

# Department of Education and Children

*Rheynn Ynsee as Paitchyn*

Ref: redacted

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## **Moderation of Science Record 2018-19**

Date – 24<sup>th</sup> April 2019

School – Victoria Road

Moderators – redacted

### **School Context**

Victoria Road School serves the Castletown community and has both single cohort and mixed classes.

The Science Coordinator has been in post for redacted years and has previously been the science coordinator for another school. The scheme of work the school uses was in place before the science coordinator started at Victoria Road School. There are curriculum trackers that are highlighted and passed on through out the students' time at school. Teachers assess using the e-tracker. End of KS2 data shows that although attainment has fluctuated over the years depending on each cohort, levels are good to excellent.

Science is not currently a focus on the school's SIP but this year Victoria Road moderated science with Scoill Phurt le Moirrey (there has been no in-house moderation during the Science Coordinator's time at the school).

The school has a transition programme with Castle Rushen High School, which includes science visits.

### **Activities During Visit**

Moderators met with the Science coordinator, reviewed planning and assessment material, moderated science evidence provided and interviewed pupils.

### **Evidence of in house moderation**

The school has cross-moderated with Scoill Phurt le Moirrey last month.

### **Science Training attended including Science Cos**

The coordinator has attended the Science Coordinator meetings. There has been no school wide Science CPD since the Science Coordinator started.

**Verbal feedback given** – To the Head teacher, Deputy Head and Science Coordinator

### **Moderation Focus**

Two pupils assessed at 2a and two pupils assessed at 4a. Focus was on overall attainment.

### **Overall Comments:**

The school was very welcoming and the Head Teacher's office was provided for the moderators. The Science Coordinator was readily available and pupils interviewed were polite, enthusiastic and very responsive. All pupils interviewed thoroughly enjoyed science.

The teachers had prepared evidence of assessment for each pupil, all work was marked and planning was available to review.

Everything was well organised by the Head teacher, Science Coordinator and staff and the moderation session ran very smoothly, which the moderators appreciated.

### **Individual Students:**

#### **Student 1 - yr 2**

Level: 2a

Evidence provided: A variety of evidence including book work, maths book, medium term plans, e-tracker, worksheets, tables, classification activities, photographs, QR code e-books.

#### **The Moderator agreed with this level because:**

After questioning it was clear that the student is working at 2a and that if they had more opportunities to extend SC1 through recording (including

diagrams, graphs, reflections and simple evaluations) then he would be working within 3c. The evidence provided showed a range of engaging learning activities that the student was very keen to discuss. The use of ICT to create video books about a sweets investigation not only showed great discussion between students, but allowed opportunities for a range of predictions. The student was able to suggest ways to measure results and explain ways he could stay safe during Science lessons.

## **Student 2 - yr 2**

Level: 2a

Evidence provided: A variety of evidence including book work, maths book, medium term plans, e-tracker, worksheets, tables, charts, graphs, diagrams, classification activities, photographs, QR code e-books.

### **The Moderator agreed with this level because:**

The evidence provided, supplemented by information gained during student interviews, supported the level of 2a. The student was able to explain safety precautions during science and to predict what would happen next in a plant investigation. The book evidence showed many opportunities for classifying investigations. The student was not able to suggest ways to gather and record information to help answer questions and evidence the moderation team found did not show that the student is creating scientific questions with help. In interview this student was not as confident and relied on the other student to answer questions.

## **Student 3 – yr 5**

Level: 4a

Evidence provided: A variety of evidence including book work, worksheets, assessment e-tracker, highlighted assessment in science book line graphs, investigation planning proforma, diagrams, photographs, data sheets.

### **The Moderator disagreed with this level because:**

The evidence found by the moderation team supports a level of 4b. The student has demonstrated an understanding of the aspects in particular jobs and roles and is able to discuss how the science they have done in class could be related to real life examples. They were using graphing to show results and had begun to use mode, median and mean in their work. The ICT use in science was evident throughout his work and in pupil interview.

To attain at 4a, the student does need to demonstrate how scientific evidence is used to support or refute ideas; make generalisations with scientific vocabulary; use mathematical conventions within his results, conclusions and evaluations and evaluate the effectiveness of his working

methods, making improvements. The student was very quiet during the interviews and was not able to supplement his work in his book with further explanation.

### **Student 4 – yr 6**

Level: 4a

Evidence provided: Evidence included book work, assessment e-tracker, line graphs, investigation planning proforma, diagrams, photographs, data sheets.

#### **The Moderator agreed with this level because:**

The student was able to demonstrate that he could describe how changing one variable can alter another. (In pupil interview he explained changing variables in his jumping pattern seeking investigation.) The ICT examples that were provided showed that he uses a range of predictions and make a series of accurate observations and measurements. There were lots of examples of data collection and he was able find the mode, median and mean. To become a firm 4a, the student will need to interpret the results and recognise inconsistencies, including some with negative numbers and to make generalisations.

**Please note that line graph was not two sets of continuous data.**

#### **Strengths:**

1. All students showed a real enjoyment for science in school with one explaining that they loved science because 'we learn something new every time'.
2. Good photographic evidence of investigations and quotes included in books to show understanding. (KS1)
3. Learning records show teachers structure lessons based on what knowledge and skills the children will need to gain next, informed by ongoing assessment.
4. Group work was evident throughout the school (evidence was through QR code recordings and in all books).
5. Feedback in bookwork extends the concept being taught, giving time to reflect and respond.
6. Good coverage of the knowledge strands across the school and investigations are engaging (the children were very positive and remembered investigations they had completed from throughout the years).
7. The focus on data handling is good and work on conclusions is progressing well. It was great to see the use of mode, median and mean in both Science and Maths books.

8. It is evident that the school is focusing on building strong science vocabulary.
9. All children were able to explain how science impacts on everyday life experiences and there were many opportunities for them to relate their investigations to real life situations.

### **Areas for development:**

1. There was not enough evidence to establish levels from the initial evidence provided, so extensive questioning was needed to gain information. After questioning it was clear that one of the KS1 students is currently working at 2a and that if he had more opportunities to extend SC1 through recording (diagrams, graphs, reflections etc) then he would be working within 3c. It is suggested that there is a larger emphasis on recording elements of investigations, particularly in KS2, which will show the students can not only investigate, but they are also analysing results, reaching conclusions, evaluating, improving their methods and making generalisations.
2. Feedback needs to be related to SC1 or misconceptions. It tended to reflect with simple statement – “good observations.” In the example where an evaluative question was written (What might you do differently next time?) the child had reflected and answered with a method change.
3. It was noted that written work tended to focus on what results occurred but not what those results could mean. There were examples in both KS1 and KS2 where investigations seemed to stop at the activity, rather than asking children to delve into the deeper reasons (evaluations). When this is addressed, all students will be firmly 2a or 4a.
4. The use of a variety of investigation styles would benefit the students. For instance, there were lots of engaging observation, classifying and sorting activities in KS1, but when these skills have been shown, changing the investigation style will allow the students to develop other skills. Another way to develop classifying skills would be to use empty tables or provide subheadings that are incorrect to let students decide which are important.
5. The students showed an excellent understanding of variables that might effect an investigation, however they were looking for ‘fair tests’ where they would only be able to minimize variables (e.g. floating and sinking which is a pattern seeking investigation). We recommend that the proforma used in KS2 has the ‘Is it a fair test?’ wording in star box removed and that planning includes the range of investigation styles.

6. All students mentioned that their teacher decides on all investigations. After discussions with staff, it is clear that the children do create their own questions. We would recommend that the process of creating questions and then carrying out the investigations is made explicit to the children. Children also indicated that they would ask teachers or use Siri if they did not know an answer to a question (not mentioning books). This suggests that they see science as a teacher led learning area.
7. The students showed a good understanding of how to read data but they were not yet using mathematical conventions within the explanations or results comments. Building onto data analysis could include students calculating differences or percentages, comparing modes and ranges, or using sentences like 'the more..., the more'.

Signed (Moderators) – redacted

Date – 24<sup>th</sup> April 2019

Signed – (HT)

Date -