Nüdel™ KART

GOOD DESIGN AWARD® WINNER

GOOD DESIGN AWARD® GOLD WINNER

# SUPERVISOR MANUAL

## This manual is suitable for use with both the Nüdel Kart and the Nüdel Rover

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This product complies with:
**INTERNATIONAL SAFETY STANDARDS** (ASTM F963, EN71)
✔**USA** ✔**EUROPE** ✔**AUSTRALIA**
Designed in accordance with:
**INTERNATIONAL TOY & PLAYGROUND SAFETY STANDARDS**
(AS4685, ISO 8124, ASTM F1487-17)



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(ASTM F963, ISO 8124, EN 71)
✔**USA** ✔**EUROPE** ✔**AUSTRALIA**

For the purpose of this document, and anytime we refer to a “Supervisor”, we mean anyone that is trained and authorised to work with children. They may also be referred to as a teacher, early childhood educator, playworker, facilitator, OT, or allied health professional (this list is not exhuastive.

The Nüdel Rover has been tested to be used with ages from 1-12 and therefore requires active professional supervision and ongoing risk assessment.

The Nüdel Rover can be configured in millions of different ways and so may present different risks and hazards to different ages of children, with varying levels of competency and development.
Refer to page 46 for more information.

# ENDLESS POSSIBILITY

Nüdel resources create an instant, stimulating space to play with endless possibilities - anywhere, anytime. With infinite configurations, they have been designed to supercharge the brain, maximise learning and development and increase student and teacher wellbeing.

Nüdel resources 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 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. Increse the social, emotional and physical development of children.

3. Support the United Nations' 17 Sustainable Development Goals to address poverty, inequality and climate and environmental degradation, and promote peace and justice (UN, 2018).

4. Create flexible education opportunities designed to empower students through voice, agency and leadership.

5. Nüdel Kart supports science, technology, engineering, the arts and mathematics (STEaM).

Globally around 250 million children are failing to reach their full developmental potential and 350 million have no access to early childhood development programs. Amazingly, over 90% of the worlds children go to school, but around 2/3rds are failing after 4 years. In our rapidly changing world, developing these skills is crucial for our children to thrive into the future.

'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 NÜDEL?

# 01. WHAT ARE NÜDEL RESOURCES? WHO IS IT FOR?

Nüdel resources are mobile spaces, karts that come apart into many different pieces, and are filled with loose parts that children can manipulate, build and play with. Nüdel resources can be used in many settings, indoors and outdoors. They are not gender or culture specific and are 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

The Nüdel Rover us suitable for children 1-12 years and requires active adult supervision and is for professional use only.

**WARNING:** The Nüdel Rover requires active professional supervision and risk assessment. The Nüdel Rover can be configured in millions of different ways and so might present different risks and hazards to different ages of children, with varying levels of competency and development. Refer to page 46 of this document for more information.

The required support will be different for different ages and different levels development.

## Nüdel resources:

- Focus on loose parts, not fixed equipment
- Are mainly made from natural and all non toxic materials and plastic free packaging
- Can be expanded with additional Nüdel parts
- Child-led, not activity based
- Are interactive
- Are designed fundamentally to encourage the highest forms of learning: imagination, creativity, problem solving and social interaction
- Can go anywhere, into any place, from inner city schools to remote settlements, play groups to refugee camps
- Don’t require infrastructure or power
- Are long-lasting and made from the most durable materials
- Are small enough to store indoors, so it can it can be protected from harsh weather, theft and misuse
- Children are able to set up and pack up the Nüdel Kart and Nüdel Rover on their own.

*This will depend on the age of the child and level of development. Adult supervision is always required.

# 02. WHY DID WE DEVELOP NÜDEL KART?

It all started with the 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 in education systems. 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. The average western child spends now spends less time outdoors than a maximum security prisoner.

Nüdel Kart prototype shown above

## Nüdel Kart was developed to answer a very difficult question:

**How can we easily and instantly provide quality play and learning 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, STEM toy and early childhood specialists. 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.

Since this time, we have also developed the Nüdel Rover. Our smaller more compact version of the Nüdel Kart. It is built on the same design principles and has the same high quality finish and benefits, just for smaller groups of children, with a focus on the allied health sector.

# 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 learning, 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). When children play they are challenging themselves in the areas they are ready to develop, so the learning is perfectly timed for their brains to absorb effectively.

## 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

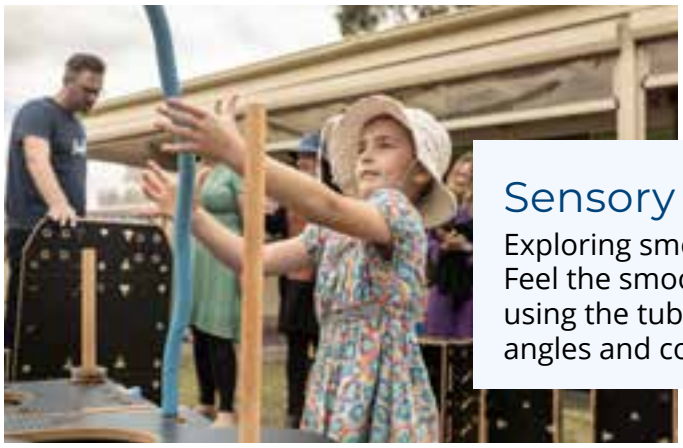
## What's with the 'loose parts'?

Loose parts are 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 resources have 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 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 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 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 and the Nüdel Rover was designed to support all of the above.

# 06. WHAT ARE THE BENEFITS OF NÜDEL RESOURCES?

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.

**The Nüdel Kart and Nüdel Rover, 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.

**Nüdel can also be used as a:**

- Pastoral care program
- OSHC program
- Playground extension
- Wet weather activity
- Drama and PE resource

**Nudel supports more than curriculum:**

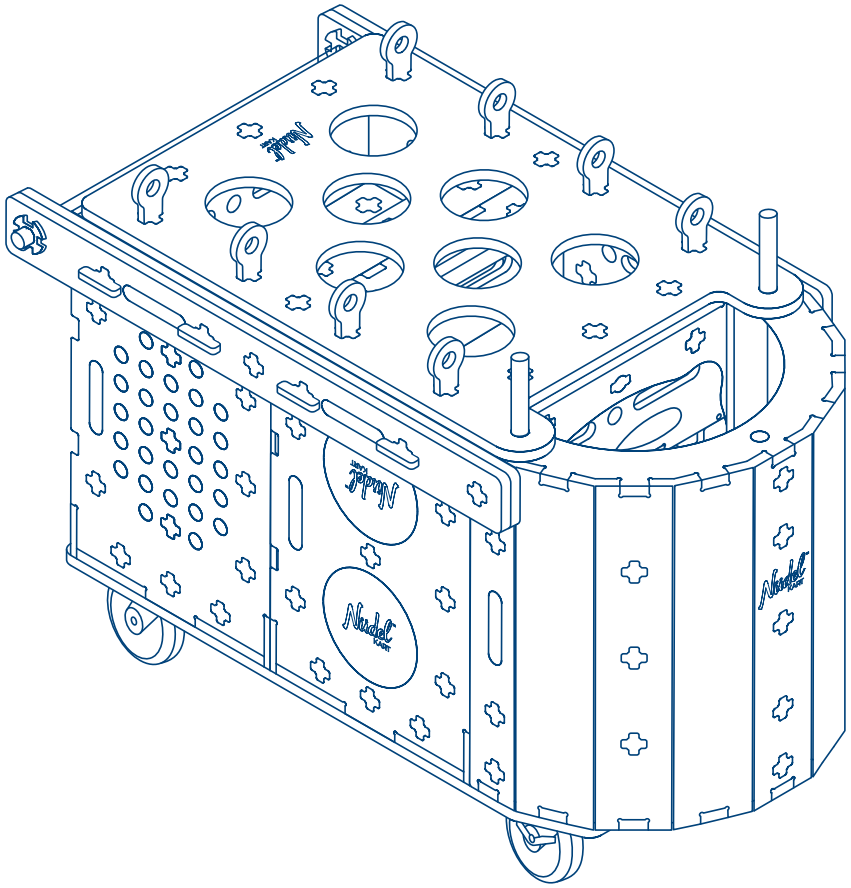
- STEM and 21st Century skills
- First principles thinking
- Self regulation and growth mindset
- Creativity and problem solving
- EQ, social skills and well-being

"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

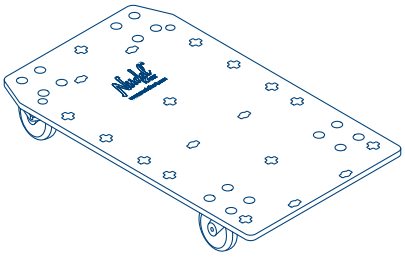
# HOW TO USE YOUR NÜDEL RESOURCES?

# 07. WHAT IS IN A NÜDEL KART?

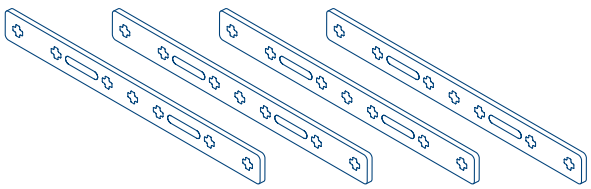


## Kart parts:

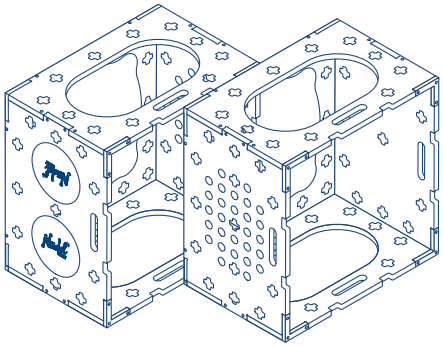
Base Board x 1



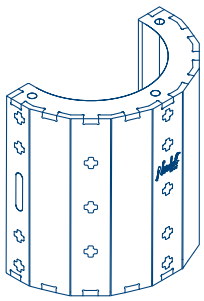
Arms x 4



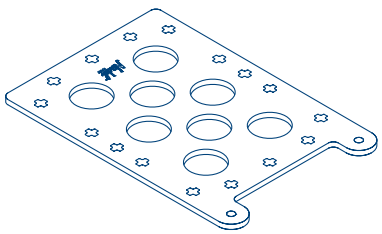
Big Boxes x 2



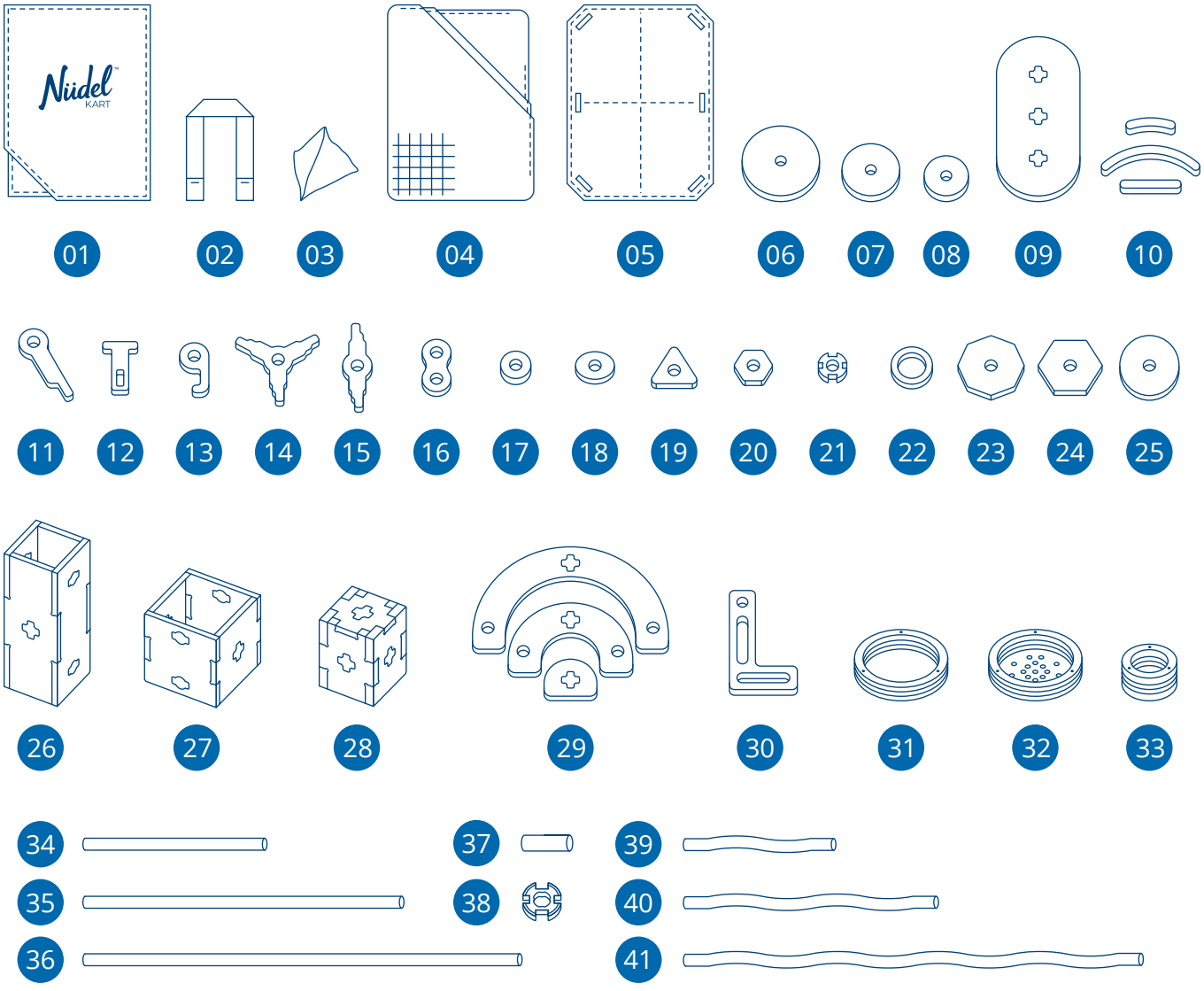
Wobble x 1



Holey Moley x 1

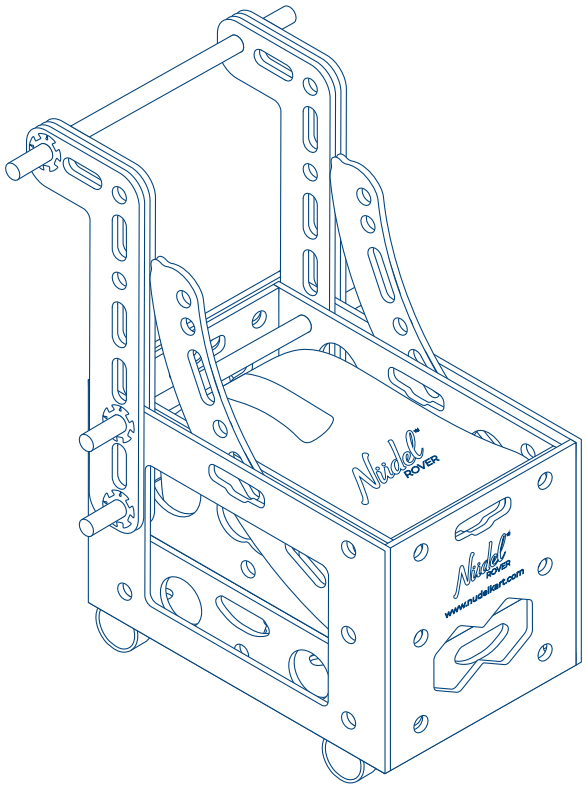


# List of items:



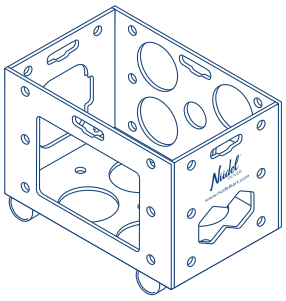

01. Kart Cover x 1
02. Strap x 25
03. Bean Bag x 12
04. Netting Material x 8
05. Canvas Sheet x 6
06. Large Wheel x 4
07. Medium Wheel x 11
08. Small Wheel x 8
09. Large Oval x 2
10. Wood Connector x 27
11. Key Peg x 24
12. T Peg x 16
13. #9 Peg x 14
14. Propeller 3 Point x 8
15. Propeller 2 Point x 8
16. Glasses x 8
17. Small Coin x 13
18. Small Oval x 9
19. Small Triangle x 5
20. Small Hexagon x 7
21. Cog Connector x 8
22. Ring x 2
23. Medium Octagon x 2
24. Medium Hexagon x 2
25. Medium Oval x 2
26. Large Tube x 2
27. Medium Tube x 2
28. Funnel x 2
29. Rainbow x 1
30. L Connector x 4
31. Bowl x 2
32. Sieve x 1
33. Cup x 3
34. Short Wood Dowel x 8
35. Medium Wood Dowel x 12
36. Long Wood Dowel x 10
37. Connector Tube x 12
38. Silicone Ring x 24
39. Short Play Tube x 4
40. Medium Play Tube x 4
41. Long Play Tube x 4

# WHAT IS IN A NÜDEL ROVER?

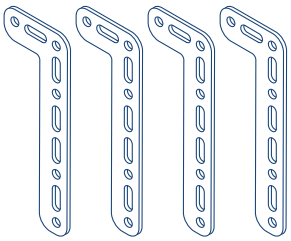



## Rover parts:

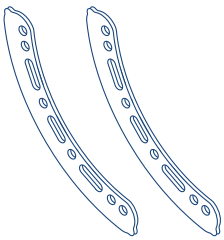
Big Box x 1



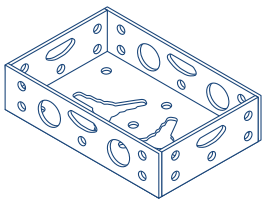
L Arms x 4



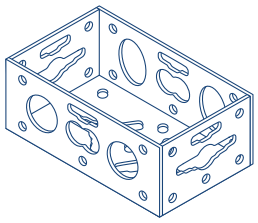
Curved Arms x 2



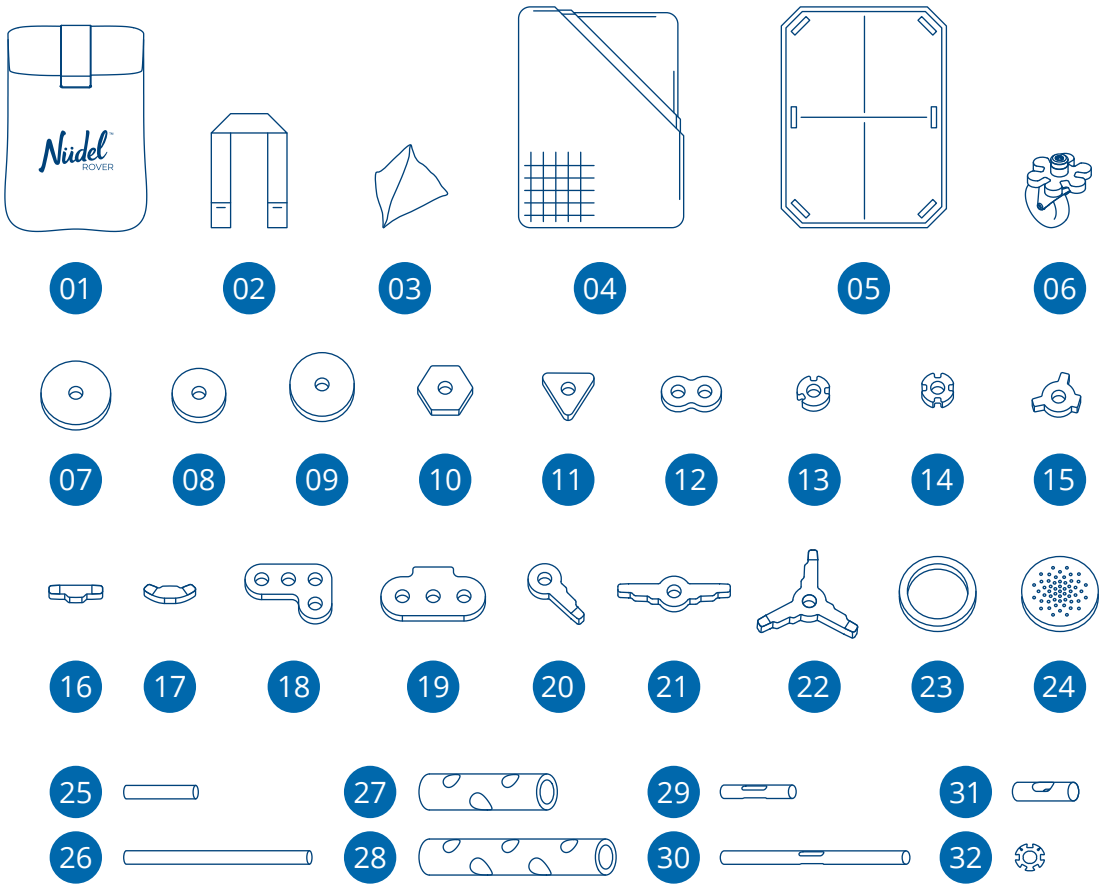
Small Drawer x 1



Large Drawer x 1



# List of items:




01. Velcro Bag x 1
02. Straps x 12
03. Bean Bags x 6
04. Netting Material x 2
05. Canvas Sheets x 2
06. Removable Wheel x 4
07. Medium Wheel x 4
08. Small Wheel x 4
09. Medium Oval x 2
10. Small Hexagon x 2
11. Small Triangle x 2
12. Glasses x 2
13. Cog 1 x 2
14. Cog 2 x 4
15. Round Connector x 6
16. Flat Connector x 8
17. Curved Connector x 4
18. L Connector x 2
19. Tank Connector x 2
20. Key Peg x 10
21. Propeller 2 Points x 2
22. Propeller 3 Points x 4
23. Ring x 2
24. Disc Sieve x 2
25. Short Wood Dowel x 8
26. Medium Wood Dowel x 6
27. Short Tube x 4
28. Long Tube x 4
29. Short Play Tube x 4
30. Medium Play Tube x 2
31. Connector Tube x 6
32. Silicone Ring x 24

# 08. WHEN AND WHERE TO USE YOUR NÜDEL RESOURCE

Nüdel Resources 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 **child directed activities**.

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.
- Allied health professionals for both assessment and support of lagging skills.

# DEVELOPMENTAL CAPABILITIES AND SKILLS

There are many developmental characteristics/skills typical at each age and stage. The following age grid identifies examples of characteristics that easily match skills that could be developed through the use of your Nüdel resource. Please note these examples of characteristics can vary for individuals.

**Table 1**
**Guide/Summary of Developmental Capabilities and Skills**

| Age | Developmental Characteristics and Skills |
|---|---|
| 1-2 | Moves in many ways. Repeats actions & names objects. Can scribble.<br>Plays alongside others.<br>Follow simple instructions/questions. |
| 2-3 | Can move in different ways and balance. Plays with others, uses imagination.<br>May resist sharing. Can line up and build with items.<br>Use water, sand, dough for lots of reasons, symbolic/pretend play.<br>Can ask questions. Becomes dramatic. Makes songs, music and dances.<br>Vocabulary increases. |
| 3-4 | Can hop, skip jump, climb, step. Can hold pencils, cut paper.<br>Enjoys movement. Becoming independent. Play with others. Can use objects to construct.<br>Answer questions. Likes to help<br>Follow rules. Learn numbers and letters. Act out pretend characters. |
| 4-5 | Enthusiastic, adventuresome and loves to experiment. Markedly increased talk.<br>Playing cooperatively with others. Takes turns.<br>Enjoys rhymes, stories, jokes. Loves imaginative play. Understands spatial concepts, eg up, down, over...Counts. |

| Age | Developmental Characteristics and Skills |
|---|---|
| 5-6 | Is positive and helpful. Likes to please. May be indecisive. More social. Loves to play 'house' with blocks. Climbs, swings, jumps, skips. Makes up stories and pretend characters. |
| 6-7 | Enthusiastic, adventurous, demanding, competitive, busy and restless. Developing sympathy. |
| 7-8 | Thoughtful, observes and reflects. Makes plans, wants control, questions rules, easily distracted but may also persevere. Physically cautious. Likes collecting. |
| 8-9 | High energy, self-aware, dramatic, curious, likes challenges and to bargain. Uses simple logic and abstract thinking. Needs freedom to do things their own way. Relationships are important. Likes to classify possessions. |
| 9-10 | Can complete lots of activities quickly, more thoughtful but moody. More independent and self-motivated, dependable, trustworthy. Likes information, facts, varied interests including money. Lists and categorises. Takes on challenges and is able to reason, has conscience. Can make detailed plans. Likes to make complete goals. |
| 10-11 | Loves physical activities, has groups of friends, memorises information, and has a strong moral compass. Not self-centred. Sense of fairness. |
| 11-12 | Assertive and outgoing, Moody, impulsive and curious. Becoming more objective and insightful. More complex thinking. Better able to express self. Strong sense of justice. |


Adapted from: https://www.acecqa.gov.au/sites/default/files/2018-02/DevelopmentalMilestonesEYLFandNQS.pdf
Developmental milestones and the early years learning framework and the national quality standards.

The Centre for parenting education. Child Development by Age. Accessed 25/11/21
https://centerforparentingeducation.org/library-of-articles/child-development/child-development-by-age/

Guide to Children's Growth and Development, NSW Department of Community Services: www.community.nsw.gov.au/docswr/_assets/main/documents/par_development.pdf - accessed 20/01/2012.

Nixon, D & Gould, K 1996, Emerging: Child Development in the First Three Years (2nd ed.), Katoomba, Social Sciences Press.
Nixon, D & Aldwinkle, M 1997, Exploring: Child Development from Three to Six Years, Katoomba, Social Sciences Press.

# 09. FROM MOTOR SKILLS TO MOTORING: 100 PLAY IDEAS

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 PLAY TO CURRICULUM

"We are all superheroes."

## When children use Nüdel resources they:

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

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 resources 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 resource. 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

## Communication

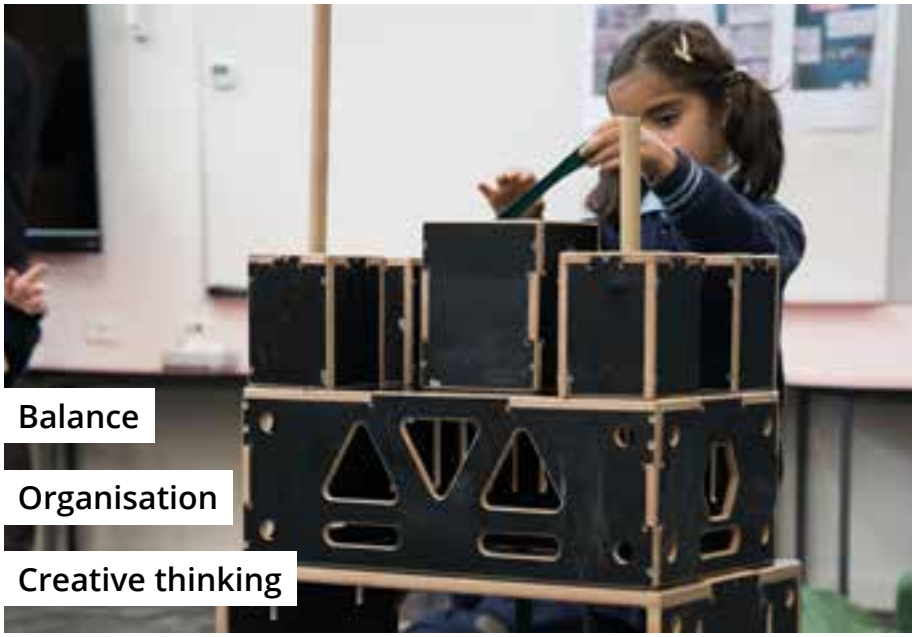
- Use oral language for different purposes
- Speak assertively
- Speak respectfully
- Change language for the audience
- Use appropriate body language
- Explain process
- Explain procedure
- Explain what they are doing and thinking
- Recount what they have done
- Persuade others
- Use language to express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

### Physical Skills

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

Following are examples of common things that children make, play and build with the Nüdel Kart or Nüdel Rover. 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 or Nüdel Rover as part of more structured activities or lesson plans, or to inspire further inquiry in students.

# 10.1 IDEA 1: BUILD A TOWER/BRIDGE

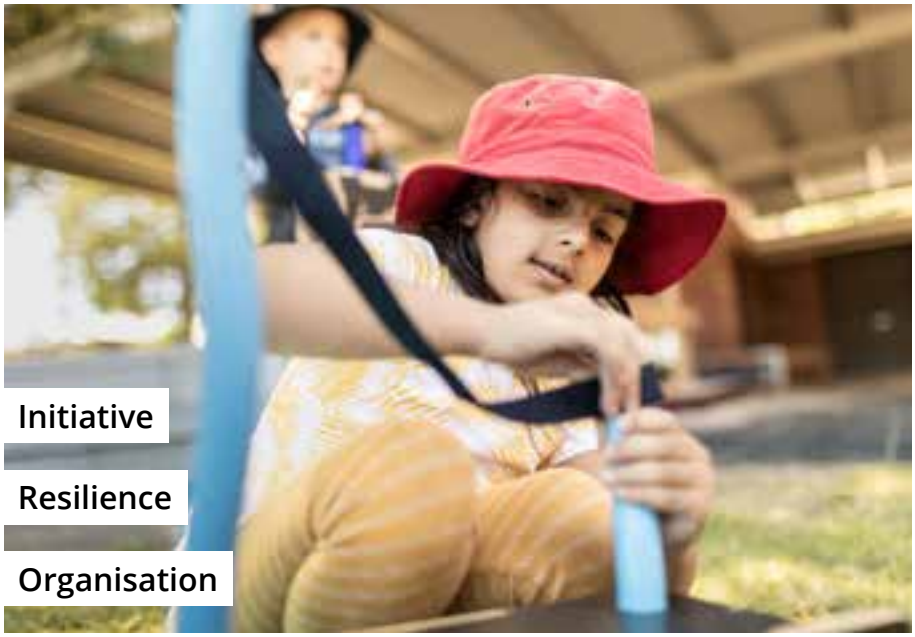



| Example links to Curriculum | Extension ideas using Nüdel Kart/Nüdel Rover |
|---|---|
| **4-6 yr olds** | |
| Mathematics - Measurement<br>Mathematics - Geometry<br>The Arts - Visual arts | Measure the tower/bridge with informal units, e.g. hands. Make comparisons - big, bigger, taller etc. Draw big and little things and compare them. |
| **6-8 yr olds** | |
| Humanities - Geography<br>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<br>Humanities - History | Test and rebuild using engineering principles, such as a cantilever. Explore the properties of materials. |

# 10.2 IDEA 2: CONDUCT A PERFORMANCE


| Example links to Curriculum | Extension ideas using Nüdel Kart/Nüdel Rover |
|---|---|
| **4-6 yr olds** | |
| The Arts - Drama<br>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<br>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 or Nüdel Rover as the stage set. |

# 10.3 IDEA 3: GO TO MARKET




| Example links to Curriculum | Extension ideas using Nüdel Kart/Nüdel Rover |
|---|---|
| **4-6 yr olds** | |
| Mathematics<br>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 pieces as currency and count, add and tally amounts. Alternatively, using real shopper dockets and brochures, use pieces to represent products and organise them according to price. |
| **8-12 yr olds** | |
| Humanities - History<br>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


| Example links to Curriculum | Extension ideas using Nüdel Kart/Nüdel Rover |
|---|---|
| **4-6 yr olds** | |
| Design and Technologies<br>Creative Thinking | Decide what machine your school or community could use most. Make the machine out of the Nüdel Kart or Nüdel Rover. 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<br>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

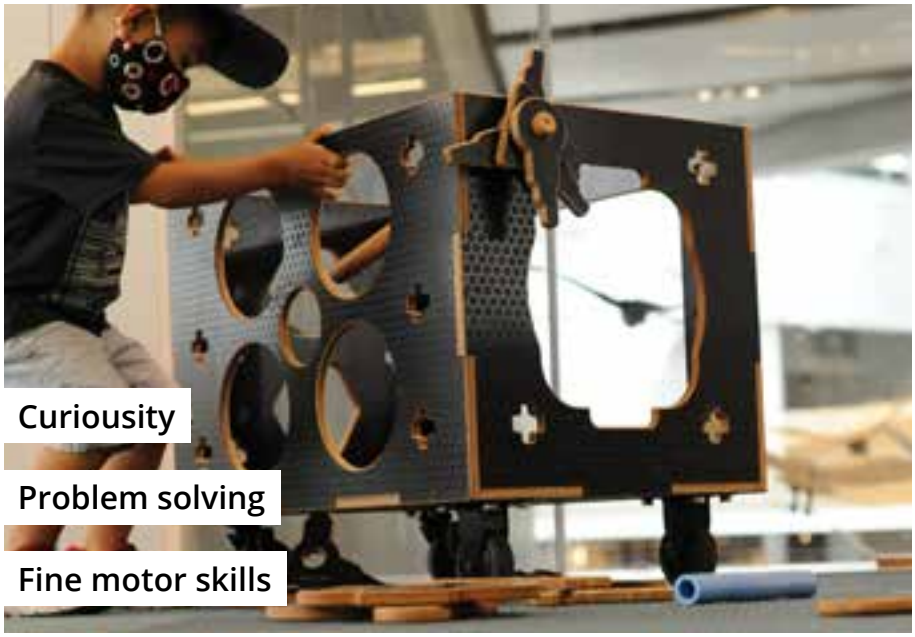
**Initiative**

**Self motivation**

**Creative thinking**

| Example links to Curriculum | Extension ideas using Nüdel Kart/Nüdel Rover |
|---|---|
| **4-6 yr olds** | |
| The Arts - Visual Arts<br>English | Talk about the qualities of superheroes.<br>Draw someone they know who is a hero to them. Explain why and enact when using Nüdel Kart or Nüdel Rover. |
| **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<br>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




| Example links to Curriculum | Extension ideas using Nüdel Kart/Nüdel Rover |
|---|---|
| **4-6 yr olds** | |
| Health and Physical Education<br>Humanities - History | Draw chalk roads on the pavement outside. Make traffic signs from Nüdel 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<br>Humanities - History | Make a construction of your town/city using the Nüdel 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<br>Humanities - Geography<br>Technologies | Inquiry into social organisation.<br>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. |

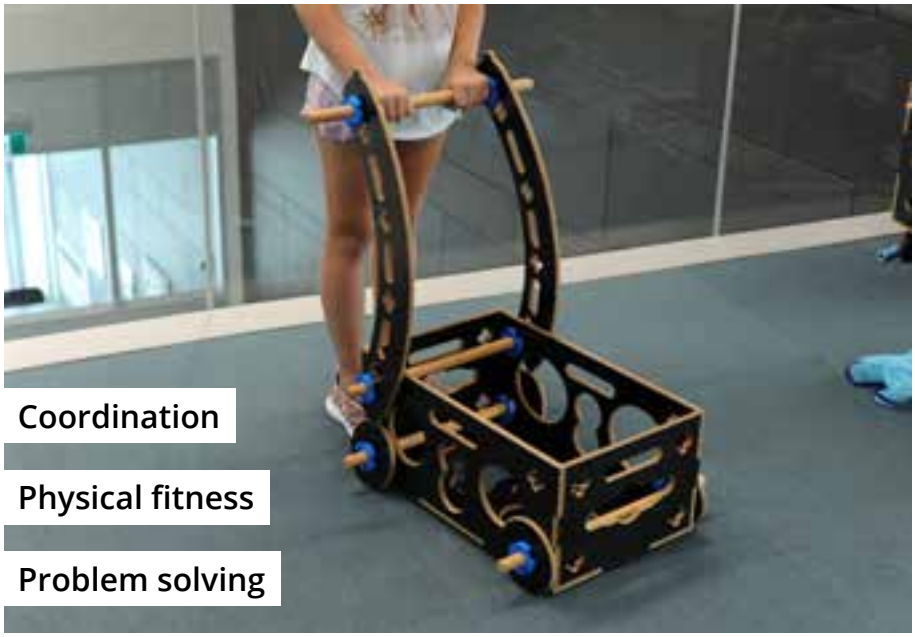
# 10.7 IDEA 7: RUN A RESTAURANT


| Example links to Curriculum | Extension ideas using Nüdel Kart/Nüdel Rover |
|---|---|
| **4-6 yr olds** | |
| Health and Physical Education<br>English | Set up a café in the classroom using Nüdel 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.<br>How to be a good host / a good guest. How to set a table.<br>Teamwork - working together to produce a meal. |
| **8-12 yr olds** | |
| Health and Physical Education<br>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


| Example links to Curriculum | Extension ideas using Nüdel Kart/Nüdel Rover |
|---|---|
| **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<br>Science | Add balls and other objects 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<br>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

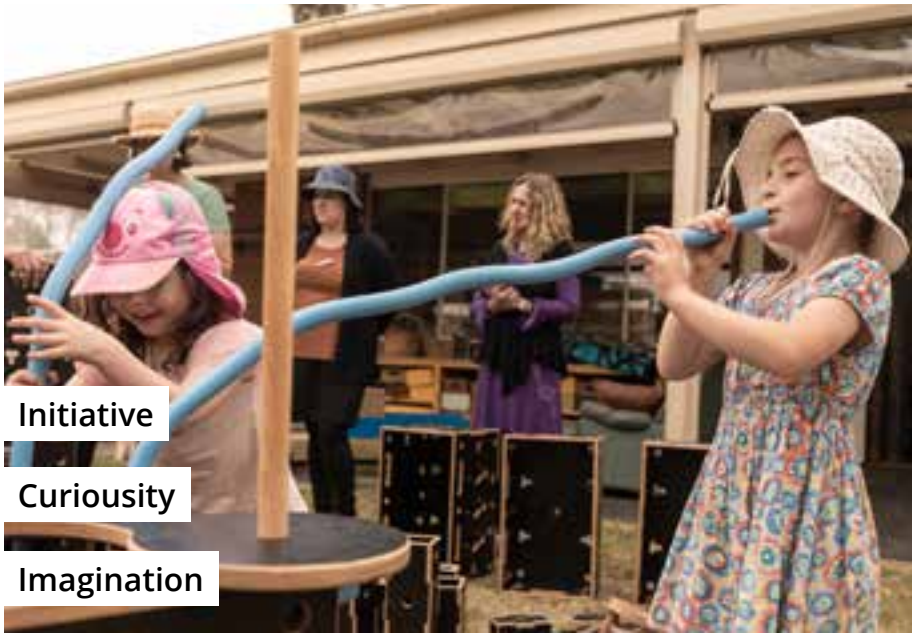



| Example links to Curriculum | Extension ideas using Nüdel Kart/Nüdel Rover |
|---|---|
| **4-6 yr olds** | |
| Science | Discuss push and pull. Use wood dowels and straps to try pushing and pulling a variety of objects. |
| **6-8 yr olds** | |
| Science | Inquiry into force. Test how to make things move faster and slower. Explore friction building a pulley from Nüdel Kart or Nüdel Rover pieces. |
| **8-12 yr olds** | |
| English | 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. |

# 10.10 IDEA 10: BUILD A SHELTER


| Example links to Curriculum | Extension ideas using Nüdel Kart/Nüdel Rover |
|---|---|
| **4-6 yr olds** | |
| Design and Technologies<br>Science | Add toys to Nüdel Kart or Nüdel Rover and make a home for them. Discuss animal homes and the different forms they take. |
| **6-8 yr olds** | |
| Design and Technologies<br>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<br>Design Technologies<br>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




| Example links to Curriculum | Extension ideas using Nüdel Kart/Nüdel Rover |
|---|---|
| **4-6 yr olds** | |
| The Arts - Music<br>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 pieces. |
| **8-12 yr olds** | |
| English<br>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


| Example links to Curriculum | Extension ideas using Nüdel Kart/Nüdel Rover |
|---|---|
| **4-6 yr olds** | |
| Design and Technologies<br>English<br>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<br>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<br>English | Think about uses for robots as the Tuning In session to an inquiry about AI and robotic solutions to real problems.<br>Act out futuristic scenarios, asking 'What if?' questions about the robots. (What if they had emotions? What if they took over?) |

# HOW TO USE THE NÜDEL ROVER WITH 1-3 YEAR OLDS

While children of all ages naturally engage in unstructured play, the play ideas are examples of extension ideas to develop physical, social, emotional, cognitive and language skills.

**Important Note:** The large boxes are mainly used for crawling in or using like a table. Do not stack the large boxes up too high in case they fall. Active, professional adult supervision is required as well as child strength and balance, so that they can move away from/protect themselves from a falling heavy tower. Focus on the smaller, lighter parts and objects that are on the ground if using the larger items.

## Idea 1: Stacking, Knocking, Rolling

| Developmental Characteristics and Skills | Extension ideas using Nüdel Rover |
|---|---|
| **Likes to** stack, build and knock things over<br><br>Can roll balls<br><br>Saying names. | Provide achievable challenges, eg make a high stack of materials. When children knock over stacks of items, build them up again. Stacks could be made on the side of the drawers for a more dramatic effect as they fall over and down to the ground.<br><br>Roll different shaped parts to see which is the fastest, goes the furtherest etc. Use the items to knock down the buildings.<br><br>Name and find parts. |

## Idea 2: Pretend Play – Be a performer

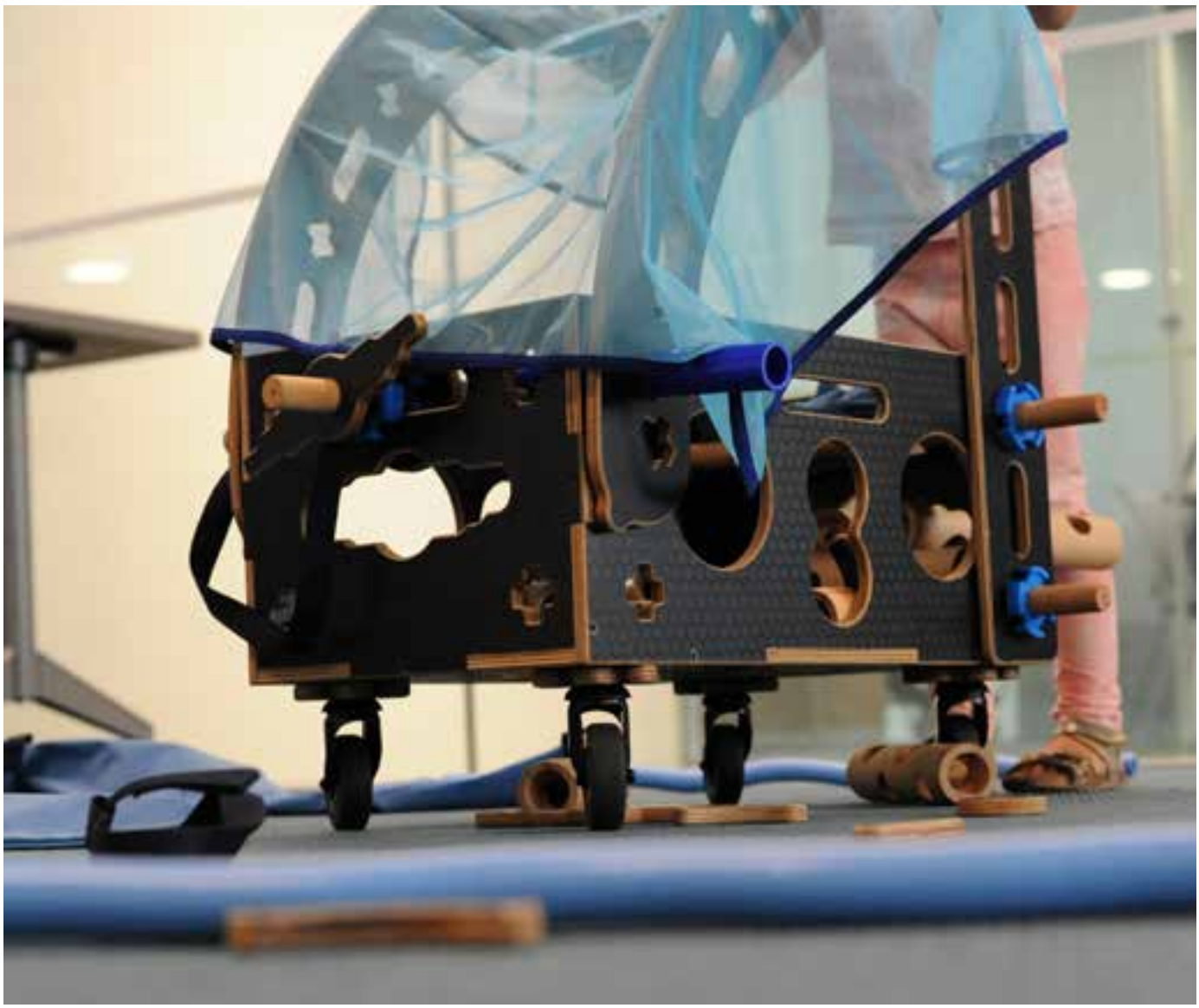
| Developmental Characteristics and Skills | Extension ideas using Nüdel Rover |
|---|---|
| Becomes dramatic.<br><br>Increased vocabulary.<br><br>Makes songs, music and dances.<br><br>Uses objects for lots of reasons.<br><br>Symbolic/pretend play. | Set up a stage for performance. Children could sing, dance, act.<br><br>Use Nüdel Rover for props and costumes. |

## Idea 3: Going on a bear hunt or teddy bear's picnic

| Developmental Characteristics and Skills | Extension ideas using Nüdel Rover |
|---|---|
| Can walk, run, climb, kick, jump, stop, balance on one leg, use steps.<br><br>Make believe – uses imagination. | Set up an obstacle course.<br><br>Find Nüdel Rover objects that can be climbed on, balanced on or jumped over. Please note: Don't stack the boxes one on top of the other and get the children climbing over the top as they may fall over.<br><br>For younger children use the boxes with their open edge down so they are stepping on the base of the box which is the largest and most stable surface. Other configurations may be possible with professional supervision/support and handholding.<br><br>Create the course as a track to a teddy bear's picnic or read/show Youtube clip 'We're going on a bear hunt' by Michael Rosen. https://www.youtube.com/watch?v=0gyI6ykDwds as stimulus for an imaginative adventure. |

## Idea 4: Make a farm

| Developmental Characteristics and Skills | Extension ideas using Nüdel Rover |
|---|---|
| Can line up objects, stack and build. | Use the Nüdel Rover to make roads, a river, fences and buildings for your farm. |



## Idea 5: Make robot

| Developmental Characteristics and Skills | Extension ideas using Nüdel Rover |
|---|---|
| Repeats actions.<br>Follows simple instructions.<br>Can scribble.<br>Can stack and build<br>Becomes dramatic.<br>Increased vocabulary.<br>Engages in symbolic/pretend play.<br>Getting interested in numbers. | Make a robot to help around the house. Tell the robot what to do. Get them to repeat your actions. Could include numbers. Eg dust 2 times then sweep. Scribble instructions for the robot.<br><br>2-3 year olds can push carts and vehicles around the floor or get into them and push them with a stick or their feet. |

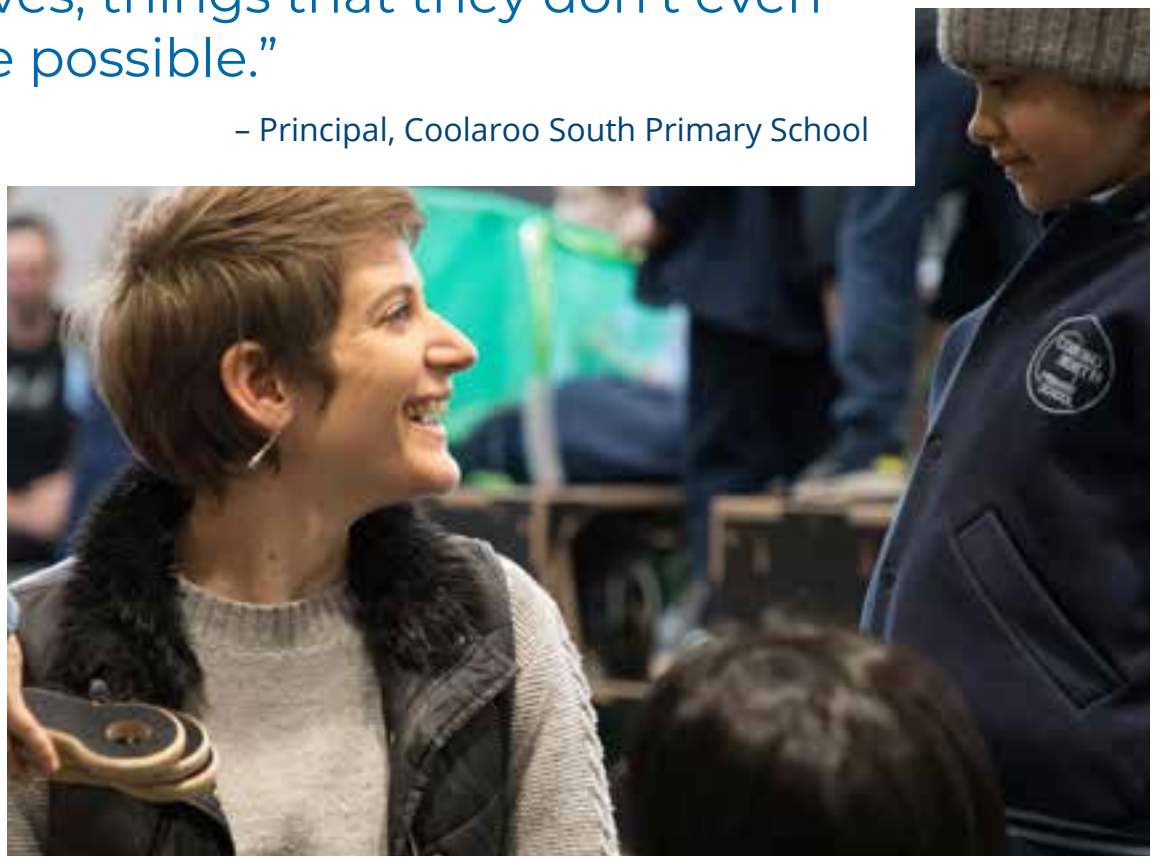
# 11. WHAT IS THE ROLE OF TEACHERS/ SUPERVISORS?

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 resources. These are slightly different for the Nüdel Kart and the Nüdel Rover. All children collect small pieces for drawers.

For instructions on how to pack up your Nüdel Kart and Nüdel Rover, refer to the 'Pack Up Manual' for each resource 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.

# NÜDEL SAFETY AND MAINTENANCE

# 14. GENERAL SAFETY

Nüdel resources must be used at all times in accordance with the Terms of Use, Construction Manual, Pack Up Manual and this document. This document, and all associated documentation related to Nüdel resources, remains subject to the Terms of Use and the Limited Warranty.

**Warning:** This product can cause injury if not used safely. Supervise children at all times with people who are appropriately qualified to work with children

(For the purpose of this document, and anytime we refer to a "Supervisor", we mean anyone that is trained and authorised to work with children. They may also be referred to as a teacher, early childhood educator, playworker, or facilitator.)

- Adult assembly required.
- Nüdel Kart has been designed for children 3-12 years of age. It is not suitable for children under the age of three and children under the age of three are not permitted to engage with Nüdel kart.
- Nüdel Rover has been designed for children aged 1-12 years. Children under the age of 1 are not permitted to engage with Nüdel Rover.
- Ensure children of mixed age or development skill are mixed appropriately. For example, it may not be appropriate to mix groups of 1 year olds with groups of 5 year olds.
- The Nüdel Rover requires active professional supervision and risk assessment. The Nüdel Rover can be configured in millions of different ways and so might present different risks and hazards to different ages of children, with varying levels of competency and development.
- Always supervise children and assess risk (Refer to section 2 and go to the website here: www.nudelkart.com/nk-risk-benefit-assessment for more information on Risk Benefit Assessment and a template.).
- Serious injury may result as a consequence of not following this information.
- Active use of the Nüdel resources must always be supported by the presence of a Supervisor, experienced with leading sessions with children. Always defer to their expertise to advise regarding unsafe situations.
- Please keep these instructions for future reference.
- Nüdel resources can be used indoors or outdoors in dry conditions.

# 15. RISK ASSESSMENT

Nüdel resources can be configured in ways that may create hazards or risks beyond a child's competence to handle. Supervisors must assess risks and hazards constantly whenever children are using the Nüdel resources.

## What's 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.

Nüdel resources are designed to create a creative and challenging environment for groups of children and are reconfigurable in many different ways. Some of those configurations may not be appropriate for a child's skill level and the environment that the Nüdel resources are used in. At all times Supervisor discretion is to be used to assess if a child is safe or if additional support or intervention is required.

Nüdel resources have been designed to minimise risks as far as possible while allowing children's growth and development. Because of the nature of loose parts play, Nüdel resources can be configured in ways that could cause injury. Supervisors should be constantly aware of the following hazards and react to reduce the risks where required: Falls, Toppling of equipment, Strangulation, Shearing and pinching, Entrapments, Protrusions, Crushing. *This list is by no means exhaustive.

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)

Visit the website here: www.nudelkart.com/nk-risk-benefit-assessment for more information on Risk Benefit Assessment and a template.

If you lead a session where any sort of injury or problem occurs, we'd like to hear about it! Even if a child was playing in an unsafe manner, or it was a simple accident, we would appreciate you emailing us at nudel@playgroundideas.org with what happened. This sort of feedback will help us to keep track of issues Supervisors encounter, and can help influence a future, safer design, and better Supervisor resources.

# 16. CONSTRUCTION

Refer to the Construction Manual for step by step instructions. The Nüdel resources should be constructed by a competent person(s), with the tools required for construction.

Please go to www.nudelkart.com/construct and watch the following videos:
1. Nüdel Kart and Nüdel Rover construction tips
2. Nüdel Kart and Nüdel Rover screwing tips

**These do not replace the construction manual.**

You should always refer to and use the Construction Manual when constructing the Nüdel Kart or Nüdel Rover.

After assembling any component, run your hands along the edges of each component to ensure that it is free from sharp edges, splinters, or cracks. If you find sharp edges, splinters or cracks, these can be repaired with sanding or wood filler.

(Refer to the Construction Manual for full details)

# 17. SAFETY TIPS FOR A SESSION

## A. Before you start

- Inspect all parts for damage before and after play. Damaged parts must be discarded, repaired or replaced. (refer to pack up Section 17 of this document for more detail). Failure to properly inspect and repair may result in serious injury.
- Take care when using the Nüdel Kart or Nüdel Rover with other equipment or with objects other than those supplied – assessment of additional risk is essential (refer to risk assessment document www.nudelkart.com/nk-risk-benefit-assessment and Section 15 of this document).
- Take into consideration the maximum number of users and age ranges:

**Nüdel Kart**

- Nüdel Kart has been designed for children 3-12 years of age. It is not suitable for children under the age of three and children under the age of three are not permitted to engage with Nüdel kart
- The Nüdel Kart is designed for a maximum of 30 children at one time with a minimum of one Supervisor. Note that Supervisors need to comply with the supervision ratios for their state / jurisdiction based on the age group.
- There are enough parts for a whole class, (up to 30 children), to work with one Nüdel Kart. You can always use more than one Nüdel Kart at a time for larger groups, or purchase Nüdel Kart add-ons. Contact us at nudel@playgroundideas.org for more information.

**Nüdel Rover**

- Nüdel Rover has been designed for children aged 1-12 years. Children under the age of 1 are not permitted to engage with Nüdel Rover.
- Ensure children of mixed age or development skill are mixed appropriately. For example, it may not be appropriate to mix groups of 1 year olds with groups of 5 year olds.
- The Nüdel Rover requires active professional supervision and risk assessment. The Nüdel Rover can be configured in millions of different ways and so might present different risks and hazards to different ages of children, with varying levels of competency and development.
- The Nüdel Rover is designed for a maximum of 8 children at one time with a minimum of one Supervisor. Note that Supervisors need to comply with the supervision ratios for their state / jurisdiction based on the age group.
- There are enough parts for 8 children to work with one Nüdel Rover. You can always use more than one Nüdel Rover at a time for larger groups, or purchase Nüdel Rover add-ons. Contact us at nudel@playgroundideas.org for more information.

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- Take into consideration the maximum weight restrictions of 100kg unless otherwise marked.
- Use on flat ground, clear of obstructions.

**Set limits.** You can of course adapt the rules and expectations to yourself, users, and the kart in particular settings, however we suggest:
1. Be safe
2. Show respect – to self, others, equipment and space

Children can be reminded about these at the beginning of each session, and as needed.

**You may want to have consequences like: no safe play = no play.**

## What's the difference between a risk and a hazard?
(Refer to Section 15 of this document)

Visit the website here: www.nudelkart.com/nk-risk-benefit-assessment for more information on Risk Benefit Assessment and a template.

As with any active play experience, there is a risk of injury. The role of the Supervisor is to monitor the play session and ensure that children are free to explore the healthy risks that exist with active play, but are safe from hazardous situations. It is the Supervisor's role to assess each session, situation, and construction to ensure that the children are safe from hazards.

- Monitor children that aggressively push, pull, or roughhouse during play sessions to intervene before injuries occur.
- Do not allow children to climb on unsteady structures, or to enter an unsteady structure which other children are actively assembling, disassembling, or climbing on.

These examples are provided for illustrative purposes only. We cannot list every potential hazardous situation. It is the Supervisor's responsibility to remain vigilant to ensure a safe play environment. Unattended children should not be permitted to play with Nüdel resources. The Terms of Use require active monitoring of each session by a Supervisor.

## B. During a session

Remind students of the rules, expectations and consequences:
1. Be safe
2. Show respect – to self, others, equipment and space

Always supervise and assess the risks and hazards present in any given situation. Again refer to **What's the difference between a risk and a hazard?** (Refer to Section 15 of this document)

Nüdel resources are made from durable materials. Structures made from Nüdel resources have been tested, and can support up to 100kg (220 lbs), unless otherwise marked, without damage or collapse. Supervisors should ensure that components are assembled in a stable, secure manner before any child is allowed to climb on the structure. Never allow children to climb on loosely assembled components, or any structure that is more than **60cm (23.6 inches) high**.

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

If something breaks or becomes hazardous, remove it from the play area immediately.

Discourage children putting objects in their mouth for hygiene reasons.

Nüdel resources has been designed to minimise risks as far as possible while allowing children's growth and development. Because of the nature of loose parts play, the Nüdel resources can be configured in ways that could cause injury. Supervisors should be constantly aware of the following hazards and react to reduce the risks where required:

- Overload and stability risks: Look out for too many children climbing on one part or area, which might cause the product to be overloaded or become unstable. Active professional supervision is recommended at all times to mitigate these hazards.
- Entrapment risks: Children below three may become entrapped by the head, torso or limbs in some complex configurations. Monitor, assist or stop children trying to fit in small gaps, to keep them safe. Active professional supervision is recommended at all times to mitigate these hazards. (This is a specific risk to the Nüdel Rover)
- Falls
- Toppling of equipment
- Strangulation
- Shearing and pinching
- Entrapments
- Protrusions
- Crushing

*This list is by no means exhaustive

**Stacking risks:**
Children should be monitored to avoid stacking objects over head-height, to avoid the risk of materials being toppled, and tumbling onto the children involved in the stacking activity, or other children within striking distance of the stacked objects who may not be paying attention to that activity.
For example, for a 1.5m stacked tower, children not engaged in the stacking activity should be more than 1.5m from the base of that stack. If the stack becomes unstable, Supervisors may need to physically support the stack as it is disassembled.

**Climbing risks:**
Supervisors should assess the stability of any structure a child intends to climb upon to avoid the risk of collapse or instability leading to a fall and additional tumble risks to surrounding children . Do not allow children to push, pull, or interfere with other children who are climbing on or within a structure. Supervisors

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may need to offer assistance to the climber in any or all of the following ways;
1. Challenge the child to test the structure's stability by wobbling it and then encourage them to make the structure more stable;
2. Assist the child in reinforcing the structure to improve stability;
3. Provide physical support to the child on the structure, or the structure itself; or
4. Prevent the child from climbing on any structure deemed hazardous due to structural stability, or if the Supervisor deems the child not competent to undertake the climbing challenge.

**What if children use items as weapons or in another unsafe manner?**
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. However some children may need special attention. In extreme cases, for children with special needs, consider preparing a separate play-space without any of the components the child is attempting to use in an unsafe manner, or simply remove these objects from the entire play space and leave the children to play with the remaining pieces.

Again, these examples are provided for illustrative purposes only. We cannot list every potential hazardous situation. It is the Supervisor's responsibility to remain vigilant to ensure a safe play environment. Unattended children should not be permitted to play with Nüdel Kart or Nüdel Rover. The Terms of Use require active monitoring of each session by a Supervisor.

## C. Pack up

- Before and after play, inspect all parts for signs of visible damage or wear and tear that indicates a broken or weakened part. Damaged parts must be discarded, repaired or replaced. Failure to properly inspect and repair may result in serious injury.
- We recommend that Supervisors do a general inspection of the kart as it's being unpacked and packed up and a per-piece inspection should occur after every 10 uses. Children can be made to be part of this process.
- Wipe the kart clean at the end of every session.
- You may occasionally need to wash/clean loose parts after a period of play, depending on the play environment and weather.
- Children enjoy the challenge of packing up a Nüdel Kart or Nüdel Rover – encourage them to be a part of the pack up process. After the first session, children may be able to lead this process and take ownership over the assembly of the kart. (Children are able to set up and pack up the kart on their own, under supervision, as per the terms of the use and other related documentation.)

**Storage**
To minimize weathering over time, Nüdel resources should be stored inside. Choose somewhere that is easy to wheel the kart into, (ie. not up stairs or sloping surfaces to avoid the kart rolling over or away), and ideally, in a room or shed that is lockable.

# 18. MAINTENANCE

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

**Over time:**

- Regularly check your Nüdel resources and the loose parts inside.
- If something breaks or becomes hazardous, remove it from the play area immediately.

Damaged parts must be discarded, repaired or replaced before reuse. Failure to properly inspect and repair may result in serious injury. Included in your maintenance kit are some simple items to repair your kart. Drill bits, nuts and bolts and extra screws, if any parts feel loose or need strengthening from some overly vigorous box jumping adventure.

Your kart comes pre-oiled with a water resistant, natural, non toxic coating to keep the edges strong. You may notice some wax marks on the surface, this is beeswax and will come off over time. If the kart experiences excessive humidity or moisture, the edges may need to be re-oiled.

Please contact us at nudel@playgroundideas.org to purchase additional oil to keep it in great condition for years to come.

You can also restock with Nüdel spare parts.
Contact us at nudel@playgroundideas.org.

The Nüdel Kart and Nüdel Rover are made from certified plywood and treated with a beeswax oil that makes it water resistant. However it should not be left outside overnight and should not be used in wet conditions.

# 19. FAQs

## How can I raise funds to buy a Nüdel resource?
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.

## Can my school raise funds to buy a Nüdel resource?
Yes, as a no-profit Playground Ideas is constantly working with sponsors to send Karts to schools and communities that need support across the globe.

## How many children can use a Nüdel resource at one time?
**Nüdel Kart** - 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 or add your own local materials.
**Nüdel Rover** - The Nüdel Rover is designed for groups of up to 8 children.

## 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. Using the Kart on carpeted floors or outside on the grass can significantly reduce the noise.

## 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 a Nüdel resource?
No problem, your Nüdel Kart can be maintained and expanded easily through Nüdel add- ons or with local materials. See tips above for maintaining, restocking, building and adding to Nüdel Kart with low cost and free items. Contact us for a specific piece or enquiry.

## 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 us if you would like to book in Professional Development with staff in your setting.

## Do Nüdel resources only suit some children?
Nüdel is for everyone. The child decides how to use it. 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 resources are most suitable for children from 3 - 12 yrs old. (The Nüdel Rover is suitable for children 1-12 years)

## 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 and think about something.
3. To "noodle around" means to play or experiment.

## Why is it called Nüdel Rover?
The Rover is named after the tiny and amazing Mars lander pod that was filled with incredibly compact tools to do an amazing amount of work.

## Why is it only one colour?
By only creating one colour kart, it prompts the child to add meaning onto the object as opposed to driving meaning through association.

## How big is the Nüdel Kart?
It's about the size of a traditional supermarket shopping trolley. Finished size is approximately 72cm Wide x 83cm High x 133cm Length (Handle  can be packed away to reduce length to 120cm for storage).

## How big is the Nüdel Rover?
The Rover is about the size of a small bedside table. Finished size is approximately 55cm Wide x 92cm High x 72cm Length.

## Can you use it outside?
Yes.

## Can you use it inside?
Yes.

## Aren't some of the pieces too heavy for children?
Based on longitudinal research from the Sydney Playground Project their findings showed that heavy parts were essential if you want high levels of social skills development. Heavy parts cannot be manipulated by only one child and therefore, force children to collaborate requiring the highest order social skills such as negotiation, problem solving, compromise and so on.

## Do I need power?
Nüdel requires no batteries or power for use or even construction but a battery screwdriver is extremely useful and time saving during construction

## How long does it take to assemble out of the flat-pack box?
**Nüdel Kart V1** - For your average school maintenance person allow half a day. If you're having any issues please contact us.
**The Nüdel Rover** - 30-60 minutes for the uninitiated. If you have already purchased a Nüdel Kart it could take as little as 15 minutes.

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## How long does it take to pack up together?

10min. And you can get the class to assist with this process. Much less for the Rover.

## How do you clean an educational resource like Nüdels?

Please note

**(1) Cleaning during COVID-19**

(a) The best course of action would be to quarantine the Nüdel Kart for 72 hours between uses.

(b) Otherwise we suggest cleaning all pieces with mild soap with friction*, between each use.

*the action of one surface or object rubbing against another

**(2) If there is a known Coronavirus case that's when you should do a 2 step clean**

(a) Rub down with detergent and then;

(b) Rub down with disinfectant. (refer to this link for further information https://www.safeworkaustralia.gov.au/covid-19-information-workplaces/industry-information/agriculture/cleaning#heading--1--tab-toc-how_to_clean_and_disinfect)

**(3) For a general clean outside of a COVID-19 environment** ,we suggest wiping down with a damp cotton cloth. If the kart is particularly dirty or has been used 10 times or more, as per the supervisor manual, if you are conducting a piece by piece safety check, you may want to clean the kart and each element with mild soap and some friction or an environmentally friendly cleaning agent. Test on the wood first to make sure it won't stain or damage the Nüdel Kart.

Please note "If the Nüdel Kart requires a rigorous cleaning schedule, the timber may become dry over time and may require additional oiling. Contact us at nudel@playgroundideas.org for an appropriate oil to maintain the Kart over the long term.

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# CREDITS

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Nüdel™ KART