



Well-organised storage of resources in a central location, easily accessible to all staff and science ambassadors.



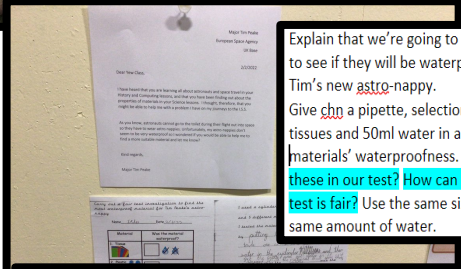
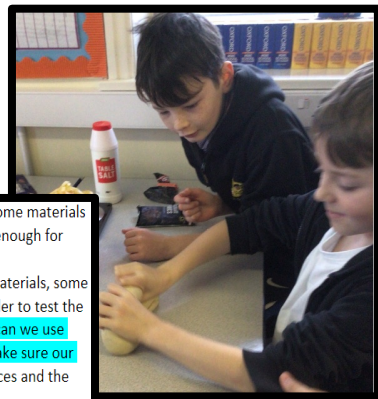
Outdoor learning is used to enhance learning experiences and engage our kinaesthetic learners.

Children are involved in a range of topical science initiatives both in school and at home. This contributes to making science more visible and valued in and around school.

Science at Manor Road

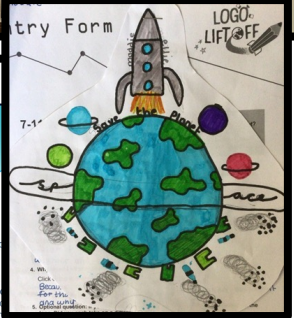
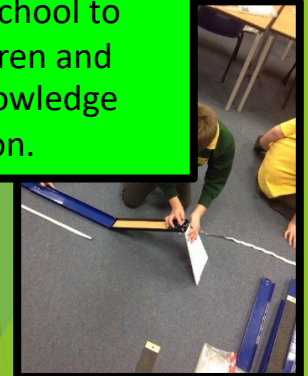


Practical activities and discussion opportunities are used across school to engage children and maximise knowledge retention.



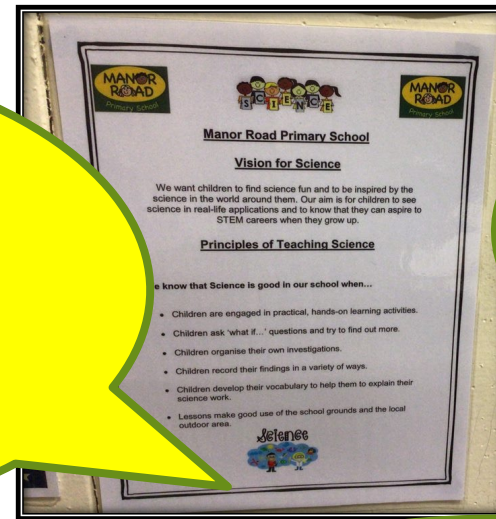
Explain that we're going to test some materials to see if they will be waterproof enough for Tim's new astro-nappy. Give chn a pipette, selection of materials, some tissues and 50ml water in a cylinder to test the materials' waterproofness. How can we use these in our test? How can we make sure our test is fair? Use the same size pieces and the same amount of water.

Real-life scenarios help to make science meaningful across school, from designing astro-nappies, baking cakes and bread, to growing plants from seeds.



“We love reminding Mrs Elford which part of the principles we’re using in each science lesson!”

Y6 Ambassador in Pupil Voice



Hello! Thank you for the STEAM ideas! We did an intercontinental gingerbread glyph...with Elliot and us (parents) doing it in the UK and video calling Elliot’s grandparents in Malaysia!

Y2 parent



“The lenses make it easier to focus the direction of lessons and are good for the children who are used to lenses in their English lessons.”

Katy Elford

“We love the lenses for science as they make it really easy to see what enquiry we’re actually doing in lessons. If our teacher forgets, we remind them!”

Y6 science ambassador



‘Hi Sue,
The PLAN resources have been so useful, thank you...the knowledge matrices were fantastic!’

Brogan Lawrenson

WS Lenses Feedback from Learning Walks and Staff and Science Ambassador Discussion

Review of Impact:

There is more emphasis on focused enquiry in most classes. Children can articulate why they’re carrying out activities with better understanding of their purpose. (See Pupil voice).

Engagement:

The children are very engaged with the lenses and ensure each teacher refers to them in lessons. (Y5 and 6)

Staff have been positive as they wanted more direction and they are used to using focus lenses from our Write Stuff English lessons. (All classes’ staff meeting feedback.)

Next steps:

Ensure ws is embedded in all classes, using lenses for focus and referencing lenses in planning and KO’s.



Images: PSTT (2019)



Strengths in Science at Manor Road

- We have just achieved our third PSQM award: Gilt
- Staff love teaching science and are very willing to take on new advice and to rise to challenges.
- Children are highly motivated to learn science, especially enjoying the practical activities and the science weeks.
- Science has one of the best ‘sticky learning’ records in school, with children able to explain their current learning in addition to learning from previous years.
- We have access to a fantastic outdoor environment, both on our school doorstep and in the wider community, for enhancing science teaching and learning.
- Children are aware of STEM possibilities and are inspired to pursue future careers in STEM areas.

Areas for Development in Science

- ▶ We are continuing to embed the 'enquiry skills' TAPs lenses and will be incorporating the 'working scientifically' lenses moving forward.
- ▶ Front sheets for each science unit are being developed in order to support children's grasp of scientific vocabulary.
- ▶ Pre- learning tasks are already carried out in each class so we are now working on incorporating further AFL activities to guide children's learning and post-unit quizzes/ activities to determine their end of unit understanding.
- ▶ Arrange more visitors/visits where possible.
- ▶ Further develop our role in the wider community through links with primary schools/ high schools and STEM employers.

Context of school and needs of our children.

- ▶ STEM careers will play a vital role in our children's futures so it is important that we give children a firm foundation in scientific learning and understanding combined with the aspiration to pursue science in their future academic lives.

- ▶ Science aims and vision for learning fit well alongside the school's vision:

- ▶ Ensure our school is a nurturing and happy family where everyone is valued for their individuality within a safe and secure environment.
- ▶ Equip children with the resilience and perseverance to become creative, independent thinkers.
- ▶ Encourage learning for life within an ever-changing world.
- ▶ Foster an enquiring mind in order to stimulate reflection, challenge and innovation both inside and outside the classroom.
- ▶ Provide first hand experiences in order to develop in our children a love of learning, a pride in their work, respect for their surroundings and good relationships with others.
- ▶ Promote rights and attitudes of care, tolerance, trust and respect through a broad and balanced curriculum.
- ▶ Build strong, collaborative partnerships between the school and wider community.





Manor Road Primary School

Vision for Science

We want children to find science fun and to be inspired by the science in the world around them. Our aim is for children to see science in real-life applications and to know that they can aspire to STEM careers when they grow up.

Principles of Teaching Science

We know that Science is good in our school when...

- Children are engaged in practical, hands-on learning activities.
- Children ask 'what if...' questions and try to find out more.
- Children organise their own investigations.
- Children record their findings in a variety of ways.
- Children develop their vocabulary to help them to explain their science work.
- Lessons make good use of the school grounds and the local outdoor area.



<http://www.manor-road.lancsngfl.ac.uk/information/science-2/>



Impact as a Subject Leader

- ▶ I have guided school to achieve our third Primary Science Quality Mark- this time at Gilt level, with elements of Outreach. We received praise for our submission and have been advised to aim towards the Outreach award next time.
- ▶ The science long term plan has been updated with EYFS curriculum and the key vocabulary has been added.
- ▶ The website has been updated with the intent, implementation and impact statement and will continue to be updated with ongoing information about science at Manor Road.
- ▶ I have met with the Science Ambassadors for each year group twice this year, explaining their role and getting their feedback about science in school in a pupil voice format.
- ▶ Josh and I attended a Thinking, Doing, Talking, Science course throughout the last year which we fed back at a recent staff meeting. This course emphasised the importance of practical activities with a specific learning purpose; something which I consistently support staff to try to achieve in their science lessons.
- ▶ I give staff very regular updates on the latest news in science teaching and learning and support staff with their teaching on an ongoing basis.
- ▶ I have previously been a part of the Chorley Ogden Trust alliance which enabled us to access training and £2000 worth of equipment free of charge. The official alliance has now ceased to function but I am hoping to liaise with other member schools to implement a new alliance.

Progression in Science at Manor Road

I	Pre-School	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Living Things	<p>Comments and asks questions about aspects of their familiar world such as the place where they live or the natural world. Can talk about some of the things they have observed such as plants, animals, natural and found objects. Shows care and concern for living things and the environment.</p>	<p>They know about similarities and differences between themselves and others, and among families, communities and traditions. They can talk about their own environment The world: Show care and concern for living things and the environment</p>	<p><u>Animals including humans</u></p> <p>Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. Identify and name a variety of common animals that are carnivores, herbivores and omnivores. Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)</p>	<p>Explore and compare the differences between things that are living, dead, and things that have never been alive. Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other Identify and name a variety of plants and animals in their habitats, including microhabitats Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food .</p>	<p><u>Plants</u></p> <p>Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers.</p>	<p>Recognise that living things can be grouped in a variety of ways. Explore and use classification keys to help group, identify and name a variety of living things in their local environment. Recognise that environments can change and that this can sometimes pose dangers to living things.</p>	<p>Describe the differences in the lifecycles of a mammal, an amphibian, an insect and a bird. Describe the life processes of reproduction in some plants and animals.</p>	<p>Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro - organisms, plants and animals. Give reasons for classifying plants and animals based on specific characteristics</p> <p><u>Evolution and inheritance</u></p> <p>Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.</p>

Moving forward...

- ▶ I have creating vocabulary front sheet templates for staff to use at the beginning and end of each science unit.
- ▶ I am ensuring that our science capital remains high through supporting staff and children in running British Science week in March and participating in the Great Science Share in June.
- ▶ I will continue to liaise with both staff and students in order to maintain our strong standards in science teaching and learning at Manor Road.
- ▶ I will begin to guide school towards achieving the PSQM Outreach Award in 3 years time.