CEYS
Creativity in Early Years Science Education

Curriculum Materials

Learning Journey

Changing Seasons: Ice

Erasmus+

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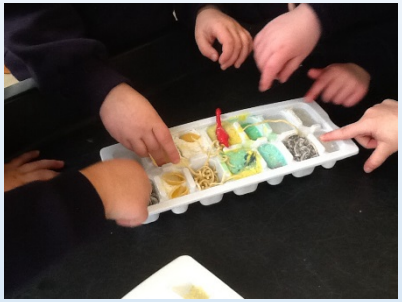

Learning Journey
Changing seasons: Ice

Tamar Richards
Lancing College Preparatory School at Worthing, UK

Changing seasons: Ice

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Setting the Scene

Focus

The focus of this project was on developing children's *questioning and curiosity* and providing the opportunity to develop *thinking skills*.

Rationale

Through my planning and teaching I wanted to foster *questioning and curiosity* by

- modelling and promoting questions in the nursery
- *standing back* more whilst the children were investigating allowing them to develop *thinking skills*.

Age: 3-4
Learning activities: Questioning, gathering evidence
Creative dispositions: Thinking skills, curiosity
Synergies: Questioning and Curiosity, Teacher scaffolding and involvement (standing back)
Contextual factors :
Investigations: Group work

Background

School setting: Free Flow Nursery

Curriculum links:
EYFS-Development Matters, Characteristics of Effective Learning.

- Playing and Exploring
- Active Learning
- Creating and thinking critically
- Question why things happen and give explanations. Asks e.g. *who, what, when, how*

Overview of Learning journey

Starting point:
Through my planning and teaching I wanted to foster *questioning and curiosity* by modelling and promoting questions in the nursery and standing back more

Children were not used to being the ones to ask the questions and had no concept of questioning verbally. I introduced the question board

Learning activity 1: Exploring ice
Talking about weather changing had prompted children to begin to talk about ice and snow. Exploring how to freeze water and make ice. Placing various small toys inside the ice and see what happened.

Children were highly motivated and engaged. Questioning each other. They were able to work together thinking of new ideas and sharing ideas and knowledge with each other

Learning activity 2: Building igloos
Children were asked if they could make their own Igloos from ice.

Some of the children who were more reluctant on previous tasks were more willing to join in and were internally questioning by trying different methods to build with the ice.

Learning activity 3: Freezing materials
What else can we freeze? A selection of materials from the messy play box were put out and the children decided what they wanted to freeze.

Children were clearly able to think about which materials might freeze more effectively , even selecting and asking for resources that were not provided

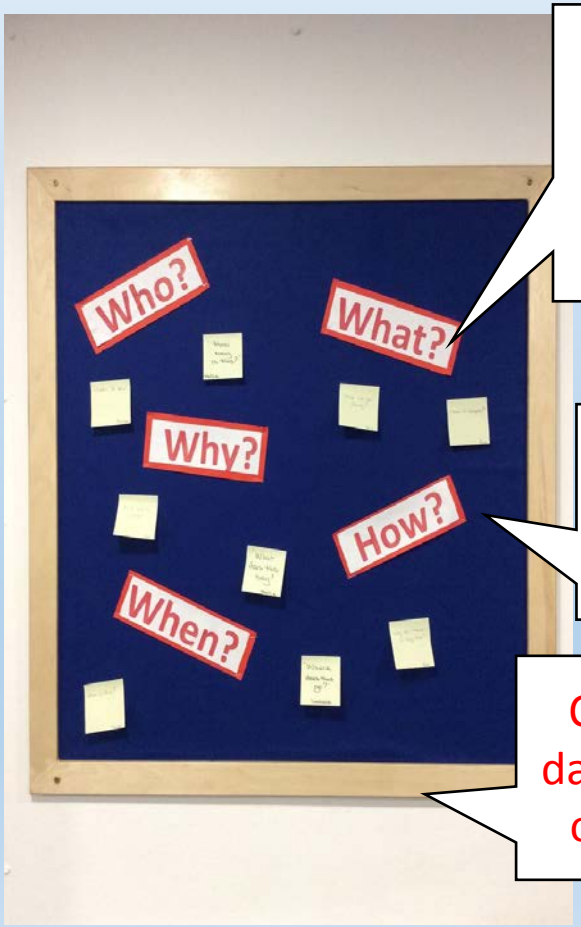
Learning activity 4: The Results
Exploring the results and melting the materials. We collected the trays from the freezer and investigated what we found. Seeing if and how we could turn it back to its original state.

By this point children needed far less adult suggestion and were asking questions of each other. They were also sharing their own knowledge and working out solutions as a group.

Questions continued
Children were far more motivated and curious. Standing back more and modelling had started to allow them to ask their own questions

Developing the learning journey: Starting point

Developing the children's questioning skills.



Child: Where did you get it from?

Child: Why is it special?

Child: What day did you go on holiday?

Activities

- **During group times we started to promote questioning by encouraging children to ask questions of each other during show and tell.**
- **In the first few weeks the adult modeled the questions for the children**
- **Each time a question was asked it was placed on the question board.**

The more we celebrated questions in the nursery the more able the children were to question verbally

The children were not used to being the ones to ask the questions and had no concept of questioning verbally

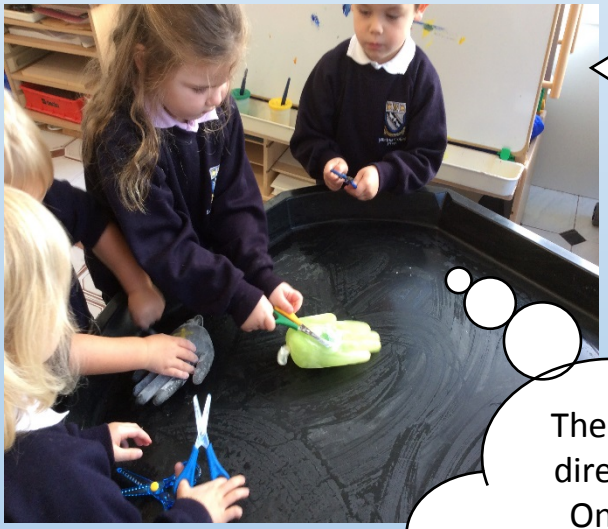
We focused on a few questions connected to changing seasons

Developing the learning journey 1: Exploring Ice

Talking about changing seasons and weather changing had prompted children to begin to talk about ice and snow. We went into the garden and tried to find some ice which had naturally formed

Activity

- **Exploring how to freeze water and make ice.**
- **Changing the colour of the water the day before and placing the coloured water in the freezer over-night**
- **Children placing various small toys inside the ice and see what happened. Trying to free the toys.**



Child: We could use a spoon to make a hole in the ice. Mine is starting to melt because I'm taking the plastic off.

The children were highly motivated and engaged. Questioning each other. I was trying to stand back and see which direction the children would take the activity.

Adult: How can we free the toys?

The children needed some initial direction and problems to solve. Once they were provided with this they were able to work together thinking of new ideas and sharing ideas and knowledge with each other.

While exploring ice and 'freeing' toys, children talked about how difficult it is to break ice - this informed our next activity and connected it to habitats

Developing the learning journey 2: Building igloos

Activity: Building Igloos. The children were asked if they could make their own strong Igloos from ice.

Adult: What will make the ice stick?

Child: We can try pushing it.

We can use glue

Child: It is sticky!

Child: Let's use this (rice) to stick it.

Some of the children who were more reluctant on previous tasks were more willing to join in and were internally questioning by trying different methods to build with the ice.

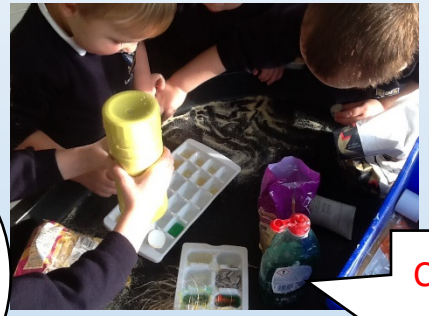
The children were far more able to work together to try to find a solution to the problem

Many more children joined the task and suggested different materials to make the ice stick. Their attempts to use different materials (e.g. rice) to make the ice stick informed our next activity

Developing the learning journey 3: Freezing Materials

Activity: What else can we freeze? A selection of materials from the messy play box were put out and the children decided what they wanted to freeze.

They were clearly able to think about which materials might freeze more effectively , even selecting and asking for resources that were not provided. I was careful not to interfere with the process and stood back this meant the children were able to have their own ideas and question what may happen without an adult providing the answers.

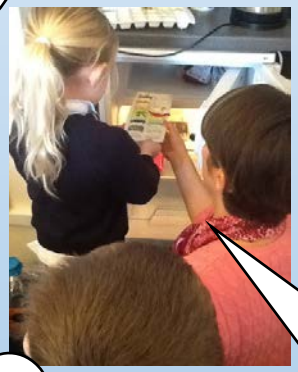


Child: I want to do paint! Let's do snow! It looks like snow!

Adult: I wonder what we could freeze?

Child: I think it will make ice.

The children thought that all the materials would be ice, not understanding that water makes the ice.



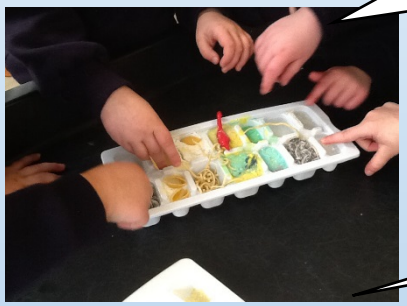
Child: We need to make it cold. We can use the freezer again

The children had learnt from the previous activities that the materials needed to be cold.

Children made predictions and chose different materials and objects. They could not wait for the next day to see the results

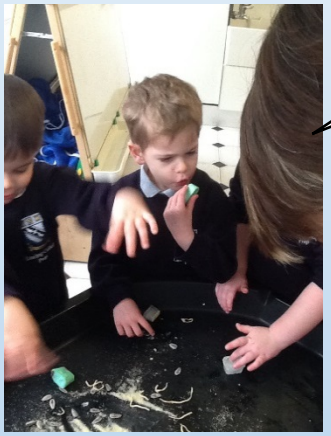
Developing the learning Journey 4: The Results

Activity: Exploring the results and melting the materials. We collected the trays from the freezer and investigated what we found. Seeing if and how we could turn it back to its original state.



Child: This one didn't work (shaving foam) it was too hot.

Child: The seeds didn't freeze, they are just cold. Can we put them in again?



Child: If I blow on it it might melt.

Adult: What else could we use to free the toys?

Child: It needs the sun to melt.

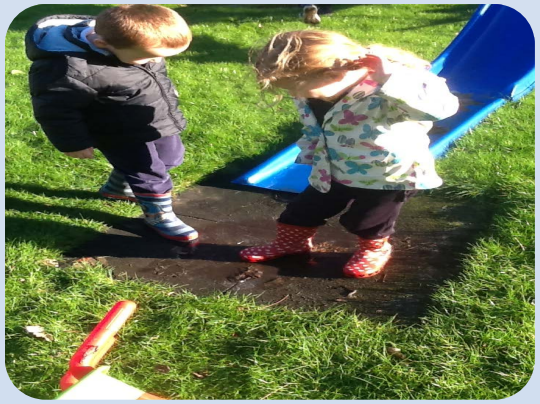
Child: We can use the hot water again. It will make it runny.

I had noticed that by this point the children needed far less adult suggestion and were asking questions of each other. They were also sharing their own knowledge and working out solutions as a group. The children were far more motivated and curious. Standing back more and modelling had started to allow them to ask their own questions

Reviewing learning across the project

- My aim was to develop children's questioning and curiosity and provide the opportunities to develop thinking skills (Creative Dispositions) by allowing the children to participate in active investigations of their own choice (features of inquiry)
- I wanted the children to find ways to solve problems and think of new ideas, without adults providing the instant answers

Assessment for learning

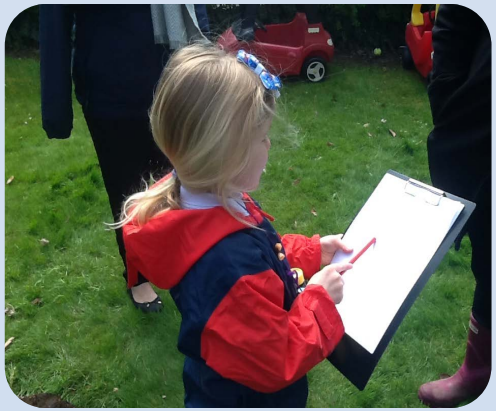


Child 1:

Became more motivated and engaged.

Child 2:

Became more confident and the communication increased.



Child 3:

Levels of curiosity and questioning became higher.

Teacher role

- Less directive allowing the children to take a lead.
- Provided the basic knowledge and asked the children ‘I wonder…’
- Allow the children plenty of time
- Celebrate questioning and creativity by using the display boards.

Classroom Environment

- Easy access to Materials
- Freedom of movement in the area
- Rich variety of resources allowing independent access

Reflection Questions

- How can you promote questions in your own setting?
- How would you build on children's interests?
- What is your role as the teacher?

Further Activities

- To provide a science exploration area
- Extend the creative science to the outdoors
- Create floor books with children before starting activities

Practical information

Resources

Starting point - Paper and an area for a display

Learning activity 1 - Rubber gloves or balloons, Food colouring, Water, Scissors, Small toys, Freezer

Learning activity 2- Ice cube trays, Builders Tray, Freezer, Extra materials to choose from (rice, glue, etc.)

Learning activity 3 - Materials to freeze (shaving foam, paint, small toys, seeds, pasta, rice, liquid soap, bubble bath), Ice cube trays (containers the same size to freeze), Builders tray, Freezer

ACKNOWLEDGEMENTS

CREATIVITY IN EARLY YEARS SCIENCE EDUCATION (2014-2017)

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