



Teacher assessment

Key stages 2 and 3

Science : learner profile

Level 4

Foreword

This profile is intended to help teachers see the type of evidence that can be used to take to a cluster meeting, in order to support the best-fit judgements made. It also clearly demonstrates that the evidence predominantly lies in a pupil's book and hence is what is already available to the teacher.

The profile also includes a detailed commentary which provides clarity on why the best-fit judgment was awarded. There is no suggestion or expectation that a learner profile is produced for every pupil in the cohort or that teachers write such an extensive commentary.

Task 1

Tuesday

March

11th

Nôd : To explore and explain what I know about sound.

1. What is sound ?

Sounds are vibrations ✓

2. What can sound travel through ?

Sounds can travel through solid, liquid and gases. ✓

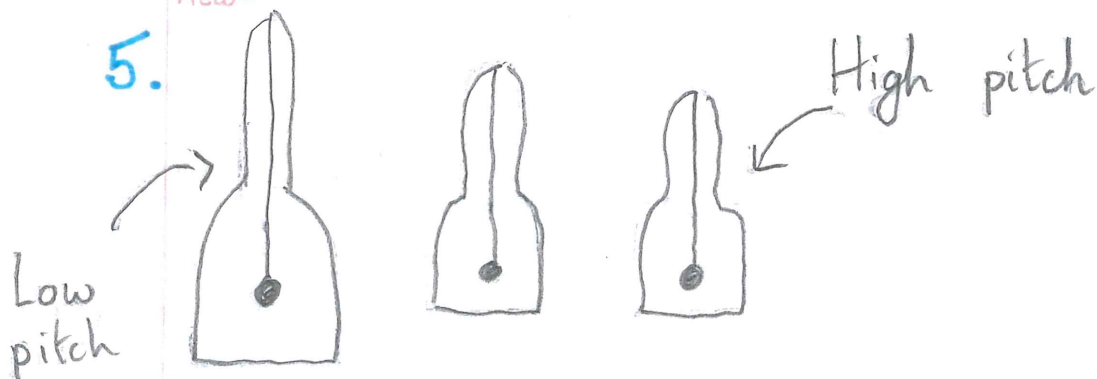
3. Can you explain how sound travels.

Sound travels through tiny, little molecules and molecules travel through solids, liquids and gases.
 are in

4. Can you explain how we hear ?

We hear (from all of the molecules of solid, liquid and gases and then vibrations hit our ear drum and that's why we hear.
 how

5.



Task 1

answer The smallest bell will have a high pitch because the hammer^m inside will hit the metal on the outside quicker than the large bell because the molecules have little space to move.

answer The larger bell will have a low pitch because the hammer inside will take longer to hit the metal on the outside and the molecules have a lot of room to move around. You're

on the right tracks.

6. Is there anything that you know about that we haven't discussed yet? explain

I don't know anything about sound, but understand what we have talked about. That's a great sentence.

I know a lot more about sound now.

7. What would you like to know about sound? Are there any investigations you can think of.

of I can't think off any investigations.

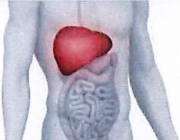
Task 2

Additional Pupil Evidence – Level 4 science

The following evidence is taken from the pupil's electronic evidence

TASK 2

The heart and exercise

Organ	Image	What it does (function)
Heart		Pumps blood around the body. The heart is actually a large muscle.
Lungs		The lungs are made up of two organs that get filled with air. We breathe using our lungs and it helps oxygen enter our body.
Liver		This is a large organ that helps control the sugar in our body and removes dangerous chemicals.
Brain		The brain helps you control your body and lets you think!
Skin		This is the largest organ. It protects your body and keeps liquids inside.

Task 2

Monday

March

31st

Note: To investigate how our bodies work.

We take a breath in and then, the air that we breath in goes in to our lungs and then when we breath out, we breath out. But if you do star jumps you breath loudly. At the end we breath out.

After discussion this is what I think happens, We take a breath in and then the air travels to our lungs and then the air goes into our blood and then Next the blood travels to our heart and then the blood and oxygen goes into the muscles. and When we breath out, the carbon dioxide goes into our lungs and then we end up breathing it out.

breath-
ing

What a difference. Talking about 'star jumps'....
This will help begin our investigation.

Task 2

Wednesday

May

7th

Nâd: To explain, in detail, what we have been doing with ipads and exercise.

Before Easter we measure our heart and breathing rate with a app called 'vital signs', before exercise.

After that our partener recorded us doing star jumps for 45 seconds and the reason we did star jumps was because it is the best exercise to get your heart rate and breathing up.

Then we took a screen shot and opened it in Numbers.

In numbers we created a graph with our results the breathing and heart rate.

Last week on Thursday, we created a Second^Spro and Seconds^S pro is when you create a workout.

Firstly, we went on to create a workout ^{For} ourself^S. So to start with you need 2 intervals Exercise and rest and then we added a time for the exercise and a time for the rest.

Secondly we added 5 exercises but it is best to do legs, arms, upper body and lower because if you keep doing lower body you will get tired very quickly.

Finally we did our workout and Mr Evans took photos of us doing our workout.

Task 2



✓ Legible Handwriting.

✓ Wrote in paragraphs.

! Maybe More Detail.

! A little more explanation.

Peer marked according to the Success ladder for writing.

E.F.M

This is organised and well written. You've gone back and checked/fixed your work too.
Self and peer assessed.

TASK 3

Sound insulation investigation.

Redrafting

1. Collect the equipment required, e.g. datalogger, various materials, ruler, and sound speaker.
2. Place the datalogger and the speaker on a flat surface so they don't move. This will also keep the test fair.
3. Put an insulating material between the datalogger and the speaker. Check it more than once for reliability.
4. Put the results in a table and work out the average.
5. Plot the data as a graph and write a conclusion.

Task 3

Wednesday April 2nd

Nôd: To write a detailed plan for our investigation.

Which material is the best sound insulator?

What are the variables?

- Type of material.
- Amount of material. *Pics needed.*
- Colour of material.
- Size of material.
- Shape of material.
- Height of material.

What's our independent variable?

Our independent variable is the type of material.

What will we measure (Dependent variable.)

We will measure the sound by ^{we} doing it in decibels, using data loggers. Will check it, check it and check it again.

Task 3

to make it reliable and accurate.
We are going to keep the other variables the same to make it a fair test.

How we will carry out the investigation. (method)

- Firstly we will get our equipment =
- Materials / Insulator
 - Data Logger
 - Speaker
 - Sound
 - Pencil and Paper ✓ Nice extra.

* Secondly we will get a data Logger next to a speaker and put a insulator inbetween them.

Thirdly we will check the data Logger to see if it works.

* Next we will put the data Logger and the speaker on a flat surface to make it a fair test.

After that we will start our investigation by creating a table for our results.

* Then we will put the data Logger in front of the speaker and put a material inbetween and then we will

Task 3

measure in decibels. You've repeated the same steps a few times *

Then when we get our results we will put them into a table.

After that when we have got our results you will make an average by adding the numbers up and divide them by 3.

Finally you make a graph and to get a level 5 you choose the graph, X axis and Y axis, scale. Then you make a conclusion. ✓

Very nearly Mr Evans proof. You just need to check your steps carefully as we move on.

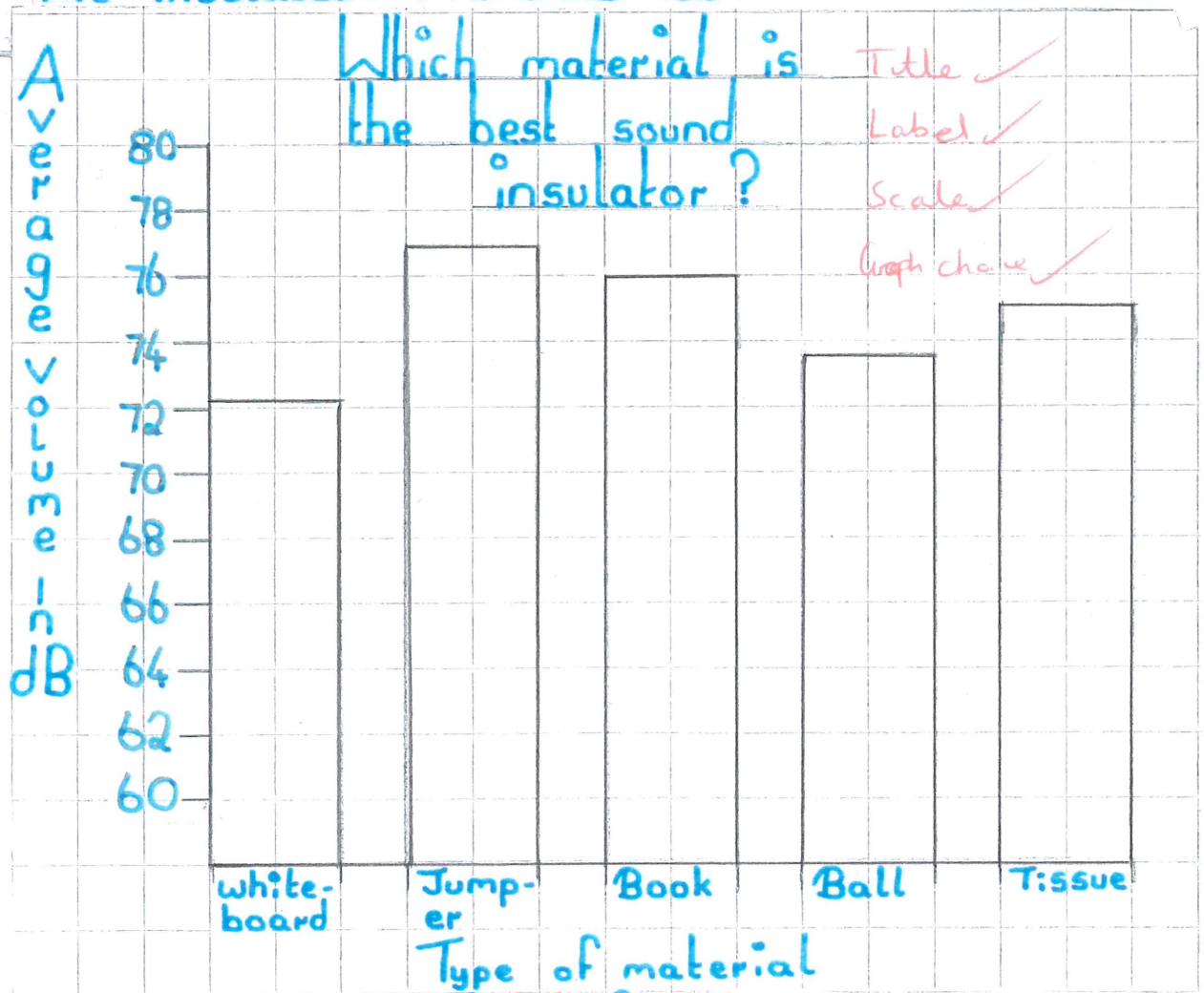
Prediction:

I predict that the jumper will be the best insulator because the material is soft and fluffy. I predict that the book and whiteboard will be the worst because the material is hard and rough. ✓

Task 3

Material	Volume 1 st db	Volume 2 nd db	Volume 3 rd db	Average volume db
Whiteboard	72.4 db	70.9 db	73 db	72.1 db
Jumper	77.7 db	76.6 db	78 db	77.4 db
Book	70.1 db	72.8 db	84.1 db	76 db
Ball	74.9 db	71.0 db	72.2 db	72.7 db
Tissue	75.5 db	75.5 db	74.4 db	75 db

No insulator = 77.5 db



TASK 4

Writing a conclusion

'My prediction was wrong, I predicted the jumper would be the best sound insulator because the material is not solid like the whiteboard. I thought the sound waves would vibrate more inside the softer jumper and the sound wouldn't get through. However, the results show that the whiteboard was the best sound insulator and the jumper the worst. From my results, I think the softer materials seem to insulate sound less well. I think the whiteboard was the best insulator because the sound waves bounced off the surface and did not travel on to the datalogger.'

Also when I look back at my success criteria I met all of my main aims, e.g. repeating the test three times to get a mean, making sure the test was fair and putting my results in a table.'

Monday

April

7th

Task 4

Nôd: To write a detailed conclusion using all that we have learnt.

Firstly my prediction was wrong, I predicted that the jumper would be the best sound insulator. My graph shows me that the whiteboard was the best sound insulator, because the decibels came right down.

I thought that the jumper would be the best sound insulator because the molecules are not a solid so the sound waves would create a vibrations. The whiteboard has tightly packed solids and made the decibels come right down, and that was the best sound insulator.

Do you think something might have gone wrong?

I'm not sure because I thought the jumper would be the best because the

Monday

April

7th

Task 5

Nôd: To plan my own investigation correctly.

Does the length of the straw affect its loudness?

Variables :

Task 5

- The length of the straw. ✓
 - Size of straw. ✓
 - Colour of straw. ✓
- Sensible suggestions.*

change ✓ Independent variable (what we are going to change)

- Length of straw.

Dependent variable (what we are going to measure)

- We are going to measure the loudness in decibels using data loggers to make it accurate. *Explained properly.*

Method (instructions)

✓ Firstly we will get our equipment =

- Straw
- Data logger
- Pen / Pencil
- Paper
- Scissors
- Ruler

8.4.14

J.L.T

Secondly we will get ^{the} our equipment in place, (and then when we have got everything ready). Then we have got everything in place to begin our investigation.

Task 5

Thirdly we will create a table to keep a record of our results.

Next we will begin our investigation, we will blow into a straw and the data logger will hear the sound waves and measure the sound in decibels. Everytime we do the test we will cut 5cm off each time. We will cut the straw using scissors, and we will use a ruler to measure 5cm to be accurate. We will check it 3 or more times to be reliable. *Good use of vocabulary.*

~~(After that)~~ When we have ~~(got)~~ our results we will work out the average by adding all the numbers up on that row and then divide by how many numbers there are. *Good explanation.*

Then we will create a graph. *If possible.*

Finally *we will* make a conclusion.

Prediction:

vibrations → I predict that when we blow into the ~~the~~ straw the first time it will be a low pitch because when we blow into the straw the sound waves will take longer to travel through the straw. Then it won't be

Task 5

as loud as a shorter straw. As we cut 5 cm off each time, it will be louder.

Table :

Length of straw	Test 1 db	Test 2 db	Test 3 db	Average db
25 cm	87	86	79	84
20 cm	84	75	81	80
15 cm	87	85	83	85
10 cm	73	89	84	82
5 cm	61	63	69	64

Did your datatlogger measure to ~~the~~ 2 decimal places?

Not sure because Billy was looking at the data logger

★ The method is clear.

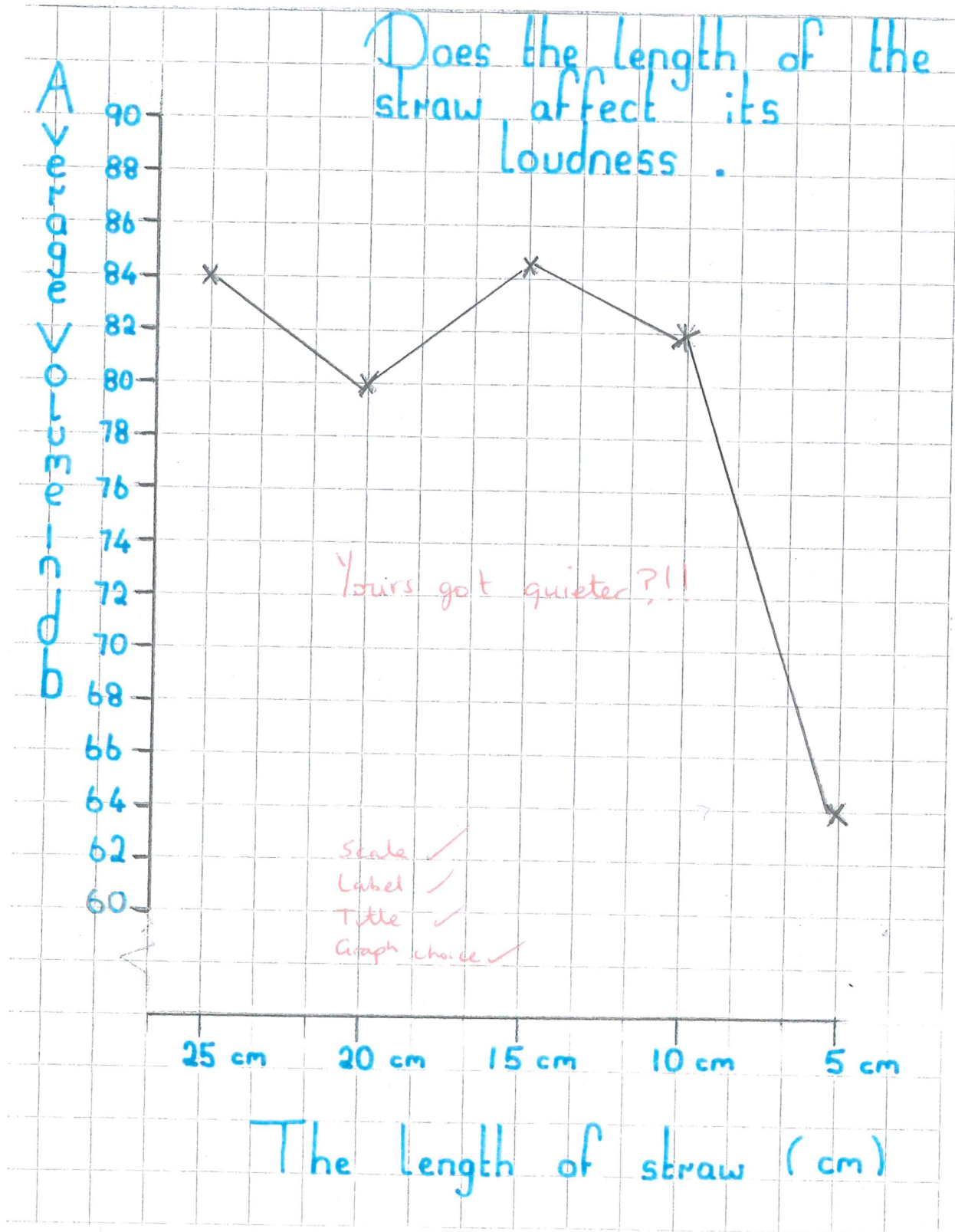
★ The table and graph are correctly made.



Be very careful when carrying out the practical task.

Task 5

9.4.14 Graph :



Task 5

Conclusion :

Firstly, my prediction was wrong. I predicted that the shortest straw will be louder than a long straw. My graph tells me that my prediction was wrong and that something went wrong in are investigation because my graph is a little confused because the crosses are every-where. I think the problem was when I blow into the straw each time I moved away from the data logger. *Hmm! Could be!*

Wednesday April 9th

Workflow using iPads - Create an interactive story.

Using these* apps as a must. Other apps can be used too. The pupils created a story that was shared with the infants through iBooks. The process is the same as any other writing project but it is drafted and redrafted using the iPads. Here is a quick breakdown of how we've used them to create our books.

The process of writing a story is gradually built up. Here is, basically, how we've carried out the task. They were placed in mixed year and ability groups.

Basic process of creating the book.

1. Listened to a story.
2. Retold the story to partners, groups and class.
3. Used iPads to organise the story, which apps to use and how to use them.
4. Decide upon a success criteria (SC) for our books. Individually and then as a class.
5. Investigate and discuss book covers and blurbs. What makes a good one? Design and make cover. Write blurb. Share (AppleTV) and peer assess. Adapt where necessary.
6. Begin creating the interactive book.
7. Write the story in Book Creator. Share using AppleTV and Showbie. Peer assess. Redraft.
8. Create interactive elements for the book using apps from list on previous page.
9. Review in their groups. Redraft if necessary.
10. ~

TASK 6

Does the length of a string affect how quickly a conker (pendulum) swings?

Fair test

I will change the length of the string.

I will measure the number of swings in 30 seconds.

I will keep the same coin, type of string and method of holding the coin and string.

Method

1. We are going to get a piece of string and attach a paperclip to it. We will then place a 2p coin into the paperclip.
2. We will start with a 20cm length string.
3. We are then going to hold and drop the coin to let it swing for 20 seconds. We'll count how many swings there are in 20 seconds.
4. We will then do this again with a 18cm, 16cm and 14cm length.
5. Each time we will check our results.

Prediction

I think the longer string will have more swings in 20 seconds than the shorter string lengths.

Results

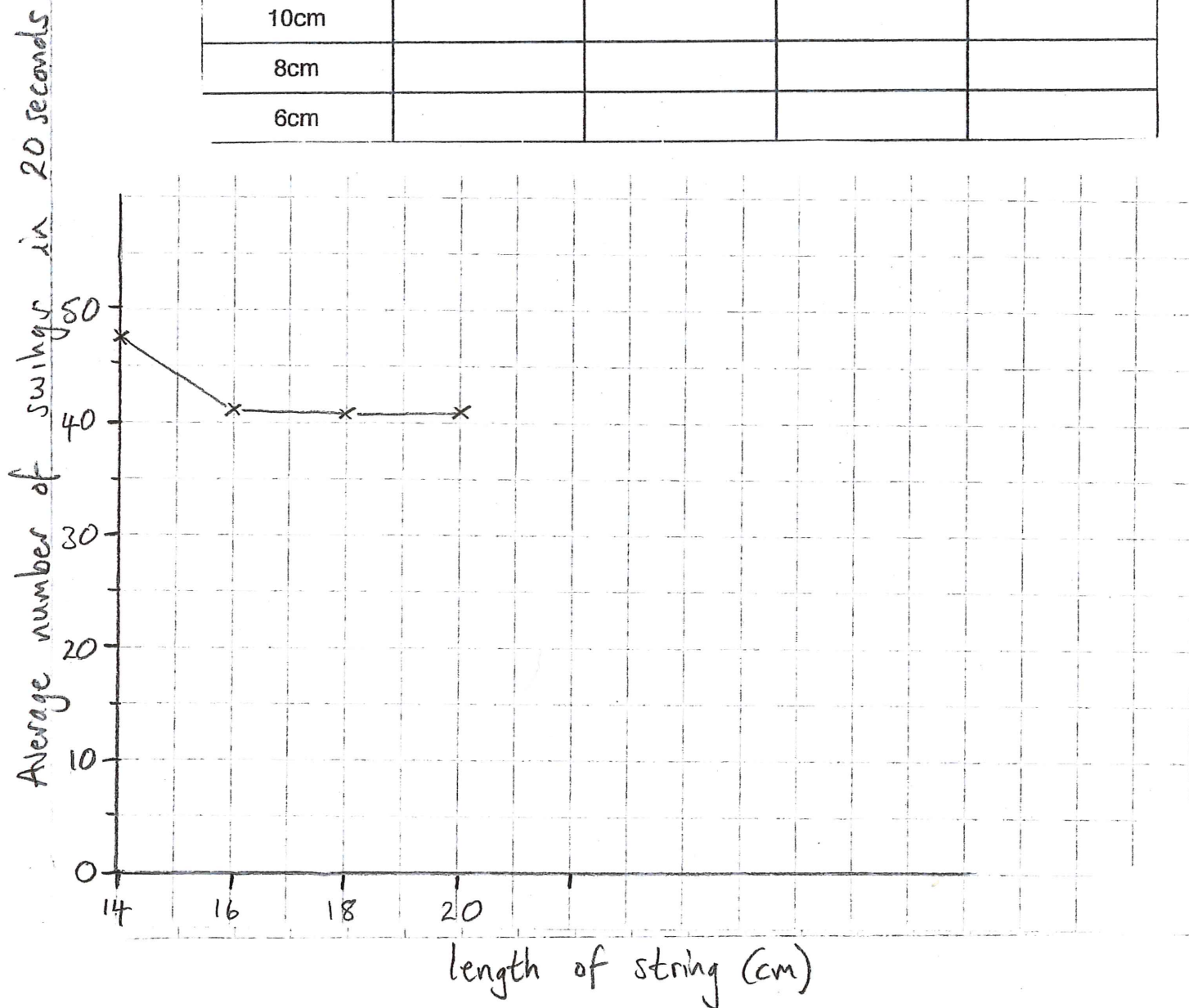
Length of string (cm)	Number of swings in 20 seconds 1 st attempt	Number of swings in 20 seconds 2 nd attempt	Number of swings in 20 seconds 3 rd attempt	Number of swings in 20 seconds 4 th attempt
20	41	41	40	41
18	42	41	40	41
16	45	36	41	41
14	48	45	48	47

Conclusion

I found out that the shorter string had more swings than the longer strings. The shorter string was swinging more quickly. I thought the longer string would have more swings. So, my prediction was wrong.

Task 6

Length of string. (cm)	Number of swings. 1st attempt	Number of swings. 2nd attempt	Number of swings. 3rd attempt	Average number of swings
20cm	41	41	40	41
18cm	42	41	40	41
16cm	45	36	41	41
14cm	48	45	48	47
12cm				
10cm				
8cm				
6cm				



TASK 7

Success criteria for plans

Nod: *To plan our investigation correctly.*

We will discuss and decide together what our success criteria will be.

Llew Llwyddiant (success criteria):

1. *Write the instructions as steps (numbers or bullet points).*
2. *Use scientific vocabulary (from our glossary).*
3. *Use bossy verbs (remember our English writing)*
4. *Will somebody else be able to follow the plan?*

		Level 3	Level 4	Level 5	Level 6
Plan	Find evidence, information and ideas	3P.1 Pupils suggest where to find evidence, information and ideas.....	4P.1 Pupils find and use a variety of evidence, information and ideas.	5P.1 Pupils find and use relevant evidence, information and ideas.	
	Methods & strategies	3P.2.... and plan, with support, the method to be used for their enquiries.	4P.2 They use scientific knowledge and skills to plan their enquiries....	5P.2 They systematically plan their enquiries	6P.2 Pupils suggest a variety of methods or strategies for their enquiries.
	Predict	3P.3 They talk about their ideas and using their everyday experience they make simple predictions	4P.3 (use scientific knowledge and skills to) and predict outcomes.	5P.3 (they) making predictions based on scientific knowledge and understanding, including simple models.	6P.3 They make predictions using abstract scientific ideas.
	Fair testing		4P.4 In a fair test enquiry, they recognise, with support, the variables to change and measure and those to be kept the same.	5P.4 When planning a fair test, they identify key variables and distinguish between independent and dependent variables and those that they will keep the same.	6P.4 In a fair test enquiry, they plan how to control the variables that they need to keep the same and make decisions about the range and values of the independent variables.
	Determining success criteria	3P.5 They agree on some basic success criteria.	4P.5 They decide upon some basic success criteria.	5P.5 They give some justification for their success criteria.	6P.5 They justify their success criteria.
Develop	Observe & measure	3D.1 They follow a simple series of instructions safely to gather their findings, and where appropriate make observations that they could measure using simple equipment.	4D.1 They follow the planned method..... They make qualitative observations and use standard equipment to measure within a given range using S.I. units.	5D.1 They select measuring instruments that allow them to make a series of accurate measurements.	6D.1 They make precise observations and accurate measurements using equipment with fine divisions.
	Monitor progress		4D.2 (They follow the planned method) making amendments where necessary.	5D.2 They regularly check progress and revise the method where necessary.	6D.2 They regularly check progress, make ongoing revisions when necessary and begin to justify any amendments or improvements made.
	Communicate findings	3D.3 They begin to organise their findings and display them in a given format, to include simple tables and bar charts.	4D.3 They organise and communicate their findings using relevant scientific language and display these in tables, bar charts and in simple line graphs when the axes and scales are given.	5D.3a They organise and communicate their findings integrating different forms in various presentations and record these systematically, using S.I. units where appropriate. 5D.3b They select the most appropriate type of graph or chart to display data.	6D.3a They organise and communicate their findings in a variety of ways fit for purpose and audience. 6D.3b They use appropriate axes and scales for graphs to show data effectively.... 6D.3c and begin to use some quantitative definitions..
	Review findings	3D.4a They begin to identify simple patterns and trends. 3D.4b They begin to distinguish between scientific 'facts', beliefs and opinions.	4D.4a They identify patterns and trends. 4D.4b They distinguish between 'facts', beliefs and opinions and begin to recognise bias.	5D.4a They can use a line graph to describe relationships between two continuous variables. 5D.4b They identify bias and start to consider reliability.	6D.4b When considering their findings they assess bias, consider reliability 6D.4c and offer some explanations for any anomalies
	Explaining	3D.5a They give an explanation, based upon their everyday experiences, for their findings, including any patterns. 3D.5b They give simple explanations for differences between and changes to organisms, objects, materials and physical phenomena.	4D.5a They use some scientific knowledge and understanding to explain their findings 4D.5b and differences between, or changes to organisms, materials and physical phenomena	5D.5a They use scientific knowledge and understanding, including simple models, when explaining their findings..... 5D.5b and differences between, or changes to organisms, materials and physical phenomena.	6D.5a They use abstract scientific knowledge and understanding, including models, when explaining their findings 6D.5b and differences between, or changes to organisms, materials and physical phenomena. 6D.5c They recognise that a number of factors and / or processes may have to be considered when explaining changes.
	Conclusions & decisions	3D.6 They say what they have found out from their work and make their own decisions by weighing up pros and cons.	4D.6 They begin to draw conclusions, from considered opinions and make informed decisions.	5D.6 They draw conclusions that are consistent with the findings and consider others' views to inform opinion and decisions.	6D.6 They consider a wider range of perspectives to inform opinions and decisions
Reflect	Review success	3R.1 They link outcomes to success criteria and identify what worked and what didn't,.... 3R.1b beginning to think about how the method could be improved.	4R.1a They decide whether their method was successful by referring to their success criteria..... 4R.1b and say how they could improve it.	5R.1 They begin to evaluate how far success criteria fully reflect successful outcomes.	6R.1 They evaluate how far success criteria fully reflect successful outcomes.
	Evaluate learning		4R.2 They describe how they have learned and identify the ways that worked the best.	5R.2 They identify the learning/thinking strategy they have used.....	6R.2 They identify the learning / thinking strategies being used.....
	Link learning	3R.3 They link the learning, with support, to familiar situations.	4R.3 They link the learning to similar situations.	5R.3 (They identify the learning/thinking strategy they have used) and link the learning to dissimilar situations.	6R.3 (They identify the learning / thinking strategies being used) and link the learning to unfamiliar situations.

APPENDIX 1

Science - level 4 best fit learner profile

Level 4: Learner profile

The materials in this folder consist of a learner profile which is judged to show the characteristics of a learner's standards of attainment which, overall, are at level 4. The commentary should enable the reader to see why the learner profile has been given a best-fit level 4.

The level of detail exemplified here in the commentary is intended to give a good sense of how a best-fit level can be fully justified, in the case of learner profiles. For in-school awarding of best-fit levels at the end of a key stage and in-school moderation, it is still necessary for the teacher to justify that the range of work required is covered and the appropriate standard reached to award a best-fit level. How this is demonstrated is for each school to determine.

A learner profile will typically contain the work of one pupil from across the range of the subject and provide sufficient evidence to enable a judgement to be made on the level which best fits the standard represented in the profile. A learner profile should be as straightforward as the pupil's book or books which show evidence of the characteristics of levels and relevant attainment target(s). Other work which would give the complete picture of a pupil's standards might include a theme/topic book, audio visual recordings, reading record. A commentary on the learner profile will make clear how, on balance, the best fit judgement has been reached and why it is not at the level above or below if it is borderline. The commentary will signpost where the evidence of achievement at a particular level can be seen in the exercise book or other original material produced in the year.

Science: Learner profile

Level 4

This evidence is drawn from seven tasks that are contained within the learner's Year 6 topic book. Ideally the whole topic book would be made available as evidence at a moderation or verification event.

Commentary <i>(all comments reflect attainment at level 4 unless indicated otherwise)</i>	Source	Reference
What I know about sound. Develop: communicate findings. As part of the introduction to the topic of sound, the pupils were asked to answer a number of questions to elicit what they already know and understand about sound and what they would like to find out. The pupil can use some scientific knowledge to offer ideas and explanations.	Task 1	pages 1 - 2
The heart and exercise Plan: finding evidence, information and ideas. Develop: communicate findings. As part of the class topic on the human body, pupils were challenged to find out the functions of key organs. The pupil is able to: • Find a variety of evidence and ideas and presents this information using scientific language; • use some scientific knowledge to offer ideas and explanations about the heart as a pump. The pupil is also beginning to spell scientific words accurately. The pupil explains how they used the 'Vital Signs' app on an iPad to help them gather pulse data as part of their task investigating exercise. The pupil is able to: • describe how they have learned.	Task 2	pages 3 - 6
Sound insulation Plan: methods and strategies; predict; fair testing. Develop: observe and measure; communicate findings.	Task 3	pages 7 - 11

The class teacher provided an initial stimulus and context for enquiry questions related to the topic of sound. The pupil was able to: • identify, with support, the variables that may be changed, measured and kept the same; • make a simple prediction based on everyday experience; • plan the steps in this enquiry in a systematic manner (after discussions with the class teacher) and chose to list the steps in paragraphs (a level 5 characteristic). The pupil redrafted this plan to improve quality; • select measuring equipment that allow them to take a series of accurate measurements (a level 5 characteristic); • use everyday ideas to predict that the jumper will be the best sound insulator (a level 3 characteristic); • understand the nature of continuous and categoric data in the context of testing the insulating properties of different materials; understand the benefit of obtaining a mean and considering reliability (both level 5 characteristics); • create their own table to collate findings, including a bar graph to display the average volume (both level 4 characteristics).		
Writing a conclusion Develop: communicate findings; review findings. Reflect: review success. When explaining the outcomes of the sound insulation investigation, the pupil is able to: • identify a pattern in their findings; • use scientific knowledge and understanding to explain their findings; • decide whether their method was successful by referring to their success criteria.	Task 4	pages 12-13
Does the length of a straw affect its loudness? Plan: methods and strategies; predict; fair testing. Develop: observe and measure; communicate findings. The pupil worked independently to explore the sounds generated by straws. They then completed a focused enquiry task. The pupil is able to: • identify the variables that need to be controlled in a fair	Task 5	pages 14 - 18

test enquiry; • use science knowledge and skills to plan their work. The pupil planned the steps in this enquiry in a systematic manner, choosing to list the steps in paragraphs (a level 5 characteristic); • select measuring equipment (a data logger) to allow them to obtain a series of accurate measurements (a level 5 characteristic); • create their own table to collate findings and draw a line graph with support to display the average volume. In this example the teacher highlighted that the scale on the x axis on the graph should be reversed; • make amendments where appropriate.		
Coin swing investigation Develop: observe and measure; review success. Following an initial exploration activity looking at falling bodies, pupils were asked to predict how the length of a piece of string affects the behaviour of a simple pendulum. Plan: methods and strategies; fair testing During some initial discussions with the class teacher, the pupil was able to: • identify the variables that need to be controlled in a fair test enquiry; • create a plan using scientific knowledge and skills; • select standard equipment. While carrying out the enquiry, the pupil: • understood the need to obtain an average and consider reliability (both level 5 characteristics); • understood the nature of continuous and categoric data, and drew a line graph to display these data (a level 5 characteristic); • offered some simple improvements to the method during discussions with the teacher (pupil: “use a lump of Blu-Tack to help the string swing better”) - a level 3 characteristic.	Task 6	pages 19 - 20
Success criteria for plans Plan: determining success criteria. As part of their work on light, pupils discussed and agreed a number of key success criteria for recording a scientific plan (a level 3 characteristic). The teacher had provided some	Task 7	page 21

possible success criteria for the class. These success criteria were noted as 'Llew Llwyddiant'.		
In the following lessons, the pupil was able to identify their own basic success criteria for both practical tasks and also when producing written records.		

Best-fit level: Summary

Planning

The pupil is able to plan, find and use relevant evidence, information and ideas (the heart and exercise task). The pupil regularly plans a method using scientific knowledge and skill. In a few tasks the pupil has shown the ability to plan enquiries systematically and use science knowledge and understanding in order to make some oral predictions (sound insulation task). The pupil is able to identify variables and control these in a number fair test enquiry tasks (coin swing and sound insulation tasks). She makes simple predictions when planning enquiry tasks. In discussions, the pupil is able to identify success criteria for her investigative work (success criteria for plans) and check progress against these after tasks have been completed.

Developing

The pupil is able to follow the planned method and makes qualitative observations using standard equipment. She selects measuring instruments that allow her to make a series of accurate measurements and chooses the appropriate scale, e.g. stopwatches, force meters and data logger sensors (straw and sound task). During practical work the pupil is able to make amendments to improve the method. She regularly communicates and explains the outcomes of her work using scientific language and displays these in tables, bar charts and line graphs (sound insulation and heart and exercise tasks). She is able to select the most appropriate type of graph or chart to display data and understand the nature of categorical and continuous data (sound insulation task). The pupil is able to review her findings and understands why reliability is an important concept in practical work.

Reflecting

In discussions, the pupil is able to describe whether their method was successful by referring to success criteria. She is also able to suggest how to improve her method in various tasks (straw and sound task). The pupil is also able to describe how she has learned (heart and exercise task).

Summary

The pupil's work includes evidence drawn from across the science range: Interdependence of organisms, The sustainable Earth and How things work. Her work also exemplifies nearly all the science skills (communication and enquiry). The evidence contains characteristics of levels 3, 4 and 5. The majority of the evidence represents level 4. Although the work represents a strong level 4, there are some important level 5 aspects absent, e.g. predicting, explaining and concluding which prevents the overall level being higher. The pupil needs to use scientific knowledge and understanding more regularly when forming predictions. The pupil also needs to present her findings in different forms e.g. research work and the use of ICT to create tables and graphs where appropriate, and to draw conclusions that are consistent with the findings.

Best-fit level awarded: 4