

# Whitehouse Common Primary School



**Manageable Assessment**



# Summary of Content

This school have put an effective and manageable assessment process in place where they closely track pupil progress and act on any anomalies it suggests, whether these are lack of progress or misconceptions.

This exemplar should be easy to transfer to “Working Scientifically” and new content strands in the 2014 Primary Science Curriculum



# What the school says

We needed to make our Science Assessment manageable for all teachers so that we could **track children's progress** and **pick up on misconceptions** at an early stage.

By looking at a variety of assessment ideas, we were able to choose the most appropriate for us and adapt techniques to suit our school.

Our assessment is now clear and teachers know what is expected, when and how they will use it to enhance their provision and inform pupils of their targets and performance.

# What we did



- Split assessment into 2 categories: “science skills” and “knowledge and understanding\*”
- Assessment tasks were created to be undertaken at the end of each unit (Test or Investigation)
- Sublevel objective statements for each unit were given to support which sublevel to award

\*K & U was further subdivided into the 3 areas of science

# Assessment Tasks

Guidance for staff

Assessment task – test example

## Science end of unit assessment tasks

At the end of each unit of work we are going to either be doing a practical assessment task with the children or a test, depending on the nature of the unit. You can then use this to level the children.

For the last week of science for the unit both lessons will need to be used for assessment.

Please split the last two lessons into two parts, with half of the class adding to their mind map using a different coloured pen/pencil and doing an independent task (maybe on the laptops?) and the other half doing the practical assessment. This way you can observe 15 children at a time to level them, then swap over for the second lesson.

If you are doing the test then all children can do this at the same time.

## Test

The test questions are taken from test base and have the mark scheme at the bottom of the test. There is also a table at the end of the test with the level to give depending on the amount of marks the child has scored.

## Practical Assessment Task

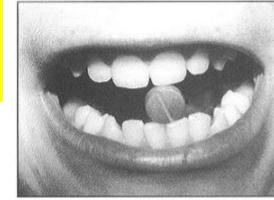
The task is planned with key questions included and assessment indicators at the bottom of the sheet to help you to level the children.

Assessment task – observation example

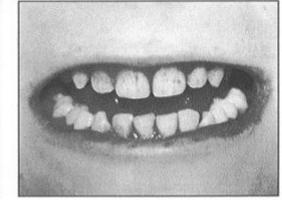
## 3A Teeth assessment (level 3)

### 1. Teeth

(a) The dentist gave this child a tablet which dyes the plaque on the teeth.



Before using coloured dye



After using coloured dye

Plaque leads to tooth decay.

What can you do to stop plaque building up on your teeth between visits to the dentist?



.....  
.....

1 mark

QCA Unit: 3D Rocks and Soils	Not in the QCA SOW
<b>Scientific Enquiry Focus:</b> Strand: obtaining and presenting results  Measuring length, recording in tables, bar charts	
<b>Learning Objectives:</b> <ul style="list-style-type: none"><li>To make careful measurements of length</li><li>To design and (or) simple tables to record results</li><li>To present results as a bar chart</li></ul>	
<b>Differentiated Activity:</b> <b>Context:</b> This activity is not in the QCA SOW. We have added it to extend the opportunities for investigative work. The investigation is: Craters! Investigate dropping asteroids (e.g. marbles) in sand and explore the craters produced. As a class brainstorm what could be changed and measured (could use post-it planning board) and allocate different variables to different groups (see below). Ask each group to make measurements and record them in a table.  Lower attainers- categorical variable, e.g. tennis ball/Ping-Pong ball/rubber ball, use prepared table, support with making measurements of crater to nearest cm (provide ruler marked in cm only). Put bars on partly prepared chart. Middle attainers- numeric variable e.g. height of drop, measure to nearest ½ cm fill in column headings and results on partially prepared chart, support with deciding on scales and axes for bar chart Higher attainers-choose own variables, measure to nearest mm, design own table to record results, make bar chart independently.	
<b>Key Questions:</b> <ul style="list-style-type: none"><li>Where on the table will you write down the things you have changed/measured?</li><li>What would be a good heading for this column?</li><li>Where on the bar chart will you show what you changed?</li><li>Where on the bar chart will you show your measurements?</li><li>Can you explain to me how you decided to draw your table of results?</li></ul>	

### Sc1 Assessment Indicators:

L2 – can measure using a simple ruler marked in cm with some help, can use a simple prepared table, can record results on a bar chart with help.  
L3 (low) – can measure to nearest ½ cm, can make decisions about where to put information in a simple table, can make a bar chart with some support

## ASSESSMENT GRIDS

- When the tasks have been complete use this alongside the sublevel statements to decide on which sublevel to give each child.
- There are sublevel statements for 'Skills' and 'Knowledge and Understanding' for every unit.

Sublevel	Statement	Assessment
1	I can recognise that plants are living and need water and light to grow	
2	I know that plants need water & light to survive and be healthy	
3	I know that seeds grow into flowering plants	
4	I can observe and describe the differences between plants grown in light and the dark	
5	I know that plants (living things) grow & reproduce	
6	I know & explain the effect that light, air & water has on plant growth	



## ASSESSMENT GRIDS

- Use the sublevel statements to give the children a sublevel for skills and a sublevel for knowledge and understanding.
- Record this on to the K and U grid and also on the Skills grid on Staff Shared - Science - Science Assessments - End of Unit Teacher assessments.
- These grids clearly show how each child is making progress through the year.

Knowledge and Understanding

Child	1	2	3	4	5	6
Child 1						
Child 2						
Child 3						
Child 4						
Child 5						
Child 6						
Child 7						
Child 8						
Child 9						
Child 10						

Skills

Child	1	2	3	4	5	6
Child 1						
Child 2						
Child 3						
Child 4						
Child 5						
Child 6						
Child 7						
Child 8						
Child 9						
Child 10						



# Assessment Grids

1a	I can recognise that plants are living and need water and light to grow I know that plants need water & light to survive and be healthy I know that seeds grow into flowering plants
2c	I can observe and describe the differences between plants grown in light and the dark I know that plants (living things) grow & reproduce I know & explain the effect that light, air & water has on plant growth
2b	I know that plants need food, water, air & light to survive & be healthy
2a	I know where a plant makes its seed I know the basic life cycle of a flower I know that plants need food, water, air & light to survive & be healthy and how to investigate this
3c	I know that different living things are suited to different environments I know the conditions for germination I know that the roots anchor the plant I know that the stem transports minerals & water

Grids and sub-level statements to help teacher make accurate judgments.

# Completed Assessment Grids

A2 SC2 Life Processes and living things		A3 SC3 Materials and their properties				A4 SC4 Physical processes	
Keeping Healthy	Life Cycles	Changing State	Gases around us	More about dissolving	Reversible and irreversible changes	Moon, sun and earth	Changing sounds
4c	4b	4c		4b		4b	4b
3b	3a	3b		3a		3a	3a
3b	3a	3b		3a		3a	3a
3a	4c	3a		4c		4c	4c
3a	4c	4c		4c		4c	4c
4c	4b	4c		4b		4b	4b
3b	3a	3a		3a		3a	3a
3a	4c	3a		4c		4c	4c

Science assessment grid for knowledge and understanding

A1	A2	S1	S2	Su1	Su2
3a	4c	4c	4c	4b	4a
3c	3c	3b	3b	3a	3a
3c	3c	3b	3b	3a	3a
3b	3b	3b	3b	3a	3a
3a	4c	4c	4c	4b	4b
3a	4c	4c	4c	4b	4a
3c	3b	3b	3b	3a	4c
3b	3a	3a	3a	4c	4b
3a	3a/4c	4c	4c	4b	4b
3a	4c	4c	4c	4b	4b
3a	4c	4c	4c	4b	4b
4c	4c	4b	4b	4b	4a

Science assessment grid for skills

A comprehensive picture of pupil achievement is built up.

# Examples of assessment in Year 3

“Aiming High” self assessment.

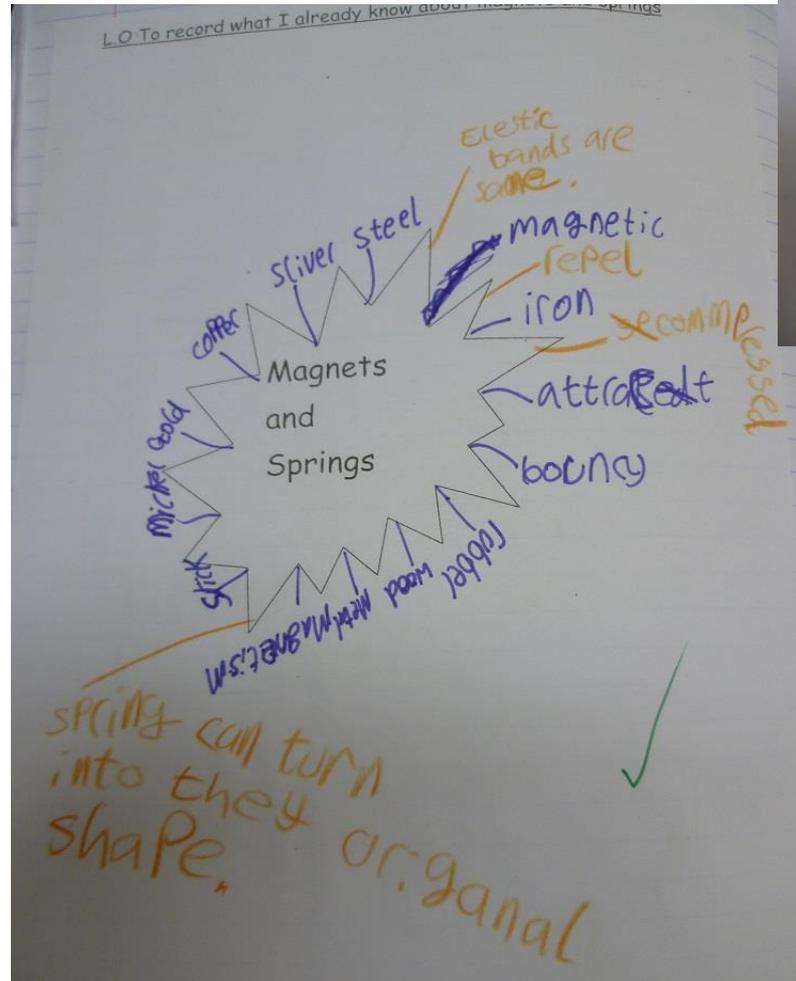
**Aiming High in Science**

Name: Evgen My target is: \_\_\_\_\_

**3E Magnets And Springs**

Level 3	I can describe the difference between a magnet and a magnetic material.	(+) A
	I can describe the forces when I stretch an elastic band and compress or stretch a spring.	(+) G
	I can say how magnets can be used to solve a problem.	(+) A
Level 3	I know that some materials are magnetic but others are not.	(+) G
	I can order springs according to their strength.	(+) A
Level 2	I know that there are forces between magnets and that, magnets can attract or repel each other.	(+) G
	I can give an example of where a magnet is used.	(+) G
	I can give an example of where a spring is used.	(+) G
Level 2	I know what happens when a paper clip is put next to a magnet.	(+) G
	I know that some magnets are stronger than others.	(+) G
Level 1	I know that magnets can stick together and push away from each other.	(+) ✓
	I know that magnets stick to some objects	(+) G

Start    Chec



Formative and summative mind-map.

1. Teeth

(a) Sue wants to find out how four different drinks affect teeth. Egg shell and teeth are made of the same type of material. Sue puts the same amount of egg shell in four beakers. She puts a different drink into each beaker.

Show how much drink Sue must put in each beaker for her test to be fair. Draw a line on beakers B, C and D.

Beaker A has been done for you.

1 mark

(b) After six days, Sue looks in the beakers. Beaker C has the least amount of egg shell left in it.

Tick ONE box to show which drink is most likely to be in beaker C.

lemonade  milk

tea  water

1 mark

(c) Sue knows that to keep her teeth healthy she should not eat too many sweets and other sugary foods.

Name ONE other thing that Sue can do to help keep her teeth healthy.

Brush for at least 2 times per 2 min

1 mark

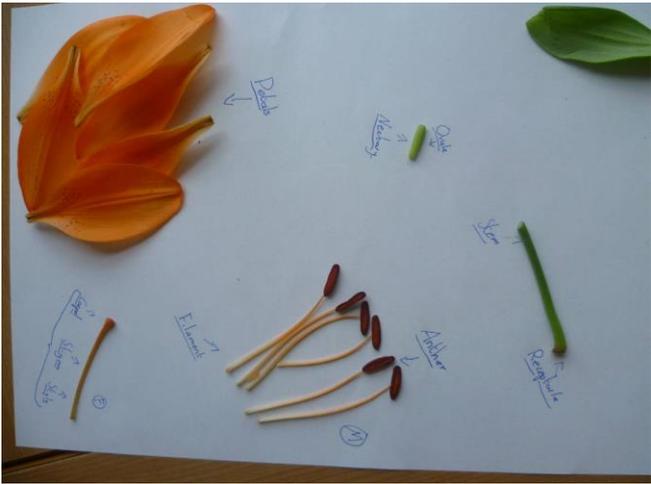
Written tests to check teacher judgements.

# The impact for our school was .....

- Staff are confident when completing assessment procedures and are therefore accurately assessing children half-termly.
- Misconceptions are addressed swiftly.
- Lack of progress is identified and acted on while there is still time.
- Children make progress and achieve good results.



# Science Subject Leaders Comments

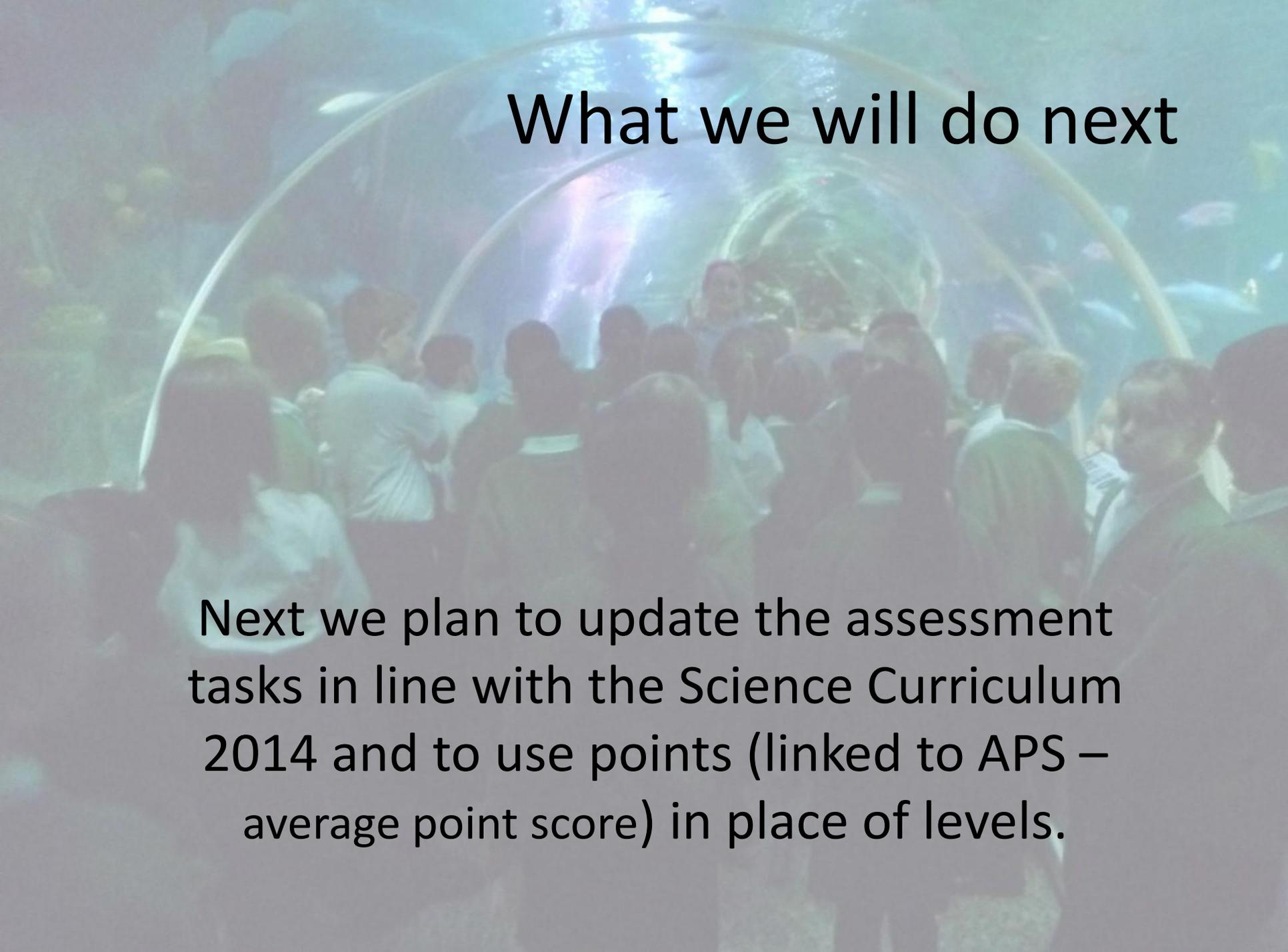


I strongly feel that accurate and regular assessment is paramount to address misconceptions and to closely monitor progress in all areas of science.

Our results at the end of KS2 help us to believe that we are on the right lines.

100% level 4+ and 85% Level 5

# What we will do next



Next we plan to update the assessment tasks in line with the Science Curriculum 2014 and to use points (linked to APS – average point score) in place of levels.