Small Group Project: Rockets

Big Idea/Unit:

Spaces & Places

Inquiry/Focus Questions:
"What does a rocket do?"
"Where do rockets go?"
"How can we make a rocket?"
"How do rockets work?"

Curriculum Goals:

Western Australia Kindergarten Guidelines:

Show confidence in own learning and capabilities

- Show increasing confidence in their abilities, achievements, and ideas as learners
- Show curiosity, engagement and purpose for learning.
- Participate in dramatic play, role play and learning experiences that explore aspects of identity and points of view
- Build positive relationships in their peer group and social circles (connects to the Health and Physical Education Curriculum).
- Celebrate achievement and share contributions with others.

Participate positively as part of a group

- Participate appropriately in a social context
- Take turns in small group situations
- Cooperate and contribute to play and small group experiences

Early Years Learning Framework:

2.4 Children become socially responsible and show respect for the environment

- Use play to investigate, project and explore new ideas
- Participate with others to solve problems and contribute to group outcomes.
- Demonstrate an increasing knowledge of, and respect for natural and constructed environments
- Explore, infer, predict and hypothesise in order to develop and increased understanding of the interdependence between land, people, plants and animals.

4.2 Children develop a range of skills and processes such as problem solving, inquiry, experimentation, hypothesising, researching and investigating.

- Apply a wide variety of thinking strategies to engage with situations and solve problems, and adapt these strategies to new situations.
- Make predictions and generalisations about their daily activities, aspects of the natural world and environments, using patterns they generate or identify and communicate these using mathematical language and symbols.
- Explore their environment
- Manipulate objects and experiment with cause and effect, trial and error, and motion.
- Contribute constructively to mathematical discussions and arguments.
- Use reflective thinking to consider why things happen and what can be learnt from these experiences.

5.1 Children interact verbally and non-verbally with others for a range of purposes

- Respond verbally and non-verbally to what they see, hear, touch, feel and taste.
- Use language and representations from play, music and art to share and project meaning.
- Contribute their ideas and experiences in play, small and large group discussion.
- Interact with others to explore ideas and concepts, clarify and challenge thinking, negotiate and share new understandings.
- Demonstrate an increasing understanding of measurement and number using vocabulary to describe size, length, volume, capacity and names of numbers.
- Use language to communicate thinking about quantities to describe attributes of objects and collections, and to explain mathematical ideas.

5.3 Children express ideas and make meaning using a range of media.

- Use the creative arts such as drawing, painting, sculpture, drama, dance, movement, music and storytelling to express ideas and make meaning.
- Experiment with ways of expressing ideas and meaning using a range of media.
- Begin to use images and approximations of letters and words to convey meaning.

5.4 Begin to understand how symbols and pattern systems work

- Can name some basic 2D shapes such as square, circle, oval, triangle and rectangle.
- Uses everyday language to talk about the properties of shapes (eg. "the circle is curvy/round").

3.2 Develop increasing responsibility for their own health and physical well-being

- Begins to identify the routines in the day to manage themselves and their property
- Demonstrates fine motor skills required for activities such as drawing, painting, cutting, use of computer mouse
- Holds a pencil correctly and uses it effectively.

Small Group Project: Rockets

Assessment Pointers:
- Students can ask for help (taken from the social/emotional checklist)
- Students can share with peers (taken from the social/emotional checklist)
- Students respond to others (taken from the social/emotional checklist)
- Student takes turns (taken from the social/emotional checklist)
- Students begin to work with others (taken from the social/emotional checklist)
- Students contribute ideas (taken from the social/emotional checklist)
- Students begin to use mark making as a means for communication
- Students use appropriate eye contact (taken from the speech skills checklist)
- Student speaks intelligibly, with only a few speech immaturities (taken from the speech skills checklist)
- Students use correct tense (taken from the speech skills checklist)
- Students begin to use adult like grammar (taken from the speech skills checklist)
- Answers questions appropriately (taken from the speech skills checklist)
- Students can name some basic 2D shapes such as square, circle, oval, triangle and rectangle and uses everyday language to talk about the properties of shapes
- Students identify how things are the same and different and begin to sort and compare
- Students demonstrate age appropriate fine motor skills when completing portraits in different media (e.g. correct pencil grip, drawing with appropriate details in drawings, manipulates dough with appropriate level of hand strength)

Questioning Strategies:

<u>Inquiry Leading Questions</u>
Tell me about..
Why do you think...
How did you...
What happened when...
What else can you do with...
What would happen if...
How might you use...
I wonder if...

<u>Shapes</u>
What is this shape?
What else is this shape? What are some examples of this shape?
How would you describe this shape?

<u>Comparing/Sorting</u>
Who in Kindy likes the same colour/ animal/ food as you? Pictorial/ photo chart
Who in Kindy likes a different colour to you? Pictorial/ photo chart
Who in Kindy has brothers? Sisters?
How are you the same as your friend?
How are you different to your friend? Child chooses how to record similarity/ difference e.g. teacher as scribe, drawing, painting, video

<u>Fine Motor</u>
How could you express it with a drawing/ clay/ etc?
Do you like your creation? Why?
What is your favourite? Why?

Prior Knowledge:

- The children painted large fridge boxes
- The teaching staff cut holes in them for the children to play in.
- The children were pretending that it was a rocket to fly in,

Resources:

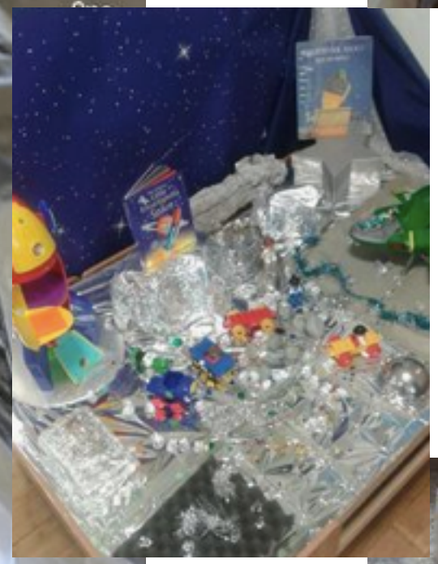
Floorbook – pens, markers, paper, scissors, photos etc.

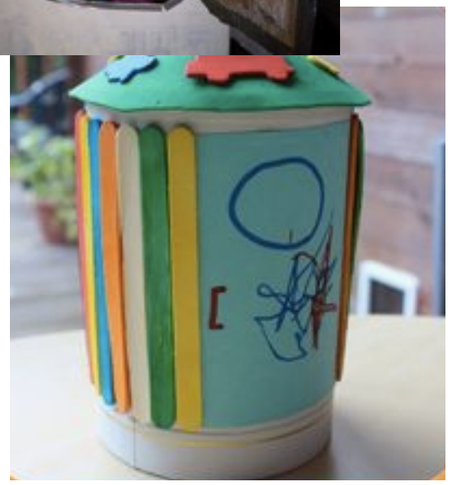
Craft supplies

<u>Week 3 Observation:</u>

The children were using an old cardboard box to pretend that they were flying in a rocket. A staff member sat with the children asking them leading questions to stimulate thought and reflection. The children revisited the same play experience for a few days in a row. We decided that this was something we would scaffold through setting up the environment and providing additional resources to further develop this play.

Possible learning experiences:





Project Celebration:

Unit Reflection:

Prior Knowledge:

Resources:

Post Planning:

Week 4:

- The children decided that they would like to build a rocket. They worked as a team to build a small model of a rocket... "so that we know what we're doing" explained one child.
- Two boys sat with me to draw a rocket. They ended up talking extensively on the different aspects of rockets. One boy drew each part separately, and articulated what each part was for. The other boy sat quietly drawing and included all the features the other boy was talking about.
- Two girls drew rockets and used them in their play.
- Mrs Robinson sat with the group and asked them "What do we know about rockets?". The group updated the floor book to include their thoughts and ideas. Three children has a disagreement about the speed of rockets.

Week 5:

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Project Celebration:

Unit Reflection

Prior Knowledge:		Project Celebration: Plan and carry out a birthday party for a staff member.
Resources:		Unit Reflection

EARLY YEARS LEARNING FRAMEWORK
Kindergarten Yearly Overview (Term One Projects highlighted)

Outcome 1: Children have a strong sense of identity

1.1 Feel safe, secure and supported

- Communicate their needs for comfort and assistance
- Seeks to participate in new experiences.
- Respond to ideas and suggestions from others
- Initiate interactions and conversations with trusted educators
- Initiate and join in play
- Explore aspects of identity through role play
- Establish and maintain reciprocal, respectful relationships with other children and educators

1.2 Develop emerging autonomy, interdependence, resilience and sense of agency

- Demonstrate increasing awareness of the needs and rights of others
- Is open to new challenges and taking considered risks
- Approaches new safe situations with confidence
- Beginning to initiate negotiating and sharing behaviours
- Persists when faced with challenges and when first attempts are not successful
- Engages in play independently
- Makes choices and decision

1.3 Develop knowledgeable and confident self identities

- Explores different identities and points of view in dramatic play
- Shares aspects of their culture with peers and educators
- Has a sense of who they are and shows pride in being part of their family, community, place and cultural group
- Celebrates and shares their contributions and achievements with others
- Expresses opinions, thoughts, and ideas with others
- Expresses feelings appropriate to the situation
- Demonstrates a positive self-image

1.4 Learn to interact in relation with others with care, empathy and respect

- Engages in and contributes to shared play experiences
- Expresses a range of emotions, thoughts and views constructively
- Displays awareness and respect for others' perspectives
- Reflects on their actions and considers consequences for others
- Expresses empathy for others

- Recognises own and others emotions
- Shows interest in other children and being part of a group.

Outcome 2: Children are connected with and contribute to their world

2.1 Develop a sense of belonging to groups and communities and an emerging understanding of reciprocal rights and responsibilities

- Contributes to decision-making about matters that affect them
- Responds positively to others
- Attempts to resolve conflict or unfair behaviour by suggesting teacher-modelled strategies, eg. "What if we took turns?"
- Contributes to group experiences and projects
- Investigates ideas, concepts and ethical issues that are relevant to their lives and their local communities
- Recognises familiar features in the immediate environment
- Recognises that there are rules that influence them
- Participates in routines/systems
- Takes turns and cooperates within a small group

2.2 Children respond to diversity with respect

- Begins to show concern for others
- Demonstrates positive attitudes towards differences, including differences of culture, ethnicity, history, class, traditions, gender, abilities or lifestyle.
- Is developing an understanding of Aboriginal and Torres Strait Islander ways of knowing and being.
- Listen to others ideas and respect different ways of being and doing
- Notice and respond in positive ways to connections, similarities and differences between people.
- Is beginning to demonstrate inclusiveness, eg. Attempts to include a range of people in play and interactions.
- Shows interest in adult-led discussions about bias and non-stereotypical representations in stories & materials and contributes ideas to discussions. Eg. "My mum and dad both help to cook at home."

2.3 Become aware of fairness

- Express empathy for others
- Takes action to assist other children to participate in social groups
- Begins to understand and evaluate ways in which texts construct identities and create stereotypes
- Begin to think critically about fair and unfair behaviour
- Makes choices and problem-solves to meet their needs.

2.4 Become socially respondible and show respect for the environment

- Demonstrate how to look after and use books appropriately.
- Consider the importance of picking up own rubbish
- Demonstrates increasing knowledge of, and respect for natural and constructed environments.
- Explores relationships with other living and non-living things and observe, notice and respond to change.
- Develop an awareness of the impact of human activity on environments and the interdependence of living things.

- Engages in daily sustainability routines with teacher support
- Demonstrates respect for plants, animals, places.
- Takes responsibility for own actions
- Identifies ways to care for plants and animals
- Interacts with animals and plants with care and respect.

Outcome 3: Children have a strong sense of wellbeing

3.1 Become strong in their social and emotional well-being

- Demonstrates trust and confidence
- Increasingly co-operates and works collaboratively with others.
- Enjoys moments of solitude
- Accepts affirmations
- Asserts self in appropriate ways whilst demonstrating increasing awareness of the needs and rights of others.
- Builds and maintains positive relationships
- Initiates interactions and responds positively to peers and adults
- Uses teacher-modelled strategies to control reactions and manage disappointments, eg. Uses a simple breathing technique, joins another group if there is no room to play.

3.2 Develop increasing responsibility for their own health and physical well-being

- Demonstrates fine motor skills required for activities such as drawing, painting, cutting, use of computer mouse
- Holds a pencil correctly and uses it effectively.
- Combine gross and fine motor movement and balance to achieve increasingly complex patterns of activity including dance, creative movement and drama
- Talks about what makes a healthy life
- Shows increasing independence and competence in personal hygiene, care and safety for themselves and others.
- Demonstrates willingness to participate in physical activity
- Demonstrates self-help skills, such as organising own belongings with occasional prompting from adults
- Identifies and applies familiar rules to keep themselves and others safe.
- Fundamental Movement Skills (with support and prompts for correct technique):
    - Running
    - Hopping
    - Jumping
    - Catching a ball
    - Throwing overhand
    - Kicking a large ball
    - Balancing
    - Climbing
    - Is developing skipping technique (aiming to skip forwards at 5 years old)

Outcome 4: Children are confident and involved learners

4.1 Develop dispositions for learning such as curiosity, cooperation, confidence, creativity, commitment, enthusiasm, persistence, imagination, and reflexivity

- Explores different ways of doing things
- Shows curiosity about events and experiences
- Shows curiosity, engagement and purpose in learning
- Perseveres when faced with challenges, making several attempts before seeking help.
- Express wonder and interest in their environments
- Uses play to investigate, imagine and explore ideas
- Participate in a variety of rich and meaningful inquiry-based experiences
- Responds to music, artworks, dance, drama and media and incorporates creative ideas in play.

4.2 Develop a range of skills and processes such as problem solving, inquiry, experimentation, hypothesizing, researching and investigation

- Engages in simple investigations and explorations
- Identifies cause and effect
- Explore safe environments using all senses
- Applies a wide range of thinking strategies to engage with situations and solve problems, and adapt these strategies to new situations
- Make predictions and generalizations about their daily activities, aspects of the natural world and environments.
- Manipulates objects and experiments with cause and effect, trial and error, and motion.
- Uses reflective thinking to consider why things happen and what can be learned from these experiences.
- Explains own thinking processes and makes justifications.
- Utilises the senses to gain information when exploring the world around them
- Develops investigative skills through instructive play and experiential learning
- Asks questions when investigating topics of personal interest.

4.3 Transfer and adapt what they have learned from one context to another

- Mirrors, repeats and practices the actions of others, either immediately or later
- Makes connections between experiences, concepts and processes
- Uses the processes of play, reflection and investigation to solve problems
- Applies generalizations from one situation to another
- Tries out strategies that were effective to solve problems in one situation in a new context
- Transfers knowledge from one setting to another

4.4 Resource their own learning through connecting with people, place, technologies and natural and processed materials

- Uses and names a range of tools, resources and techniques in investigations
- Uses his/her senses to explore natural and built environments
- Adapts materials for use in play situations, suggesting new ideas and ways to use resources.
- Explores the purpose and function of a range of tools
- Manipulates resources to investigate, take apart, assemble, invent and construct

- Experiments with different technologies
- Explores ideas and theories using imagination, creativity and play
- Uses feedback from themselves and others to revise and build on an idea

Outcome 5: Children are effective communicators

5.1 Interact verbally and non-verbally with others for a range of purposes

- Develops use of Standard Australian English and home language to communicate effectively.
- Clearly articulates developmentally appropriate vowel and consonant sounds.
- Develops a range of simple sentence structures to convey meaning.
- Establishes use of a range of vocabulary, e.g. nouns, verbs, adjectives, simple conjunctions.
- Listens and participates in conversation as appropriate to children's cultural situation, e.g. eye contact, turn-taking.
- Communicates with peers and adults in a range of contexts, e.g. play setting, group situations, formal instruction.
- Uses language for variety of social purposes, e.g. taking turns in conversations, expressing thinking and ideas, recounting experiences, coordinating play.
- Listens and engages in conversation related to classroom activities.
- Uses vocabulary in familiar contexts related to everyday, experiences and personal interests.
- Uses specific, subject or topic-related vocabulary, e.g. mathematical or scientific terms including number, size and quantity, spatial words, categories of items such as colours, animals, body parts or food.
- Uses oral language as a tool for reflective thinking, e.g. recounting, describing, reasoning, explaining, problem-solving.
- Uses oral language as a tool for analysing and organising, e.g. sorting, describing, comparing and categorising objects and experiences.
- Respond to and generate questions
- Communicates with known adults and peers about personal experiences

5.2 Engage with a range of texts and gain meaning from these texts

- Engages with, listens to and responds to a variety of texts, e.g. fiction, non-fiction, poetry, multi-media texts, with familiarity and understanding of their format.
- Share, illustrate, re-enact or re-tell stories of different cultures, e.g. traditional tales, dreamtime stories.
- Sings and chants rhymes, jingles, and songs.
- Attempts to 'read' and shares texts for personal purposes.
- Explores texts from a range of different perspectives and begin to analyse the meanings.
- Actively uses, engages with and shares his/her enjoyment of language and literature.
- Investigates words and word meanings.
- Engage in active construction of meaning from text with teacher support, e.g. makes connections between text and own experiences and ideas, makes predictions.
- Recognises and recalls key details or literal information , e.g. who, what, where.
- Reflect on cause-effect relationships and make inferences, e.g. why, how, what if, what might happen next.
- Predict and sequence events in text with teacher support.
- Asks for information or clarification.
- Identifies visual elements of a variety of electronic texts, e.g. pictures, photographs, videos, e-books, multi-media.
- Understand that there are different text types that have different purposes, e.g. lists, procedure, recount, narrative.
- Understand that information can be found in non-fiction texts to provide answers to questions.

- Identify some elements of books and conventional texts, e.g. character, setting, title, beginning, ending.
- Engage in activities that involve representation of meaning in response to text, e.g. re-telling, drawing, painting, music, sculpture, dance, symbolic play, roleplay.
- Carry out simple 2 step instructions.
- Recognise components of text, e.g. letters, words, sentence, pictures, page, title, author, illustrator.
- Explore early concepts of print including that print is constant, and text sequence and directionality, e.g. text goes left-right and top-bottom, where to start reading, pictures on subsequent pages of text are related.
- Recognises own written name.
- Shows understanding of and uses appropriate comparative language related to quantity, length, capacity, mass and time, such as: more than, less than, heavier, lighter, bigger, smaller, shorter, taller, longer.
- Shows understanding of and uses appropriate spatial and positional language such as on, under, through, behind, next to, on top of, over, in front, out, forwards, backwards, across, down, up.
- Responds to the ways in which aspects such as colour, line, shape, and design are used to communicate ideas and create moods.

S.3 Express ideas and make meaning using a range of media

- Explores representation of language, e.g. scribbles, shapes, pictures, letter-like symbols, letters, writing high-frequency words such as their own name.
- Experiments with representing texts in a variety of ways, e.g. oral retelling, roleplay writing, imaginative play, drawing, drawn or written letter.
- Contributes to texts produced in collaborative or modelled writing context.
- Explores use of literate language in oral texts and shared writing experiences, e.g. traditional story starters, "rich" descriptions.
- Shares what they have written or created with another person
- Can write own first name using correct letter formation and capitalisation.
- Role plays writing as part of play
- Initiates drawing or writing to communicate an idea.
- Responds to a range of stimuli (eg. Music, artworks)
- Experiments with ways of expressing ideas and meaning using a range of media.
- Engages in dramatic play
- Engages in music-making
- Uses resources and materials creatively
- Expresses and explores own ideas through 2 and 3 dimensional forms
- Creates simple representations of events, people, objects and feelings

S.4 Begin to understand how symbols and pattern systems work

- Participates in innovation and play involving sound patterns, vocabulary and language, e.g. invented words, songs, poems, nonsense rhyming, sentence innovation.
- Participate in literacy texts which have a predictable pattern based on rhyme or rhythm, e.g. dances, chants, rhymes, jingles, songs.
- Demonstrates word awareness (eg. Jumping to represent each word in a spoken sentence such as I / can / see / a / cat)
- Recognises and suggests rhyming words
- Uses body percussion to represent the number of syllables in spoken words.
- Demonstrates awareness of the initial sound in a spoken word, eg. the sound that their name begins with.
- Develops beginning knowledge of the alphabet, e.g. letters in own name.

- Develops awareness of sound-symbol relationships, associating the shapes of some letters with their sounds and name.
- Develop awareness of different letter forms, e.g. capital and lower case in name.
- Finds numbers in the environment and talks about their purpose, eg. on a clock, keyboard, recipe.
- Recognises the difference between numerals and letters.
- Counts orally forwards and backwards to 10.
- When counting, knows that the last number said represents 'how many' (cardinal number), it does not describe the last object touched.
- Uses one to one correspondence when counting collections (touching each item exactly once)
- Makes a set of up to 5 objects.
- Able to subitise small collections at a glance (1 – 2 items)
- Is beginning to develop an awareness of the correlation between numerals and small quantities, with teacher support.
- Demonstrates early awareness of simple ABAB patterns – copying and continuing these using colours, shapes, objects, pictures, actions etc.
- Identifies how things are the same and different.
- Begins to sort, categorise, order and compare collections and events and attributes of objects and materials.
- Describes and compares objects by the most obvious attribute (eg. Length, mass, area, capacity and time).
- Is developing early awareness of the names of the days of the week with teacher support.
- Can name some basic 2D shapes such as square, circle, oval, triangle and rectangle.
- Uses everyday language to talk about the properties of shapes (eg. "the circle is curvy/round").
- Notices and predicts the patterns of regular routines and the passing of time.
- Engage in exploratory writing in response to written words and numerals in the environment.
- Explores ideas using everyday language to talk about money in play, eg. uses "dollars" or "cents" to refer generally to money; says "you have to pay".

S.5 Use information and communications technologies to access information, investigate ideas and represent their thinking

- Recognises and uses specific vocabulary that is related to information and communication technology, e.g. screen, keyboard, mouse.
- Uses keyboard and mouse to operate simple computer programs, e.g. talking texts, games.
- Experiments with the use of the keyboard for roleplay writing.
- Identifies the use of technologies in everyday life.
- Uses real or imaginary technologies as props in their play.
- Uses ICTs to access images and information.
- Uses ICTs as tools for designing, drawing, editing, reflecting and composing.
- Uses tools from a variety of cultures, including those of Aboriginal and Torres Strait Islanders.