

Using the Resource

The idea behind this resource has been gathered together and developed over time, so I will try to explain how it could be used, and how others have used it.

By starting with the 'Being Scientific' card you can remind children that this is a cyclical process, with questions leading to investigation, answers and then more questions (simply put!).

Sharing that only the part you want to develop today is the part that will be assessed (usually on paper), so you may be looking at investigating some science that you want the children to gain the correct answer to or the right pattern, such as how number of cells affects brightness of bulbs. Then you would focus on the analysis and conclusion skills. You would then perhaps:

- discuss as a class the rest of the parts such as what they think could happen;
- provide a method and the list of equipment (or with older children discuss what is required);
- provide a recording format (basically you make everything more simple and straight forwards for the parts you aren't assessing!) until you reach the analysis and conclusion.

This is where the meat of the lesson would be independent work of the children... using the progression sheets as helpful prompts to develop their writing and ideas. These start almost as 'cloze' procedure for younger children developing into a range of open questions for older ones.

The colours on some of the sentences are related to variables:

Orange – what would change (and you still change something in a survey!)

Green – what you would measure

Red – what would be controlled.

This doesn't mean all the resources are based on 'fair tests': for example with a survey, you change the 'person' you are questioning in the survey; keep the question the same and measure the response – but in no way is it a fair test!

You could have the progression cards on the desk all the time – you could have display made of each stage to show progression – you could use some of the cards in other lessons, e.g. maths and geography for presentation or English for the conclusions to help with continuity..... These have all be tried by other teachers in class, very successfully!

Being Scientific

Evaluate and Refine

Do you trust your results? Why?
What could you do or change about what you did, to trust them more?
What new questions are there?

Explore & Think Scientifically

What are you trying to find out? What questions and ideas do you have? Who uses this or where is it used in everyday life?

Ask Questions

What do you want to find out? What are you changing or measuring? Does your question tell others this?

Analyse and Conclude

What is the answer to your question?
What does your evidence mean?
Are there any patterns? What did you find out? How can you tell? Why?
Is there anything odd?

Observe over time?

Fair Test?

Research?

Pattern Seek?

Classify?

Survey?

Plan

How can you answer your question?
What type of enquiry should you use? Why?

Present Information and Communicate

How will you show others what you found out? What science words can you use?

Carry it Out

Do your investigation!
Work with others

Observe & Measure

What will you need? How will you use it? However often will you do it? How will you record it?
How will you make it safe?



Being Scientific

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Ask Questions
What do you want to find out? What are you changing or measuring? Does your question tell others this?

Analyse and Conclude
What is the answer to your question? What does your evidence mean? Are there any patterns? What did you find out? How can you tell? Why? Is there anything odd?

Today's focus...

Plan
How can you answer your question? What type of enquiry should you use? Why?

Observe over time?
Fair Test?
Research?
Pattern Seek?
Classify?
Survey?

Present Information and Communicate
How will you show others what you found out? What science words can you use?

Carry it Out
Do your investigation!
Work with others

Observe & Measure
What will you need? How will you use it? However often will you do it? How will you record it?
How will you make it safe?



What happened



We found out that



The answer to our question is



What we found out



I found out that made the

.....

Our guess was / wasn't right

- long - short
- big - small
- hot - cold
- bright - dim
- fast - slow
- loud - quiet

The answer to my question is

.....



What we found out and why



longer - shorter
bigger - smaller
hotter - cooler
brighter - dimmer
faster - slower
louder - quieter
heavier - lighter
greater - lesser
increases - decreases

I found out that made the
.....

What is the answer to your question?

My prediction was / wasn't right



I think this was because

Can you explain why?



Conclusion of what happened and why



I found out thatthe

Which words from the box could you use to describe your pattern?

longer - shorter
bigger - smaller
hotter - cooler
brighter - dimmer
faster - slower
louder - quieter
heavier - lighter
greater - lesser
increases - decreases

What is the answer to your question?

Was your prediction correct?

This is because.....

Can you explain why?



What our conclusion is



Were there any patterns in your graph?
What comparatives could you use to describe them?

- longer - shorter
- bigger - smaller
- hotter - cooler
- brighter - dimmer
- faster - slower
- louder - quieter
- heavier - lighter
- greater - lesser
- increases - decreases

What is the answer to your question?

Was your prediction correct?
What did you find out?

- I conclude that...
- My research shows...
- My experiment shows that...
- My graph/results show...



What is your conclusion?
Can you explain why scientifically?

- This can be explained by...
- As I predicted...
- This is because...
- The reason for this is...



Concluding Explanation



Can you explain any patterns you found using your graphs?

Does all your evidence support your conclusion?

longer - shorter
bigger - smaller
hotter - cooler
brighter - dimmer
faster - slower
louder - quieter
heavier - lighter
greater - lesser
increases - decreases

What is the answer to your question?

Was your original idea or prediction correct?



What conclusion can you come to?

Can you explain why, using background information and scientific key words?

- I conclude that...
- My research shows...
- My experiment shows that...
- My graph/results show...

What further questions could you ask or investigate?

- This can be explained by...
- As I predicted...
- This is because...
- The reason for this is...

