


STEM AND ENVIRONMENTAL EDUCATION HIVE

**A planning framework to support
teaching and learning within
continuous provision.**



Continuous and Enhanced Provision

Continuous Provision

Continuous provision is to be accessed with the Hive during every visit. The learning opportunities are vast and children can explore within a fully inclusive and differentiated environment. To support with adult interactions, the following plans state clearly the activities that can be seen as opportunities for focused learning and the Development Matters statements that can act as a framework for quality engagement. Guidance around the use of learning hooks can be found on the next page, but should not be seen as an exhaustive list. Rather they are ideas from which inspiration can grow.

Enhanced Provision

For specific enhanced learning opportunities, please refer to the Rolls-Royce Environmental Education Plans (A Sustainable Future). Within these plans there are specific and chronologically driven lesson plans, which link to both Environmental education, Science and Maths. Within this planning framework there are clear opportunities for philosophical debate and metacognitive learning. These plans weave together the cross curricular nature of how the Hive can be used to inspire in the young minds of children.

STEM Planning

The STEM planning for indoors, provides suggestions for the hooks for learning. Adults can take specific resources, keywords and/or philosophical concepts into each planned focused activity to enable every child's right to cognitive challenge to be present and fully exploited.

When accessing the STEM Hive, this approach can also be used. ECO Eddy is the key character within the Hive and he can be used as the central focus for providing children with what they need to stimulate and inspire their learning. For example, ECO Eddy may have a bucket next to him full of conkers and pebbles, ready for a focus on weight. There may be a basket of sticks with a bird inside, for looking at nature's construction for animal shelter . . .

On entry to the Hive, children are encouraged to gather in the central area for guidance on how to use the Hive and to ensure that all children have had the opportunity to think ahead in terms of their explorations. A designated child can be selected to collect the learning stimulus from ECO Eddy, which will enable a two minute chat with the group about what they may choose to concentrate their thinking and activity around. This also enables the adult to use the ECO Hut as a focus for recording the intentions for learning and also to remind children to record their discoveries throughout the session.

The Hive is a focused teaching and learning space. It is not a Forest School site. The children need a strategically managed balance between their own child led learning and an adult thread to move children towards their learning goals.

Teaching and Learning Plan for the STEM and Environmental Education Hive

Lesson focus

Science

- Weather reflection
- Feed the birds
- Seasonal changes
- Rain Gauge
- Music area
- Colour, light and shadow exploration in Tardis
- Bark/Leaf Rubbing
- Decay observations
- Minibeast Hunts
- Magnification
- Freezing and Melting
- Floating and sinking
- Volcanoes
- Forces
- Changes over time observation board
- Solar/Wind Power
- Compost/bark chippings small world play
- Natures potions
- Animal homes/materials/construction

Development Matters

The World

- Repeat actions that have an effect
- Explore materials with different properties
- Explore natural materials, indoors and outside
- Explore and respond to different natural phenomena in their setting and on trips
- Use all their senses in hands-on exploration of natural materials
- Explore collections of materials with similar and/or different properties
- Talk about what they see, using a wide vocabulary
- Explore how things work
- Plant seeds and care for growing plants
- Understand the key features of the life of a plant and an animal
- Begin to understand the need to respect for the natural environment and all living things
- Explore and talk about different forces they can feel
- Talk about the differences between materials and changes they notice

Teaching and Learning Plan for the STEM and Environmental Education Hive

Development Matters

The World

- Explore materials with different properties
- Use all their senses in hands-on exploration of natural materials
- Explore collections of materials with similar and/or different properties
- Talk about what they see, using a wide vocabulary
- Explore how things work
- Begin to understand the need to respect for the natural environment and all living things
- Explore and talk about different forces they can feel
- Talk about the differences between materials and changes they notice

Expressive Art and Design

- Use their imagination as they consider what they can do with different materials
- Make simple models which express their ideas
- Make imaginative and complex 'small worlds' with blocks and construction kits, such as city with different buildings and a park

Mathematics

- Climb and squeezing selves into different types of spaces.
- Build with a range of resources.
- Combine shapes to make new ones – an arch, a bigger triangle etc.

Lesson focus

Technology and Engineering

- Shape and size natural construction
- Materials and their properties natural construction
- Pulley
- Vehicle/Role play
- Using environmental boards to stimulate activity
- Floating and sinking – problem solving for modes of transport
- Volcanoes – solve problems for man made environments
- Forces - Solar/Wind Power
- Animal homes/materials/construction
- Den building
- Comparisons between the natural and industrial worlds

Teaching and Learning Plans for the STEM and Environmental Education Hive

Lesson focus

Mathematics

- Number Hunt
- Wooden dominoes
- Shape and size natural construction
- Number hunts
- Use of environmental numbers to stimulate play
- Large abacus
- Leaf compost or fruit storage – time line for decay
- Weighing Scales
- Volume and capacity water play
- Number recording
- Leaf counting
- Environmental patterns
- Collecting and sorting
- Stick counting/sorting/patterns
- Pulley – weight and height
- Train – fast and slow

Development Matters

Mathematics

- Counting-like behaviour, such as making sounds, pointing or saying some numbers in sequence
- Climb and squeezing selves into different types of spaces.
- Build with a range of resources.
- Compare sizes, weights etc. using gesture and language
- Notice patterns and arrange things in patterns.
- Experiment with their own symbols and marks as well as numerals
- Solve real world mathematical problems with numbers up to 5
- Compare quantities using language: 'more than', 'fewer than'
- Talk about and explore 3D and 3D shapes
- Understand position through words
- Discuss routes and locations, using words like 'in front of' and 'behind'
- Make comparisons between objects relating to size, length, weight and capacity
- Select shapes appropriately: flat surfaces for building, a triangular prism for a roof etc.
- Talk about and identifies the patterns around them.
- Extend and create ABAB patterns – stick, leaf, stick, leaf
- Begin to describe a sequence of events, real or fictional using words such as 'first', 'then ...'

This planning document is to be used in conjunction with the Indoor STEM planning framework and also the 'A Sustainable Future' planning document, in order to best access all learning opportunities for all children.

The STEM HIVE is a space for adults to provide a symbiotic interplay between curriculum learning and environmental education. Our focus is to teach children about the impact of human behaviours on our planet and to encourage children to think about the solutions for the future. **It is this cognitive challenge which underpins ALL work within the HIVE.**