Impact Statement

Science

Project/Intervention

To improve the teaching of science with the focus on pupil enquiry, active learning and improved recording. To build science networks beyond the school centred on the creation of our new Lab.

Issues and Challenges

- Slowness of Lab completion
- Balance between National Curriculum expectation and child led enquiry
- Staff confidence in going off plan
- Children recall the 'wow' experiments that led to posing questions but not the scientific explanations behind them

Desired Outcomes

- Continue to develop an enquiry based approach to the teaching of science
- Teachers are familiar and confident to use a range of experiments which promote questioning
- Children are confident to pose questions from observation
- Develop a wider range of ways science is recorded, including more data and graphs
- Teachers know what scientific enquiry looks like in terms of assessment for learning

What we did

- Led school based Inset looking at:
  - 'Wow' starting points
  - Planning from children's own ideas
- Encouraged teachers to adapt their planning to allow for unexpected tangents in children's enquiry
- Visiting speakers led Inset to develop the teaching of scientific enquiry:
  - Naomi Hiscock, Primary Science Education Consultancy
  - Carole Kenrick, Lab 13
- Crick Science Week – teachers in Y1-6 worked alongside scientists to carry out a science investigation. Y5 visited the Crick Institute and worked in their lab for a day
- Signed up to EEF 'Thinking, Doing, Talking Science' (TDTS) research project for year 5 teachers. We were part of the control group.
- Encouraged children to enter the National Primary Engineering Awards 2017
- CC given time to research scientific approaches, possible funding, resources
- FC led Science training for Camden NQTs, working with Kingsgate Science Lead
- Governor monitoring of the teaching of science through a Pupil Focus Group in March 2017

How we did

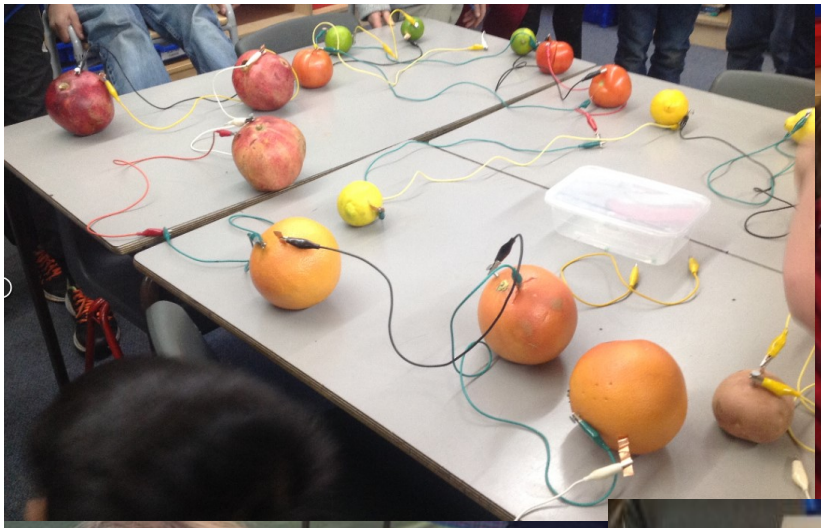
- SLT 'Book Looks' show more science taught and recorded than in previous years
- Monitoring showed our children love the hands on practical approach to science but often can't recall the knowledge behind the experiment
- Children said the majority of their science lessons are practical but could see the purpose of the more formal aspects, such as writing up what they had done
- There is still little evidence of scientific data being collected, compared or analysed
- Five of our children were recognised as 'highly commended' for their engineering designs

What we learnt

- Building work doesn't always go to schedule!
- Teachers welcome practical support in how to teach science
- Staff embrace getting messy and letting the children lead
- The use of video can enhance the sharing of scientific enquiry
- Staff work well in pairs / teams researching inspirational ideas relevant to their age group

Next Steps

- Ensure each year group has relevant and inspirational investigations which promote questions in children's thinking
- Further staff Inset to maintain momentum in developing science teaching
- Open the Lab and incorporate its use into our science teaching
- Parent event sharing our learning
- Y5 teacher +1 to attend 'Thinking, Doing, Talking Science' training 17-18 and share learning and approach with all staff
- Ensure children understand the science behind the experiments they see



Some of our pupils say:-

I like Science because you never really know what's going to happen when you do experiments. You have to predict; if you get it wrong it doesn't matter, you've learnt something. It's quite a lot of joining in, it's creative and it's making things. (Arkady, Y2)

I LOVE science - you do so many experiments, actually doing stuff that's active not just writing. We learnt how to erupt volcanoes and we watered Venus fly traps when we were learning about plants. We learnt the parts of a plant and about pollination. We did a play about this in our open day for parents. (Amelia, Y3)

Teachers teach science in a fun way. I remember what I've learnt. I learnt about rocks; there are three types – metamorphic, igneous and sedimentary. The teacher explained what they were and where they came from then we wrote about it to help us remember. We also made rocks out of chocolate, we layered three different types, and this really helped me understand it. (Georgia, Y3)

Some of our pupils say:-

I really like science. We learnt about magnet s and forces. We found that magnets can pick up loads of stuff, not all things but some metals. (Reece, Y3)

Science is very exciting. You do lots of practical experiments like seeing if citrus fruit is a conductor and mixing bicarbonate of soda and vinegar to see what happens. If you put more in the explosion is huge! I learnt that what I think will happen doesn't always. (Tillie, Y4)

Sometimes teachers ask what we'd like to learn within our science. The teacher tries to answer some of the questions. We made salt dough and tested whether we could make a bulb light up. We found a fat piece of dough was a better conductor than a long thin piece. We don't just do experiments; when we learnt about mammals we couldn't really do practical things so we learnt from the teacher. I'm saving up for a science box with twenty experiments and I've also got Disgusting Science Experiments. (Molly-Rose, Y4)