



Education
Scotland
Foghlam Alba

Hazeldene Family Centre

SEED8602212

CC CS2003014616

Karen McIlroy

November 2019

STEM Nation Award element evidence submission



For Scotland's learners, with Scotland's educators



Family and community STEM learning

Mearns Castle Cluster Early Level STEM CLPL

[The Wonder of Science: Curiosity and Investigation in Early Learning](#)

A programme of Science workshops for 60 practitioners working at the Early Level (Teachers, CDOs and Play Workers) to develop the knowledge and skills to inspire children's enthusiasm for STEM subjects. All workshops take place in Hazeldene Family Centre, 9 Rosemount Avenue.

This programme is being supported through *Education Scotland's Enhancing Professional Learning in STEM Grants Programme* and the Scottish Government STEM Education and Training Strategy.
#STEMnation @STEMedscot

Workshop 1: Changing Properties of Materials/Carbon Dioxide/Chemistry – Making Bath Fizzers

A practical workshop session exploring chemical reactions and how materials can change when mixed together or others are added.

- Monday 11th November 3.45–5.00 p.m. OR
- Wednesday 13th November 3.45–5.00 p.m.

Workshop 2: Ice, Ice Baby

A practical workshop session exploring ice and how it can be used to support concept development in Curriculum for Excellence.

- Monday 20th January 3.45–5.00 p.m. OR
- Tuesday 21st January 3.45–5.00 p.m.

Workshop 3: Under the Microscope

A practical workshop session exploring plants and how microscopes can enhance learning.

- Monday 16th March 3.45–5.00 p.m. OR
- Tuesday 17th March 3.45–5.00 p.m.

Workshop 4: Digital Learning – Code-a-pillar

A practical workshop session using digital toys to develop children's curiosity, problem-solving and mathematical thinking.

- Tuesday 28th April 3.45–5.00 p.m. OR
- Wednesday 29th April 3.45–5.00 p.m.

Booking will be available through CPD Manager.



CLPL Sessions offered to colleagues



STEM INSET DAY

The Wonder of Science. Workshops offered to Cluster Colleagues and those within the Local Authority working at Early Level, CfE

“More confident after taking part in the workshops. Getting more ideas very helpful. Learnt a lot from it!”

“Slightly confident, anxious about what goes right and wrong. Very helpful and interesting CPD”



Family and community STEM learning



Parents as Partners
As part of our STEM Week Parents were invited to join us and share some of the aspects of their daily STEM work with the staff and the children. One parent is an engineer who is working at the Science centre. She spoke to the children about the body and demonstrated how the digestive system works.

“I learned about poo, it comes out. I eat food and it squeezes out of our tummies out of our bottom”

Parents as Partners
One of the parents joined the children and staff to talk about renewable energy. The children enjoyed designing and creating their own windmills. She also discussed local areas such as Whitelee Windfarm and the huge turbines that can be seen there.





Family and community STEM learning



A variety of Family learning Maths Bags are available for families to borrow,
Each bag is different and encourages the exploration, development and understanding of mathematical concepts including, sorting, comparing and matching. In addition there are opportunities to look for numbers and explore loose parts materials.
Children can discuss the use of different types of spoons, discuss the material it is made from too. Loose parts encourage the learner to be creative with the resources, create patterns and build things.





Family and community STEM learning

Parental and Family Engagement Programmes build STEM Capital

Very helpful- Really boosted my confidence in trying Science at home. Very friendly staff to learn and work with and try to make new things.

HazeldeneFamCentre
3,398 Tweets
Edit profile

HAZELDENE FAMILY CENTRE

Science Parent workshops were offered. Parents attended a hands on workshop and were given a little learning bag to take home so they could do the activity at home with their family. The children will measure out and count the ingredients and put them in the bags for them to be sold at the Christmas Markets



<https://twitter.com/HazeldeneFamC/status/1195090076717527066>



STEM curriculum and learner pathways

STEM at Hazeldene



Malaguzzi (1996) suggests that adults and children should work in partnership rather than the adult taking over and making all the decisions.

Initially we consulted with the children to find out what they know about STEM. Which sparked some discussion about their parents careers. They created mind maps, asked questions and drew pictures. Based on these responses the children built their own understanding through investigation and discovery rather than being told the answers. Children were very engaged and also planned for their own next steps in learning.

During some reflection time. The children spoke of their experiences. “What happened when we mixed the Bicarbonate of soda”? “It exploded”. “We put vinegar in test tubes”.



STEM curriculum and learner pathways



Science
Observing
Experimenting
Making
Predictions
Asking questions

“Scientist is
experiments”





STEM curriculum and learner pathways



- ## Technology
- Being Inventive
 - Using tools
 - Making things work
 - Identifying issues
 - Using computers



“you press the buttons
to make it go”



<https://twitter.com/HazeldeneFamC/status/1179890083006164992>





STEM curriculum and learner pathways



Engineering

- Solving problems
- Using materials
- Designing and creating
- Building
- Team work
- Creativity



She followed the instructions independently but also used her own creativity

"I made an umbrella"





STEM curriculum and learner pathways



Mathematics

Time, money, measure
Patterning and Sequencing
Exploring shapes
Numbers, Volume, Weight



Maths Week
30th September
2019

“you press the
buttons and
the numbers
change”



For Scotland's learners, with Scotland's educators



Education Scotland

Denholm House
Almondvale Business Park
Almondvale Way
Livingston EH54 6GA

T +44 (0)131 244 5000

For Scotland's learners, with Scotland's educators