

## SCIENCE POLICY

“Science is about making sense of the world”

For young children, science is an introduction to the world of living things, materials and physical processes. It is largely a practical subject which develops a spirit of exploration, investigation, discovery and enquiry by encouraging curiosity, scepticism, respect for life, respect for other individuals, originality, perseverance, open mindedness and responsibility.

At Marwood, we consider that science should involve children in learning through first hand experience, in both outdoor and indoor environments. We should aim for children to enjoy their experiences associated with science and to increase and develop their knowledge and their investigative and observational skills.

### PROCESS

The knowledge content of our science curriculum is clearly defined in the National Curriculum. We also have to consider the investigative and experimental element of the National Curriculum and should aim to teach science using these processes, throughout the year.

#### A SUMMARY OF THE PROCESS SKILLS

- **OBSERVING** – detail and change, cause and effect, similarities and differences, noticing the order of a sequence of events.
- **MEASURING** – using standard and non-standard units and using measuring apparatus.
- **HYPOTHESISING** – suggesting reasons for events or phenomena which can be tested scientifically.
- **PREDICTING** – proposing what will happen, or what may be found.
- **PLANNING AND CARRYING OUT INVESTIGATIONS** – devise suitable tests and experiments and carry them out using appropriate equipment and recognise the need for a fair test and a limited number of variables. Repeat and refine investigations to test the validity of their findings.
- **INTERPRETING AND INFERRING** – drawing conclusions from results of an investigation or from information collected.
- **COMMUNICATING** – information by the most suitable method and selecting information from a variety of sources.

### PRESENTATION

Good practice should be encouraged in recording and communicating science work throughout the school. Children should be encouraged to devise their own ways of communicating findings. They should understand that there are a variety of ways of recording their work; charts, posters, graphs, diagrams, written reports and pictures. One piece of work produced in collaboration with a group is acceptable. Give children opportunities to present their findings to the class. Consider the use of the computer, particularly power points further on in school, camera or digital video camera, to present work or to keep records of children’s findings. How and what children record can provide an insight into their understanding.

### TALK TALK TALK

Children should be given every opportunity to talk about their science work. The teacher can gain an insight into what a child has understood by using open questions e.g. Why do you think that? What do you notice when.....? Is there another way....?

Can you show me how? How can you test it? Probing questions should be part of every science lesson. They extend the child, inform you about how much the child has understood and allow a degree of continuous assessment to inform you of the next steps to be taken. Communication is essential to learning in science. Children need to; share ideas, listen to other people's ideas, be able to justify their own ideas and ask and answer questions. Children should be invited to express their ideas in science. We need to be responsive to these ideas however strange they may seem. The greatest scientists became great by having different ideas!

### SOME STRATEGIES FOR DEVELOPING GOOD PRACTICE

- There should be thoughtful planning of suitable activities.
- There should be provision of appropriate resources which should be accessible to the children to allow selection.
- Activities should encourage observation, question raising and provide opportunities for action to be taken through child/teacher initiated investigation procedures.
- Adopting appropriate teaching strategies to suit the purposes of a particular learning situation. The emphasis should be on learning through first hand experience. On occasions it is also appropriate to use demonstrations, explanation, discussion or secondary resources such as non-fiction books, I.C.T., DVDs, posters or models.
- Children need to be given the opportunity to work alone/ in pairs/ in small groups, and to come together as a class to share observations, ideas, discoveries and explanations.
- Sufficient time needs to be given to science during each term, so as to ensure good coverage of the whole key stage curriculum, within a key stage.
- Teachers need to be aware of new developments and need to update their own scientific knowledge where necessary.
- A positive image of science should be promoted to both boys and girls.
- Teachers should actively seek to, where appropriate, base lessons in the outside environment of the school and use the school grounds as an excellent resource for first hand experiences.
- Science within the curriculum should be applied to real life.

### ASSESSMENT AND RECORD KEEPING

Records of all children's work should be kept in their science books. All children should be assessed at the end of each unit of work, through science assessment activities and the results of these assessments, as well as teacher observations, should be recorded each term, individually, on the science tracker system, to show the children's ongoing progress. In addition to this, APP sheets and knowledge assessment sheets will be completed for 3 children of differing abilities, within each year group, excluding foundation children who are assessed through knowledge and understanding in the foundation profile.

### SAFETY AND CARE

The careful and safe use of equipment is promoted at all times and every science activity should be 'risk assessed'. Reference should be made to the book 'Be Safe!' ( ASE ), which gives guidelines on health and safety in primary school and nursery science, and safety risks should be identified at the planning stage. Also all living things and their habitats should be treated with care and respect and should be disturbed as little as possible during any science activities.

### RESOURCES

A range of science resources are based in each classroom to use for ongoing consolidation of the whole science curriculum. Also, larger resource items are located in the science cupboard next to class 4, for use by all classes when appropriate. These resources should be treated with care and respect and the children need to be taught how to use them properly. It is the responsibility of the co-ordinator to replace and update resources when necessary, and the teachers to return the resources and place them into the cupboard.

### PLANNING

Science links learning through experience and themes on the 2 year rolling programme. Children have opportunities to learn inside and outside of the classroom and use I.C.T. to further their communication and research. Coverage of the whole science curriculum should happen through each key stage.

This policy should be regularly read and reviewed if necessary.

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