Overview

Sunday, November 10, 2019 10:27 PM

Student Name: Rachel Piper

Student Number: P129083

Assignment Title: A portfolio which illustrates a critical reflection of progress made on the planning and implementation of three pedagogical principles.

Pathway: Secondary PGCE ICT and Computing

Targets from previous assignment:

	Target	What have I done in this assignment?
Target 1	**Continue to develop your critical reflections.**	**I have tried to analyse my points in a few different ways and used some opposing views in literature.**
Target 2	**Ensure that you engage with a wider range of current literature to make more confident justifications.**	**Most of my literature is from a more recent source than what I used in my previous assignment.**
Target 3		

Link to OneNote: https://uowtsd-my.sharepoint.com/:o:/g/personal/rpiper_129083_student_uwtsd_ac_uk/Egle3rz0FuNBvYU-deb6ldkBErO1v5jUjnqfZ6TvgXxIJA?e=uJhzcz

Word count: 3223 (Excluding illustrative examples)

Cross-Curricular Responsibilities

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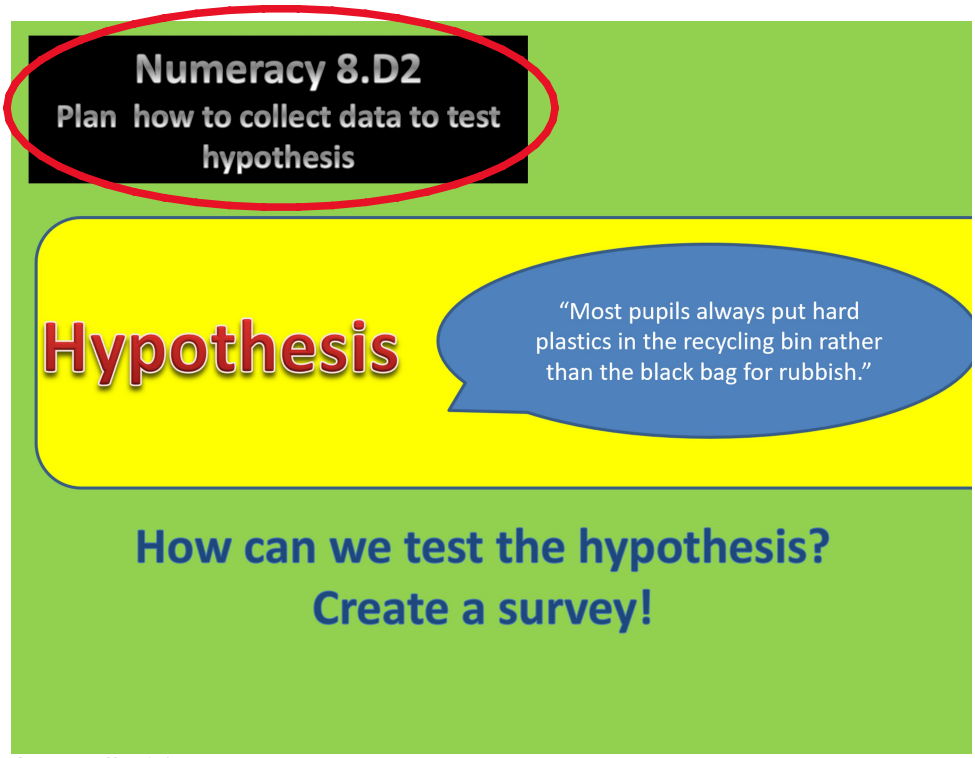
In this section, there are 3 examples of Cross-Curricular responsibilities.

- Numeracy
- Literacy
- Digital Competency

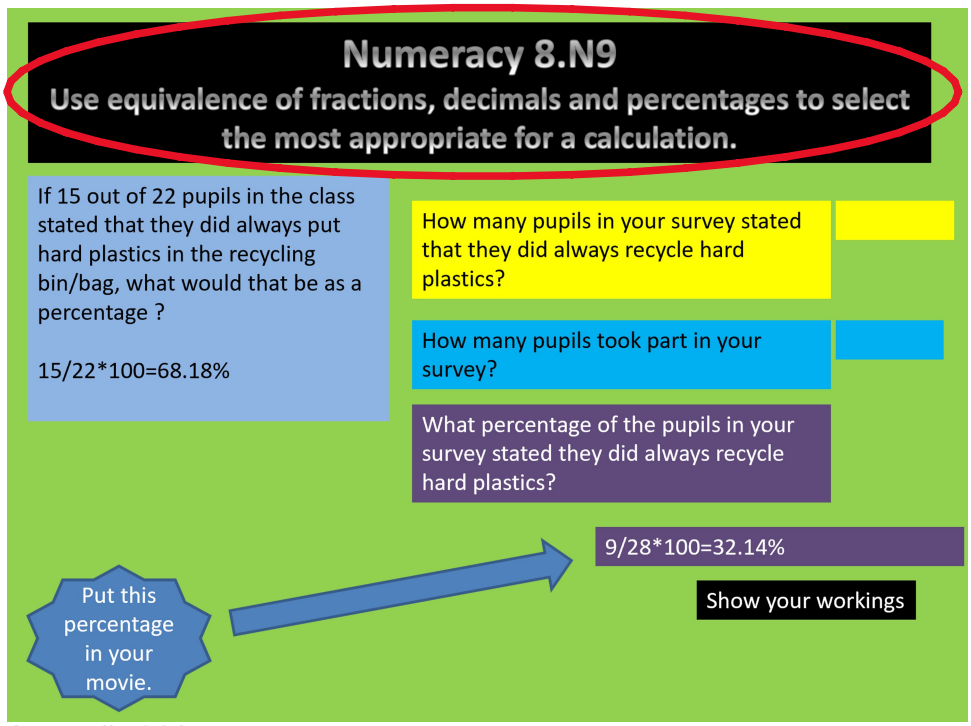
CCR - Illustrative Example 1 Numeracy

01 January 2020 19:42

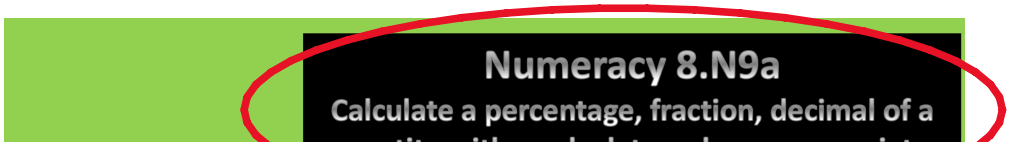
Within the Powerpoint work books, there are pages/ lessons dedicated to numeracy. The head of department that has created the resources has even noted which part of the numeracy framework the lesson covers (although it does also touch on other sections, just not in as much detail).

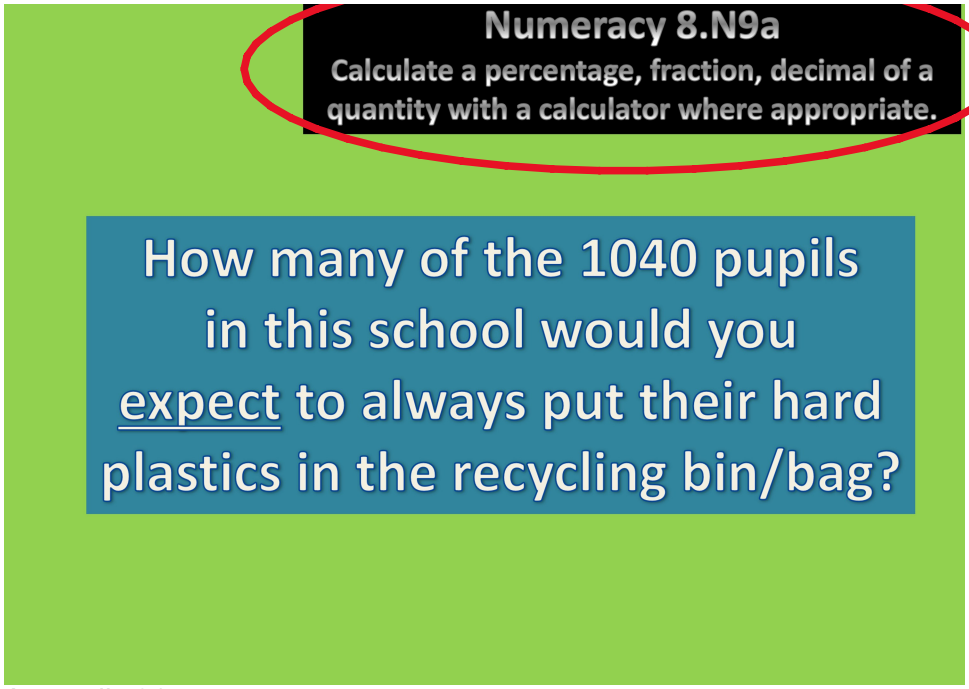


Appendix 01.a



Appendix 01.b





Appendix 01.c

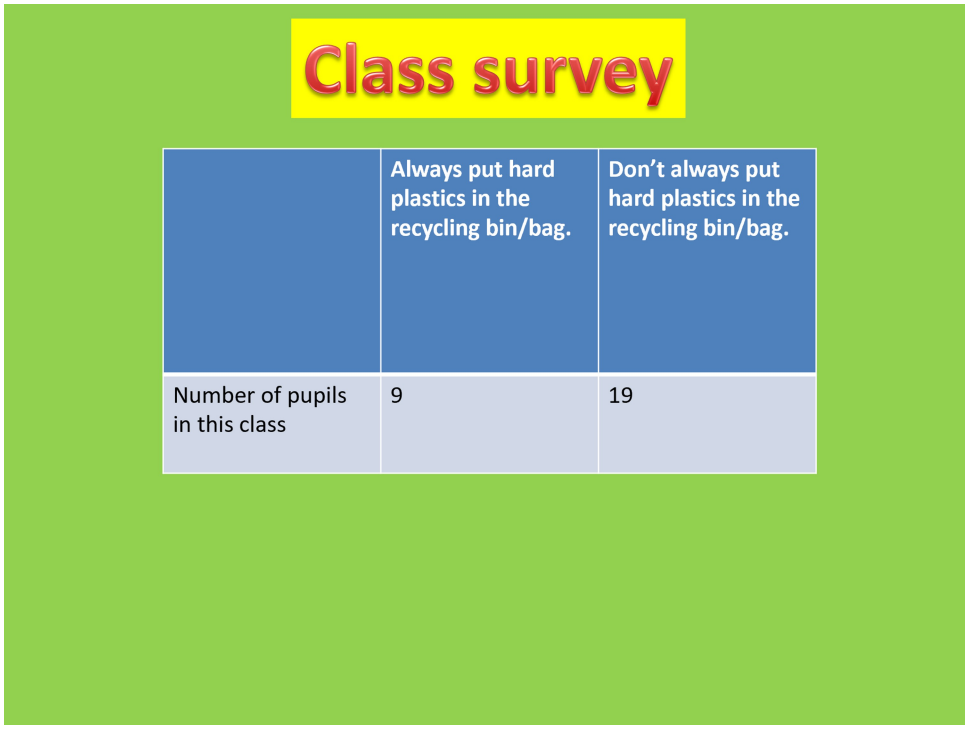
STRAND: Using data skills	ELEMENT: Collect and record data, Present and analyse data, Interpret results	
Learners are able to:	**Learners are able to:**	**Learners are able to:**
collect own data for a survey, *e.g. through designing a questionnaire*	plan how to collect data to test hypotheses View exemplification materials	test hypotheses, making decisions about how best to record and analyse the information from large data sets
construct frequency tables for sets of data, grouped where appropriate, in equal class intervals (groups given to learners)	construct a wide range of graphs and diagrams to represent discrete and continuous data	construct and interpret graphs and diagrams (including pie charts) to represent discrete or continuous data, with the learner choosing an appropriate scale View exemplification materials
construct a wide range of graphs and diagrams to represent the data and reflect the importance of scale	construct frequency tables for sets of data in equal class intervals, selecting groups as appropriate	select and justify statistics most appropriate to the problem considering extreme values (outliers)
interpret diagrams and graphs (including pie charts) View exemplification materials	construct graphs to represent data including scatter diagrams to investigate correlation View exemplification materials	examine results critically, select and justify choice of statistics recognising the limitations of any assumptions and their effect on the conclusions drawn
use mean, median, mode and range to compare two distributions (discrete data). View exemplification materials	interpret diagrams and graphs to compare sets of data View exemplification materials	use appropriate mathematical instruments and methods to construct accurate drawings.
Key Stage 3 classroom tasks View classroom resource materials	use mean, median, mode and range to compare two distributions (continuous data).	Key Stage 3 classroom tasks View classroom resource materials
	Key Stage 3 classroom tasks View classroom resource materials	

Appendix 01.d (Welsh Government, 2008)

Learners are able to:	Learners are able to:	Learners are able to:
use equivalence of fractions, decimals and percentages to compare proportions	use equivalence of fractions, decimals and percentages to select the most appropriate for a calculation View exemplification materials	use equivalence of fractions, decimals and percentages to select the most appropriate for a calculation
recognise that some fractions are recurring decimals, *e.g. 1⁄3 is 0.333*	simplify a calculation by using fractions in their simplest terms View exemplification materials	use and interpret different representations of fractions, *e.g. mixed numbers and improper fractions*
calculate percentages of quantities using non-calculator methods where appropriate	calculate a percentage, fraction, decimal of any quantity with a calculator where appropriate View exemplification materials	calculate a percentage increase or decrease View exemplification materials
use ratio and proportion including map scales. View exemplification materials	calculate the outcome of a given percentage increase or decrease View exemplification materials	express one quantity as a percentage of another View exemplification materials
Key Stage 3 classroom tasks View classroom resource materials	use ratio and proportion to calculate quantities. View exemplification materials	use ratio and proportion to calculate quantities.
	Key Stage 3 classroom tasks View classroom resource materials	Key Stage 3 classroom tasks View classroom resource materials

Appendix 01.e (Welsh Government, 2008)

Appendix 01.a refers to the section in the Numeracy Framework regarding planning how to collect data to test a hypothesis. The lesson also included "Use equivalence of fractions, decimals and percentages to select the most appropriate for a calculation." see Appendix 01.b and "Calculate a percentage, fraction, decimal of a quantity with a calculator where appropriate." see Appendix 01.c. Appendix 01.d and 01.e display extracts from the Numeracy Framework (Welsh Government, 2008).



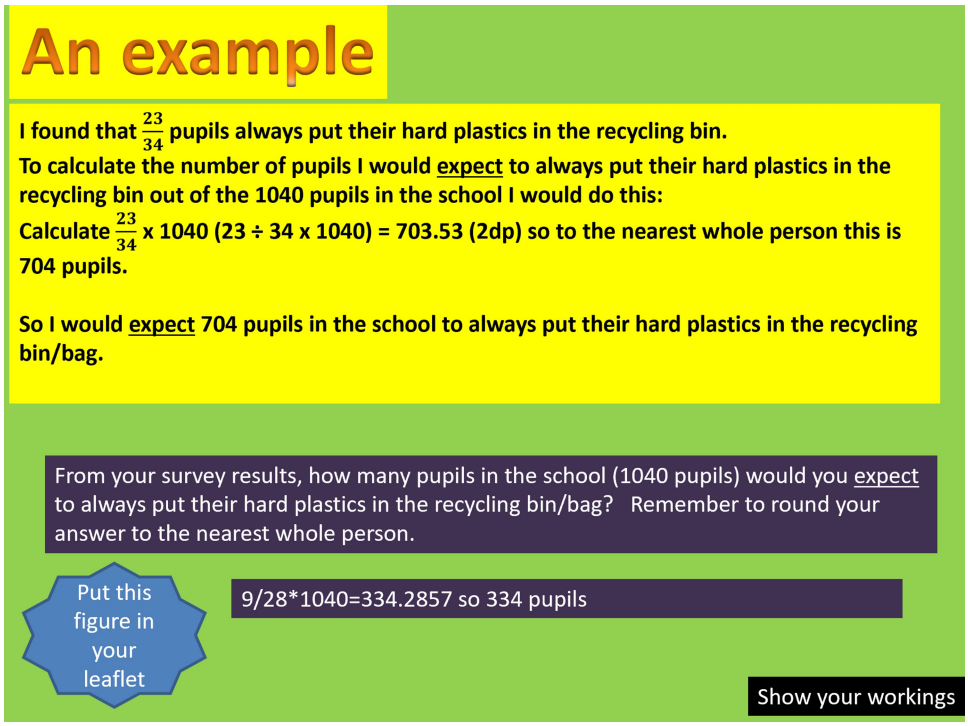
Appendix 01.f

Within this lesson, I asked pupils to put their hands up if they always put their plastic rubbish in the recycling bin. I then asked a pupil that didn't have their hand up to count the pupils. The pupil that was

helping me demonstrate on the computer using AB Tutor Control then wrote the number in the correct section of the survey. Then I asked how many pupils do not always recycle their plastic. I then has another pupil count the amount and the demonstrator pupil wrote this number in the box, see Appendix 01.f.

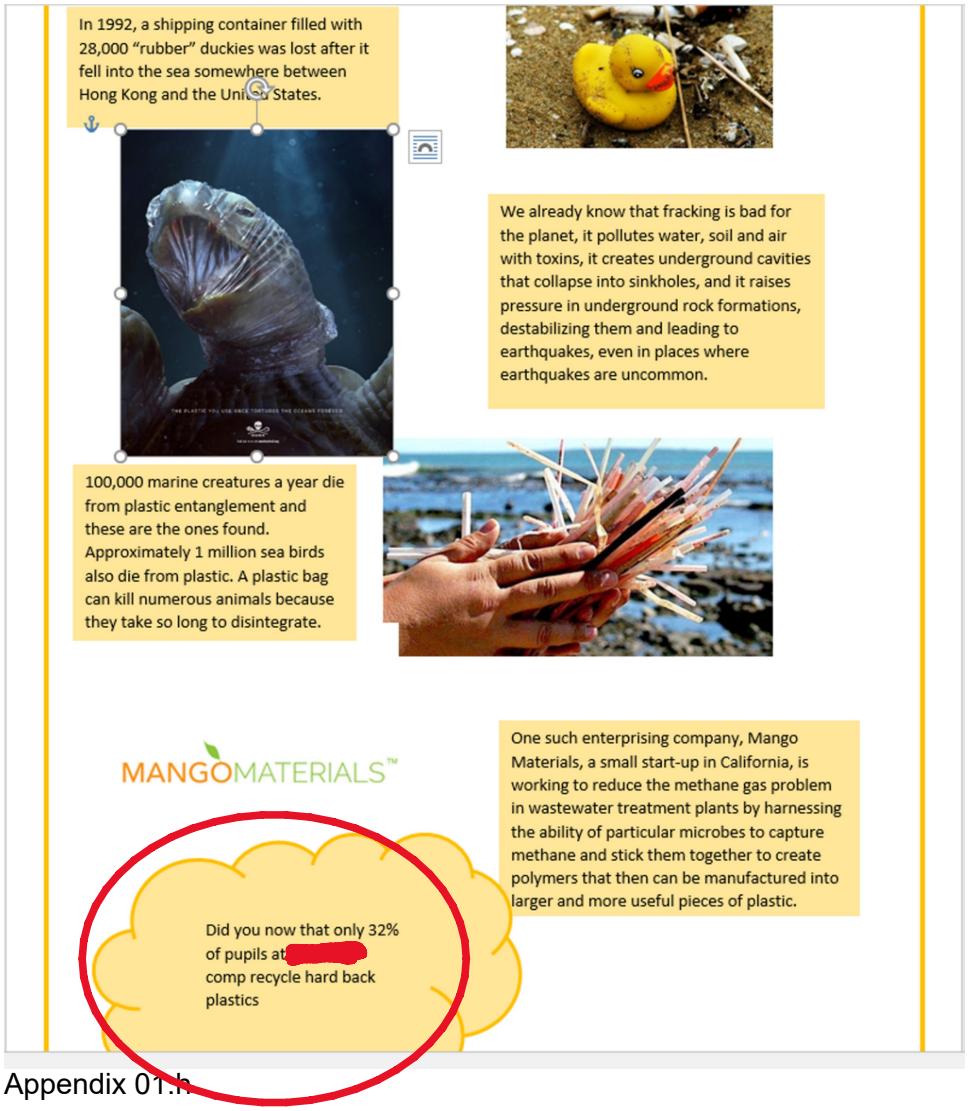
On the next slide, there is an example of how to work the question out. At first, we did it together as a class. First we had to put down how many pupils said they recycled, then how many participated over all. I asked pupils how we would work that out and they shouted out adding the two numbers together. We then needed to work out what percentage of pupils in the class recycled. I asked pupils how they would work out a percentage. Each pupil I selected had to answer what key I would need to click next on the keyboard and then I wrote down what they said on the white board. 9/28*100=32.14%. The pupils needed to show their workings and should not just write the final answer, see Appendix 01.b.

In the next section, pupils needed to make an estimate without a calculator, based on the result of the survey, how many pupils in the whole school recycle. I then wrote the guesses on the board so we could see how many had the correct answer, see Appendix 01.c.



Appendix 01.g

The next slide gave an example of how to work the answer out. Again, we first worked out the example together as a class. The pupils had to round the final number up to a whole number as it represented the number of pupils. The pupils were then asked to work the answer out using the data they had gathered in a survey. Once they had had a go themselves, I asked the pupils what key I would need to enter next. 9/28*1040=334.2857. Pupils needed to round this up to 334 pupils, see Appendix 01.g.



Appendix 01.h



Appendix 01.i

Pupils were then asked to include the calculations into their leaflets they had been creating about the environment. The numeracy was being used to enhance their original work and added to the overall leaflet with purpose, as I was able to show them how to import shapes into a Microsoft Word document where they could add this new information to make their leaflet more interesting and informative, see

Appendix 01.h and 01.i.

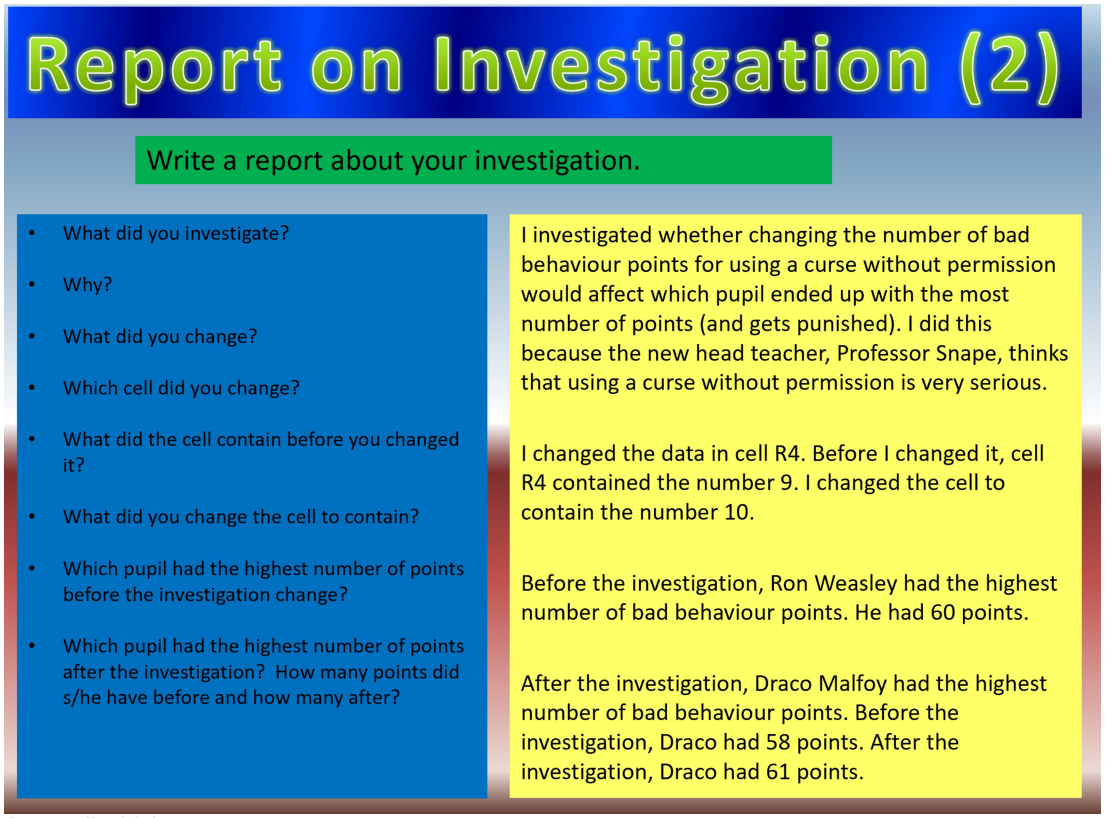
CCR - Illustrative Example 2 Literacy

01 January 2020 20:14

As well as a Numeracy Framework, there is also a Literacy Framework (Welsh Government, 2008) which must be covered across all subjects within Wales. Appendix 02.a shows an extract from the Literacy Framework.

STRAND **Writing across the curriculum**	ELEMENT **Writing accurately**	ASPECT **Handwriting, Grammar, Punctuation, Spelling**
Learners are able to:	**Learners are able to:**	**Learners are able to:**
use a wide range of sentence structures choosing connectives to make meaning clear **View exemplification materials**	write with grammatical accuracy, varying the length and structure of sentences to make meaning clear **View exemplification materials**	write simple, compound and complex sentences with grammatical accuracy in their writing **View exemplification materials**
use the full range of punctuation accurately to clarify meaning, *e.g. demarcating sentences (full stops) and clauses (commas), and using apostrophes correctly* **View exemplification materials**	use the full range of punctuation in order to clarify meaning, *e.g. semicolons, colons, quotation marks* **View exemplification materials**	use the full range of punctuation in order to clarify meaning, *e.g. semicolons, colons and parentheses*
use a variety of strategies and resources to spell familiar and unfamiliar vocabulary and subject-specific words correctly **View exemplification materials**	use a variety of strategies and resources to spell familiar and unfamiliar vocabulary and subject-specific words correctly **View exemplification materials**	use a variety of strategies and resources to spell familiar and unfamiliar vocabulary and subject-specific words correctly **View exemplification materials**
produce fluent and legible handwriting **View exemplification materials**	produce fluent and legible handwriting **View exemplification materials**	produce fluent and legible handwriting **View exemplification materials**
Welsh-medium statement: write sentences ensuring that the verb tense and person is usually correct in context	Welsh-medium statement: write grammatically accurate sentences ensuring that the verb tense and person is usually correct in context	Welsh-medium statement: write grammatically accurate sentences ensuring that the verb tense and person is correct in context
Welsh-medium statement: use a range of mutations (soft, nasal and aspirate mutations) correctly in context.	Welsh-medium statement: use a range of mutations (soft, nasal and aspirate mutations) correctly in context.	Welsh-medium statement: use a range of mutations (soft, nasal and aspirate mutations) correctly in context.
		Key Stage 3 classroom tasks

Appendix 02.a (Welsh Government, 2008)



Appendix 02.b

In lessons, pupils are expected to write a report explaining their findings during a particular task. For this example, year 7 pupils had to write a report on what they investigated and include specific details about the task, see Appendix 02.b. The pupils were given questions to answer and they were expected to write in full, complete sentences.



Appendix 02.c

When teaching this lesson and explaining what type of things they could write, I explicitly mentioned that they had to use capital letters for names, needed to check their spelling and use correct grammar an punctuation. They also had a slide they could refer back to that helped them write accurately that corresponded to the mark scheme that would be used to check their literacy, see Appendix 02.c.

The pupil whose work I have used as an example in Appendix 02.b had good literacy skills, although I did circulate around the

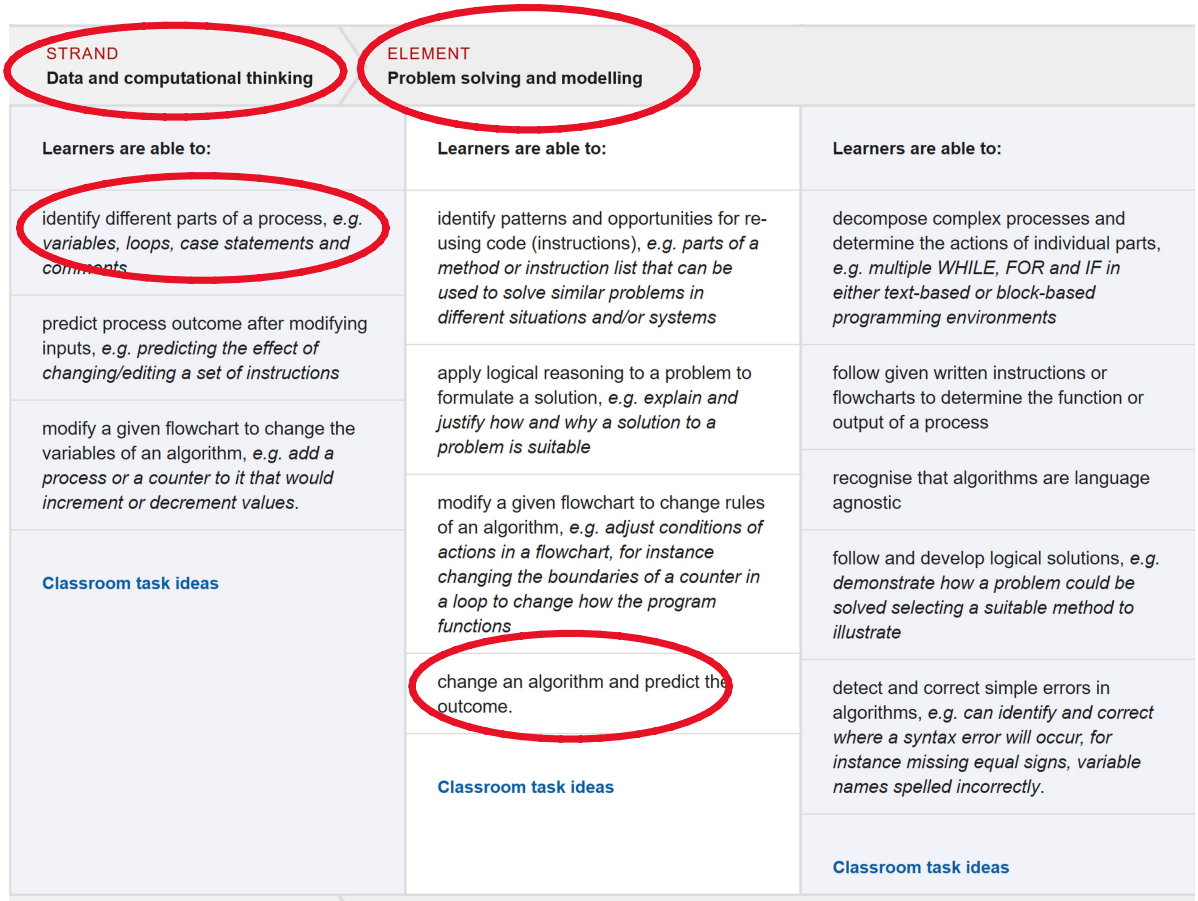
room to check the spelling etc. and would announce "Don't forget to put capital letters for each name!" when I saw a mistake. This meant the pupils could check back on their work before I came to see it. This pupil wrote a lot although there was a wide variation of literacy skills in this lesson as some were unable to write in full sentences and struggled with spelling. If there were specific words that many pupils were struggling with, I stopped the lesson and asked them to face me. I then asked pupils to spell the words out for me as I wrote it on the board. I was sure not to ask the pupils that were really struggling with the spelling as I did not want them to feel like I was highlighting this to the class.

I think that having a slide they can refer back to with the literacy rules will be very helpful for pupils when having to complete more writing tasks as it is always available for them to access and they do not need to ask a teacher for help if they don't want to.

CCR - Illustrative Example 3 DCF

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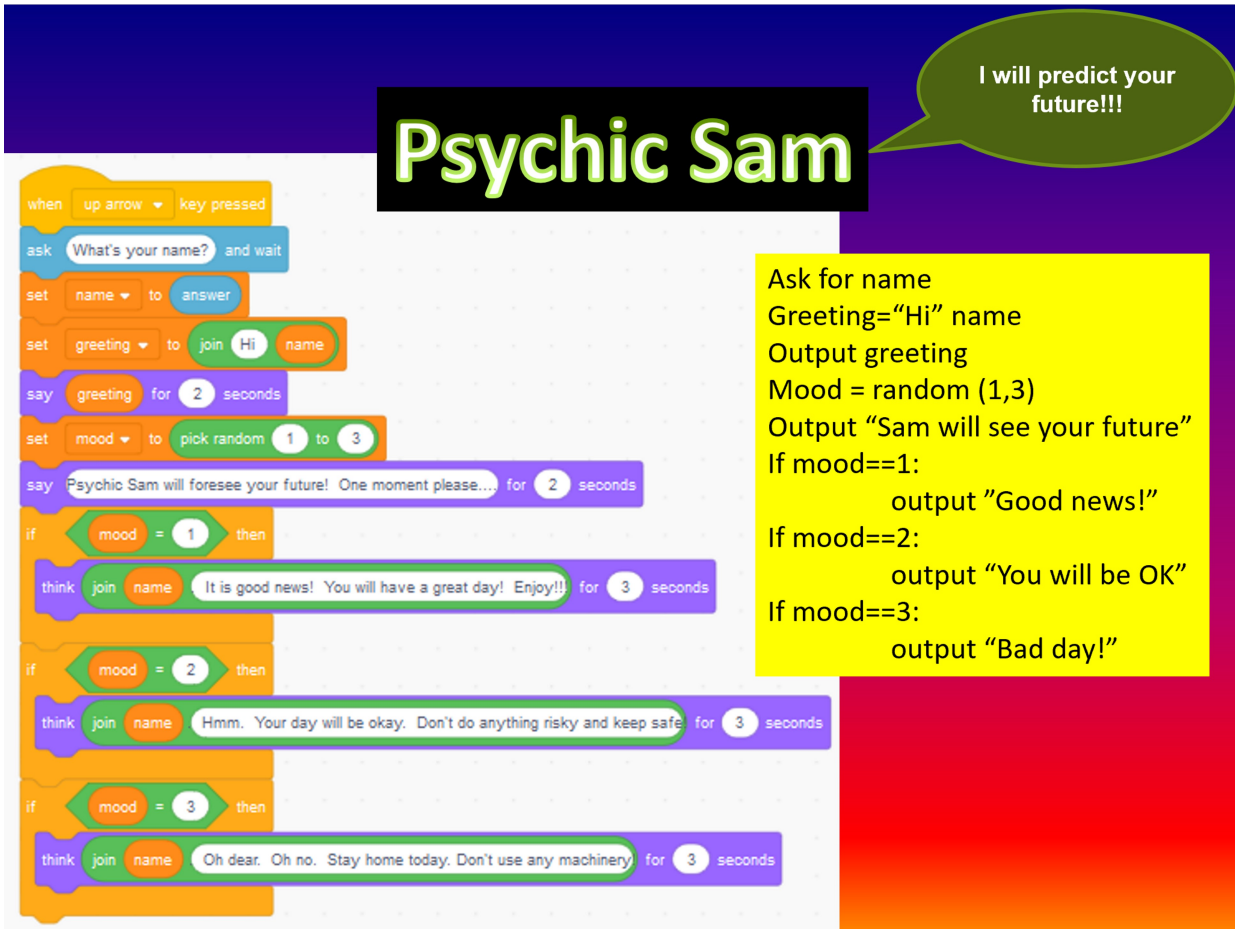
As well as the Literacy and Numeracy Frameworks which are already embedded within the curriculum, The Welsh Government have more recently implemented the Digital Competency Framework which will hopefully increase the ICT and computational thinking skills of pupils across all subjects. Appendix 3.a demonstrates an extract taken from the Digital Competency Framework (Welsh Government, 2016).



STRAND **Data and computational thinking**	ELEMENT **Problem solving and modelling**	
Learners are able to:	**Learners are able to:**	**Learners are able to:**
identify different parts of a process, *e.g. variables, loops, case statements and comments*	identify patterns and opportunities for re-using code (instructions), *e.g. parts of a method or instruction list that can be used to solve similar problems in different situations and/or systems*	decompose complex processes and determine the actions of individual parts, *e.g. multiple WHILE, FOR and IF in either text-based or block-based programming environments*
predict process outcome after modifying inputs, *e.g. predicting the effect of changing/editing a set of instructions*	apply logical reasoning to a problem to formulate a solution, *e.g. explain and justify how and why a solution to a problem is suitable*	follow given written instructions or flowcharts to determine the function or output of a process
modify a given flowchart to change the variables of an algorithm, *e.g. add a process or a counter to it that would increment or decrement values.*	modify a given flowchart to change rules of an algorithm, *e.g. adjust conditions of actions in a flowchart, for instance changing the boundaries of a counter in a loop to change how the program functions*	recognise that algorithms are language agnostic
Classroom task ideas	change an algorithm and predict the outcome.	follow and develop logical solutions, *e.g. demonstrate how a problem could be solved selecting a suitable method to illustrate*
	Classroom task ideas	detect and correct simple errors in algorithms, *e.g. can identify and correct where a syntax error will occur, for instance missing equal signs, variable names spelled incorrectly.*
		Classroom task ideas

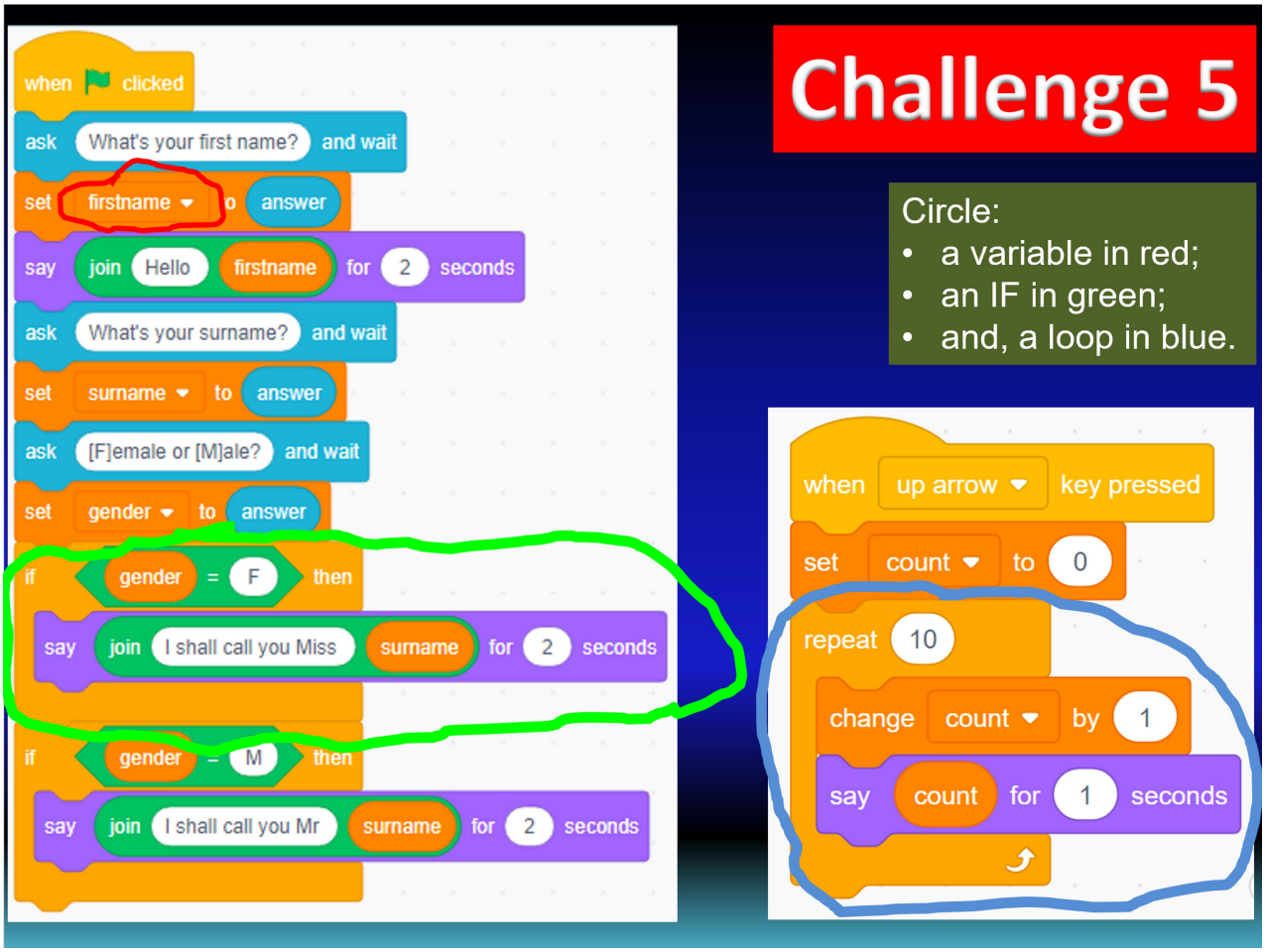
Appendix 03.a (Welsh Government, 2016)

During the ICT lessons, I cover digital skills every day, however, the Digital Competency Framework has specific aspects that it requires to be achieved. One section that I have covered specifically with both year 7 and year 8 is the strand of 'Data and Computational Thinking' under the element 'Problem Solving and Modelling', see Appendix 03.a.



Appendix 03.b

With year 8, we are about to start the lesson that will be dealing with the section 'change an algorithm and predict the outcome', see Appendix 03.a and 03.b. We have been working on multiple Scratch 3.0 programs (Scratch, 2019), starting from very simple where I have demonstrated how to create the program and then they copy it to then showing them how the final program will work and the pupils having to re-create this using what they have learnt previously.



Appendix 03.c

In this example of year 7 work, see Appendix 03.c, I have targeted the section of the DCF 'identify different parts of a process', see Appendix 03.a. In this lesson, based on what we had covered in previous lessons, pupils were asked to identify a variable, an IF statement and a loop. They distinguished this by using different colour circles so I was able to see who understood what was what and that they were not just remembering how I made each program in the demonstration.

Assessment For Learning

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This section covers Assessment for Learning.

- S.T.A.R Marking
- Questioning
- Observation

AFL - Illustrative Example 1 Marking

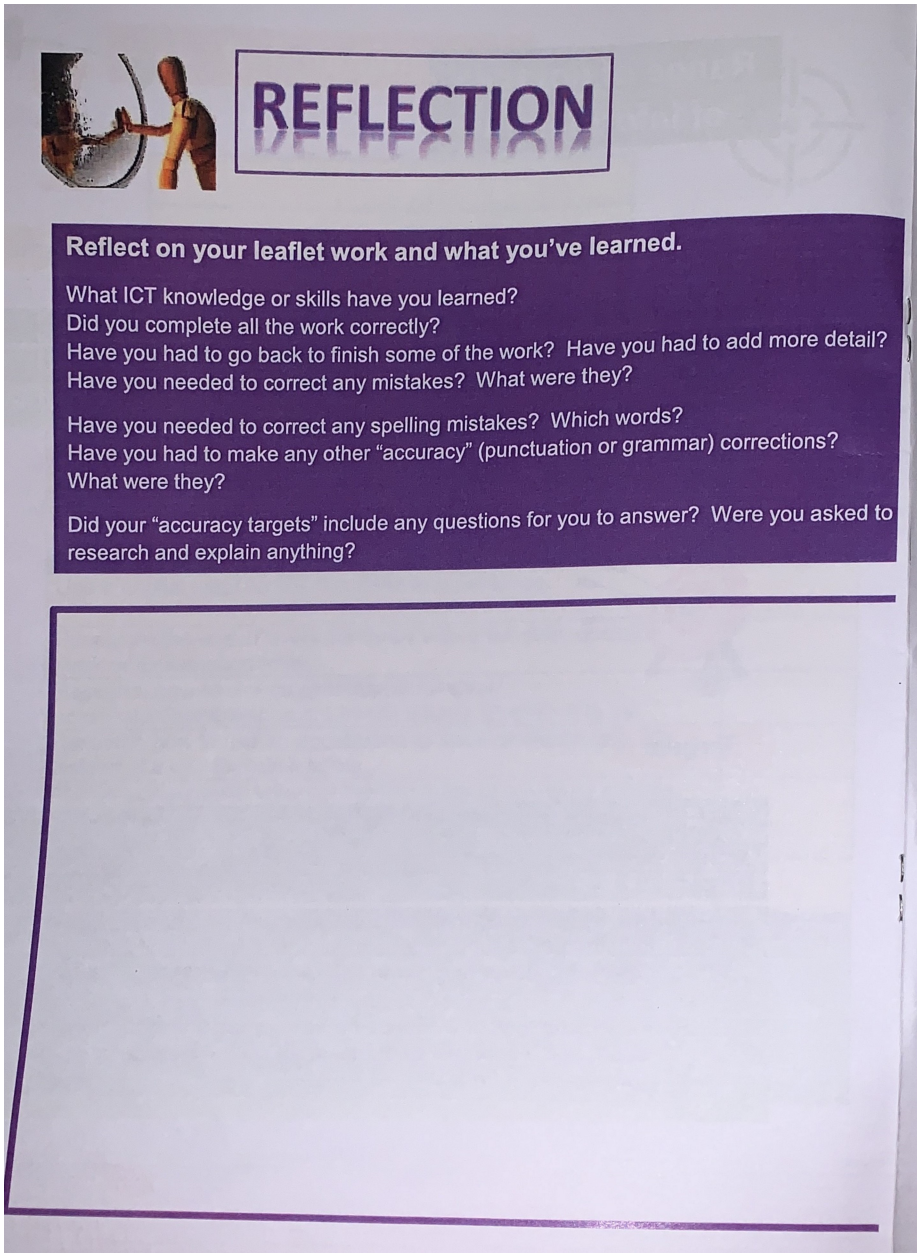
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The ICT department uses a S.T.A.R marking policy. This can vary from school to school. In this school, S.T.A.R stands for S - Strengths T- Targets A - Accuracy and R - Reflection, see Appendix 04.a.



Appendix 04.a

As the pupils in this discipline do not have exercise books to complete their work in, it is not possible to collect their books in and mark. Instead, the 'workbooks' are digital and are created using Microsoft Powerpoint.



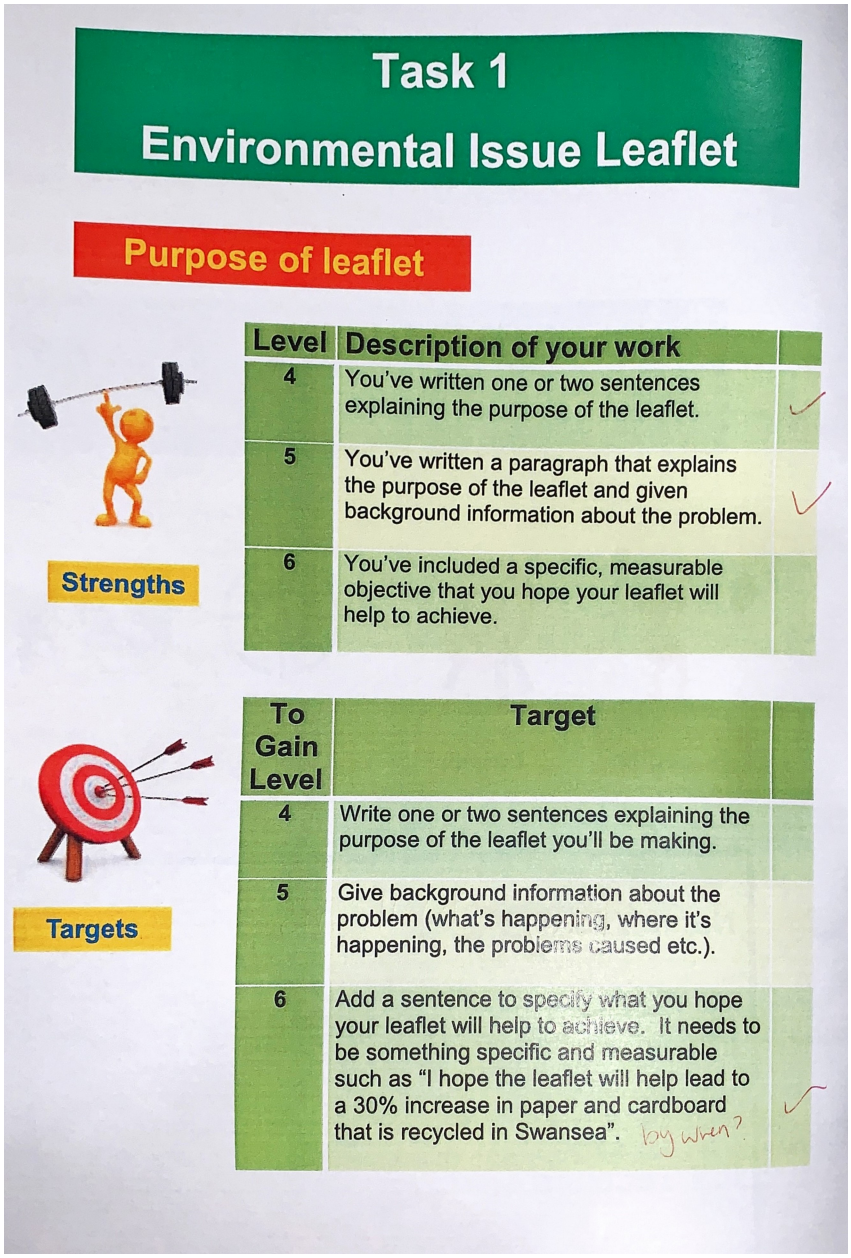
Appendix 04.b

When it is time to mark their classwork, (usually done after a topic has finished), the pupils will upload their Powerpoint documents to a shared folder that the teacher can access. A booklet has been created to make it easier to see the levels that the pupil has achieved and what they need to do to achieve it. Once the marking has been completed and returned, there is a section for pupils to reflect on the feedback they have been given, see Appendix 04.b. They are asked about what they have learned, whether they needed to change anything in their work, and general questions that gets the pupils to think about why they needed to change what they did and how it improved their work. An entry on TeacherToolkit, (2016) suggests that by giving the pupils to re-draft their work and take feedback into account gives pupils the chance to think about their work, how are they going to improve it and how are they going to take action to make sure their work is the best quality it can be. This is better than pupils receiving a mark without knowing how close they were to the next grade or what they could have done to have made their work better. Giving pupils the choice to improve their work can help them build their initiative and motivation to do well in class.

When marking the pupils work, I had the booklet in front of me and their virtual workbook on the computer screen. The booklet matched the order of the workbook so the pages easily corresponded to the screen to find what the mark scheme was asking for without having to search for the work.

There were pupils of varying assigned levels within the class, but mainly levels 5 and

6. When the pupils receive this booklet back once the work is marked, they can clearly see what level they are currently achieving and what their targets are to reach the next level. The reflection section is useful for pupils to return to their work and improve it when they can clearly see the mark scheme in front of them, see Appendix 04.b.



Task 1
Environmental Issue Leaflet

Purpose of leaflet

Strengths

Level	Description of your work	
4	You've written one or two sentences explaining the purpose of the leaflet.	✓
5	You've written a paragraph that explains the purpose of the leaflet and given background information about the problem.	✓
6	You've included a specific, measurable objective that you hope your leaflet will help to achieve.	

Targets

To Gain Level	Target	
4	Write one or two sentences explaining the purpose of the leaflet you'll be making.	
5	Give background information about the problem (what's happening, where it's happening, the problems caused etc.).	
6	Add a sentence to specify what you hope your leaflet will help to achieve. It needs to be something specific and measurable such as "I hope the leaflet will help lead to a 30% increase in paper and cardboard that is recycled in Swansea". by when?	✓

Appendix 04.c

Intended Audience



Strengths

Level	Description of your work
4	You've written one or two sentences explaining who you expect will read your leaflet. You've referred to age group, gender, location and maybe interests.
5	You've discussed how you will attract the audience's attention so that they will read your leaflet (colour scheme, images, font, type of words you'll use).
6	You've explained ways in which you'll make the leaflet meet their needs (e.g. a font that's easy to read, words with a suitable reading age, the way you'll lay out your pages).



Targets

To Gain Level	Target
4	Write one or two sentences explaining who you hope will read your leaflet (age group, gender, location, interests).
5	Describe how you'll attract the audience's attention (so that they will choose to read your leaflet). Explain the colour scheme, type of images, font and type of words you'll use in your leaflet (and why).
6	Describe how you'll meet the audience's needs. If they are young perhaps you'll use a certain font and certain types of words. Explain.

Appendix 04.d

My leaflet is aimed at
The gender of : men and women
There age: 18-50

To attract peoples attention I will put dying sea life (eg; turtles, fish and coral)
My colour scheme will be turquoise and mint green
My main font will be balloon Lt Bt
I will use words like Dying, Suffering, plastic , turtles ,ocean ☺

Appendix 04.e

Task 1

Environmental Issue Leaflet

Purpose of leaflet



Strengths

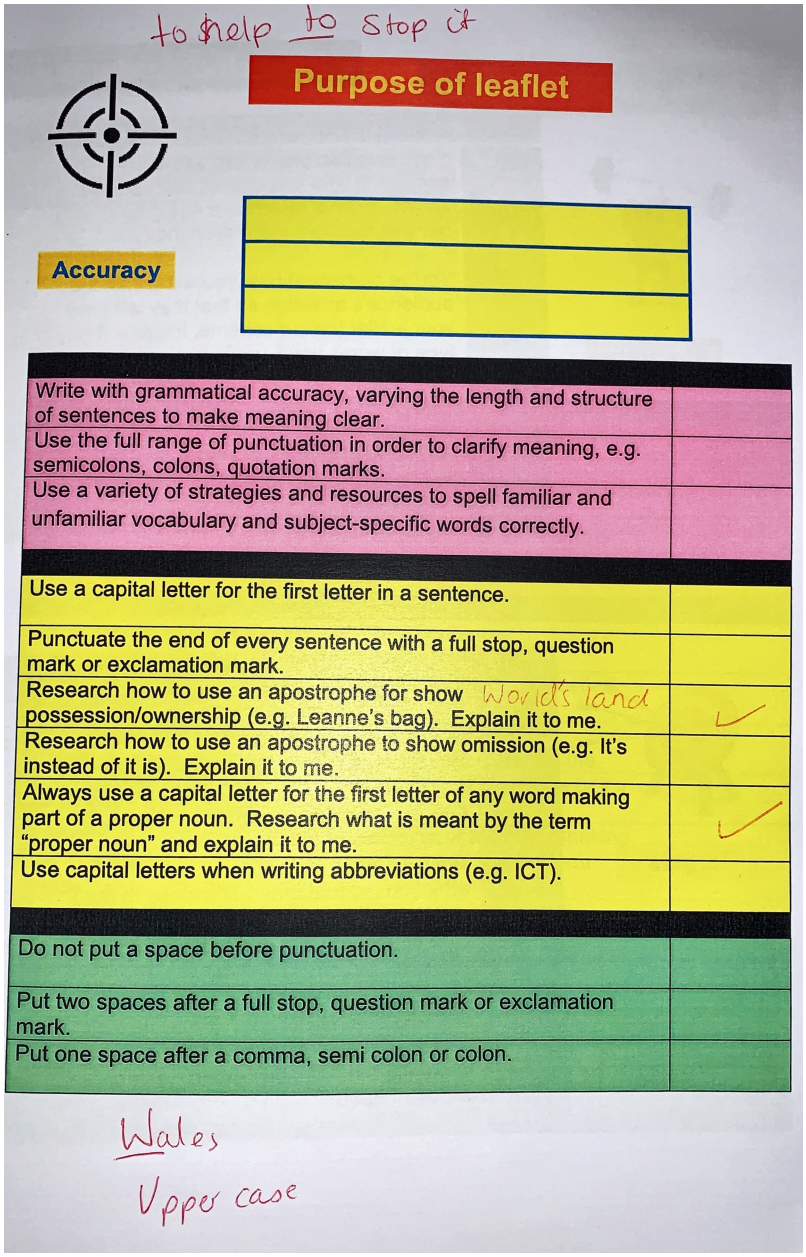
Level	Description of your work
4	You've written one or two sentences explaining the purpose of the leaflet.
5	You've written a paragraph that explains the purpose of the leaflet and given background information about the problem.
6	You've included a specific, measurable objective that you hope your leaflet will help to achieve.



Targets

To Gain Level	Target
4	Write one or two sentences explaining the purpose of the leaflet you'll be making.
5	Give background information about the problem (what's happening, where it's happening, the problems caused etc.).
6	Add a sentence to specify what you hope your leaflet will help to achieve. It needs to be something specific and measurable such as "I hope the leaflet will help lead to a 30% increase in paper and cardboard that is recycled in Swansea".

Appendix 04.f



to help to stop it

Purpose of leaflet

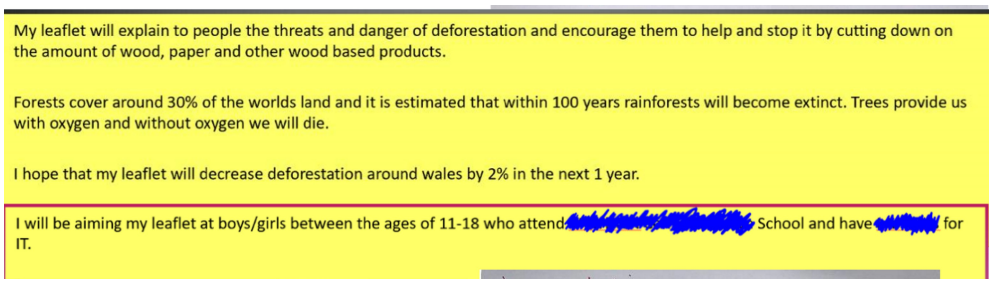
Accuracy

Write with grammatical accuracy, varying the length and structure of sentences to make meaning clear.	
Use the full range of punctuation in order to clarify meaning, e.g. semicolons, colons, quotation marks.	
Use a variety of strategies and resources to spell familiar and unfamiliar vocabulary and subject-specific words correctly.	
Use a capital letter for the first letter in a sentence.	
Punctuate the end of every sentence with a full stop, question mark or exclamation mark.	
Research how to use an apostrophe for show possession/ownership (e.g. Leanne's bag). Explain it to me. Words land	✓
Research how to use an apostrophe to show omission (e.g. It's instead of it is). Explain it to me.	
Always use a capital letter for the first letter of any word making part of a proper noun. Research what is meant by the term "proper noun" and explain it to me.	✓
Use capital letters when writing abbreviations (e.g. ICT).	
Do not put a space before punctuation.	
Put two spaces after a full stop, question mark or exclamation mark.	
Put one space after a comma, semi colon or colon.	

Wales

Upper case

Appendix 04.g



My leaflet will explain to people the threats and danger of deforestation and encourage them to help and stop it by cutting down on the amount of wood, paper and other wood based products.

Forests cover around 30% of the worlds land and it is estimated that within 100 years rainforests will become extinct. Trees provide us with oxygen and without oxygen we will die.

I hope that my leaflet will decrease deforestation around wales by 2% in the next 1 year.

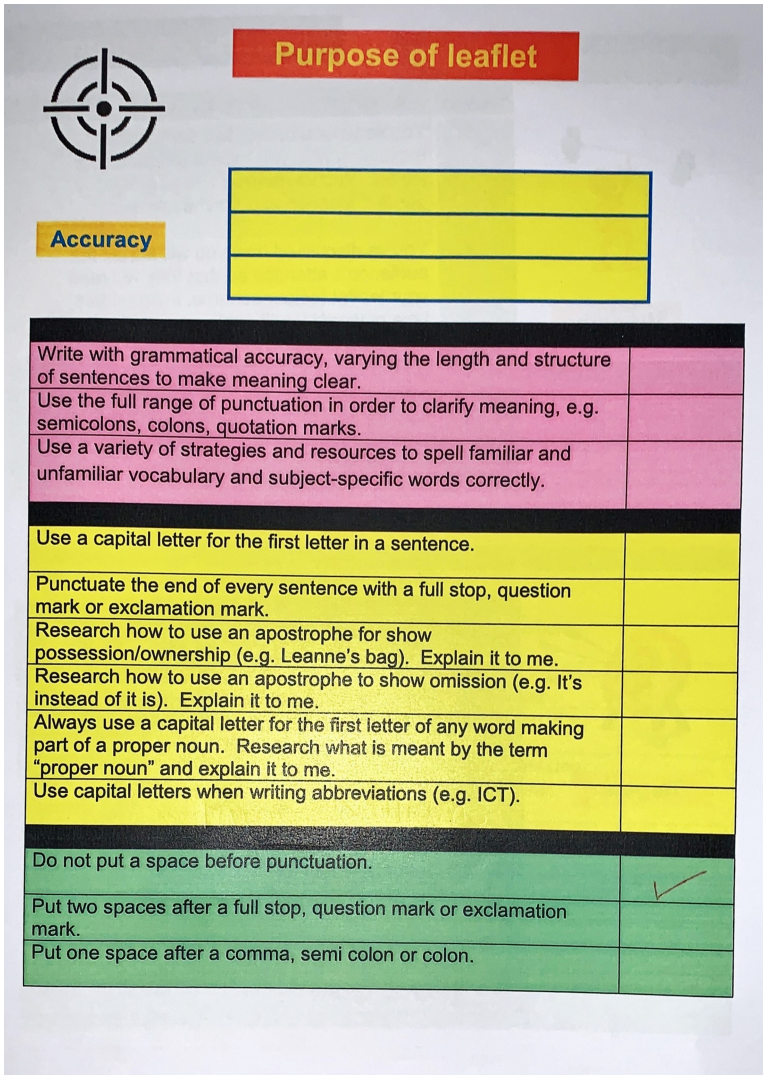
I will be aiming my leaflet at boys/girls between the ages of 11-18 who attend [redacted] School and have [redacted] for IT.

Appendix 04.h

To mark Pupil As work, I looked at the mark scheme, see Appendix 04.c and 04.d, then I checked the workbook slide corresponding to that section of the mark scheme, see Appendix 04.e. Comparing these, I would check that the box contained one or two sentences referring to the leaflets intended audience and tick the relevant level. In Pupil A's case, they had written enough information to achieve a Level 4 grade, however, in order to achieve a Level 5, the pupil must give more detail and explain why choosing these colours will attract a specific audience. Using this feedback, the pupil is able to return to this page in their work book and improve it to achieve their target Level 5 grade.

There are two lots of pupils work in these examples. One is a Level 4, working to achieve a level 5, see Appendix 04.c, 04.d, 04.e, 04.i and 04.j and the other is already

achieving a Level 6 but still has room to improve, see Appendix 04.f, 04.g, 04.h, 04.k and 04.l.



Purpose of leaflet

Accuracy

Write with grammatical accuracy, varying the length and structure of sentences to make meaning clear.	
Use the full range of punctuation in order to clarify meaning, e.g. semicolons, colons, quotation marks.	
Use a variety of strategies and resources to spell familiar and unfamiliar vocabulary and subject-specific words correctly.	
Use a capital letter for the first letter in a sentence.	
Punctuate the end of every sentence with a full stop, question mark or exclamation mark.	
Research how to use an apostrophe for show possession/ownership (e.g. Leanne's bag). Explain it to me.	
Research how to use an apostrophe to show omission (e.g. It's instead of it is). Explain it to me.	
Always use a capital letter for the first letter of any word making part of a proper noun. Research what is meant by the term "proper noun" and explain it to me.	
Use capital letters when writing abbreviations (e.g. ICT).	
Do not put a space before punctuation.	✓
Put two spaces after a full stop, question mark or exclamation mark.	
Put one space after a comma, semi colon or colon.	

Appendix 04.i

lower case
(they are not proper nouns)

dying

suffering

Intended Audience



Accuracy

Write with grammatical accuracy, varying the length and structure of sentences to make meaning clear.	
Use the full range of punctuation in order to clarify meaning, e.g. semicolons, colons, quotation marks.	
Use a variety of strategies and resources to spell familiar and unfamiliar vocabulary and subject-specific words correctly.	
Use a capital letter for the first letter in a sentence.	
Punctuate the end of every sentence with a full stop, question mark or exclamation mark.	✓
Research how to use an apostrophe for show possession/ownership (e.g. Leanne's bag). Explain it to me. People's attention	✓
Research how to use an apostrophe to show omission (e.g. It's instead of it is). Explain it to me.	
Always use a capital letter for the first letter of any word making part of a proper noun. Research what is meant by the term "proper noun" and explain it to me.	
Use capital letters when writing abbreviations (e.g. ICT).	
Do not put a space before punctuation.	✓
Put two spaces after a full stop, question mark or exclamation mark.	
Put one space after a comma, semi colon or colon.	

Write in full sentences.

Appendix 04.j

Intended Audience



Strengths

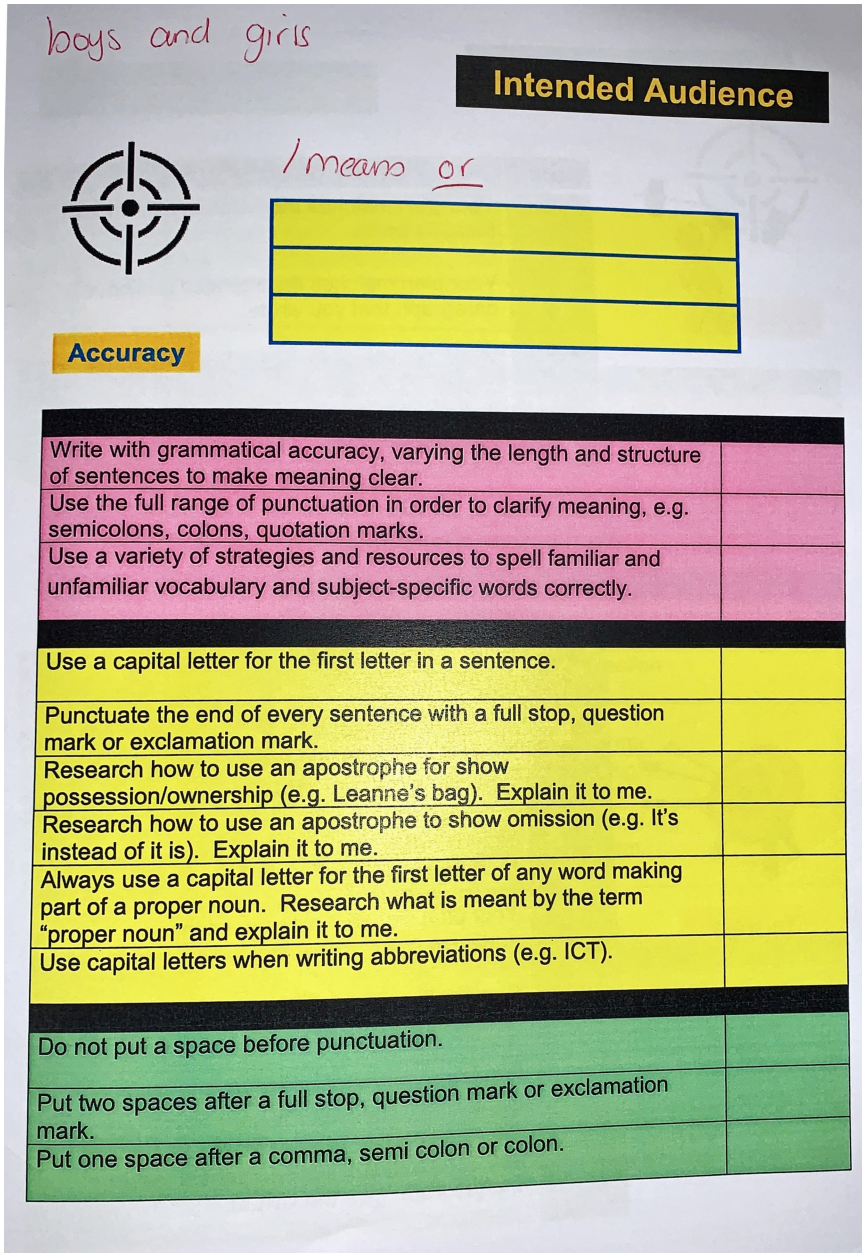
Level	Description of your work	
4	You've written one or two sentences explaining who you expect will read your leaflet. You've referred to age group, gender, location and maybe interests.	✓
5	You've discussed how you will attract the audience's attention so that they will read your leaflet (colour scheme, images, font, type of words you'll use).	
6	You've explained ways in which you'll make the leaflet meet their needs (e.g. a font that's easy to read, words with a suitable reading age, the way you'll lay out your pages).	



Targets

To Gain Level	Target	
4	Write one or two sentences explaining who you hope will read your leaflet (age group, gender, location, interests).	
5	Describe how you'll attract the audience's attention (so that they will choose to read your leaflet). Explain the colour scheme, type of images, font and type of words you'll use in your leaflet (and why).	✓
6	Describe how you'll meet the audience's needs. If they are young perhaps you'll use a certain font and certain types of words. Explain.	✓

Appendix 04.k



Appendix 04.I

As well as marking their ICT skills, there is a lot of concentration on their literacy skills. Pupils are expected to be accurate with their punctuation, spelling and grammar. If a pupil is to make an error on one of these steps, they will only achieve the green 'outer ring' of the target. The red 'inner ring' of the target includes more complicated marking criteria such as using a full range of punctuality accurately. Pupils will have the chance to return to their work and correct as many grammatical errors as they can find when they have their marks returned back to them.

AFL - Illustrative Example 2 Questioning

02 January 2020 12:14

It is important to find out what the gaps in pupils knowledge are. Questioning is the main chance for the teacher and student to interact with each other, but it is important to enterprise on the questions asked to make sure they are as effective as they can be, getting the pupil to think more about the answer they are given and helping the teacher realise how much understanding has taken place.

It is useful to plan the questions you are going to ask so you can get the most out of them, for example, knowing what you want the pupils to learn from the questions you've asked, knowing how to build on the answer if it is not what you wanted to reduce the chance of pupils losing confidence to answer again, as well as planning a wait time for answers and returning to pupils after they've had a question wrong to redeem themselves (Sullivan, 2003).

	cell to recognise that it is a formula. - What do we need to put at the start of each formula? An equals. - So, if I wanted the computer to work out the answer to the top question, we would need = then we put the name of the cell the number is in so in this case it would be E 19 then we wants to ADD, so put a plus sign there for me please, then we type the other cell in which would be G19, then we click enter. - "What do I need to start the formula with NAME1? Why NAME2? What key would I press next NAME3? Why would I use the sum function instead of adding them all up separately NAME4? Is there another way I could do this NAME5? Do you agree NAME6?" I will then ask around the class until all of the keys of the formula have been entered. If a pupil makes a mistake, I will return to them later.		

5

Appendix 05.a

In appendix 05.a, I have written what my question plan for that lesson in within my lesson plan. This lesson was to a mixed ability Year 7 class learning about formulae and functions in spreadsheets using Microsoft Excel. Using Bloom's Taxonomy (1956), I have tried to expand on the question as I move around the room asking questions, aiming the questions where they have to expand more at pupils I know have a better understanding of the topic. I repeated this technique every time I asked a similar question, after the 3rd lesson, pupils were a lot more keen to answer questions and no pupils answered "I don't know", although not all answers given were correct. If pupils were incorrect, I tried to ask them a similar question after another pupil had got the answer they had wrong so the pupil could learn from it before they were expected to answer again.

I chose to question in this way as when I originally asked questions to this class, I rarely had any responses although I knew at least some of the pupils knew the answers. Some pupils would eventually start to put their hands up to answer but it was always the same three pupils. I tried to make it so pupils felt more comfortable to answer. I originally asked them to shout out the answers as a group but then only the pupils who were confident in their answer were willing to try

and some pupils who were not engaged in the lesson used this as a reason to shout random words. I found aiming the questions at particular pupils made the pupils that were messing around and distracting others spend time thinking about an answer in case they were going to get asked next.

AFL - Illustrative Example 3 Observation

16 December 2019 18:03

When pupils are working on a task, I always circulate the room to check that pupils are on tasks and can help them change direction if they are missing the point of the task. Constantly observing the work and been 'seen' to be observing the work keeps pupils on task as they are aware that I will be shortly coming to see how much they have done. The pupils also know that if they haven't achieved what I was expecting of them so far, they have until I circulate the room again to get that section of the task finished. This also helps with the pace of the lesson because pupils very rarely sit and not do work unless they have finished, they also enjoy calling me over to show me that they have finished.

It will also respond with particular sentences and sounds depending on the name inputted. This will be done by using 'if' blocks and boolean blocks.	- I will walk around the class as they are working to see how far they have got. I will check to see who fully understands the task and who needs help. Pupils will be expected to help others once they have finished. Each pupil must show me their working code before they take a final screen shot and paste it into their work books.

Appendix 6.a

Appendix 6.a is an extract from my lesson plan that suggests how I will assess the learning within the lesson. Having this continuous feedback of watching the pupils work can give me a better understanding of how they understand, who understands and what needs to be re-taught (CEA, 2019). I very often had to stop a lesson to re-teach a section that many pupils mis-understood, which I only realised by observing their work as they were working.

Build on previous knowledge and experience and engage interest.

Sunday, November 10, 2019 10:28 PM

This section explains how I implemented the pedagogical principle of building on previous knowledge including examples of;

- Reminders at the start of the lesson
- Using Excel to try old skills in a new context
- Creating challenges in Scratch 3.0 to use skills we have learnt in previous lessons

APK - Illustrative Example 1 Start of the lesson reminders

16 December 2019 18:08

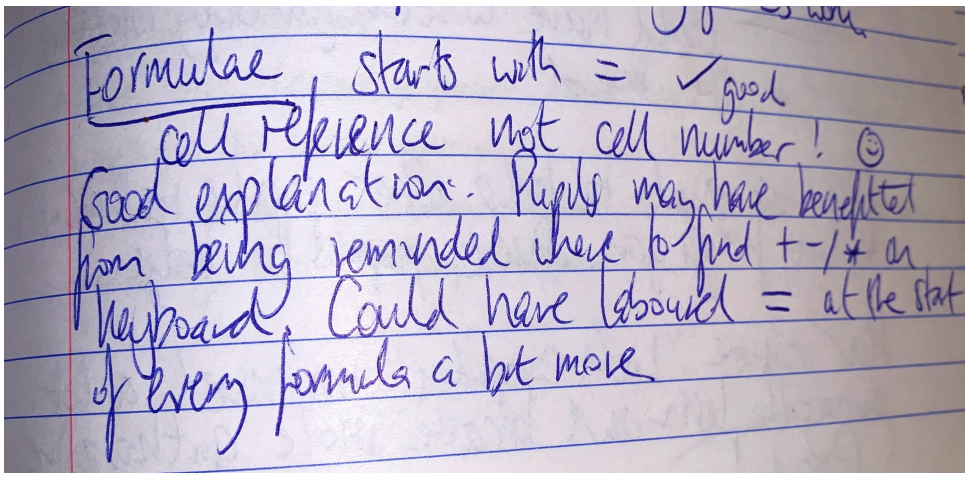
I would build on previous knowledge by having a recap at the start of each lesson. This technique is supported by Rosenshine (2012) as for pupils to easily access information that they have learned, they need to practice retrieving the information. Sherrington (2018) suggests that by retrieving the information at regular intervals helps keep the information in the long term memory. As I only saw pupils once a week for ICT due to the timetable, I made sure that I recapped as much as I could from previous lessons so the information was at least being retrieved weekly. I tried not to over load pupils with the reminders by only reminding them of key elements that I knew they would need later in the lesson or scheme of work.

Time	Activities/Methodology/Key Concepts (Teacher's Role – including key teaching points, differentiation strategies and key questions)	Pupil Tasks (Pupils' role –including differentiation, engagement in formative assessment and homework)	Resources (Including Health and Safety requirement)
Opening phase (with links to prior learning)	- Shake pupils hands at door - I will put Scratch up on the screen so the pupils that do log in and have time can go to the website. - I will also write Scratch on the whiteboard so they have correct spelling. - I will tell pupils to lock their computers and face the front for me to do the register. - Register - I will remind them of what we did last lesson, pointing out key words such a VARIABLES, BLOCKS. - I will write a secret name on the board without them seeing and cover it with my hand. I will ask them to guess the name and I will count how many attempts it took	- Pupils wait at door until I greet them - Pupils that have logged on first can open up Scratch Program as it is on the board.	- Computer, Register, - dual screen, Scratch, Whiteboard pen, remote to freeze screen, AB Tutor Control, Powerpoint workbook, my example Scratch program that I can follow if neccesary.

3

Appendix 07.a

Appendix 07.a demonstrates one of my lesson plans where I have included in my opening phase where I was going to remind pupils about key words we had learnt in the previous lesson.



Appendix 07.b

Appendix 07.b is an extract from one of my first feedback sessions with my mentor after I had

finished teaching a lesson about spreadsheets. He emphasised how important it was for me to remind pupils about what we had covered in a previous lesson to help the lesson run smoother and to reduce pupils asking questions during the lesson which I could have covered during my explanation. From this feedback, I always made sure to include a recap in every lesson before the pupils were to complete a task that would need them to recall information.

APK - Illustrative Example 2 Excel Re-using old skills in a new context

02 January 2020 14:58

It has been shown that activating prior knowledge improves pupils comprehension when learning something new (Robb, 2014). Students can also develop a 'Why bother?' mentality when trying to complete a task that is too hard as they do not have enough background information to build upon. If students do not have this background knowledge, it is important that you have given them the appropriate amount of skills to at least achieve some of the task, but pupils with a higher ability can stretch their boundaries.

In a year 7 class, we have been focusing on spreadsheets. We completed 5 spreadsheet tasks together, each raising a level of difficulty and complexity as we worked through them as a class. After completing the level 4 work of learning how spreadsheets work, how we make them and what they can do, pupils were then asked to create their own spreadsheet. Based on the knowledge that they had gained from the previous month of lessons and any knowledge about spreadsheets they may have had before then, they could be as creative or as simple as they liked. Many began with the design of their spreadsheet, linking their knowledge of tools such as WordArt and formatting from Microsoft Word and implementing them into Microsoft Excel. I think this was a great technique in improving their knowledge of how the User Interface is represented within Microsoft Office programs as the pupils used the knowledge of what they had learnt in a previous lesson on Microsoft Word and they had to link this to a less familiar interface, with the majority of students completing this successfully.



Appendix 05.a

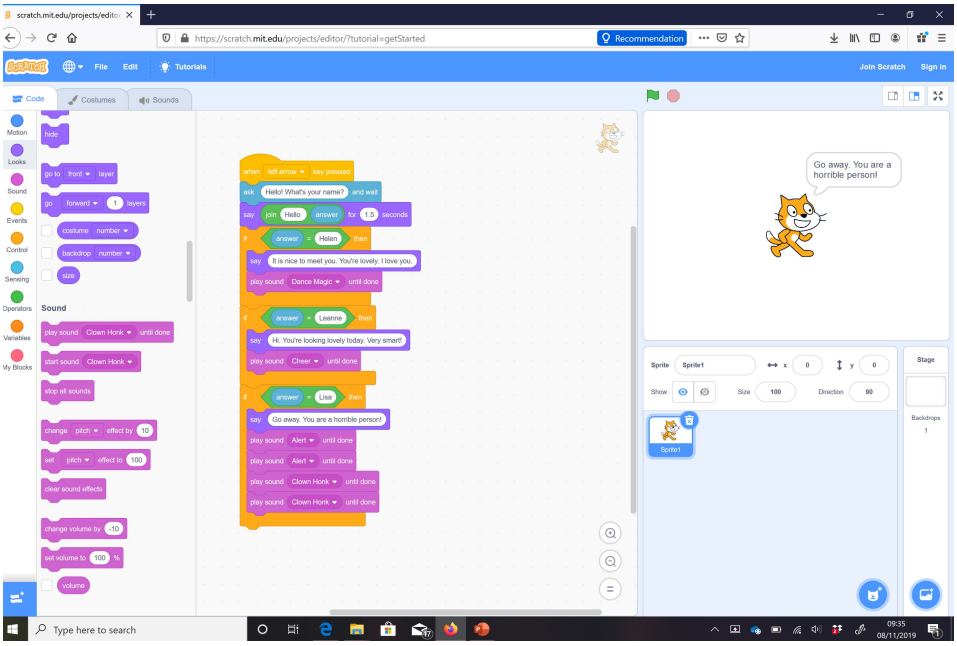
Pupils were also expected to save pictures from Google Chrome using Google image search into the correct file and then import them and resize them in Excel, which they had only previously done in Microsoft Powerpoint, see Appendix 05.a. In some classes, I only showed a quick demonstration to remind pupils how to use these skills and then sent them to create the spreadsheet. This took a long time to get through a simple task for some pupils. For the next time I was taking this lesson, I spent more time reminding pupils how it was done. I also asked pupils to direct me so I would ask a pupil how I would insert a picture. When I followed the instructions exactly how the pupil described, it was incorrect and the result was not right. The pupil then corrected themselves and we tried it again and it was correct. This however backfired, as many pupils believed they needed to make that mistake first before it was done

correctly so pupils had learnt a false skill. I had to correct pupils as I visited their computers around the class rather than stopping the class flow for the pupils that were doing well. I do not have examples of our most recent lesson where pupils have started to create a spreadsheet but some have many more columns than others as they have understood the main concept of what we have been trying to learn such as why using formulae is more practical because if any information needs to change, the formula will correct the whole spreadsheet. Some pupils have not yet understood that they cannot just type the final numbers in and they need the formula to complete the task correctly. These pupils will have a much more basic spreadsheet as their prior knowledge that has been stored of spreadsheets is not as extensive as some other pupils in the class which will be working at a high level 5 standard. Having the simpler tasks of inserting pictures and WordArt though have helped keep the students who are struggling engaged in the lesson as they are still able to complete some of the task without my help.

APK - Illustrative Example 3 Scratch creating challenges to complete based on previous lessons

01 January 2020 21:01

Year 8 have not previously covered Scratch since they have been in comprehensive school, so I had to introduce them to all of the aspects that were necessary to complete the tasks I will expect them to be able to do by the time we get to the end of this section of the scheme of work. This meant introducing them to the User Interface as well as how to open Scratch 3.0 (2019) on Google Chrome and how to save and load files correctly. It was also important to introduce them to key terminology such as 'variables', 'IF statements/ blocks' and 'loops'.



Appendix 09.a

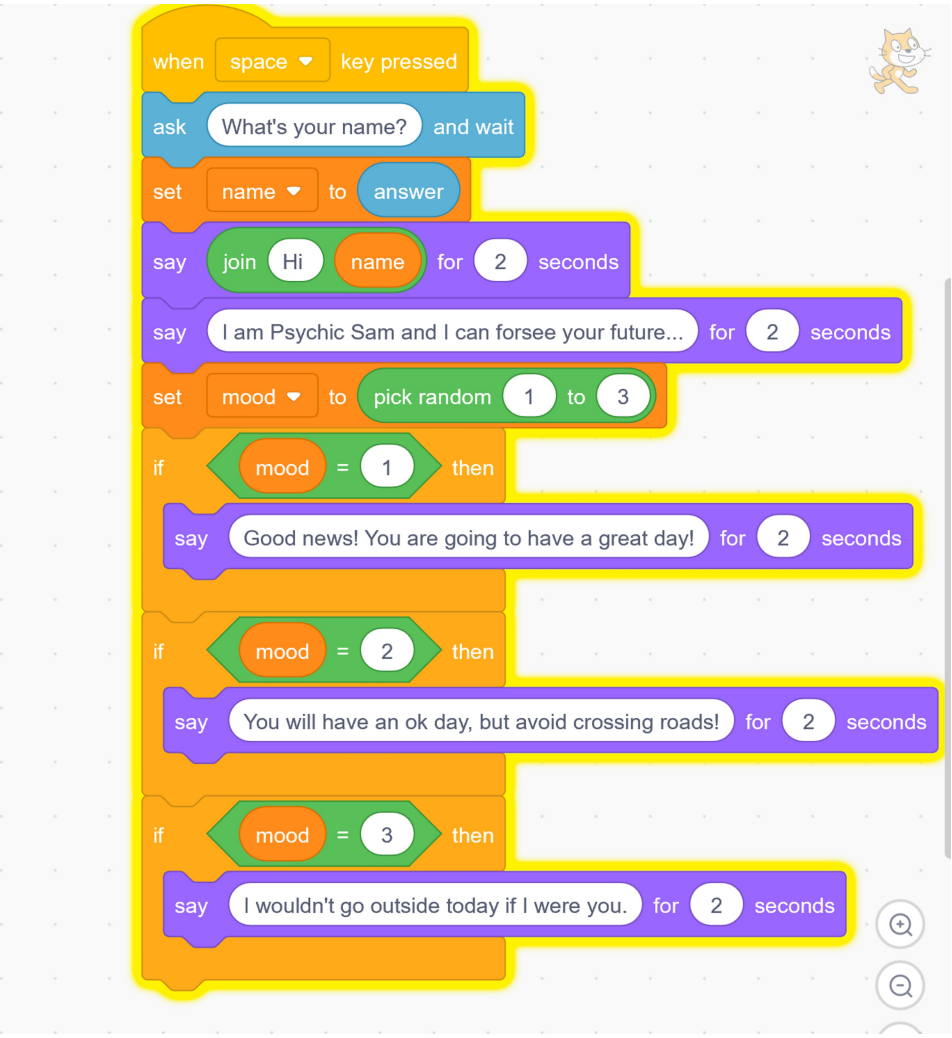
I began by having a pupil open Scratch on their computer while I displayed it on everyone else's screens so they could see clearly. I would talk through what program we are going to make and I would explain to the demonstrator pupil how to do the first section then have the whole class do the same while having the work up on the board for reference if they need it, see Appendix 09.a. I would constantly repeat the same words to help them stay in their minds. I would say "We need the program to REMEMBER the name so we would need to make a VARIABLE." and every time I would say this, I would give the class less clues and expect them to fill in the gaps in my sentence.

```
Name="Shakira"
Count=0
Guessedit=no
Repeat until guessedit=yes
        ask "Guess my name"
        count=count+1
        if answer==name
                guessedit=yes

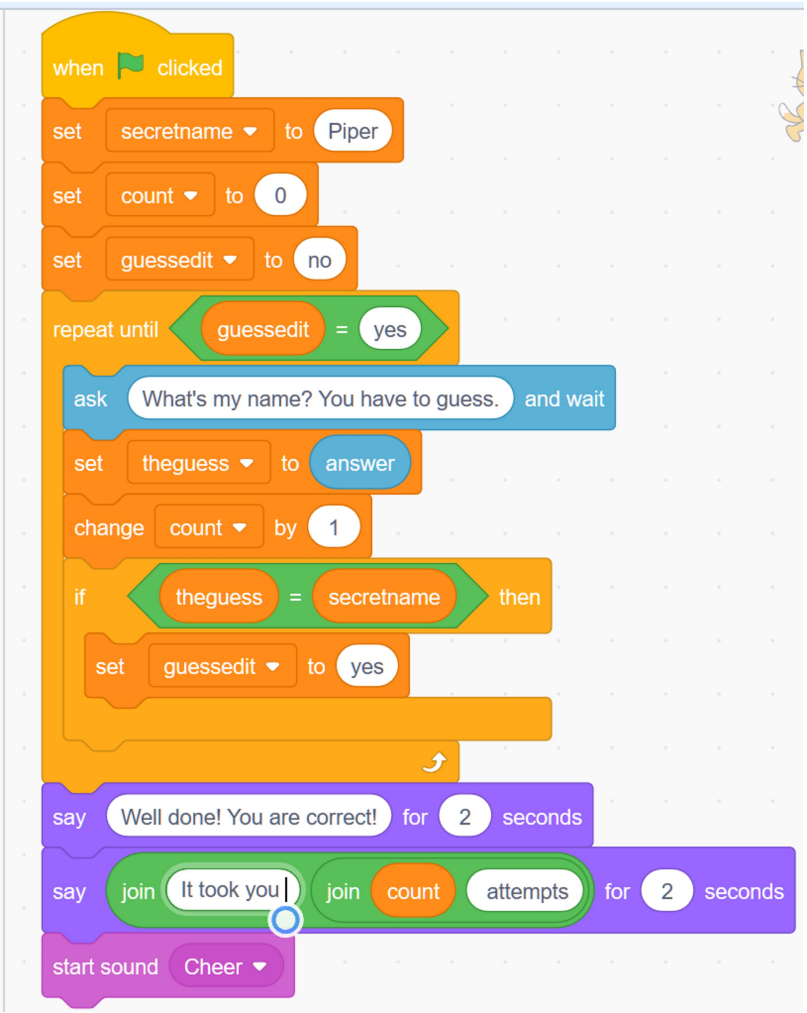
Output "Well done you got it"
Play sound "cheer"
Output "It took you", count, "attempts"
```

Appendix 09.b

On each slide there is a pseudocode for each program and I would talk through this while making the code on the board, using it as a list of instructions and showing the pupils how to use it as instructions. This would be important later.

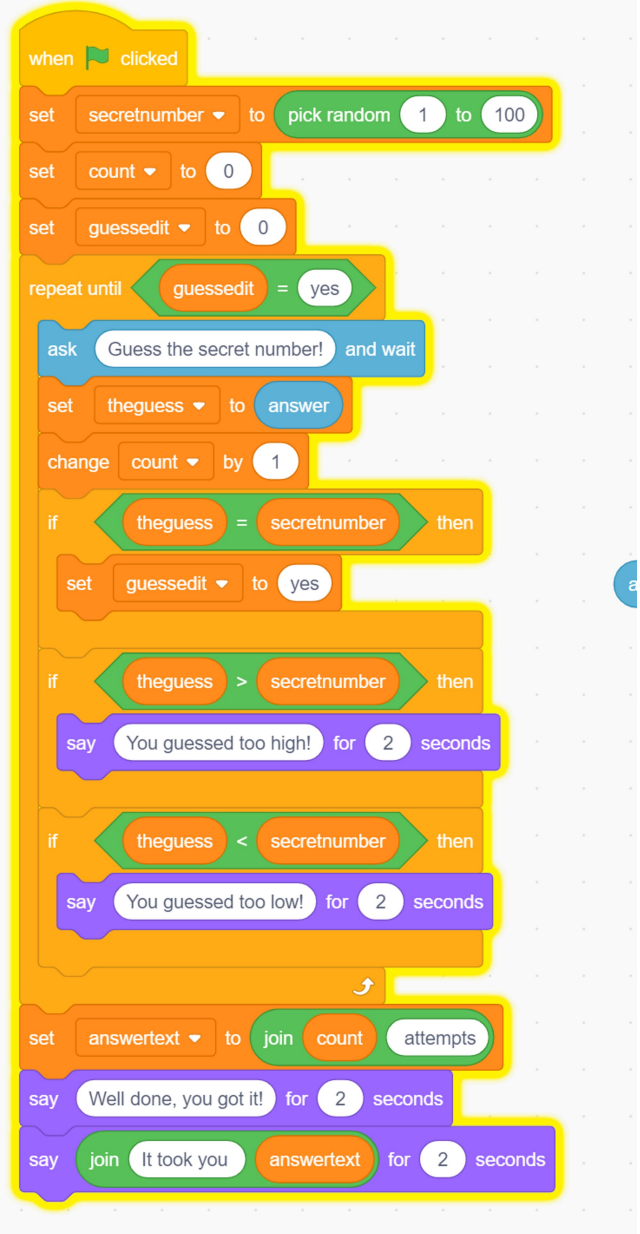


Appendix 09.c



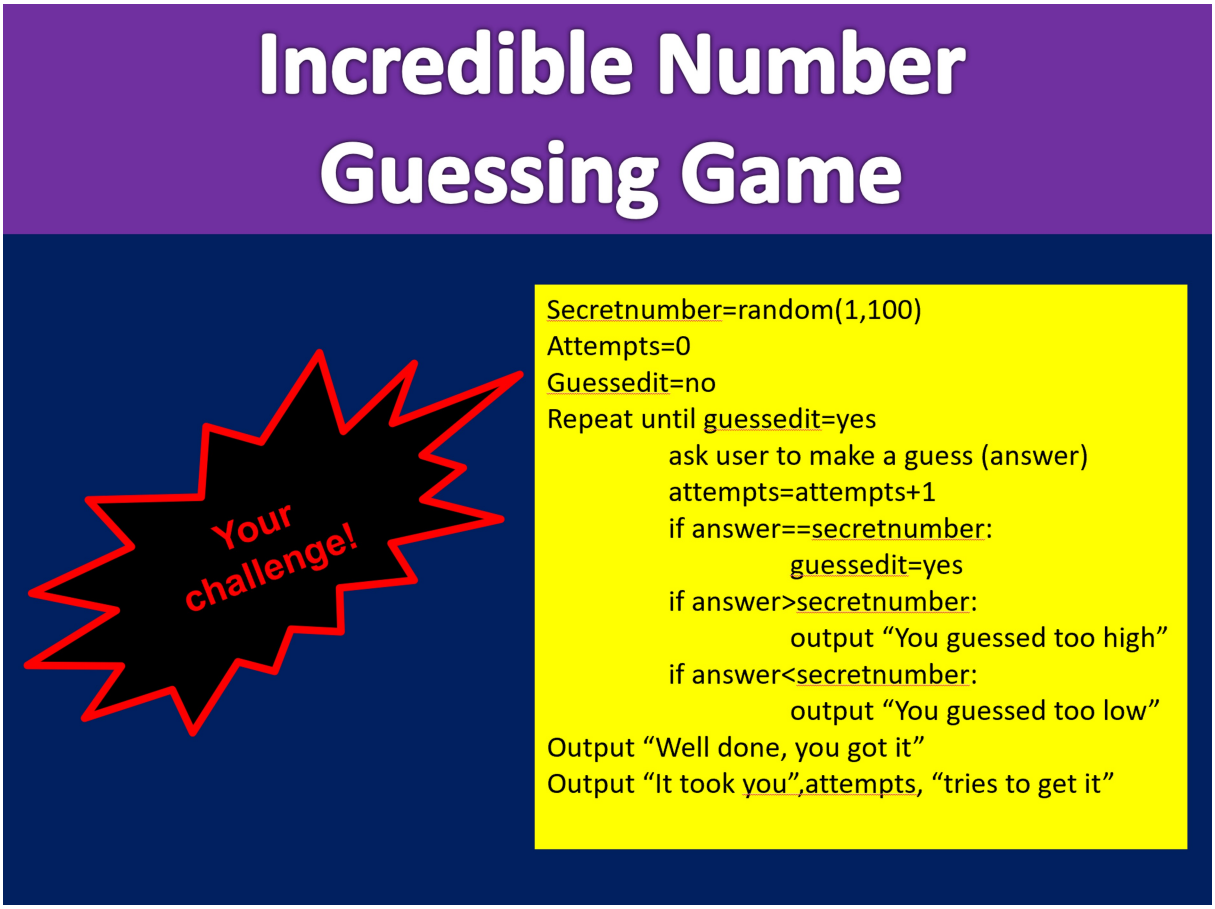
Appendix 09.d

Each lesson, I would remind them of what we created last lesson, asking them if I wanted the computer to remember an answer I would need to make a ? VARIABLE. After 4 practice Scratch lessons, see Appendix 09.c and 09.d, where I showed them how to complete it and left the example on the board, they were given a challenge.



See Appendix 09.e

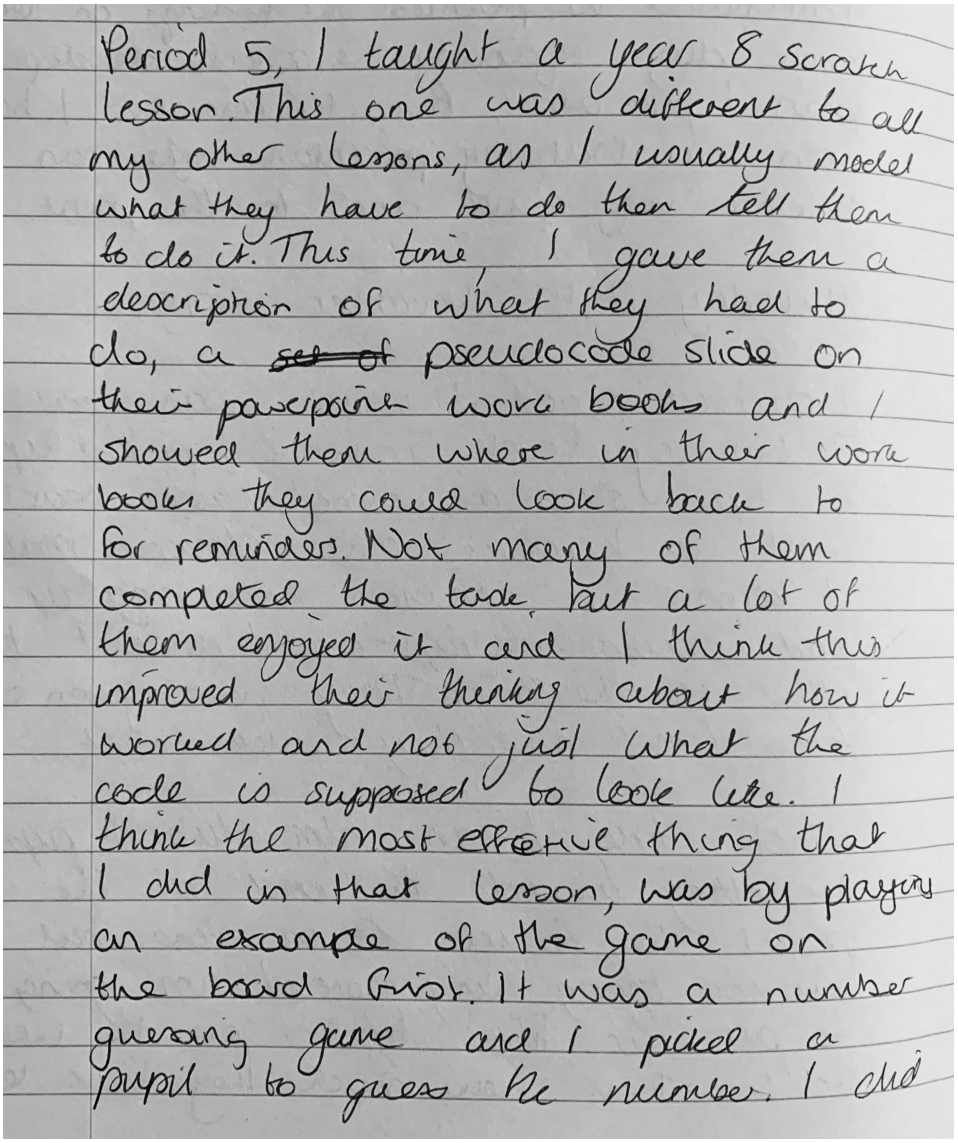
In this challenge, they had to create a Scratch program called the number guessing game, see Appendix 09.e. In this lesson, I began by making them play the game as a class. This went well, I will use this technique of 'here's one I made earlier' as it shows exactly what needs to be the final product without me wasting 10 minutes of lesson time trying to explain it.



Appendix 09.f

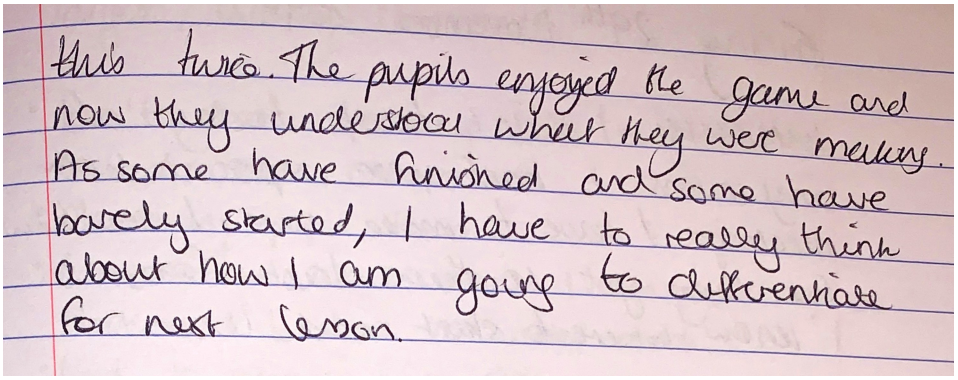
I then brought up the yellow box of instructions, see Appendix 09.f that they needed to follow and talked it through with them, again exaggerating VARIABLE and LOOP/REPEAT and IF. I reminded them that there is nothing in this program that they haven't used before.

Pupils were then tasked to do this themselves. I wandered the class as they did this and tried to only give them clues that I have already mentioned at the beginning of the lesson. Some pupils managed to complete this task very quickly. I had dedicated a lot of lesson time to this as I wanted them all to be able to complete it so I asked the pupils that had finished to first add extras in such as sound effects but once they had done that, to sit with others and help them complete it. They were not allowed to do it for them but could give them tips. This worked well as it re-enforced the knowledge for those pupils.



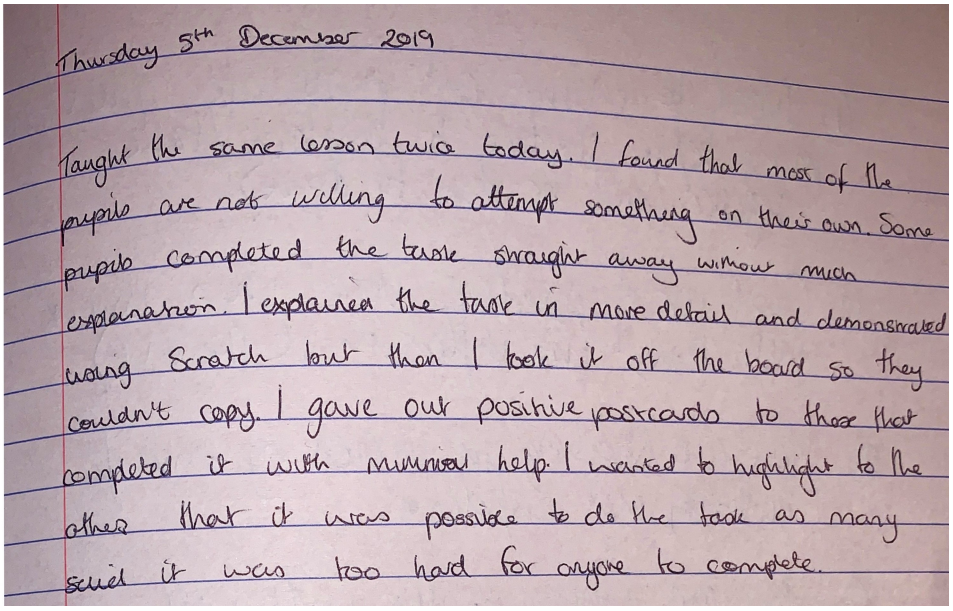
Period 5, I taught a year 8 Scratch lesson. This one was different to all my other lessons, as I usually model what they have to do then tell them to do it. This time, I gave them a description of what they had to do, a ~~set of~~ pseudocode slide on their powerpoint work books and I showed them where in their work books they could look back to for reminders. Not many of them completed the task, but a lot of them enjoyed it and I think this improved their thinking about how it worked and not just what the code is supposed to look like. I think the most effective thing that I did in that lesson, was by playing an example of the game on the board first. It was a number guessing game and I picked a pupil to guess the number. I did

Appendix 09.g



this twice. The pupils enjoyed the game and now they understood what they were making. As some have finished and some have barely started, I have to really think about how I am going to differentiate for next lesson.

Appendix 09.h

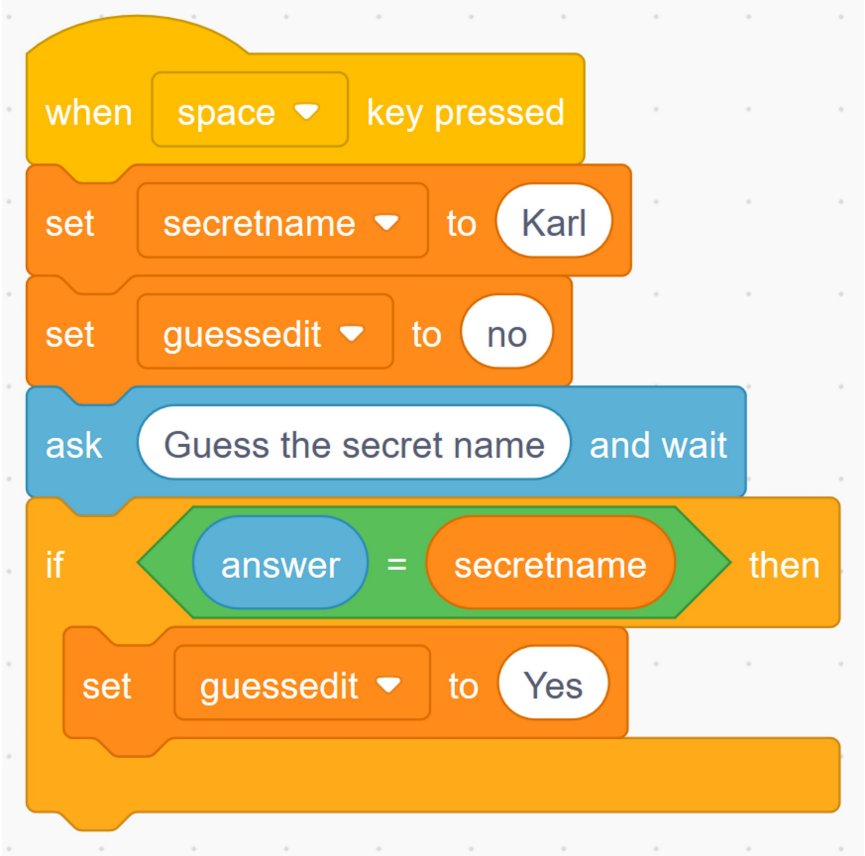


Thursday 5th December 2019

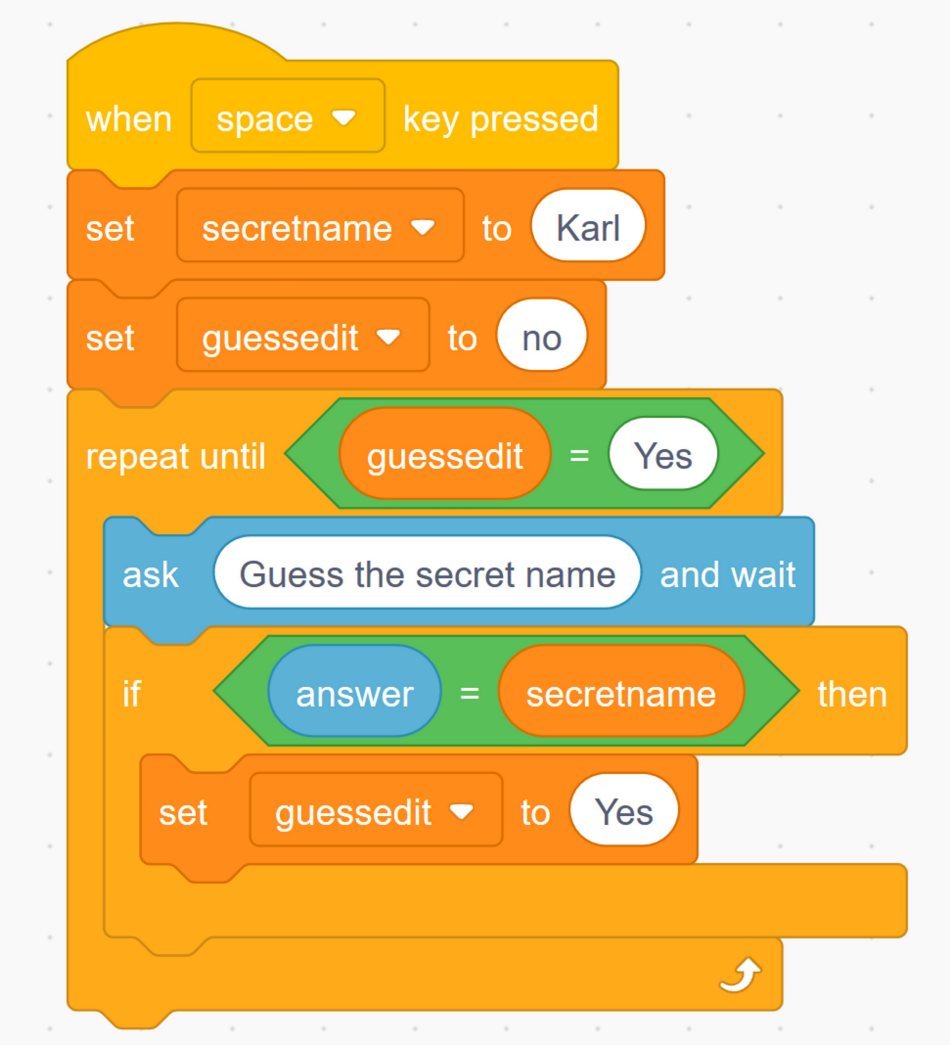
Taught the same lesson twice today. I found that most of the pupils are not willing to attempt something on their own. Some pupils completed the task straight away without much explanation. I explained the task in more detail and demonstrated using Scratch but then I took it off the board so they couldn't copy. I gave out positive postcards to those that completed it with minimal help. I wanted to highlight to the others that it was possible to do the task as many said it was too hard for anyone to complete.

Appendix 09.i

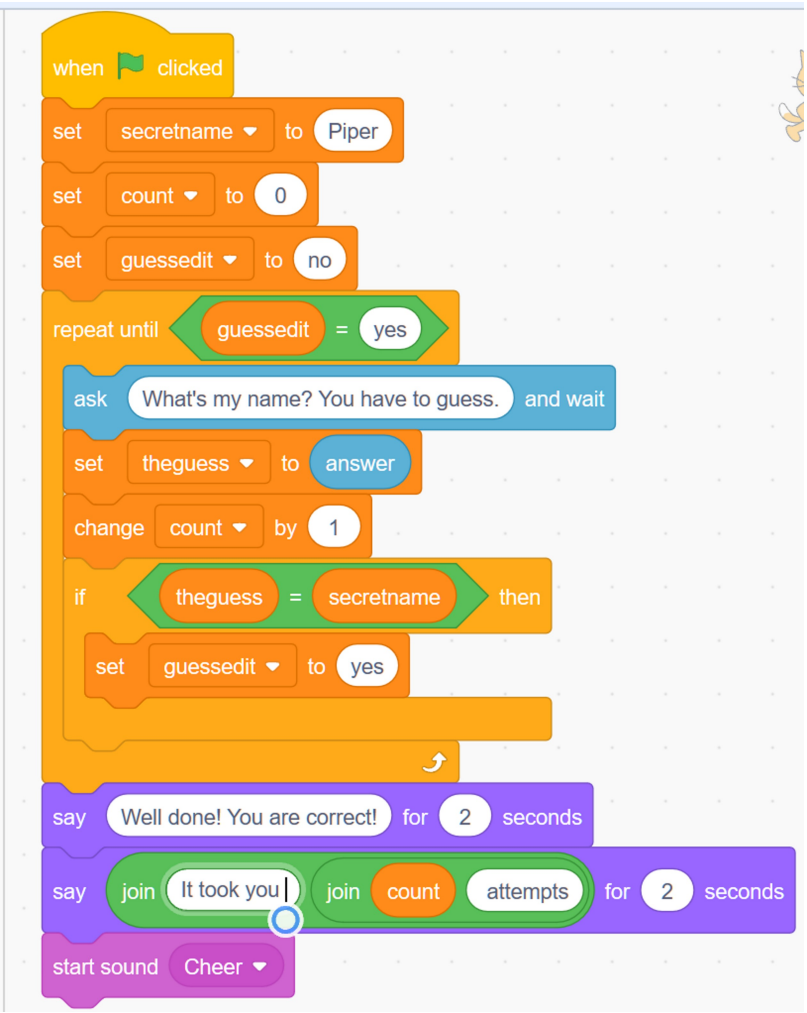
Appendices 09.h, 09.h and 09.i are extracts from my learning journal of how I thought the lessons went and how much understanding of the topic was gained during the lessons. Depending on the class, the success level was vastly different although there were always pupils who completed the task straight away and some that could not complete it without help from either peers or myself. Although sometimes the levels of understanding were not at the best that they could be, the way I structured the lesson, such as starting by playing the game, got all pupils engaged in the lesson and it was an enjoyable lesson to teach also. Pupils wanted to be able to create their own game and learn that skill so they felt the lesson was purposeful.



Appendix 09.j



Appendix 09.k



Appendix 09.l

I used hand outs with broken down sections of the code which were given to pupils if they wanted some help getting to the next section or to check that what they were doing so far was correct, see Appendix 09.j, 09.k and 09.l.

Critical Reflection

Sunday, November 10, 2019 10:28 PM

In Professional Teaching Experience 1, I have been placed in a large, English medium comprehensive school in South Wales with just under 1000 pupils. The pupils within the school are of mixed gender, aged between 11-19 years, and the percentage of free school meals is at 24.1%. The school is currently in the Yellow support category. The school has an on-site teaching facility for pupils with additional learning needs (www.mylocalschool.gov.wales, 2019) (Estyn, 2015). I have been teaching mainly Key Stage 3 ICT and the main finding of this paper will be based on as such. This paper will be discussing the importance of 3 pedagogical principles that have been outlined in Successful Futures (Donaldson, 2015) and how I have implemented them within my teaching practice during PTE1. The principles I have chosen to discuss are Cross-Curricular Responsibilities, Assessment For Learning and Building On Previous Learning. Names of teachers, pupils and school with be omitted in accordance with the BERA Guidelines (2018).

In Successful Futures (Donaldson, 2015), it is suggested that all teachers are responsible for literacy, numeracy and digital competency skills, regardless of the subject they teach. Currently, there is a Literacy and Numeracy Framework in Wales, and a Digital Competency Framework has been newly developed, which is not yet embedded as much as Literacy and Numeracy but will shortly reach the same standard. Having these skills taught and embedded within the subject with purpose and not 'shoe-horned' in, will mean these skills are being continuously strengthened and developed, rather than just in English, Maths and ICT lessons.

Katerina Avramedes et.al (2015, p.249-265) suggests that for cross-curricular learning to work, it is important that teachers of different subjects communicate and co-ordinate their lessons. This can help them build and expand on previous knowledge they have learnt in a different subject, for example, creating graphs and rather than teaching the students from the absolute basics, check with their maths teacher what they have already covered or what are they currently working on with graphs. This helps students integrate their knowledge into other subjects and not separate the skills into Geography skills, Welsh skills, English skills etc. Communication can also help with the continuity of teaching, teach a skill in a similar way not to confuse pupils that may have already been struggling with it, but also, to make sure the teacher is correct in what they are saying. Time availability is the biggest barrier for the communication between teachers to work.

Although Dillon et al. (2010, pp. 629-660) agrees that teaching literacy across the curriculum can enhance the learning, he also believes that the significance of disciplinary differences may be undervalued by students and teachers. The literacy needs to be used to enhance their work in the subject lesson and not completely overtake the subject in question when it is being included (Kirsten, 2019). This is backed up by Ian Phillips (2002), he suggests that pupils should not be 'doing' maths in their History lessons but using maths to enhance their knowledge of the subject and this would help the integrating of these skills into other lessons more natural and useful.

To include Literacy, numeracy and digital competency within ICT lessons can be fairly natural but to hit the specific sections on the framework can appear disjointed in the course of the lessons if not done correctly. When completing Excel spreadsheets with formulae, I always asked the pupils to work out the answers first before I showed them how to work it out with formulae. Hitting the numeracy framework, I had the pupils do a survey and work out what percentage of the school didn't recycle plastic and then they had to include their calculations into their leaflet about the environment in a way that it could help others become more aware of the implications of plastic waste, see Appendix 01.f. This did correlate with Kirsten (2019, pp. 368-384) and Phillips (2002, pp. 35-40) where it was used to enhance their work and revising how to work out percentages would bring it back to the forefront of their knowledge. I also used this section of the lesson to remind them about how symbols such as +, -, * and / would be represented and used to calculate using a computer as opposed to on paper or in print, see Appendix 01.b. This did, however, deviate from the main topic of the lesson and I may need to find a more effective way to implement numeracy seamlessly.

Literacy is easier to include within most lessons of ICT, as I will always mention grammar and punctuation rules when I am explaining on the board such as for pupils not to forget capital letters when adding names or places to spreadsheets etc. But in the lesson where I focused more on literacy such as the example in Appendix 02.b and 02.c, I did provide pupils with the list of grammar and punctuation rules that they could refer back to when necessary and this will be in their work books for the remainder of the year. Depending on pupil ability revealed how effective this was as some pupils referred back and checked without prompting, some pupils needed prompting by myself, but others were clearly struggling and no matter how much help and guidance I gave them, as soon as I walked away to help another student, they continued to write in their own way so when I returned to check their work, I had to point out the same spelling, punctuation and grammatical errors. The three pedagogical principles that I have taken in consideration link, specifically in this area with Assessment For Learning as when I marked their work books, I concentrated a lot on the pupils literacy in particular to gain marks and if I had not specified what I needed clearly enough, pupils dropped marks in this area where as they may have been displaying good ICT skills.

Although I taught ICT lessons, this did not mean that the digital competency framework was automatically covered within the lessons as the framework has specific sections, see Appendix 03.a. I covered this within lessons using Scratch programming which is demonstrated in Appendix 03.c, where I taught pupils different parts of a process over a course of 4 lessons and they were later asked to demonstrate if they knew this by correctly identifying the parts using different colours.

Assessment for learning puts emphasis on using feedback and pupils and teachers using this feedback to identify how to improve the learning and implement it where it matters most, creating more efficient learners and covering all four purposes put forward in Successful Futures (Donaldson, 2015). There are two major forms of assessment, summative and formative. Summative is what would usually be used for quantitative results such as GCSE results (Wallace, 2009). This type of assessment usually takes place outside of the typical classroom environment and students rarely receive individual feedback on the content of the exam and receive a score/grade. As the summative or end of year assessments often cover the whole subject content of the course of study, it would be hard for the teacher to pinpoint exactly what needed to be worked on, as well as the student could have reached the end of their module of study and they will no longer have that time with a teacher to help correct any misinformed knowledge. A benefit of formative assessment is that it can be worked on within class time static (Black, Harrison, Lee, Marshall, Wiliam, 2007), it can be completed in a variety of different ways and the results that are gathered from this can be immediately reviewed and worked on to improve the students knowledge and re-teach any knowledge gaps.

It is suggested that having regular assessments can have a substantial increase in student learning and this could be enhanced further if the students' progress is tracked. Teachers that use the feedback from these assessments and adapt their lessons accordingly have been shown to be more effective. (Wiliam, 2018). This could be because the teacher will not move on to the next section of new knowledge without all pupils gaining full understanding of the previous topic. A consequence of this, is that the lower attaining students are benefitting from the re-teaching more than the higher attaining students as it is possible that they could be working at a faster rate, but must slow down the learning to the level of the lowest attainer in the class, therefore, the overall results are improving, but the top end of the results are remaining relatively static (Black, Harrison, Lee, Marshall, Wiliam, 2007). This is not to say that the higher ability students would not benefit at all from the re-teaching and assessment for learning as there is always room for improvement even if it simply constant retrieval and deeper understanding of the same information. There are also opportunities for differentiation in the lesson, using the higher ability students to help others within the class complete an activity or even teach a small group of others to demonstrate understanding to the teacher, as well as being able to mark their own work or through peer marking to become more independent learners and working out what they need to do to achieve their target (Bowen and Ellis, 2009).

A benefit of questioning is that pupils receive immediate feedback on the answers they believe to be correct, the speed that pupils now give the correct answers can also show the teacher that progress has been made as the retrieval process is becoming quicker. Using

questioning techniques such as higher order questioning can help students identify where their own gaps in knowledge are but also gain a deeper understanding of the topic at hand as they answer questions related to ‘the big picture’ and can help link the knowledge to previous experiences (Sullivan, 2003). Within Bloom’s Taxonomy (1956), it is suggested that pupils need to have the knowledge before they can expand on it further. The teachers questioning should reflect this, as pupils with a stable knowledge of the topic should be able to answer the question with an analytical view more than a pupil who is still trying to grasp a basic understanding of the topic.

I believe that I implemented the AFL pedagogical principle well in a way that I always checked the pupils progress continuously throughout the lesson. If there was a particular section of the task that I was asked similar questions about, I would stop the class and get their attention by saying “Lock your computers and face this way” which they are already familiar with. I would then re-teach this section of the lesson that the pupils is-understood or I didn’t explain very well. If there were only one or two pupils with a problem, I would help them individually at their desks. I also would ask pupils who had completed the task to help others that were behind as Bowen and Ellis (2009) suggested that this can help improve their understanding of a topic if the pupils are asked to re-explain it to another pupil. As mentioned by Wiliam (2018) teachers appear to be more effective when they adapt their lessons based on the needs of the pupils, which they have discovered through AFL, some classes had more pupils completing the task without much guidance compared to others, see Appendix 06.a for how I observed their progress. With one class, I had majority of pupils helping other pupils, but in a different lesson of the same topic, I re-taught the skills needed in the task by modelling the Scratch code on the board. I then took it off the board and asked pupils to try and complete the task again. This did make them progress but there were a number of pupils which still struggled and asked me to explain it in smaller sections, which I then did for the pupils that still required help. By the end of the lesson, I had visited every pupil’s computer and they had all completed it correctly, with variations of creativity involved in the final product. This backed up the suggestion that the lower ability students were having a bigger increase in their knowledge of the subject than the higher ability students (Black, Harrison, Lee, Marshall, Wiliam, 2007), as some pupils managed to complete the task in under 10 minutes. These pupils were clearly already very confident in their skills and helping others would not have increased their knowledge base by a significant amount, it did however increase my knowledge of which pupils were managing to follow along during class time and may even be needing harder tasks in future presented to them to keep them challenged. When marking pupil work using the S.T.A.R booklets, as mentioned in Successful Futures (2015), it is important to return them to pupils as they will not improve unless they are given the chance to reflect on the feedback they have been given and are able to spend time working on it, see all 04 Appendices.

Successful Futures (Donaldson, 2015) mentions that it is important to build on what pupils already know, although, they often arrive at Secondary school with a wide variation of backgrounds and interests. Teachers need to build on the previous experience but with a variety of approaches to keep all students engaged as well as not leaving anyone behind and penalising them for their different educational background. Teachers have the freedom to adapt the learning to their students needs where appropriate. Rosenshine (2012) suggests that for pupils to successfully learn, it is important that they can retrieve the information. Rehearsing this retrieval of information often makes it easier for the pupils to recall it when needed. As well as recalling the information, making links between new information and information they already know helps them retain it further. He discusses ideas that can help with this process within the lesson such as beginning the lesson with a short review of the previous lesson, presenting new information in small steps and guiding students as they begin to practice the tasks. Research supports that having daily, weekly and monthly reviews of learning embeds the information in the student’s long-term memory and supports the future learning (Sherrington, 2018).Although this research presents the positives of building on previous knowledge, there is research that suggests problems, such as, if the previous knowledge is incorrect, it is important for this to be corrected before building and linking the information as this could warp the new learning (Fazio et. al, 2013, pp. 1-6).

Creating novel learning experiences such as school trips to a museum or similar can bridge the gap between what is learnt in a classroom and the real-life experience of a topic. This can also work both ways, reminding pupils about something they may have seen in the

museum and making links in the classroom setting and how they can use this knowledge to help them with the next task. Having tasks that build on the skills that they have had to use previously in a situation where they were personally involved can help them engage more in the lesson. When the pupils can link the purpose or meaning of the task to something personal, they are more likely to find it meaningful, although this does rely on the student's personal experience and the successfulness of this can differ (Pecore, 2017, pp. 89-105).

Building on the information from Pecore (2017, pp. 89-105) about creating a novel experience and building new learning from it, I had pupils play the games that they had created previously in a Scratch lesson, see Appendix 09.d. I then created an example of a new game that they would be creating in the next task and had them play it together as a class, see Appendix 09.e. The pupils were very involved in this lesson right from the start and this kept them engaged throughout. It was a great way to start the lesson by using something fun and inclusive as well as it demonstrating to them what they were about to create themselves. As it was similar to the games they had created previously, while playing the game, they could make links to what blocks may have been needed to create the final code. Evans (2013, pp. 98-107) has suggested that using games in lessons to increase engagement will become more widely utilised throughout the curriculum in the future, although not enough research has been conducted on this topic to prove its significance.

Pupils that were struggling with this task would slowly lose interest so to keep them engaged, I passed out hand outs see Appendix 09.j, 09.k and 09.l with clues on what was needed to complete each step and I tried to break it down as much as I possibly could without giving them the answers, this was along side other pupils helping them. Having the hand outs did keep the pupils that were falling behind more involved and engaged with the lesson but having hand outs has its pitfalls such as if it is too over crowded with information, some pupils will not bother to read it, if all of the information in every lesson is featured on the hand outs, pupils may see that they do not need to attend lessons to gather the information they needed from them and class attendance has been known to suffer and it also uses a lot of paper and is costly so if there are ways around this such as digital copies or sharing, this would be preferable (McShane, 1998).

For future development of my teaching practice for Assessment For Learning, I would like to have a better plan on what questions I am asking, who I am asking and how I am asking them. I would like to develop techniques such as 'Pose, Pause, Pounce, Bounce' (Teacher Toolkit, 2011) and enhancing my questions using 'The Question Matrix' (Wiederhold and Kagan, 1998). I would use techniques like these to be more inclusive with my questioning, to have more in-depth answers and to understand the pupils' level of learning of most if not all pupils during every lesson and helping me learn their needs to adapt the next section of the lesson which is emphasised in the Welsh Government Document for Assessment For Learning (2010).

I agree with Phillips' (2002) suggestion on using Literacy, numeracy and digital competency in the lessons to enhance the learning and not having a disjointed lesson to shoehorn them in. I will need to spend time finding great resources of how to include the frameworks effectively. When building on previous learning, I have found that I need to create more differentiated tasks when the lessons will be solely based on what the pupils have learnt previously. These lessons have helped me understand which pupils can retain and recall information better than others but also, it can make the lower attaining pupils feel like they are falling even further behind and lose interest, but also the higher attaining students finish the tasks a lot earlier than the rest and can lose interest due to waiting around for others. I could also introduce group work techniques such as 'think, pair, share' to create a positive learning environment where pupils feel comfortable asking each other for help (Watko, 2014).

References

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Avramides, K. et al. (2015) 'A Method for Teacher Inquiry in Cross-curricular Projects: Lessons from a Case Study.' *British Journal of Educational Technology*, 46 (2), pp. 249-265

BERA, (2018) *Ethical Guidelines for Educational Research.* London: British Educational Research Association.

Black, P., Harrison, C., Lee, C., Marshall, B. and Wiliam, D. (2007) *Assessment for Learning*. Maidenhead: McGraw-Hill Education.

Bloom, B. S. (1956). Taxonomy of Educational Objectives: Book 1, Cognitive Domain. London: Longman Group Ltd.

Bowen, T., and L. Ellis. (2009) Assessment for Learning. A Dictionary of Education (2009), *Oxford Reference.* [Online]. Available at: https://www-oxfordreference-com.ezproxy.uwtsd.ac.uk/view/10.1093/acref/9780199212064.001.0001/acref-9780199212064-e-60 (Accessed: 22nd December 2019).

CEA (2019) Formative Assessment and Assessment for Learning, Available at: http://ccea.org.uk/curriculum/assess_progress/types_assessment/formative/assessment_learning [Accessed: 2nd January 2020]

Dillon, D. R., O'Brien, D. G., Sato, M., & Kelly, C. M. (2010). Professional development and teacher education for reading instruction. In M. L. Kamil (Ed.), *Handbook of reading research,* 4, pp. 629–660, New York, NY: Routledge.

Donaldson, D. (2015) *Successful Futures: Independent Review of Curriculum and Assessment Arrangements in Wales.*

Estyn Report (2015) *A Report on School X*. Cardiff: Her Majesty's Inspectorate for Education and Training in Wales. Available at: https://www.estyn.gov.wales/sites/www.estyn.gov.wales/files/documents/Inspection_reportschoolx (Accessed: 2nd January 2020).

Evans, M. A. (2013) 'Youth and Video Games: Exploring Effects on Learning and Engagement.' *Zeitschrift Für Psychologie,* 221 (2), pp. 98-107.

Fazio, L. K.,(2013) 'Creating Illusions of Knowledge: Learning Errors That Contradict Prior Knowledge.' *Journal of Experimental Psychology: General* 142 (1), pp. 1-6.

Kirsten, N. (2019) 'Improving Literacy and Content Learning across the Curriculum?: How Teachers Relate Literacy Teaching to School Subjects in Cross-curricular Professional Development.' *Education Inquiry,* 10 (4), pp. 368-384.

McShane, D. (1998) *Presenting Information Visually* (EIC Guide) [Online] Available at: http://www2.wmin.ac.uk/mcshand/TEACHING/handouts.htm (Accessed: 30th December 2019).

My Local Schools (2019) School X. Available at: http://mylocalschool.gov.wales/School/X (Accessed: 2nd January 2020).

Pecore, J. L., (2017) 'Formal Lessons Improve Informal Educational Experiences: The Influence of Prior Knowledge on Student Engagement.' Visitor Studies 20 (1), pp. 89-105.

Phillips, I. (2002) 'History and Mathematics or History with Mathematics: Does It Add Up?' *Teaching History* 107, pp 35-40.

Robb, L. (2014) Teach Kids to Build Their Own Prior Knowledge, *Middleweb*, Available at: https://www.middleweb.com/13223/teach-students-build-prior-knowledge/ [Accessed: 2nd December 2019]

Rosenshine, B (2012). Principles of Instruction: Research-based strategies that all teachers should know. American Educator.
https://www.aft.org/sites/default/files/periodicals/Rosenshine.pdf

Scratch 3.0 (2019) Scratch 3.0, Available at: https://scratch.mit.edu/ [Accessed: 1st December 2019]

Sherrington, T., (2018) Exploring Barak Rosenshine's seminal Principles of Instruction: Why it is THE must-read for all teachers. *Teacherhead* [Online] Available at: https://teacherhead.com/2018/06/10/exploring-barak-rosenshines-seminal-principles-of-instruction-why-it-is-the-must-read-for-all-teachers/ (Accessed: 30th December 2019).

Sullivan, C. (2003), Questions Worth Asking. *The Brighton and Hove Assessment for Learning Project*. Available at: http://www.rtuni.org/uploads/docs/Questions%20worth%20asking.pdf (Accessed 22nd December 2019).

TeacherToolkit (2011) 'Pose, Pause, Pounce, Bounce!' *TeacherToolkit* [Online]Available at: https://www.teachertoolkit.co.uk/2011/11/04/pose-pause-bounce-pounce/ [Accessed: 2nd January 2019]

Teacher Toolkit (2016) 10 Marking and Feedback Strategies, *TeacherToolkit*, Available at: https://www.teachertoolkit.co.uk/2016/02/05/markingsketchnote/ [Accessed: 11th December 2019]

Wallace, S. (2009) Summative Assessment. A Dictionary of Education*, Oxford Reference.* [Online]. Available at: https://www-oxfordreference-com.ezproxy.uwtsd.ac.uk/view/10.1093/acref/9780199212064.001.0001/acref-9780199212064-e-984 (Accessed: 22nd December 2019)

Watko (2014) Differentiation in ICT *Tes* Available at: https://www.tes.com/teaching-resource/differentiation-in-ict-6443280 (Accessed: 2nd December 2019)

Welsh Government (2008) Literacy and Numeracy Framework, Available at: https://hwb.gov.wales/curriculum-for-wales-2008/national-literacy-and-numeracy-framework-curriculum-for-wales-2008-version/ (Accessed: 29th November 2019)

Welsh Government (2010) Why develop thinking and assessment for learning in the classroom? https://s3-eu-west-1.amazonaws.com/hwb-live-storage/05/ae/7b/09/4ca143999dea481cd5d23846/why-develop-thinking-and-assessment-for-learning-in-the-classroom.pdf

Welsh Government (2016) Digital Competency Framework, Available at: https://hwb.gov.wales/draft-curriculum-for-wales-2022/digital-competence-framework-draft-curriculum-for-wales-2022-version/#curriculum-for-wales-2008 (Accessed: 29th November 2019)

Welsh Government (2019), *Professional Standards for Teaching and Leadership*.

Wiederhold, C. And Kagan, S. (1998) Cooperative learning & higher-level thinking : the Q-Matrix.
San Clemente, CA : Kagan Cooperative Learning

Wiliam, D. (2018) *Embedded Formative Assessment*. Second ed. Bloomington, Indiana : Solution Tree Press