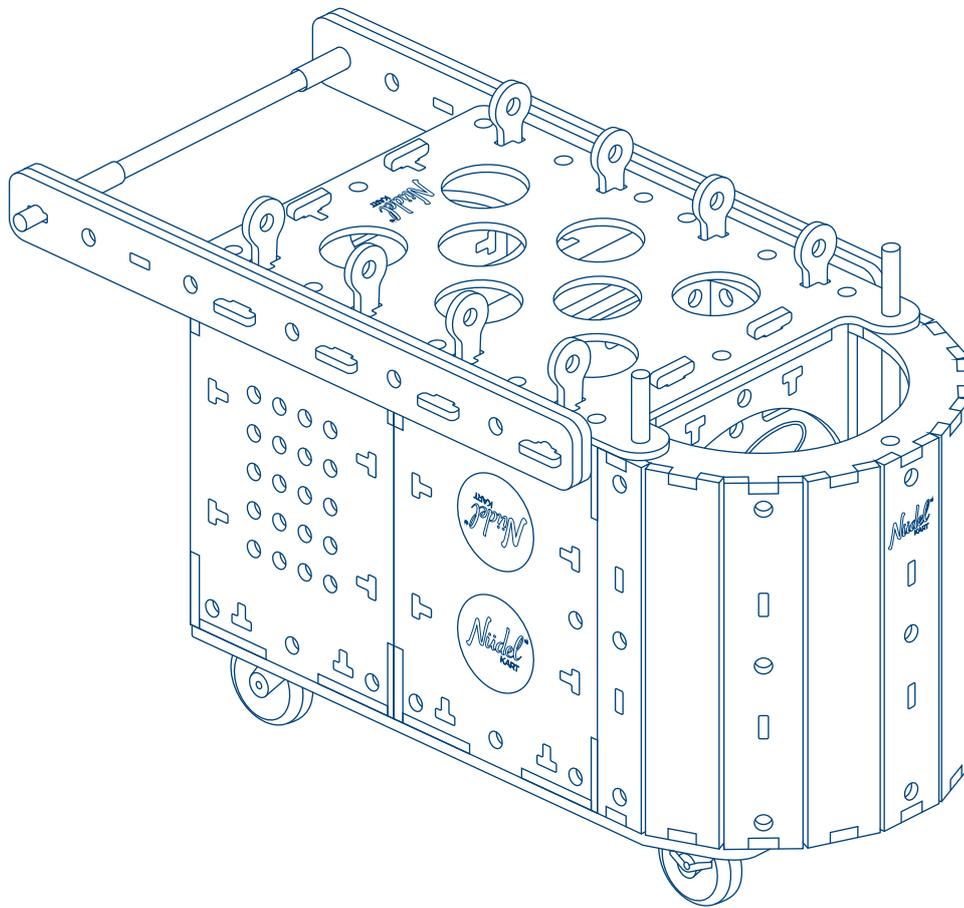
We decided to make a vehicle and I was proud of what I did. I wanted to do something really big. It was really hard but it was fun.”

– Child, 7 yrs, Moonee Ponds West Primary School

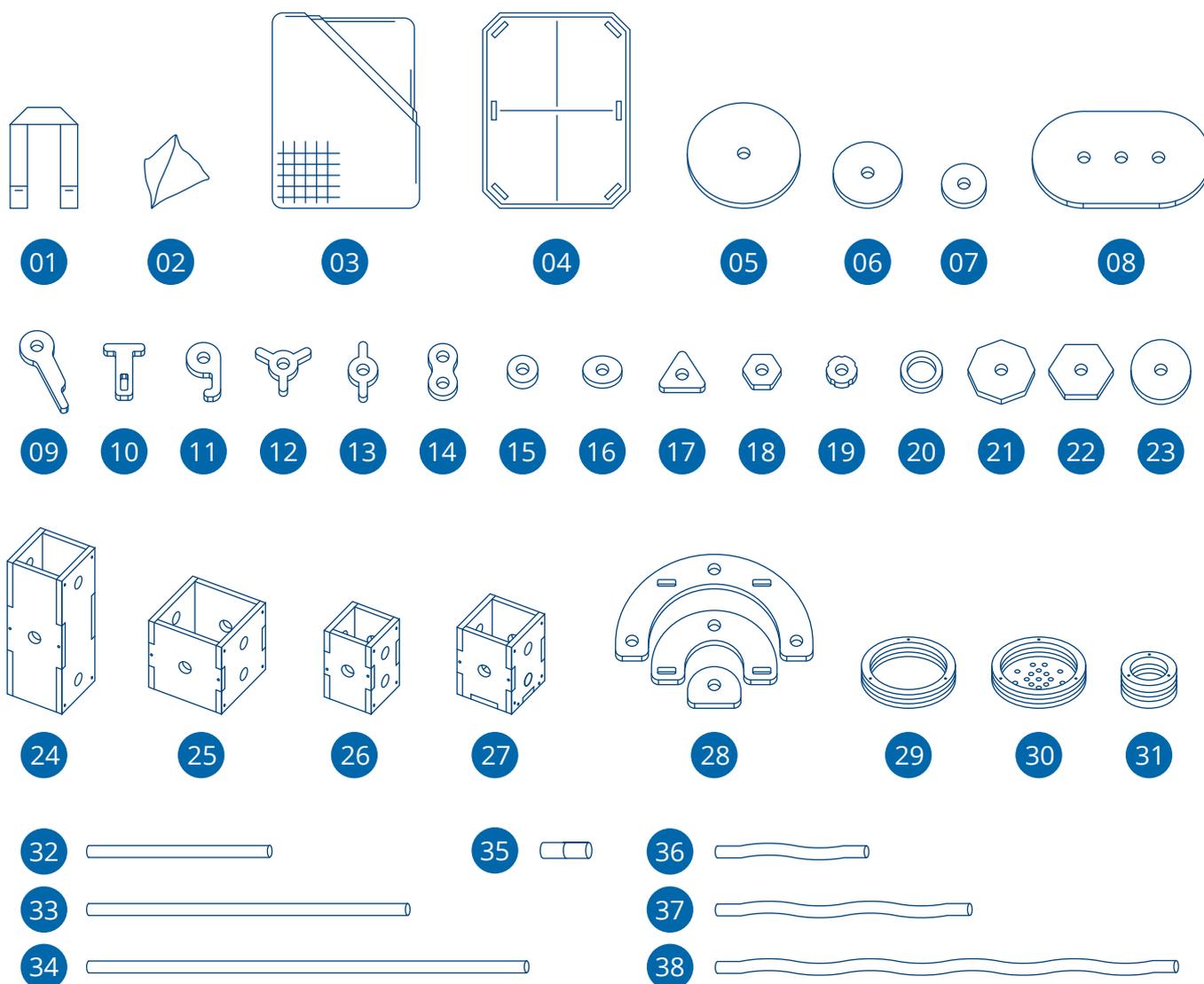
HOW TO USE NÜDEL KART



07. WHAT IS IN A NÜDEL KART?



List of items:



- 01. Straps x 25
- 02. Bean Bags x 12
- 03. Netting Material x 6
- 04. Canvas Sheets x 6
- 05. Large Wheel x 2
- 06. Medium Wheel x 8
- 07. Small Wheel x 4
- 08. Large Oval x 2
- 09. Key Peg x 24
- 10. T Peg x 14
- 11. #9 Peg x 12
- 12. Propeller 3 Points x 6
- 13. Propeller 2 Points x 6

- 14. Glasses x 4
- 15. Small Coin x 6
- 16. Small Oval x 6
- 17. Small Triangle x 3
- 18. Small Hexagon x 3
- 19. Cog x 6
- 20. Ring x 2
- 21. Medium Octagon x 2
- 22. Medium Hexagon x 2
- 23. Medium Oval x 2
- 24. Large Tube x 2
- 25. Medium Tube x 2
- 26. Small Tube x 1

- 27. Funnel x 2
- 28. Rainbow x 1
- 29. Bowl x 2
- 30. Sieve x 1
- 31. Cup x 3
- 32. Short Wood Dowel x 8
- 33. Medium Wood Dowel x 6
- 34. Long Wood Dowel x 6
- 35. Connector Tube x 12
- 36. Short Play Tube x 4
- 37. Medium Play Tube x 4
- 38. Long Play Tube x 4

08. WHEN AND WHERE TO USE NÜDEL KART

Nüdel Kart can be used inside or outside by all sorts of children and communities. It can be used for many specific purposes and classes but has been primarily designed for learning and development of executive function skills through **open-ended play**.



Children will benefit most fully when able to explore, play and create from their own ideas and impulses.

How else can it be used?

- / As an outdoor activity during school breaks.
- / In classrooms during play-based/investigation sessions.
- / As part of inquiry, especially at the tuning in stage.
- / To support the development of Curriculum content learning such as science knowledge about physics.
- / To practise and develop specific learning skills, such as numeracy, conflict resolution, communication and storytelling.
- / Before, after-school or holiday programs.
- / As a context for assessment tasks, including but not limited to problem solving and cooperative group work skills.
- / In the kindergarten or childcare play area.
- / At the local library or community centre.
- / For the community at events, festivals or celebrations.
- / At birthday parties or other family events.
- / At sports facilities and gymnasiums.
- / On a local street, village square or park.
- / At crisis centres such as refugee camps or detention centres.
- / In specialist schools or programs to support people living with disabilities.

09. FROM MOTOR SKILLS TO MOTORING: 100 PLAY IDEAS FOR YOUR NÜDEL KART

- Be a pirate
- Build a bridge
- Board a plane
- Fly a rocket to the moon
- Be an architect
- Drive a fast car
- Be a dressmaker
- Tell a robot what to do
- Limbo under a stick or strap
- Row a boat
- Conduct a train
- Make a motorbike
- Make a crane that picks things up
- Make a puppet theatre
- Make something that moves
- Perform on stage
- Go to the market
- Create a soundscape
- Be a superhero
- Be a zoo keeper
- Learn to juggle
- Have a picnic
- Tend to a farm
- Play with a doll
- Cook up a storm
- Create a home
- Conduct an orchestra
- Serve in a café
- Set up a shop
- Design an obstacle course
- Tow a car with your truck
- Build a cubby
- Travel back in time
- Travel to the future
- Make something with wheels
- Go on a holiday
- Be a teacher
- Invent a gadget
- Be a toymaker
- Construct a playground
- Make a pattern with shapes
- Stage a protest
- Hide in a den
- Build a high rise apartment
- Make a pyramid
- Strut the catwalk
- Be a rock star
- Create a game
- Be anything you like
- Ride a double decker bus
- Make a ramp
- Build a dog kennel
- Open a hairdressing salon
- Be anyone you want
- Build a factory production line
- Be a police officer
- Make a car park
- Build a castle
- Make something no one else can
- Fashion a fishing rod
- Make a circus
- Be a doctor
- Fight a fire
- Be a bride
- Go sailing
- Be a ninja
- Lift weights
- Hide in a box
- Create a pulley
- Tie a knot
- Crawl through a box
- Jump off a box
- Guard your territory
- Careful - the floor is lava!
- Make a slide
- Glide on skis
- Toss and aim
- Tell us all about it
- Score the game
- Balance on tiptoes
- Balance a stick on your hand
- Spin the wheel
- Find the treasure
- Collect the diamonds
- Make a pizza
- Share with a friend
- Slide a puck
- Tie a skipping rope
- Add wings to a dragon
- Attach a seatbelt
- Turn a key to open an idea
- Lay out a mandala
- Turn cogs in an engine
- Look through a telescope
- Bang on a drum
- Secure a roof
- Whisper a secret
- Sing in a trumpet
- March in a procession
- Make a nest

10. OODLES OF NÜDELS: 12 EXAMPLES LINKING NÜDEL KART PLAY TO CURRICULUM



We are all superheroes.”

When children use Nüdel Kart they:

- / **learn about the world** (knowledge and concepts)
- / and **learn to be learners** (skills, dispositions, behaviors and capabilities).

State and National Curriculum documents give guidance about what content, skills and dispositions are appropriate for students at each level of schooling. Teachers can choose how to use Nüdel Kart to influence the skills and dispositions children are learning – through experimenting or problem-solving.

Alternatively, specific skills might be chosen by teachers and taught explicitly to meet individual goals or classroom needs. For example, teachers might ask students to complete team tasks as a way to observe and record particular team skills.

Put simply, many skills and dispositions could be practiced while using a Nüdel Kart. In any one session it is likely that students could use (and teachers may observe) any number of the following skills, refer to page 28.



The Nüdel Kart supports deep learning through authentic engagement in real world challenges and aligns well to the ‘6 C’s’ :- Collaboration, Critical Thinking, Creativity, Citizenship, Communication & Character.”

– Fullan, M. & Scott, G., 2014

10.

The lists below include examples of skills that could be used for various levels of the curriculum.

Skills and Dispositions

Thinking

Creative

- / Generate ideas
- / Seek alternatives
- / Be open-minded
- / Use imagination
- / Goal setting

Reflective and Metacognitive

- / Use prior knowledge
- / Be aware of own thinking
- / Self regulate
- / Ask questions
- / Plan
- / Be empathic

Critical/Reasoning

- / Hypothesise
- / Process information
- / Evaluate and reflect
- / Be strategic/systematic
- / Make reasoned and ethical decisions

Interpersonal/Social

- / Build and manage social relationships
- / Listen to others
- / Work in teams
- / Team roles
- / Be accountable
- / Resolve conflict
- / Take turns
- / Share materials
- / Build resilience
- / Manage own impulses/emotions
- / Monitor own actions
- / Accept responsibility
- / Organize themselves/materials
- / Be respectful of others/feelings
- / Show empathy

Interpersonal/ Personal

- / Manage own learning and resources
- / Seek feedback
- / Learn from peers
- / Stay on task
- / Persist
- / Manage impulsivity
- / Show initiative
- / Explore and experiment with materials
- / Be self motivated
- / Use trial and error
- / Be curious
- / Manage time
- / Seek feedback

Physical Skills

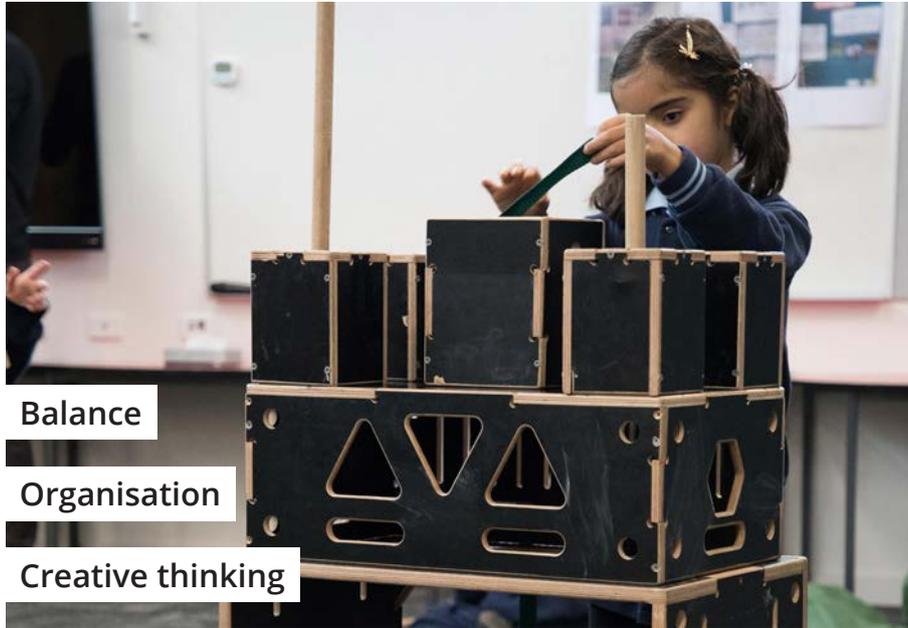
- / Fine motor skills
- / Gross motor skills
- / Balance
- / Hand-eye coordination
- / Spatial awareness
- / Physical fitness

Communication

- / Use oral language for different purposes
- / Speak assertively
- / Speak respectfully
- / Change language for the audience
- / Use appropriate body language
- / Explain process
- / Explain procedure
- / Explain what they are doing and thinking
- / Recount what they have done
- / Persuade others
- / Use language to express feelings

Following are examples of common things that children make, play and build with the Nüdel Kart. We unpack each example to demonstrate how there are natural connections to curriculum areas when children play. By noticing and seeing the learning and growth that occurs through play, teachers may also choose to use a Nüdel Kart as part of more structured activities or lesson plans, or to inspire further inquiry in students.

10.1 IDEA 1: BUILD A TOWER/BRIDGE



Balance

Organisation

Creative thinking

Example links to Curriculum	Extension ideas using Nüdel Kart
4-6 yr olds Mathematics - Measurement Mathematics - Geometry The Arts - Visual arts	Measure the tower/bridge with informal units, e.g. hands. Make comparisons - big, bigger, taller etc. Draw big and little things and compare them.
6-8 yr olds Humanities - Geography Humanities - History	Model your tower or bridge design on a famous one - or match the proportions of what you have built to famous towers/bridges around the world. Locate them on maps.
8-12 yr olds Humanities - Geography Humanities - History	Test and rebuild using engineering principles, such as a cantilever. Explore the properties of materials.

10.2 IDEA 2: CONDUCT A PERFORMANCE



Teamwork

Imagination

Organisation

Example links to Curriculum	Extension ideas using Nüdel Kart
4-6 yr olds The Arts - Drama English	Do some miming – other children can guess what/who they are. Relate this to fairytales and favourite stories if you wish.
6-8 yr olds English	Make a storyboard of the sequence of main events in the performance. How would you film it using short, medium and long shots?
8-12 yr olds English Humanities - History	Soapbox persuasions. Explore great persuasive speeches from history (e.g. Martin Luther King's 'I have a dream!' speech) . Look for persuasive devices. Present and record (video) selected techniques using Nüdel Kart as the stage set.

10.3 IDEA 3: GO TO MARKET



Initiative

Resilience

Organisation

Example links to Curriculum	Extension ideas using Nüdel Kart
4-6 yr olds Mathematics The Arts - Drama	 Set up a shop with a cash register and EFTPOS machine. Role play shopping at a market. Swap roles.
6-8 yr olds Mathematics - Financial literacy	 Count and order coins and notes. Use Nüdel Kart pieces as currency and count, add and tally amounts. Alternatively, using real shopper dockets and brochures, use Nüdel Kart pieces to represent products and organise them according to price.
8-12 yr olds Humanities - History Humanities - Geography	 Inquiry into the origins of money and government. Trade relations and world trade routes now and in the past.

10.4 IDEA 4: MAKE A MACHINE



Respect

Teamwork

Gross motor skills

Example links to Curriculum	Extension ideas using Nüdel Kart
4-6 yr olds Design and Technologies Creative Thinking	Decide what machine your school or community could use most. Make the machine out of the Nüdel Kart. Add more recycled materials to your design, such as cardboard or containers.
6-8 yr olds Science	Simple machines such as the lever, wedge, pulley and inclined plane. Trial and use them when creating a machine that moves. Explore gravity.
8-12 yr olds Science Design Technologies	Use scientific knowledge to design a machine to solve a community problem that considers sustainability. Debate whether technology brings people together or separates them.

10.5 IDEA 5: BE A SUPERHERO



Initiative

Self motivation

Creative thinking

Example links to Curriculum	Extension ideas using Nüdel Kart
4-6 yr olds The Arts - Visual Arts English	 Talk about the qualities of superheroes. Draw someone they know who is a hero to them. Explain why and enact when using Nüdel Kart.
6-8 yr olds Humanities – Civics and citizenship	 If you could do something to help others, what would you do? Record your ideas onto a digital device. Listen to everyone's ideas and celebrate them.
8-12 yr olds Humanities - History English	 Inquiry - Research old comics from the 1940s, or 1950s. Where did modern superheroes come from? What do they tell us about society's concerns and hopes? Interview one of the classic cartoon characters.

10.6 IDEA 6: CONSTRUCT A CITY/TOWN



Curiosity

Problem solving

Fine motor skills

Example links to Curriculum	Extension ideas using Nüdel Kart
4-6 yr olds Health and Physical Education Humanities - History	 Draw chalk roads on the pavement outside. Make traffic signs from Nüdel Kart pieces, such as STOP or traffic lights, and practice obeying signs. Learn traffic rules for cars, bikes and pedestrians.
6-8 yr olds Design and Technologies Humanities - History	 Make a construction of your town/city using the Nüdel Kart pieces. Look at old photos and note how the changes in your local community. Interview grandparents or local residents.
8-12 yr olds Civics and citizenship Humanities - Geography Technologies	 Inquiry into social organisation. Develop questions and interview a town planner. What issues do they need to consider? How do they predict future populations? Design a system, e.g. digital or mechanical traffic management - or urban vertical farm - for a future scenario.

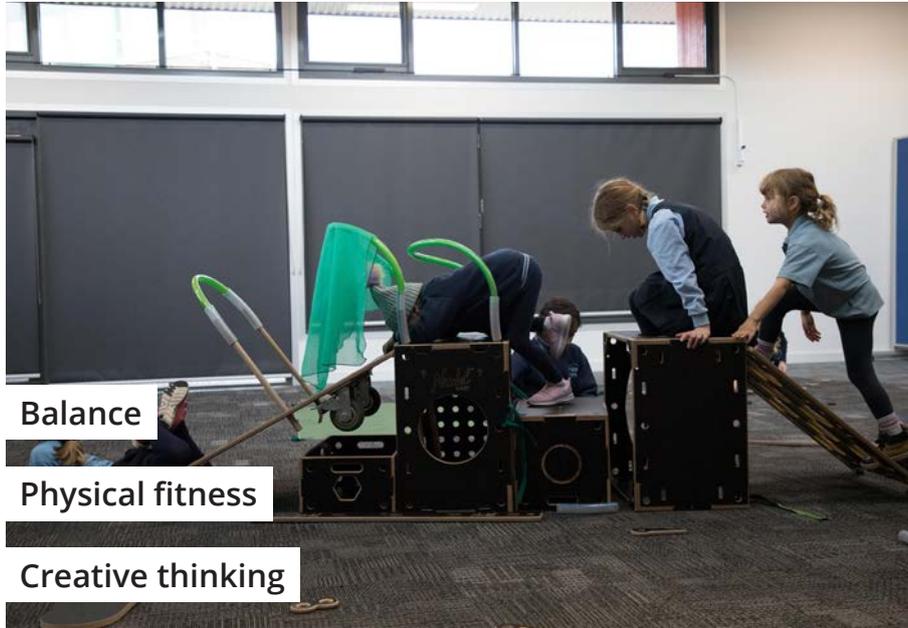
10.7 IDEA 7: RUN A RESTAURANT



Initiative
Organisation
Creative thinking

Example links to Curriculum	Extension ideas using Nüdel Kart
4-6 yr olds Health and Physical Education English	Set up a café in the classroom using Nüdel Kart pieces. Explore manners, and how we greet people and take orders. Use specialist and technical language of food and restaurants. Bon appétit!
6-8 yr olds Health and Physical Education	Inquiry – Food and community. How to be a good host / a good guest. How to set a table. Teamwork - working together to produce a meal.
8-12 yr olds Health and Physical Education Design Technologies	Research the food system and find out where does our food come from? How is it distributed? Explore sustainable business practices. Design a zero waste restaurant.

10.8 IDEA 8: MAKE AN OBSTACLE COURSE



Balance

Physical fitness

Creative thinking

Example links to Curriculum	Extension ideas using Nüdel Kart
4-6 yr olds Health and Physical Education	Play games outside that require children to go under and over objects. Explore songs such as 'We're Going on a Lion Hunt' or books of the same theme such as 'We're Going on a Bear Hunt'.
6-8 yr olds Design and Technologies Science	Add balls and other objects to the Nüdel Kart and make an outdoor marble run. Set obstacles in the path of the objects and experiment with materials such as Nüdel netting material to hasten / slow down the objects.
8-12 yr olds Design Technologies Health and Physical Education	Design an outdoor obstacle course that other children can use, such as an obstacle course that is accessible for mobility / hearing / sight impaired friends. How will you build it? How will you operate it? How will you make it challenging AND fun?

10.9 IDEA 9: VEHICLES AND MOVING THINGS



Coordination

Physical fitness

Problem solving

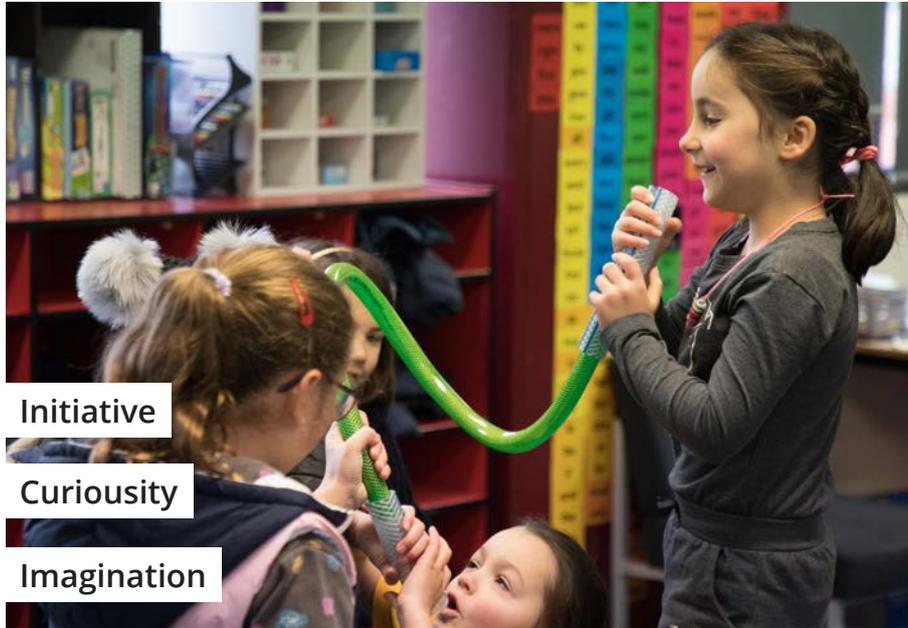
Example links to Curriculum	Extension ideas using Nüdel Kart
<p>4-6 yr olds</p> <p>Science</p>	<p>Discuss push and pull. Use wood dowels and straps to try pushing and pulling a variety of objects.</p>
<p>6-8 yr olds</p> <p>Science</p>	<p>Inquiry into force. Test how to make things move faster and slower. Explore friction building a pulley from Nüdel Kart pieces.</p>
<p>8-12 yr olds</p> <p>English</p>	<p>Write instructions for building your own car that does something amazing. Take it on an adventure and write, storyboard or script a tale of excitement. Interview one of your classmates about their design.</p>

10.10 IDEA 10: BUILD A SHELTER



Example links to Curriculum	Extension ideas using Nüdel Kart
4-6 yr olds Design and Technologies Science	 Add toys to Nüdel Kart and make a home for them. Discuss animal homes and the different forms they take.
6-8 yr olds Design and Technologies Humanities - History	 Conduct experiments outside with different materials that could be used for making outdoor cubbies. Include natural materials. Explore shelters made by indigenous cultures, and other traditional cultures.
8-12 yr olds Civics and citizenship Design Technologies Health and Physical Education	 Inquiry into shelter and social justice. Discuss issues of relocation and the impact on wellbeing. Design a flat-pack disaster shelter that is weatherproof, can collect water and has a place for growing some food. Research existing disaster relief shelters. Look at disaster ration packs (e.g. from the Red Cross). Consider young, old, mobile, injured people.

10.11 IDEA 11: PLAY WITH SOUND



Initiative

Curiosity

Imagination

Example links to Curriculum	Extension ideas using Nüdel Kart
4-6 yr olds The Arts - Music Science	 Make simple telephones for communicating information and sounds. Team task – each person in a row must pass the sound on.
6-8 yr olds Music	 Create a rhythm. Learn to play a 'cup song' or a repeated rhythm using the Nüdel Kart pieces.
8-12 yr olds English The Arts - Media Arts	 Explore the art of Foley (sound-making in movies). Create a short movie, practising and including your own Foley such as footsteps, doorbells, sounds of doors opening and shutting, rivers and more.

10.12 IDEA 12: CREATING CHARACTERS FROM OBJECTS



Teamwork

Persistence

Creative thinking

Example links to Curriculum	Extension ideas using Nüdel Kart
4-6 yr olds Design and Technologies English The Arts - Drama	Be a puppet, animal, robot or other character from a favourite book or film. Create a home for the character and let the characters interact with each other.
6-8 yr olds English The Arts - Drama	Play theatre games to develop situations and characters (e.g. cards with a problem such as 'trapped in a lift' plus lots of characters such as 'a ghost' or 'a magician'.) Write a simple narrative to enact.
8-12 yr olds Design and Technologies English	Think about uses for robots as the Tuning In session to an inquiry about AI and robotic solutions to real problems. Act out futuristic scenarios, asking 'What if?' questions about the robots. (What if they had emotions? What if they took over?)

11. WHAT IS THE ROLE OF TEACHERS/FACILITATORS?

Teacher interactions with children have an impact on the play space and children's play (Playwork Principles Scrutiny Group, 2005).

Adult interactions can build (or reduce) a child's confidence and self esteem. Taking cues from children shows them that we believe in their ability as capable learners, thinkers and risk takers who can make their own decisions. This is motivating and leads to a stronger sense of wellbeing and confidence.

“

Children just love the freedom to play and just to be. They learn so much about themselves, things that they don't even know are possible.”

– Principal, Coolaroo South Primary School



Teachers make a huge difference to scaffolding learning through play and extending children's knowledge and skills. Knowing when to observe, pose questions, stand back, direct, interact, explain, give feedback and instruct is an art!

There are a number of things a teacher can do while children are at play. Some seem counterintuitive or unimportant, however, they work to build a pillar of strength inside a child over time.

Noticing – what skills are children using or needing? How can these observations be used in another session/follow up?

Encouraging – safe play, to extend play, to challenge, giving minimal constructive feedback.

Naming – being explicit about skills and naming materials.

Waiting – for children to solve their own problems, make their own choices and mistakes, and for them to invite you to play.

Taking their lead – not instigating play but following children's ideas and showing genuine interest.

Questioning – asking about their thinking and stimulating thinking in a different way.

(Adapted from The Centre for Evidence and Implementation, 2019)

Teachers can learn a lot from being back seat observers. Prompting questions, (see below) can be used to help students plan, assess and modify their own play. These observations and answers to questions can be used as a springboard into further learning and recorded for assessment and reporting purposes.

Example Teacher Questions

During the session

What are you making/doing?
What are you trying to do/show?
What's your plan/goal?
What do you think might happen if...?
What other ways could you do that?
What are you going to do next?

After the session

What did you do well?
How do you feel now?
What challenges did you have?
How did you solve your problems?
What did you learn?
What skills did you use?
What are you proud of?
What do you want to remember?
What will you do next time?
What would you do differently next time?

NOTE: Reflections from children can be verbal, but they can also draw or write their responses.

12. SUGGESTED SESSION PLAN TO ADAPT OR USE

Beginning of the session

Ask children if they already have ideas about what they would like to do/achieve during the session. Ask children what skills they will need.

OR You could link to a particular area of the curriculum, for instance designing products that are sustainable (Design Technologies) or naming and defining specific skills that you are focusing on, such as balance (Physical Education).

Remind students of the rules, expectations and consequences:

1. Be safe
2. Show respect – to self, others, equipment and space

Investigations/Play Time

Teacher role – ask questions, join play if invited, have open-ended conversations with children and provide feedback (if asked).

Give a 5-10 minute pack up warning before finishing play (younger children or certain groups may need more time).

Pack up equipment

Helpers can be chosen to collect equipment important for rebuilding your Nüdel Kart: Key pegs, T-pegs, 9-pegs & long wooden poles. All children collect small pieces for drawers.

For instructions on how to pack up your Nüdel Kart, see page 47. Please refer to the 'Pack Up Manual' for a detailed description of this process.

Reflection

Example questions: What did you enjoy? What did you achieve? What skills did you use? How did you change your plan? What would have happened if? What did you do if there were problems/challenges?

13. VIGNETTES: REFLECTIONS FROM VIEWING A CLASSROOM SESSION

By Dr Jeni Wilson, Melbourne University Associate, Inquiry Learning Specialist

This is the first time children have used the Nüdel Kart. The introduction is brief 'Be safe and show respect'. There are no instructions about what to do, who to work with or when to finish, just to unpack the kart. Children need no further invitation.

I had many revealing conversations with children during the session. When I asked two girls why they decided to make a boat they said because they got a rocky bit and it was fun to move. Then they found some sticks and put them in the holes and put on a 'cool roof'. I asked what they were going to do next and they replied 'We're going to go sailing'. A little later they were struggling with bits falling off. No attempt was made to help them or tell them how to do it, they figured it out for themselves.

Two boys were making a train. They explained how it worked while demonstrating. This makes a clicking noise, that turns it each way. 'These make the noise toot, toot. This is where the engine is and the steam comes out, all the puffing steam'. Later a boy tries to join in. The teacher reminded him to talk to the others about what they are making before he changed anything.

At one stage I was approached by a boy who proudly said 'This is what I am making.' When I enquired about what it was he said "I don't know'. He had no need to name his creative product. Another child wandered off during the session but brought himself back. Maybe he was thinking, maybe he was just taking time out. After all, play can be hard work.

As expected it's noisy and messy. There was excited chatter, purposeful movement, urgent calling out and there was a lot going on. A couple of inevitable sword fights broke out but they didn't last long after the teacher asked them to do so in slow motion.

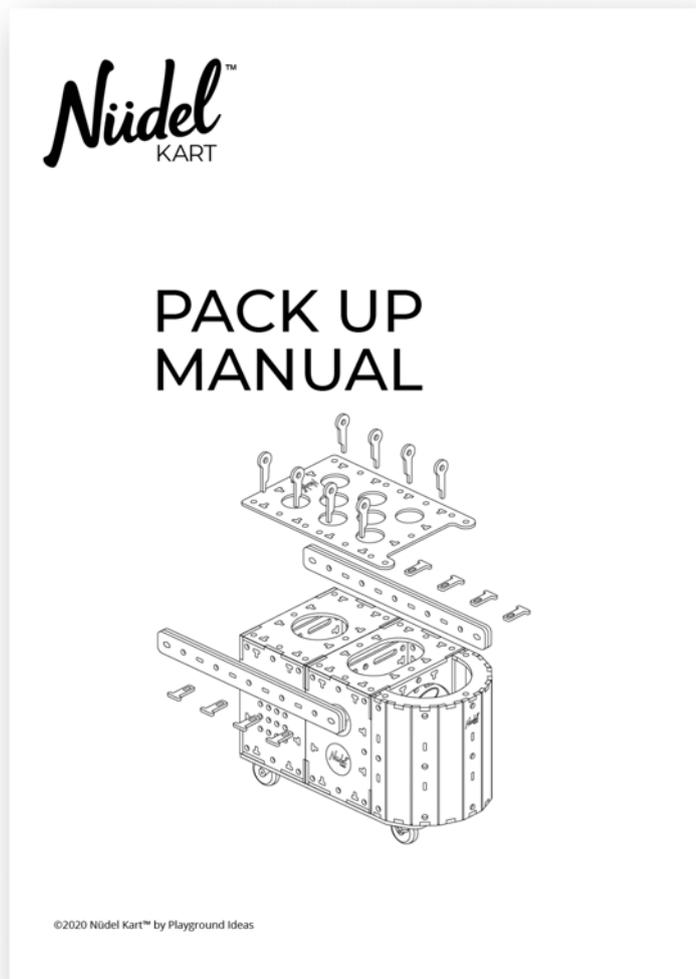
I'm impressed by the way children helped each other and persisted even when it seemed almost impossible. I heard one girl say out loud to no one in particular 'Who can tie knots?' Instead of offering to help I asked, 'How do you tie it on?' She explained, 'I can but the bit that went through isn't long enough'. She tried over and over again and finally achieved success. "You did it! How do you feel now?" I asked. She had a big smile, 'I'm really happy.'

The children helped to pack up and it was remarkably quick. It was now time for reflection. They also talked about how to solve problems and challenges. Sharing pieces, being good team members and talking and listening were strategies that were discussed.

14. HOW TO PACK UP YOUR NÜDEL KART

Children enjoy the challenge of packing up a Nüdel Kart – they should always be a part of the rebuilding process. After the first session, children can easily lead this process and take ownership over the opening and pack up of the kart.

Please refer to the 'Pack Up Manual' for a detailed description of this process.



NÜDEL KART TIPS



15. RULES AND EXPECTATIONS

While Nüdel Kart supports free, open-ended play, it is still important to set limits. You can, of course, adapt the rules and expectations to yourself, your friends and the kart in particular settings, however we suggest: Be safe and show respect. Keep the rules simple.

Children can be reminded about these at the beginning of each session (and as needed) without dampening their enthusiasm. You may want to have consequences like: no safe play = no play.

During the session, adults can support children to resolve their own issues and manage conflict as much as possible, although in this stimulating an environment, conflict is almost always significantly reduced compared to a regular class.



I am the full-time principal, full-time staff, full-time yard duty person in a school of 20 children so things are non-stop here. Over the last two hours we have been using the Nüdel Kart I haven't had any serious issues and the kids have been 100% engaged. Normally I would've had to deal with at least three major incidents between students by now."

- Principal/Teacher/Everything else, Pomonal Primary School

16. SAFETY AND MAINTENANCE

Everything in the Nüdel Kart is easily maintainable. Nüdel Kart is like a car. With regular maintenance it will give you faithful service day after day.

Over time, do:

- / Regularly check your Nüdel Kart and the loose parts inside. If something breaks or becomes hazardous, remove it from the play area immediately.
- / Watch for children putting objects in their mouth for hygiene reasons. You may occasionally need to wash/clean loose parts after a period of play, depending on the play site and weather.
- / You can restock with Nüdel Kart parts from our website

When considering safety, it is important to distinguish between a risk and a hazard.

Whats the difference between a risk and a hazard?

Risks are inherent in play and allow for childhood growth and development. They are things that children can see and adapt to and learn from.

A **hazard** is something that children can't see or are developmentally unaware of. For example, a stick with a hidden nail is a hazard, while the stick itself contains inherent risks that are good for a child to understand.

Many settings that provide play opportunities for children use a 'Risk Benefit Assessment' model, whereby play types, objects and settings are assessed based on their developmental benefits versus the likelihood of injury (physical or social/emotional). (Canadian Public Health Association, 2019; Little, H., & Wyver, S., 2008)

Reref to www.nudelkart.com for a Risk Benefit Assessment template.

17. THINGS TO CONSIDER

Storage

To minimize weathering over time, Nüdel Kart should be stored inside. Choose somewhere that is easy to wheel the kart into (not up stairs) and ideally, a room or shed that is lockable.

Theft

While unlikely, there is always a chance that items in your Nüdel Kart might 'go missing' either during sessions, or while in storage. Use your knowledge of your situation and setting to mitigate against this.

Re-stocking or adding items

You can restock loose parts through the Nüdel Kart website: www.nudelkart.com

Alternatively, you may want to add some of your own items to the loose parts play in your Nüdel Kart, depending on what you have available in your setting. Here are some ideas:

Good low/no cost items

- / Natural materials – leaves, sticks, sand, flowers, pine cones, gum nuts
- / Cardboard – tubes, sheets and boxes
- / Recycled fabric – vinyl, scarves, hessian, mats, cotton sheets
- / Wooden planks and poles (no longer than 1.5m)
- / Recycled bowls, pots and pans, wooden spoons, woks and teapots
- / Recycled containers of different shapes and sizes, and different materials
- / Recycled cable spools, things that roll such as thread spools
- / Used small tyres (e.g. scooter, bike) – wash well first
- / Used tyre inner tubes (cut the metal air nozzle out)
- / Recycled phones, computer keyboards, calculators (with electrical cords and batteries removed)

Low cost items

- / Balls – different sizes, textures and weights (ping pong balls, bean bag balls, sports balls)
- / Thick straps (minimum 1 cm width) cut into 1m lengths
- / Fabric, scarves (if not able to find recycled materials)
- / Chalk, chalk markers, drawing materials
- / Smaller craft items (feathers, pop sticks)
- / Funnels and hardy strainers/colanders
- / Tubes (cardboard, plastic, PVC or rubber) minimum 2cm diameter to make cleaning easier, maximum 1m length to fit in cart
- / Mortar and pestle (wood or thick plastic, not stone)
- / Foam mats (e.g. yoga mats)
- / Hula hoops

Items to avoid

- / Soiled/unhygienic items
- / Wood/materials with splinters, nails, wire or protruding parts
- / Objects with sharp edges e.g. broken metal cans
- / Brittle objects
- / Large, solid pieces of thick fabrics/materials that increase suffocation risks (may be ok if you cut holes in them)
- / Very small items – choking hazard and easily lost
- / Slippery surfaces
- / Materials that are difficult to clean, pick up dirt easily (soft foam, soft toys). These may be included if regular cleaning is an option.
- / Very long or very heavy objects
- / Items that get damaged by or absorb water (if using outside a lot) like paper and thin cardboard
- / Large objects that don't fit into the Nüdel Kart
- / Wheels with spokes (finger entrapment)
- / Things that are precious or expensive

18. FAQs

Where will funding come from?

You may want to write a grant application to a government department, council or philanthropic organisation to raise funds to purchase a Nüdel Kart. You could also set up a pitch on an online crowdfunding site, or use more traditional fundraising ideas or door knock local businesses. Nüdel Kart has an award winning feature length documentary that can be made available for fundraising movie nights, please contact us at nudel@playgroundideas.org to find out more.

How many children can use Nüdel Kart at one time?

There are enough parts for a whole class (up to 30 children) to work with this at one time. You can always use more than one Nüdel Kart at a time for larger groups, purchase Nüdel Kart add-ons at www.nudelkart.com or add your own local materials.

Isn't it noisy?

Yes, it can be. Some teachers manage noise better than others and the noise seems less overwhelming in larger spaces. Remember that we want children to be doing more talking, and thinking in classrooms. This is an excellent context for developing thinking, speaking and listening skills. In very poor acoustic rooms, half a tissue in each ear can make a big difference :)

What if children use parts as weapons?

Children can be reminded of the 'keep safe' rule. Encourage them to play fight in slow motion. The novelty tends to wear off pretty quickly.

Can I replace lost pieces and add to Nüdel Kart?

No problem, your Nüdel Kart can be maintained and expanded easily through Nüdel add-ons at www.nudelkart.com. See tips above for maintaining, restocking, building and adding to your Nüdel Kart.

Where will play fit into the curriculum with competing priorities?

Play is not always seen as an important priority. Lack of time, resources and places to play are often cited as problems. In some schools, the value of play may be questioned by parents, and parent education may also be necessary. Professional development on the need to play and the critical skills learnt in play, ways to optimise interactions and demonstrating links to curriculum may be beneficial. Contact Nüdel Kart if you would like to book in Professional Development with staff in your setting.

Does Nüdel Kart only suit some children?

Nüdel Kart is all inclusive and for all abilities. The child decides how to use it and can create their play space to suit their abilities so unlike wheelchair accessible activities we feel that Nüdel Kart is truly for all abilities. The benefits of playing include: using imagination and creativity, solving problems, developing social skills, higher order thinking and resilience. Children develop confidence from using their own voice and a strong sense of wellbeing from making decisions. This is universally tested to be suitable for all genders and cultures to help all children thrive throughout their lives. Nüdel Kart is most suitable for children from 3 - 12 yrs old.

Why is it called Nüdel Kart?

There are three reasons for calling it Nüdel Kart!

1. Physically, it's about the size of a South-East Asian Nüdel kart.
2. The Australian saying, "use your noodle" encourages a person to use their brain to think about something.
3. To "noodle around" means to play or experiment.

Why is it only one colour?

By only creating a one colour kart, it prompts the child to add meaning onto the object as opposed to deriving meaning through association.

19. REFERENCES FOR FURTHER READING

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Nüdel[™]
KART

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