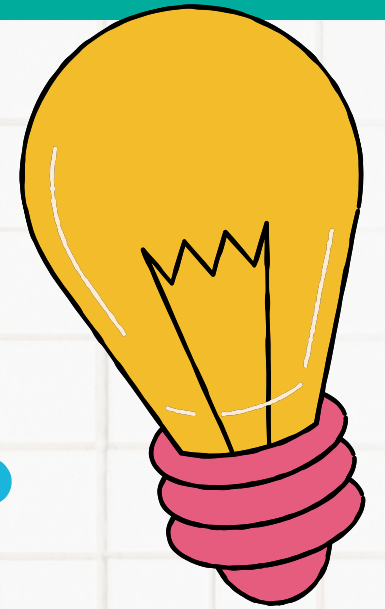
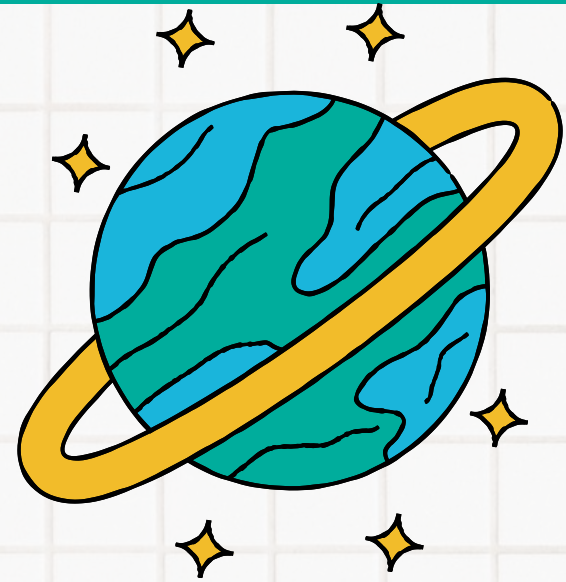


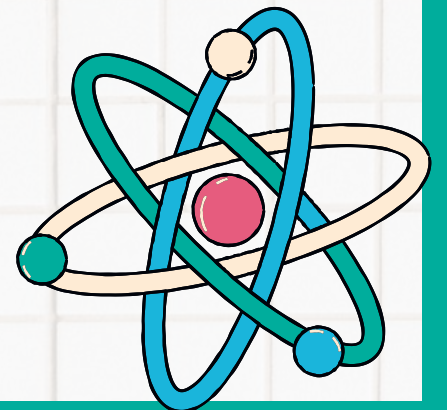
SCIENCE PROJECT

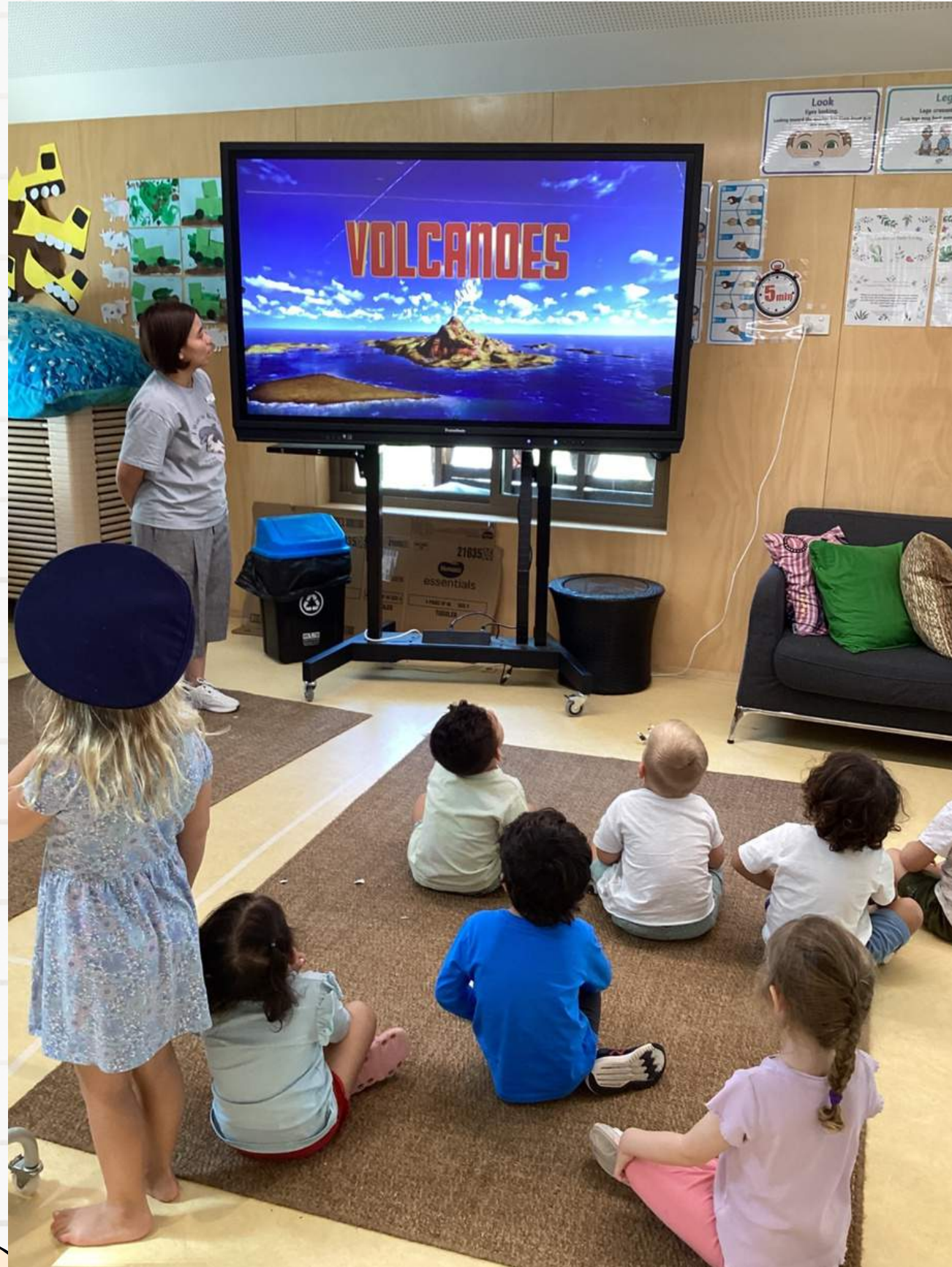
LISNA OKTAVIANI





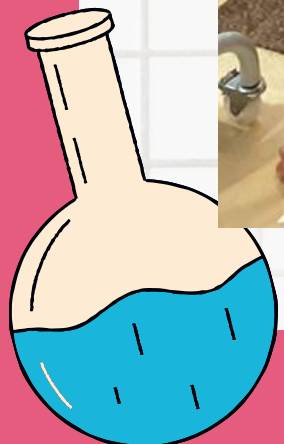
EXPLORING
VOLCANOES: AN
ENGAGING LEARNING
EXPERIENCE FOR
PRESCHOOL





After a 20-minute break in the preschool class, Lisna delivered a discovery lesson about volcanoes to the children using digital media. The children in the afternoon group were clearly interested in volcanoes and lava, despite the fact that the activity lasted only 7 minutes.

In this activity, children went on an amazing tour to learn the wonders of volcanoes. The educator aided the learning process by showing a visually appealing movie describing the concept of volcanoes and how they form. The preschool gathered in the classroom, enthusiastically seated on the carpet, while the educator led an interactive talk about volcanoes.



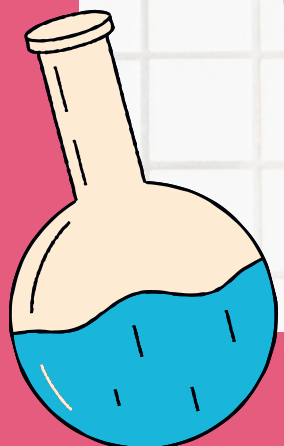


Lisna paused the documentary to encourage discussion, asking questions such "Do you know which planet is in this layer?". Lisna asked, pointing to the big layer.

"Jupiter," Luca said.

"Earth," Yan stated.

"Yes, it is correct. This is Planet Earth.





"Do you know where we live?"

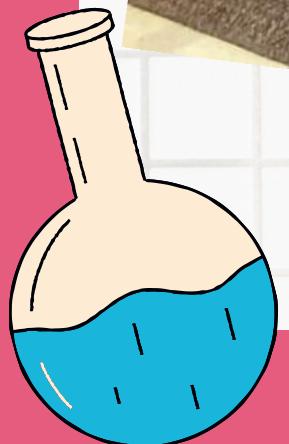
"Australia," Beave answered.

"Australia," Violet replied with a little shout.

"Sydney," Sophia declared. "We live in Sydney," Sophia added.

"Yes, that's correct; we live in Sydney, Australia. But what planet are we now living on?"

"Earth," Yan answered.



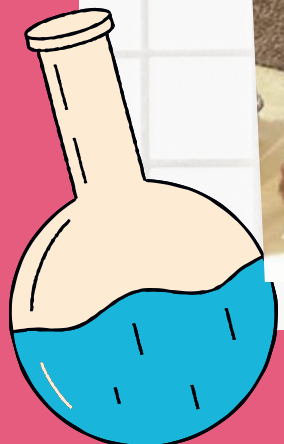
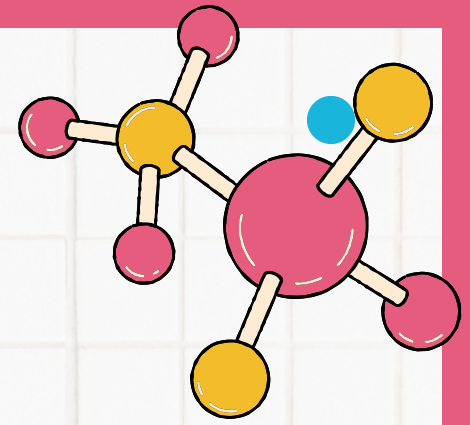


Lisna continued the video and paused many times to gather the children's comprehension of the volcano eruption.

"Can anyone tell me what a volcano is?" said Lisna

"It's a big mountain that can go boom!" Beau raised his hand and gave his opinion.

"Volcano is like a fire mountain!" Violet shouted

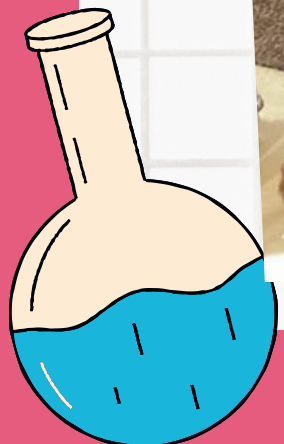
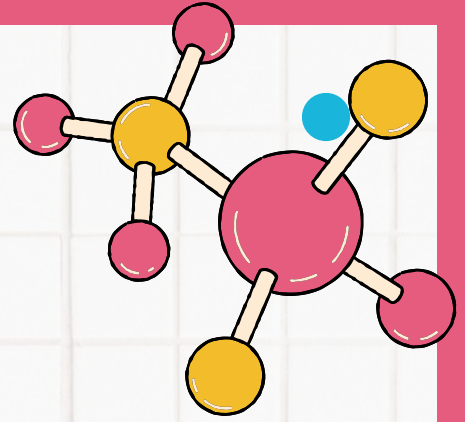




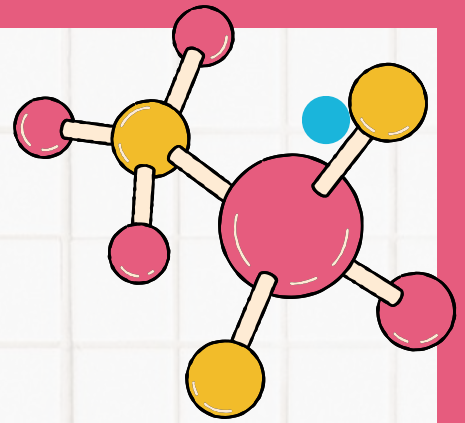
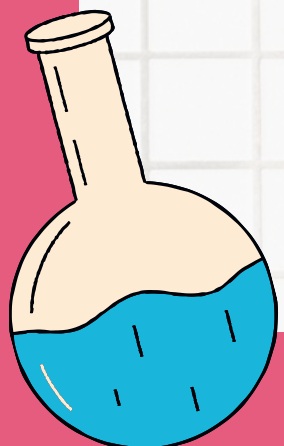
"How do you think volcanoes are formed?" Lisna asked deeper.

"Maybe the mountain gets angry and explodes!" Sophia shared her imagination.

"I think it's because of hot lava under the ground!" Yan tried to connect the story on video with his understanding.

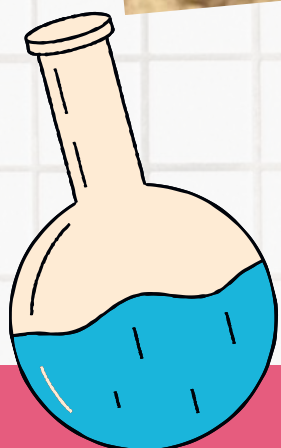
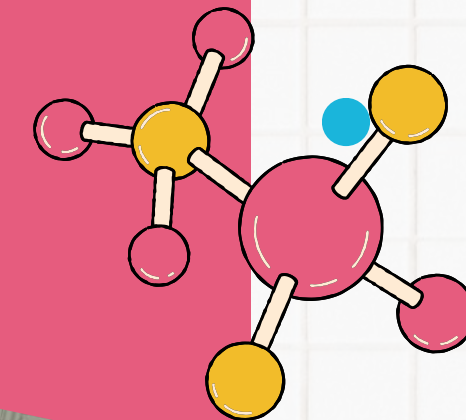


The children were so engaged and interested in learning more about volcanoes that Lisna invited them to build a volcano that erupts with lava through hands-on experiment with baking soda and vinegar.



THE SANDPIT VOLCANOES

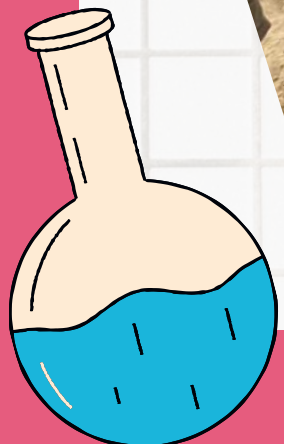
The outdoor play session was packed with excitement as Sophia and Micah's enthusiasm for building a sandpit volcano encouraged the others. We set off on a journey of research and creativity, eager to learn about volcanoes.

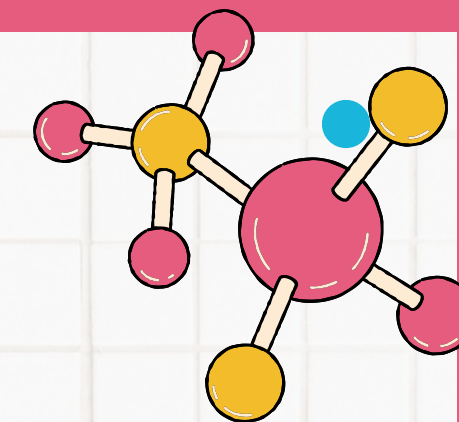


In this engaging outdoor activity, children explored the intriguing subject of sand volcanoes, giving it a colorful touch with the use of chemicals and dyes. The location was a large outside area, preferably a sandbox or a specific play place for dirty exploration.

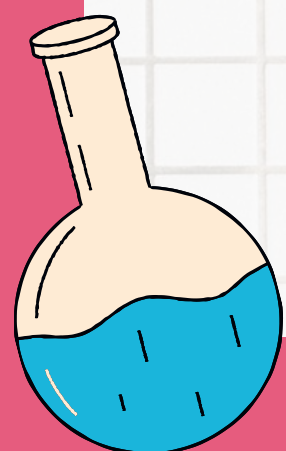
Preparation and setup:

- The educator prepared the outdoor environment with plenty of sand, ensuring it was loose and simple to mold.
- Various containers of safe, non-toxic chemicals, such as baking soda, dish soap, and vinegar, were offered, as well as colorful dyes in liquid or powder form.
- The children were given tools such as miniature shovels, and spoons





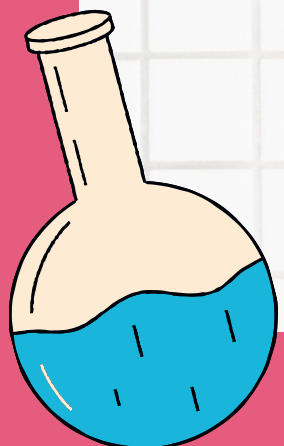
Children are excited to construct the sand volcanoes. They cooperate with one another and participate in the sand-scooping process to build a large mountain. They placed a bottle or a container in the centre of the volcano,





Children put the water to $\frac{2}{3}$ of the glass or bottles inside the sand volcano, then put the dish soap, add the baking soda and mix them, then slowly pour the vinegar to see the reactions.

And....something happened



It's exploded!

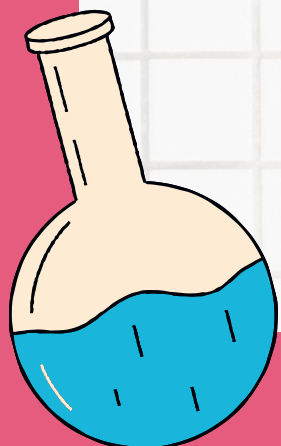
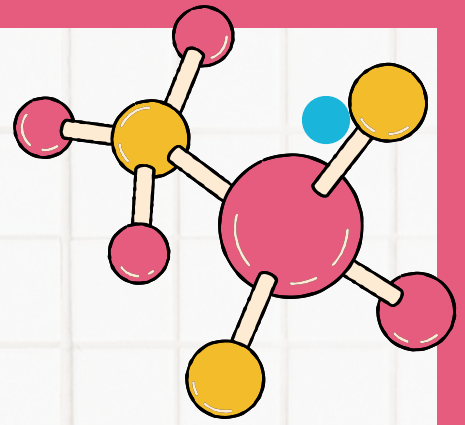


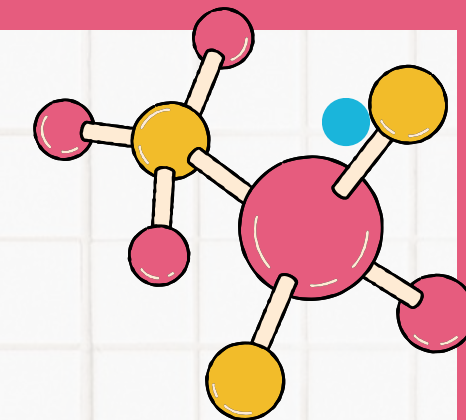
Is that a real lava? Lily followed asking

No, Lily, that is not real lava. We created a fake eruption out of baking soda and vinegar, exactly as scientists do!

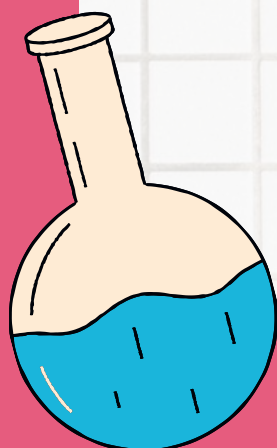
"Why does the volcano bubble like that?" ask Micah

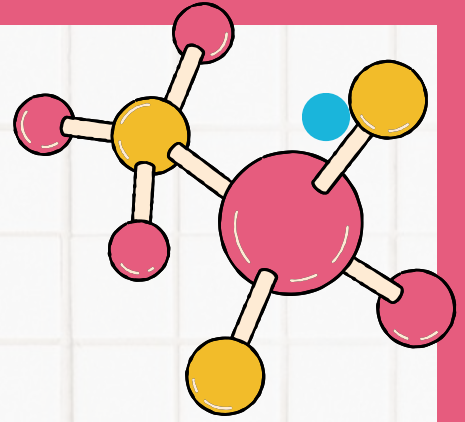
That's an excellent question, Micah! When we mix baking soda and vinegar, they have an interesting reaction that produces bubbles, much like a volcano exploding!



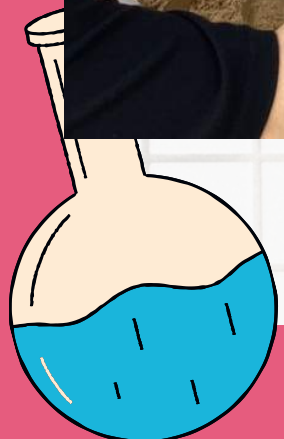


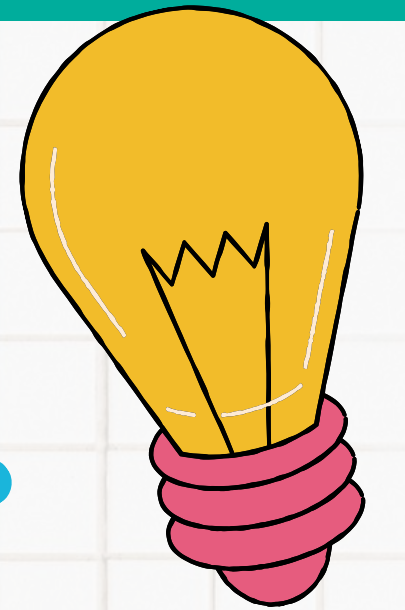
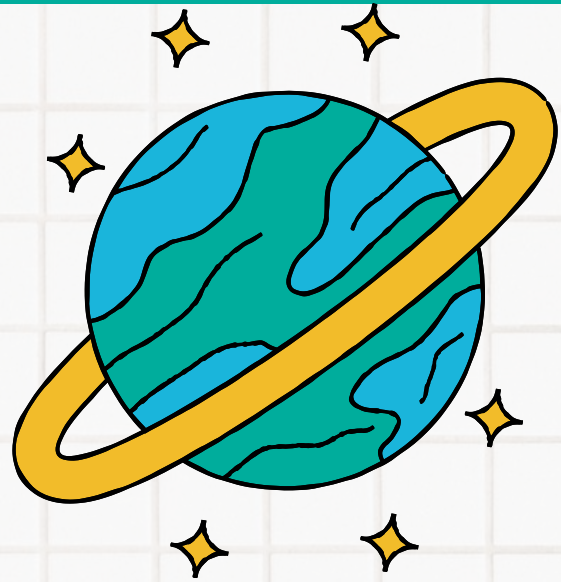
Children are encouraged to investigate the sandpit and its contents, including mixing baking soda, vinegar, and colours to make volcanic eruptions. They interact, find solutions, and engage in imaginative play while building and observing their sandpit volcanoes.



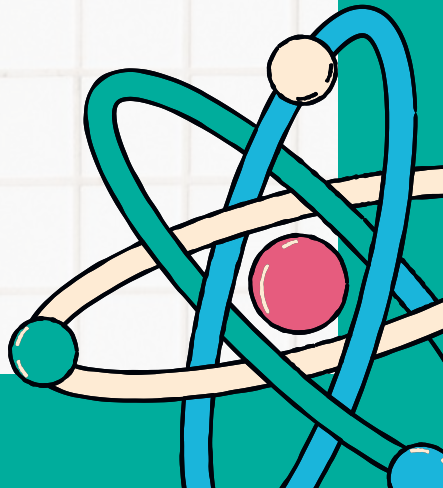


As our sandpit volcanic adventure came to a the end, children were left with a better understanding and appreciation for the natural world around them. Through play and investigation, we not only sparked their interest, but also fostered in them a love of learning that will only increase with each new discovery.



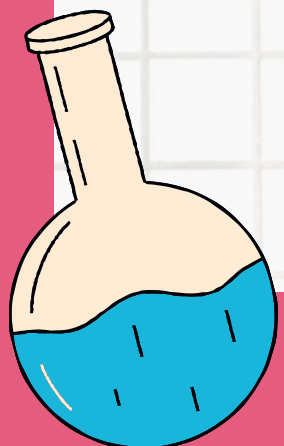
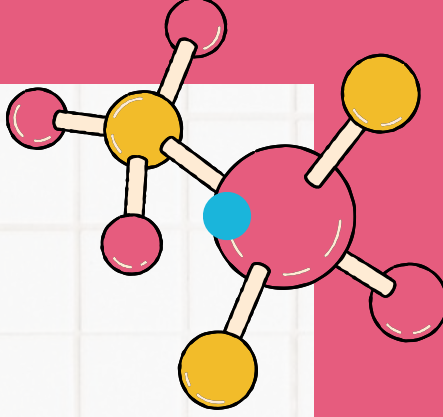


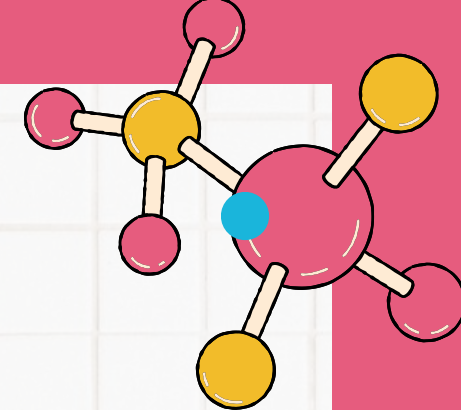
COLOR EXPERIMENT





Today, children participated in a science project about colours. They were gathered in small groups around a huge table and given various coloured liquids, including red, green, and blue, to try. Children were given droppers and instructed to combine the coloured liquids in a glass to see the changes that occurred.





"What color is this?"

"Blue!"

"Red!"

"Yellow!"

Yes! They are blue, red and yellow!"

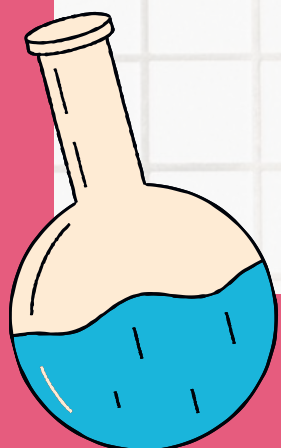
"What color do you like?"

Some said blue, another said red, pink and green.

"Did you know that with these 3 colors, we will make lots of colors?"

"Yes!"

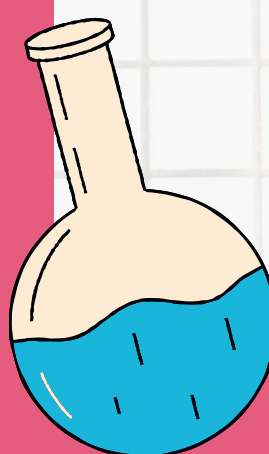
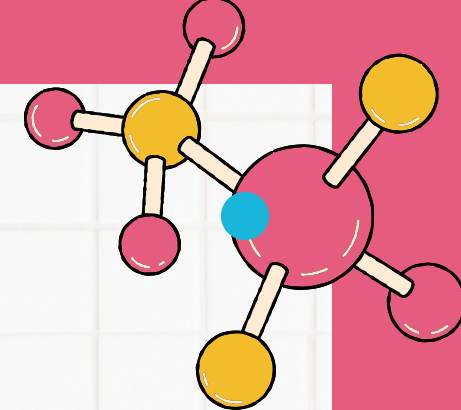
"Alright! Let's explore more and create our own colors."





🌀
Their excitement was evident as they eagerly to start mixing the colors. They felt liberated to explore and experiment freely, fascinated by the possibilities of combining different colours that occurs.

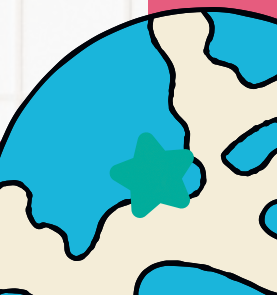
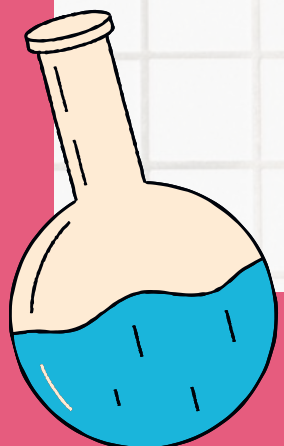
🌸
"I make purple! Yeay!"
"I can make green colour!"
"I want to try this colour...and this color.."
🌈





Some of the children need help squeezing droppers. This activity builds their motor skills, namely the strength of their hands and fingers.

The colour experiment today was an exciting experience for both the children and me. As they gathered around the table, their eyes sparkled with interest and excitement. The set-up was simple but attractive, with colourful liquids neatly organised on the table, ready to explore.





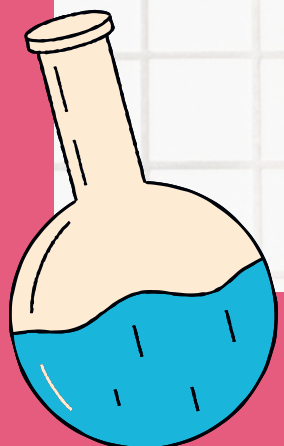
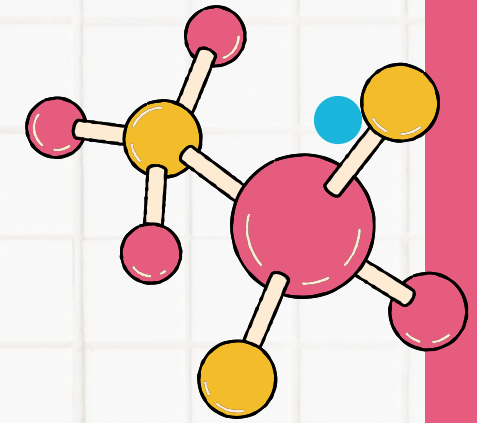
They kept trying to mix the colors until finally the color became darker because all the colors were mixed.

“What happens when all the colors are mixed?”

“Is it black?”

“Yes, the colours became darker.”

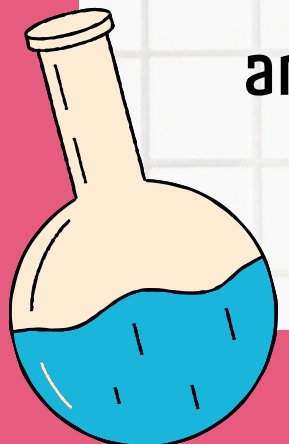
Children learn that dark colors are a combination of various colors when mixed.








Throughout the experiment, the children engaged in discussions about their observations and hypotheses, demonstrating consistent shared thinking and creation. They avidly exchanged ideas and theories, exploring the possibilities of combining different colours. As an educator, I was encouraged to witness their confidence build as they actively participated in the scientific process.

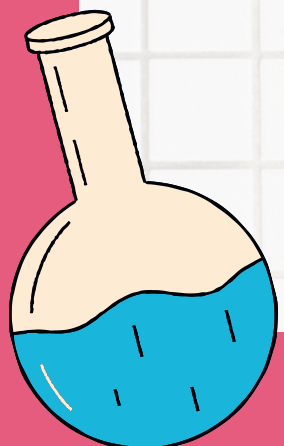
The activity of this colour experiment demonstrated the value of hands-on, inquiry-based learning. By allowing children to explore and play with colours, we not only encouraged their curiosity and creativity but also their learning confidence. The combination of prolonged shared thinking, focused instruction, and co-construction enabled meaningful interactions and learning experiences, allowing children to participate in the scientific process actively.

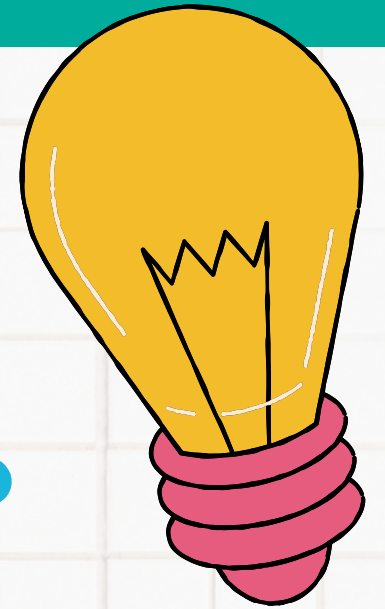
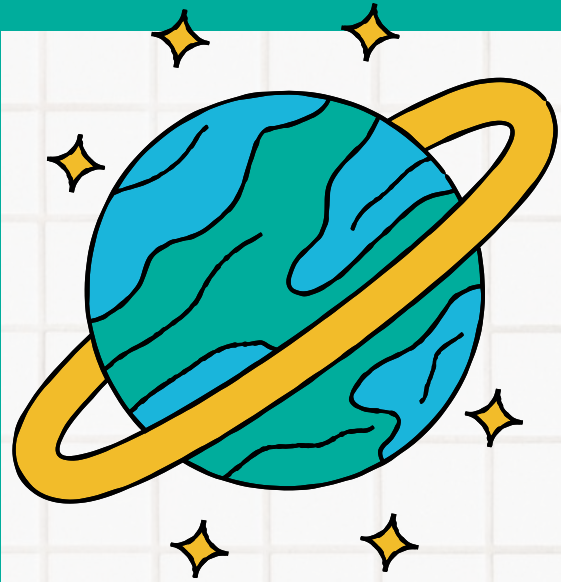




Incorporating play pedagogy into the experiment allowed for consciously structured play, creating a dynamic learning environment in which children felt empowered to take ownership of their learning. The activity fits with Outcome 4 of the Early Years Learning Framework (EYLF) by purposely combining components of exploration and discovery, which boosted children's confidence and involvement as learners.

- Teaching strategy: Sustained shared thinking, intentional teaching, co-constructing, directing
 - EYLF Outcome 4. Children are confident and involved learners
 - Australian Teaching Standards. 2.1 Content and teaching strategies of the teaching area
 - Play pedagogy: Integrated pedagogical approaches- purposefully-framed play
- 



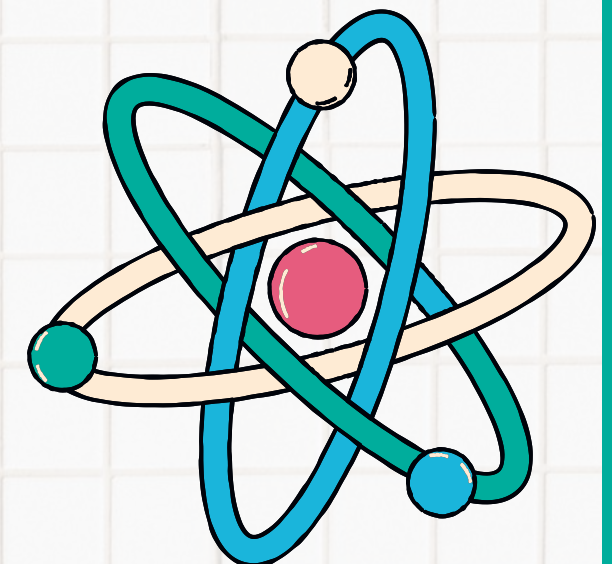
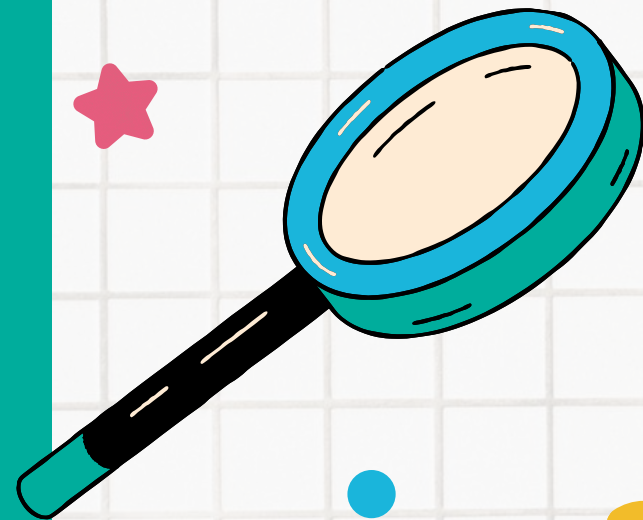


MAGICAL PLASTICBAG EXPERIMENT



Link to:

- National Quality Standards Q1 Educational Program and Practice
- Australian Teaching Standards 2.1 Content and teaching strategies of the teaching area
- Australian Teaching Standards 2.2 Content selection and organisation
- Australian Teaching Standards 3.2 Plan, structure and sequence learning programs
- EYLF Learning Outcome 4. Children are confident and involved learners
- EYLF Learning Outcome 5. Children are effective communicators.
- Teaching strategies: Sustained shared thinking, intentional teaching





Children participated in an amazing science experiment known as the Magical Plastic Bag Experiment. In this experiment, children will learn about molecules and polymer....

"I will show you something magical."

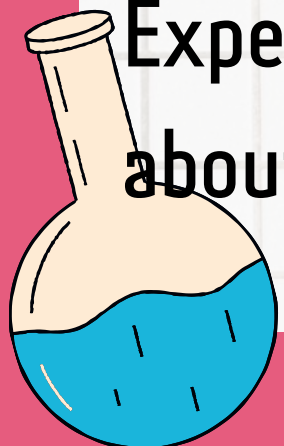
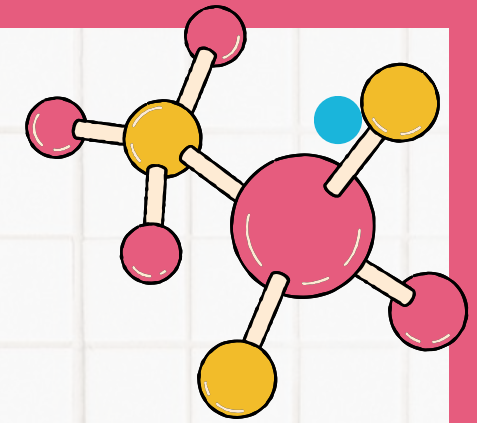
"Yeay!" shouted the children.

"What is it?"

"Yes, I want it!" The children can't wait to see what surprises await them.

"Previously, we will fill this plastic with water half part". Can you help me pour the water inside the plastic bag?"

"Yes! Let me do it!" a child is offering his help.





“Yes, we have our bag contents of water now. Thank you. I’m going to stab this plastic bag with a sharp pencil. What do you think will happen when I stab the plastic with a pencil?”

“The water will leak out!”

“It will be leaking!”

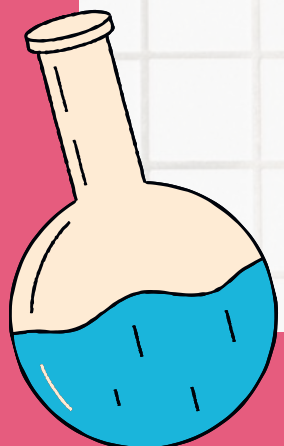
“OK, let’s try it.” Educator stab the plastic bag.

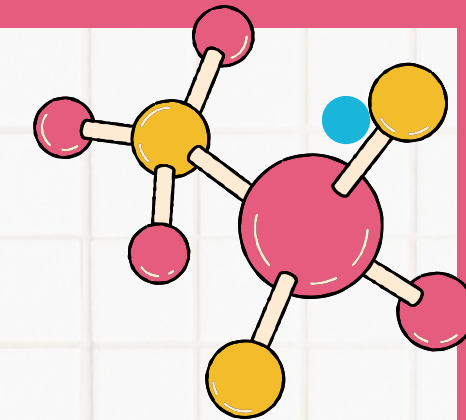
“Yes, It’s leaked.”

“Why is it leaking?”

“There’s a hole.”

“That’s right, if we pull out the pencil, it will create a hole in the plastic.”



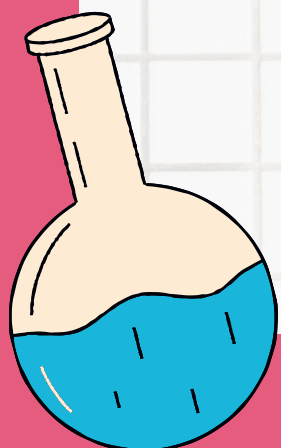
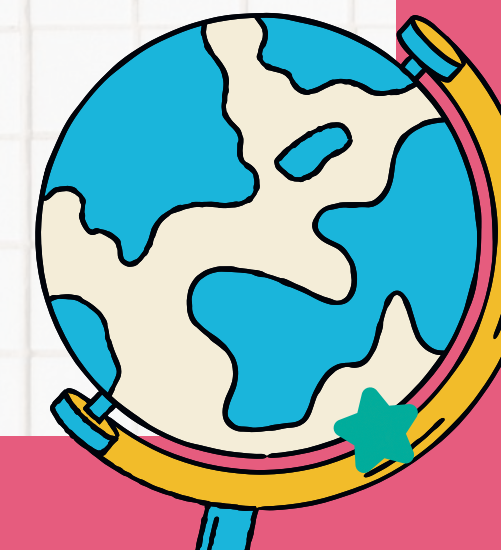


“Let’s do this experiment again on different plastic bags. This time, who wants to pour water into our plastic bag?”

“I want to.”

“Thank you, we have our second plastic bag. I will do similar like the first time. But this time, I will let the pencil stabbed the plastic from one side to the front. We’ll see what will happen.”

“Are you ready?”





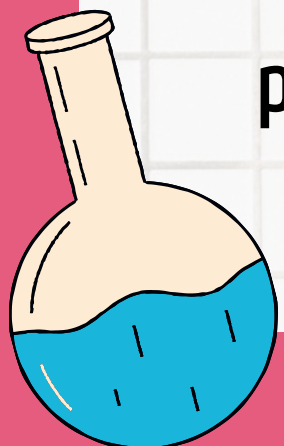
“What do you see?”

“Is it leaked?”

Children were amazed when the bag seemed to seal itself around the pencils, avoiding water leakage. Their faces showed up with surprise and delight as they watched this beautiful occurrence happen in front of them.

As the children passed the pencils into the bag, they noticed an apparently supernatural phenomenon: the bag sealed itself around the pencils

“Do you want to try? Grab each one a pencil and stab in this plastic bag.”





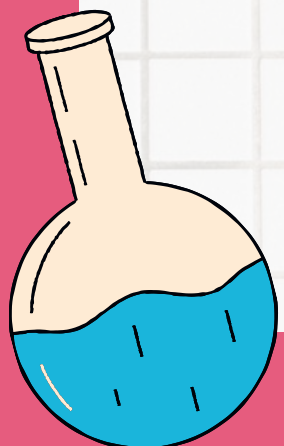
Plastic has the property of bonding to one another, just like spaghetti which sticks to one another even if there is a leak. They try to encourage each other to cover the leak even when it's stretched.

Children were amazed when the bag seemed to seal itself around the pencils, avoiding water leakage. Their faces showed up with surprise and delight as they watched this beautiful occurrence happen in front of them.

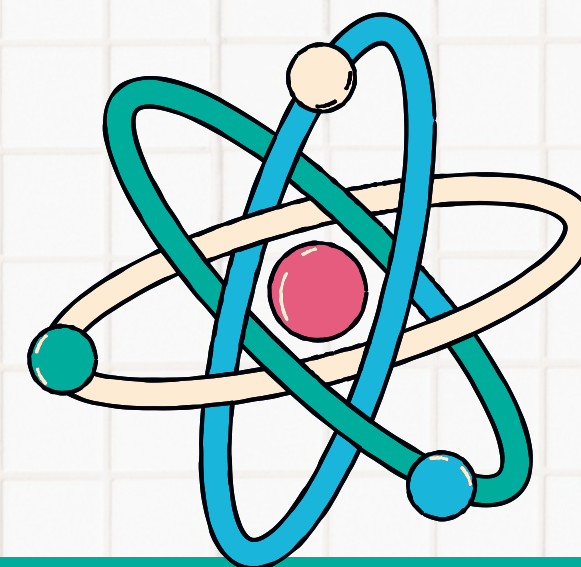
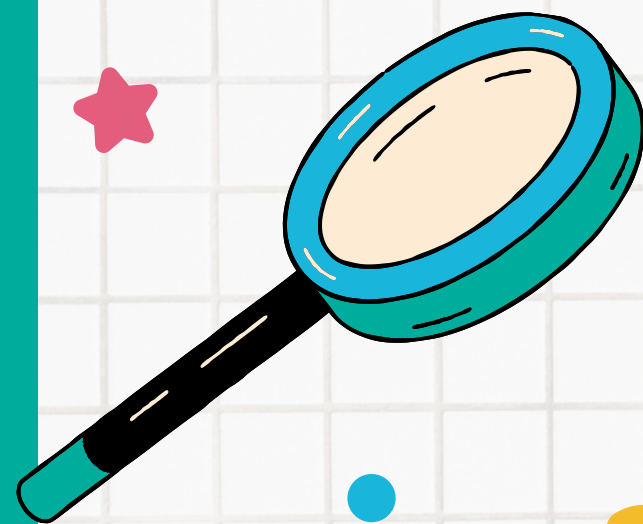
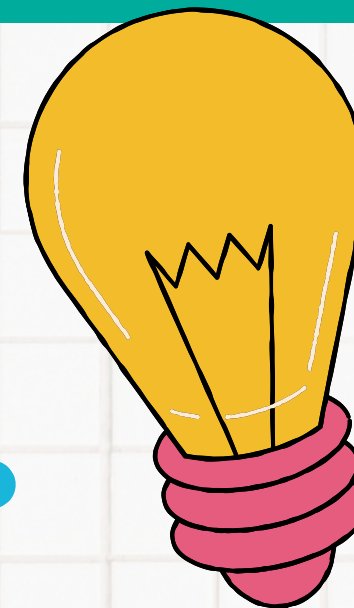
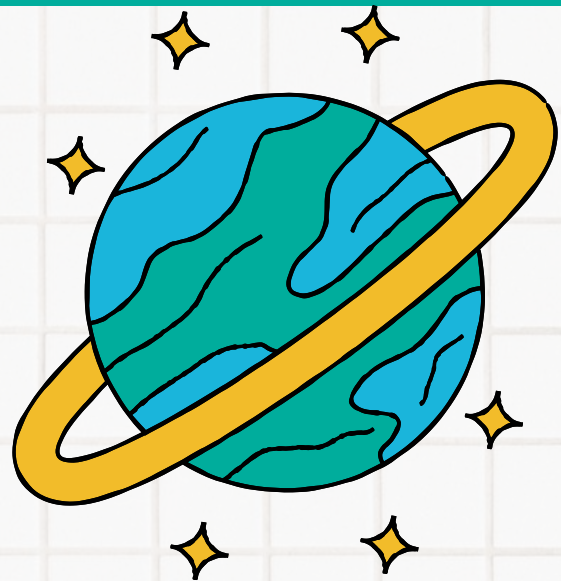




Throughout the experiment, children actively participated in discussions about what they had observed, demonstrating sustained shared thinking, deliberate teaching, and co-construction. They posed questions, shared their theories, and worked together to make sense of the scientific principles at play.

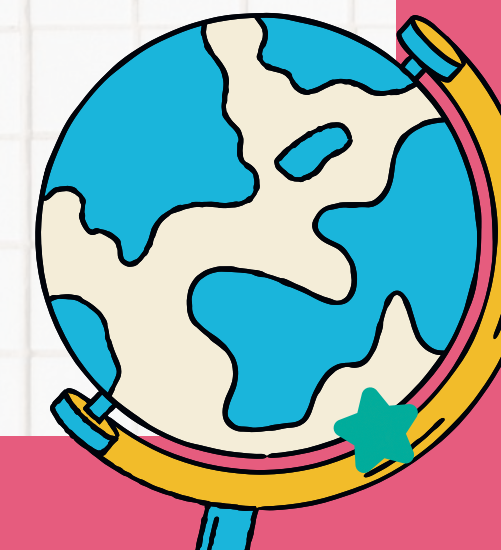
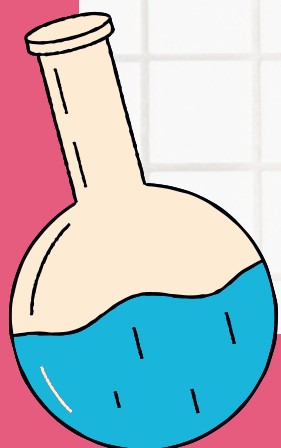


WE MADE OUR RAIN EXPERIMENT





We performed an excellent experiment with clouds and rain. With much excitement, we gathered to learn about the water cycle and cloud formation. We took part in a cloud-making activity using simple materials, which we examined and observed experience.





“Do you like rain?”

“Yes!”

“What do you do when it rains?”

“I like the sound of rain!”

“I like to sleep!”

“Where does rainwater come from?”

“It comes from Sky!”

“It’s true! Let’s see how the rain turns out!”

Today’s experiment with clouds and rain was a fascinating exploration of nature’s wonders. We set off on a scientific enquiry of the water cycle, motivated by curiosity and a feeling of adventure. As we gathered our materials and prepared for the experiment, we could feel the children’s excitement grow, anxious to witness the beauty of cloud formation firsthand.





"We will see how rain occurs. First of all, we pour water into the jar. Who wants to pour the water?"

"Let me do it!"

"Thank You!"

"Then we put the shave foam on top of the water."

"I want to try."

"Good job! Then we drop the color on the foam and see what happens."

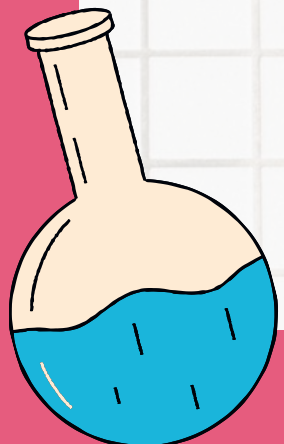
"Try to pay attention to what happens to the water below."

"The color goes down into the water!"

"Yes, that's what rain is like. Rain occurs because the clouds are unable to hold the weight of the water vapor, so the water eventually falls. This is called rain."



As the experiment went on, we introduced the concept of rain through the droplets of the colours to fall from the clouds or the foam. The children's excitement was evident as they felt the rain and connected it to the natural processes that occur in the environment.





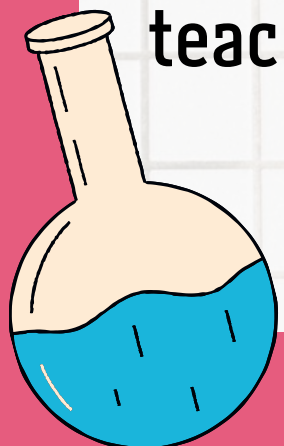
This activity allowing children to actively participate and engage in the process. They want to try it themselves and share their findings to peers.

The children's eyes glittered with awe as they watched the clouds develop and transform in front of them.



Link to:

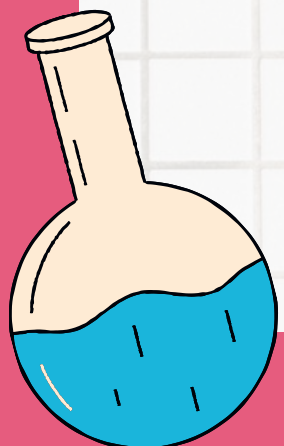
- National Quality Standards Q1 Educational Program and Practice
- Australian Teaching Standards 2.1 Content and teaching strategies of the teaching area
- Australian Teaching Standards 2.2 Content selection and organisation
- Australian Teaching Standards 3.2 Plan, structure and sequence learning programs
- EYLF Learning Outcome 4. Children are confident and involved learners
- EYLF Learning Outcome 5. Children are effective communicators.
- Teaching strategies: Sustained shared thinking, intentional teaching

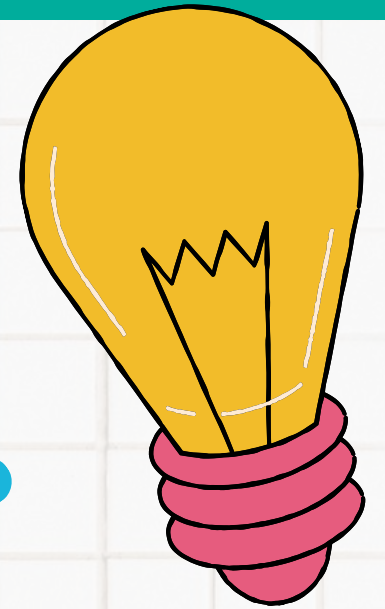
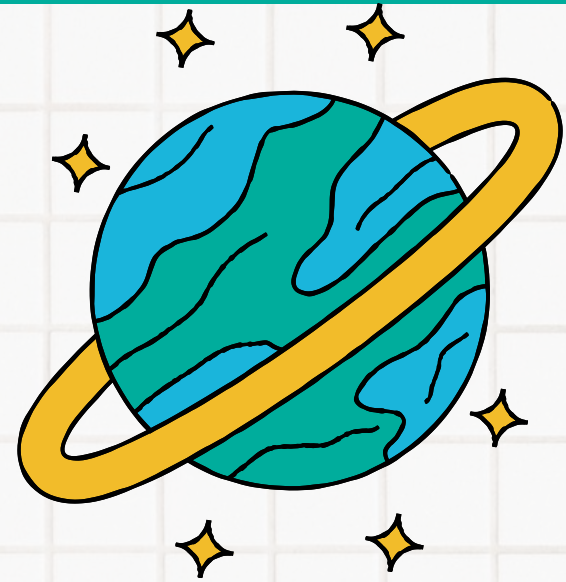


The cloud/rain experiment offered a rich and immersive learning experience, encouraging children's curiosity, enquiry, and scientific understanding. We investigated the occurs of the rain using persistent shared thinking, deliberate teaching, and co-construction, strengthening our respect for the natural world's interconnection.

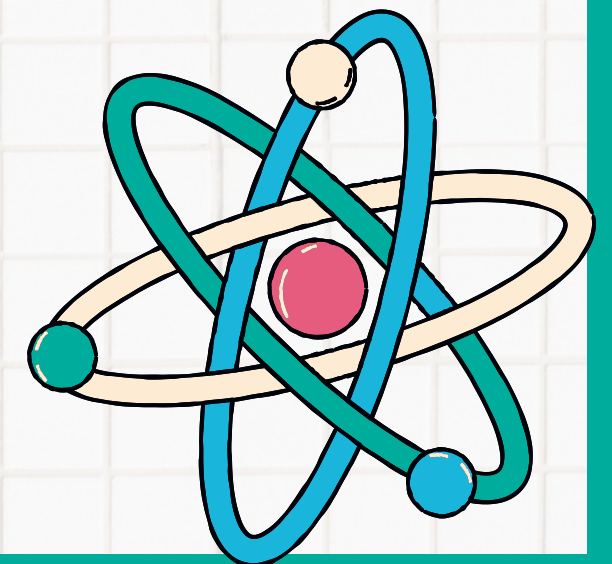
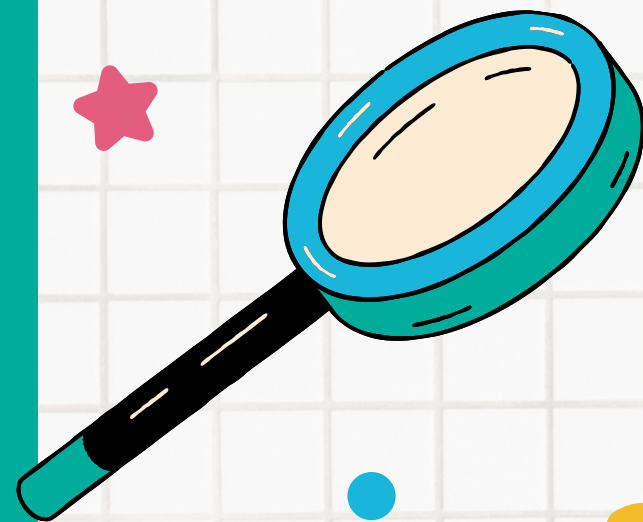


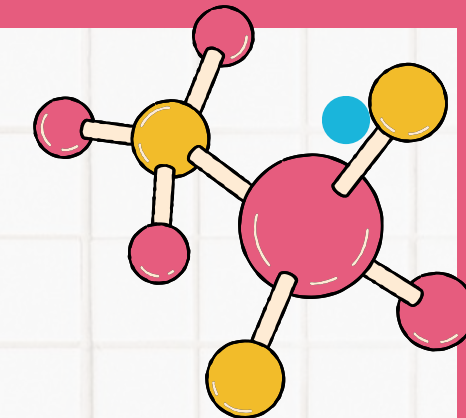
There is evidence of the children's confidence and involvement as active learners, participating in conversations, making predictions, and connecting the experiment to their prior knowledge. The experiment acted as a spark for meaningful learning, inspiring children to become interested in science and discovery.





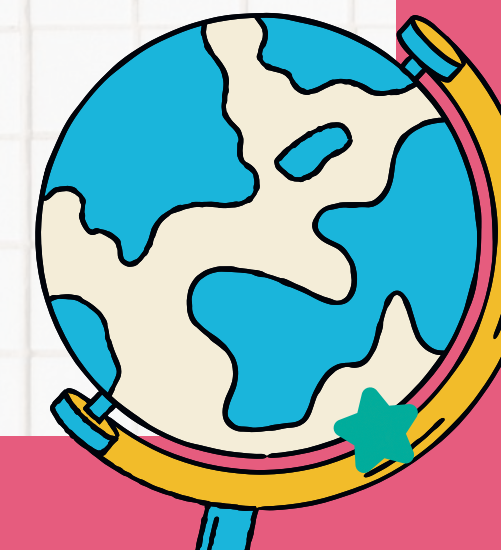
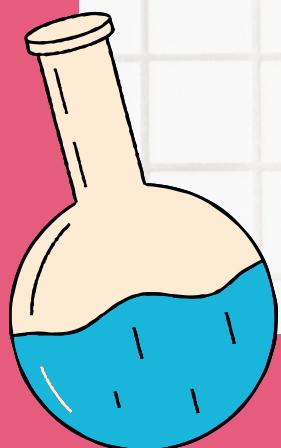
EXPLORING SNOW SCIENCE: MAKING FAKE SNOW



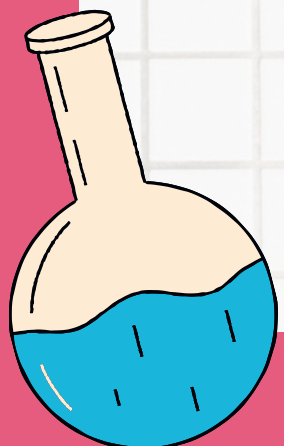
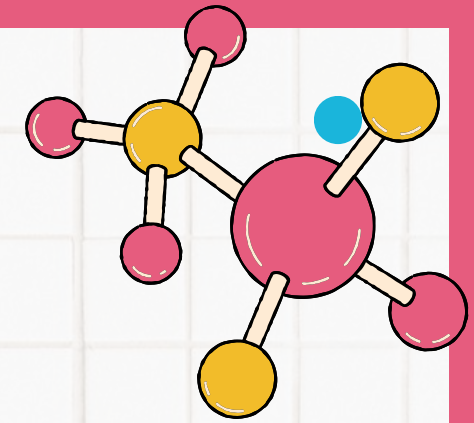


Objectives:

To enable children understand the science behind snow formation and properties, foster curiosity about the natural world, promote scientific enquiry and experimentation skills, encourage collaboration and communication with peers, and improve sensory and motor skills through hands-on exploration.



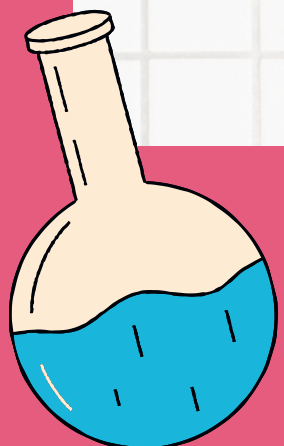
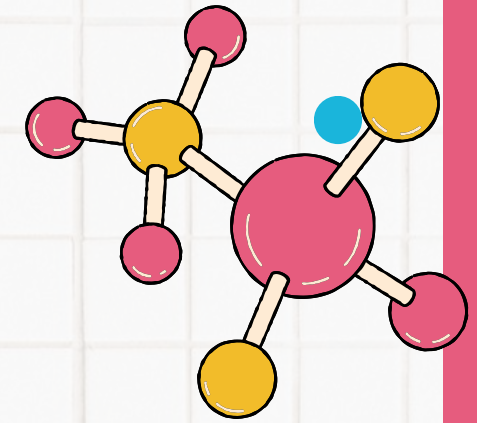
The activity intends to offer children a hands-on, practical learning experience that will increase their awareness of weather events, help them build science skills, and encourage creativity and teamwork. Children will learn about the science of snow creation and qualities while refining their fine motor skills and social interaction abilities.



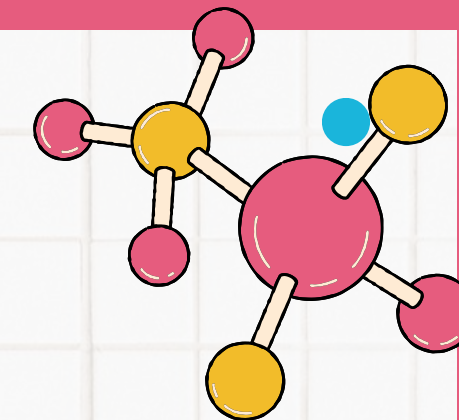
Development and learning goal:

This experience aims to support children's overall development by fostering their natural world curiosity, promoting scientific enquiry and experimentation, encouraging collaboration and communication with peers, and improving their sensory and motor skills through hands-on exploration

Making artificial snow allows children to engage in hands-on discovery, collaborative interaction, and guided reflection. They watch, enquire, and experiment, gaining a better knowledge of scientific subjects while also developing important skills like teamwork, communication, and problem-solving. Sensory exploration and social involvement help children develop holistically, instilling curiosity, confidence, and a lifetime love of learning



APPROACH TO LEARNING



Before starting the activity, educator asked first whether they had ever seen and felt snow before.

“Have you ever felt snow before?”

Every child raised their hand and all had experienced snow before.

“How does snow feel when you hold it?”

“It’s soft!”

“Easy to shape! I can make a snowman!”

“I love to make a snowman!”

“Snowman, Yeay!”

Then the teacher continues with inquiry questions.

“What shape do you think snow looks like?”

“Foam!”

“Yes, it’s looks like foam!”

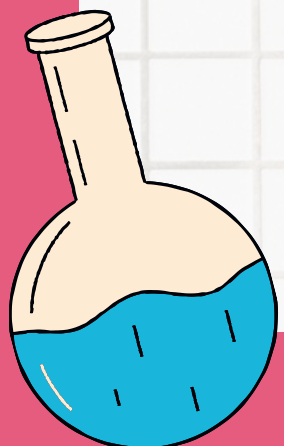


HOW?

Educator is explaining to the children what snow is, where it originates from, and how it feels. Then she introduces the idea of creating artificial snow as a fun method to investigate the science of snow. Children are listening eagerly and can't wait to start trying it.

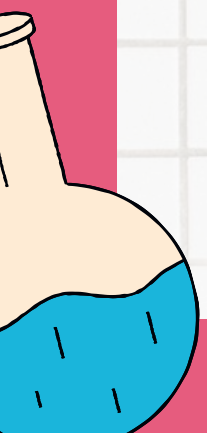
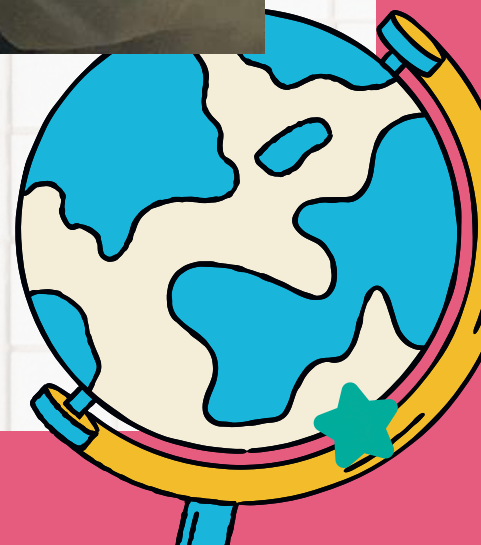
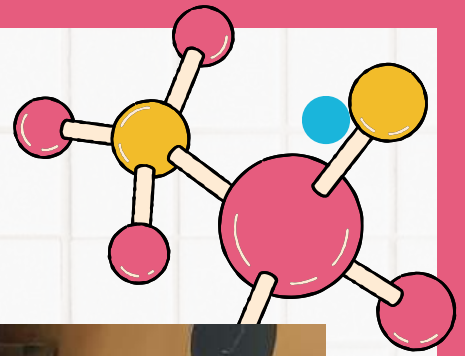


Children is encouraged to create and design their snow like snowman or anything they like. They are instructed clearly what to do and what to expect. They are encouraged to use their imagination.



Before starting the experiment, educators prepare gloves to ensure the safety of each child from allergies, injured skin, sensitive skin, and so on. Then the educator prepares a container to mix the materials that have been provided.

Educator guides children through the process of manufacturing fake snow with common household items like baking soda and shaving cream. She encourages them to watch and describe the changes that happen as they combine the ingredients. Then, they are discussing topics including absorption, response, and texture.



"Isn't this amazing? You can make your own snow without waiting for the season to arrive."

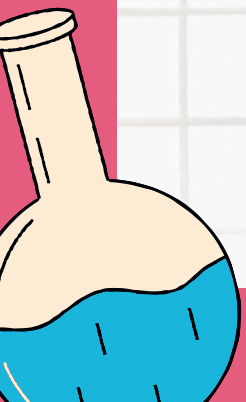
"What season produces snow?"

"Winter!"

"Yes, Winter! What is it like in winter?"

"It's cold!"

"Yes, snow is formed due to very cold weather which causes water to freeze into crystals and fall from the clouds due to its weight."



Allowing time for the children to play and experiment with the fake snow after it has been created.

Facilitate a group conversation about their observations and experiences.



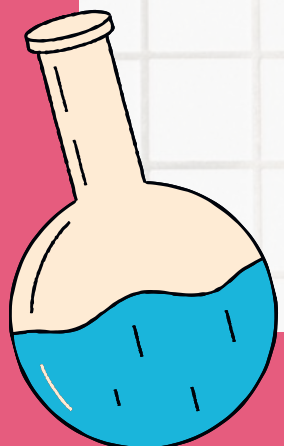
Ask questions like,

"What did you notice about the fake snow?"

"How is it similar or different from real snow?"

"What do you feel when you touch the fake snow?"

"Can you guess what will happen when we mix the ingredients together?"



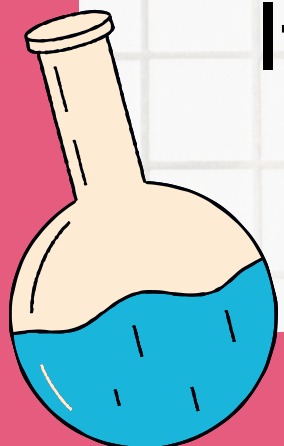


EYLF child evidence

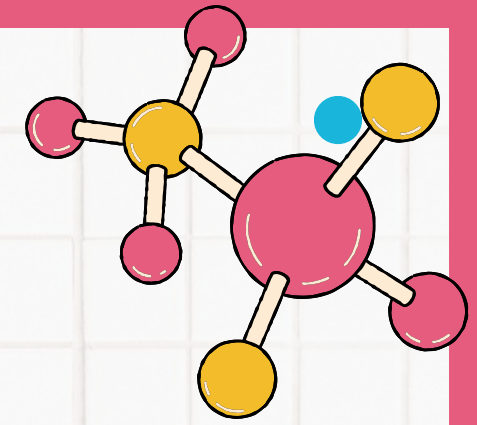
The "Making Fake Snow" activity supports EYLF Outcome 2

by encouraging children to engage with the natural world through exploration and teamwork.

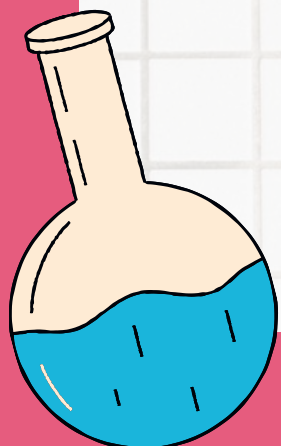
It also contributes to Outcome 4 by fostering confidence and active participation in learning through hands-on experimentation and problem solving.



Kids love feeling the softness of fake snow in their hands and they get busy forming shapes they like.

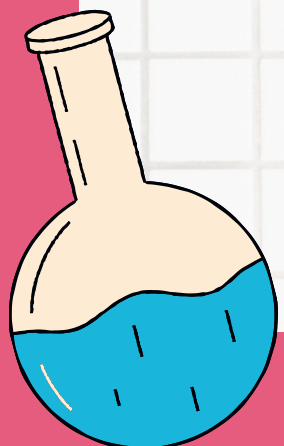


Children are given molds that they can shape their snow from. They are very creative and imaginative in creating their work. They were very enthusiastic about doing this activity.



PLAY PEDAGOGIES

- Inquiry-based learning involves hands-on investigation with artificial snow, encouraging students to ask questions, make predictions, and investigate its features.
- Encourage sensory play by allowing children to touch, smell, and observe fake snow.
- Collaborative play encourages peer collaboration and communication while creating and playing with artificial snow.



TEACHING STRATEGIES

- Demonstration



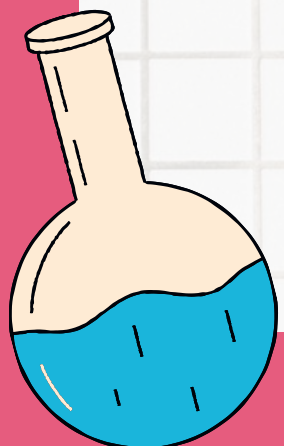
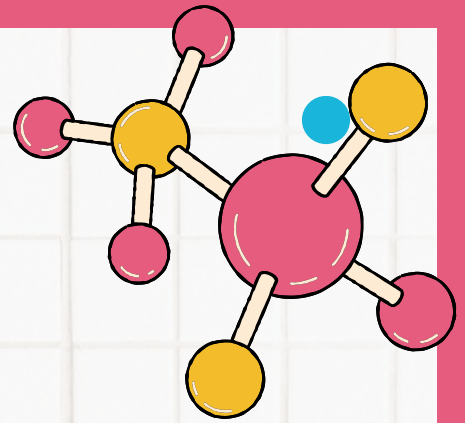
- Scaffolding



- Encouragement



- Show children how to produce artificial snow step by step, using clear instructions and supervision.
- Provide support and guidance to children as needed, allowing them to progressively assume greater responsibility for the task.
- Praise children's efforts and observations to create a positive environment for learning.



CHILD DEVELOPMENT

Cognitive development:

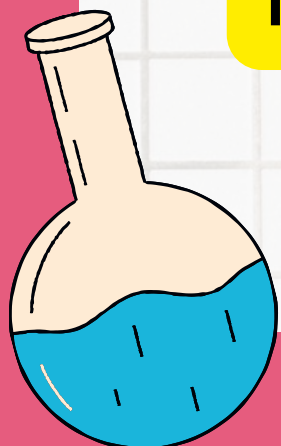
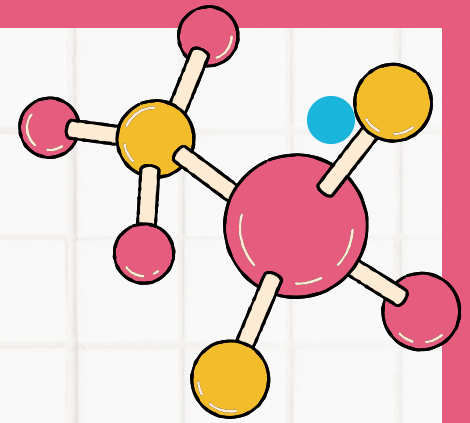
Children will develop an understanding of scientific concepts such as absorption and reaction.

Social-emotional development:

Engaging in collaborative play and group discussions promotes social skills and emotional awareness.

Physical development:

Manipulating the fake snow supports the development of fine motor skills and hand-eye coordination.





THE END

