

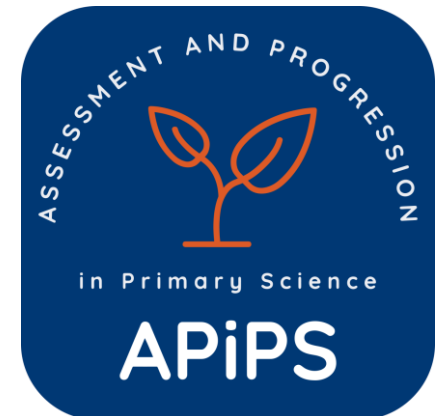
APiPS collection of First Level science enquiry examples

This Assessment and Progression in Primary Science (APiPS) collection includes examples for each stage of the enquiry cycle, matched to [Education Scotland's Benchmarks](#). We recommend that only **one part of each enquiry** is selected as the focus for any pupil recording, with the other parts being more discussion-based. This focus makes it easier to formatively assess children's learning, as recommended by the Teacher Assessment in Primary Science ([TAPS](#)) project. Different parts of the enquiry cycle can be the focus for different lessons, enabling coverage across the year.

This First Level (Primary 2-4, age 5-8) collection can be used to support teacher professional learning. It can be used in conjunction with the Early and Second Level examples to help build a shared understanding of progression in enquiry and investigative skills. Hyperlinks are included where activities align with TAPS lesson plans. New activities and examples will continue to be added to the SSERC website as they are co-created with teachers from across Scotland.



APiPS 2024 collection compiled with thanks to all schools involved.
For queries or to share further examples, please email
primary.science@bathspa.ac.uk





First Level: Plan and design

First level benchmarks: Collaborates with others to identify questions. Makes predictions about the scientific investigation/enquiry being planned. Contributes to the design for carrying out scientific investigations.

Daisies in a footprint.
Today we are going to be ecologists.
What is a Daisy?
flower dark green stem
yellow middle small + tiny
white petals on the outside but you can get
purple part behind larger the petals. variegated

Where should we look for Daisies?
your garden
trim trail outdoor classroom
outside grass - across from school.
flowerbeds fields

Where do you think we will find the most daisies? Why?
in a grassy area Sunny area open space
in a field with horses/sheep/cows - for them to eat.
no trees/not many

P3 children constructed boats that could be raced across the table by blowing.



Investigating <u>www.precious.org...the best...boulder...</u>	
The variables we could change	The variables we could measure/observe
	<u>The ice melting</u> <u>temperature</u> <u>size of ice</u>
We will change	We will measure/observe
<u>The method</u>	<u>Size of ice</u>
Our question is...	
If we change	what will happen to ?
To make it a fair test we will keep these factors the same	Our predictions are....
<u>The temperature</u>	<u>The location</u>
<u>How many times you wrap something round it.</u>	<u>The size</u>

As a class, P4 children used a planning board structure to identify what to change and measure when investigating ice melting.

P3/4 children discussed where more/fewer daisies might grow and why. They planned where they would go and how they would use a footprint shape to sample each area. (Daisy footprints).

First Level: Carry out



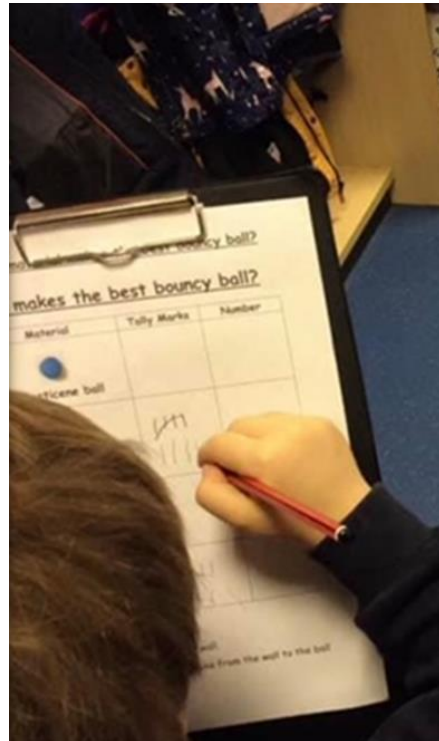
First level benchmarks: Identifies risks & hazards & ensures safe use. Collaborates to undertake investigations. Observes, collect info & makes measurements using appropriate equipment & units.



P3 children collected natural materials and made careful observations.



P2/3 children tested the bounciness of different balls by measuring the rebound off a wall (Dunlop balls). They counted in footsteps and recorded their findings in a tally chart.



P4/5 children investigated balloon rockets. They tried measuring distances with different rulers and measuring tapes. They also measured the time taken for the balloon to stop.



First Level: Analyse, interpret and evaluate



First level benchmarks: Interprets findings and discusses links to the original question. Reports on limitations of their investigation & possible improvements. Relates findings to their wider experiences of the world around them.

IS it Magnetic

Object	Prediction	Result
DESK	YES	YES
STAPLE	yes	NO
remover	No	
me	YES	
ME		

- ‘I was surprised that it stuck to my paperclip.’
- ‘I thought it would stick to the door handle.’
- ‘I thought iron things were not going to stick.’



P3/4 children evaluated their own and others' marble runs, noting on post-its what worked well, what didn't and possible ways to improve

Our marble fell many times but we fixed it and it was ok and didn't drop again

Better stopper

Making sure that all the paper is not cut before needing it.

P3 children explored which materials would be attracted to a magnet, discussing their findings about whether all metals were attracted to a magnet.

First Level: Present findings



First level benchmarks: Presents information using a range of methods inc. tables, charts/diagrams, with labels/scales. Reports in writing, orally or visually. Structures, with support, to present findings in a coherent & logical way.

P4/5 children investigated the estimated age of local trees by measuring their girth. They recorded their measurements in a table.



	Tree Species (Name)	Estimate age in years	Girth of tree in cm	Age of tree (Girth divided by 2.5)
Tree 1	beech	46	147cm	58
Tree 2	Alder	78	344cm	136
Tree 3	beech	12	78cm	31
Tree 4	beech	17	28cm	11
Tree 5	beech	6	15cm	6

P3 children presented their o-wing results in a scaffolded block graph.

