



Developing good talk skills in science

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Six activities for developing good talk skills in primary science

These activities are designed to help children acquire and practise the skills of rational argument. They should take around half an hour each. Pace should be maintained and the focus must be on developing argument skills rather than any background knowledge relating to the context of the activity.

The given order of the activities is recommended as to some extent they build on each other. However, they can be used in a different order if this is felt to be more appropriate. The activities can also be used to observe how well the groups work together to help plan good talk groups for future work in science.

Notes about each activity

1. Who stole the orange? Children should be encouraged to link data with a claim. At the same time, they should recognise that the data are not proof of the claim. They may also be able to use data to support a counter-argument.

2. Is it evidence? Children need to decide exactly what evidence supports the claim being made. They should be able to explain how they made their decision.

3. True or false? This will require recall of some knowledge and understanding about sound. The focus in this activity is reaching agreement about the statements, supporting their claim with evidence and where they disagree, giving counter arguments with evidence (a rebuttal).

4. Is it alive? Has it ever been alive? This should generate some good argument as children are unlikely to agree initially: a shell, although not living now, was once part of a living animal; an apple may be seen as similar, although technically it is still living as the seeds within have the potential to grow into a new plant; although children may know that rubber comes from a tree, they may have difficulty in seeing something so clearly part of an inanimate machine as having ever been alive; water may also cause difficulties as, although not living, it is essential for life.

5. Weighing up the evidence This activity challenges children to think of both sides of an argument before making a decision about their own point of view.

6. Odd one out This is similar to the previous activity only more open ended. There is not a right answer and children may think of very diverse reasons for their choice. Encouraging them to think of similarities first will help them be rigorous in their argument. This can be repeated with other objects.



1. Who stole the orange?

An orange disappeared from Mrs Peel's desk at playtime. Two people are suspects as they were seen in the classroom at some point during playtime. The headmaster has two theories about what might have happened:



1. Mr Zest took the orange.

This is what he said: 'I did not steal the orange. I went into Mrs Peel's classroom to borrow a pencil. I had an apple at playtime. I ate it in my classroom.'

2. Chloe Pip took the orange.

This is what she said: 'I did not steal the orange. I had a banana at playtime. I ate it in the playground. I went into Mrs Peel's classroom to get my skipping rope.'

The headmaster has some evidence that will help him decide. Read it yourself so you can decide which theory you think is most likely.

There was orange peel in the bin in the playground.
Mr Zest has a pot of pencils on his desk in his classroom.
Chloe Pip played with a skipping rope at playtime.
There was no apple core in the bin in Mr Zest's classroom.
There was a banana skin in the bin in the playground.



Remember! You have to support your choice of theory with evidence AND be able to explain any evidence that does not support your theory.

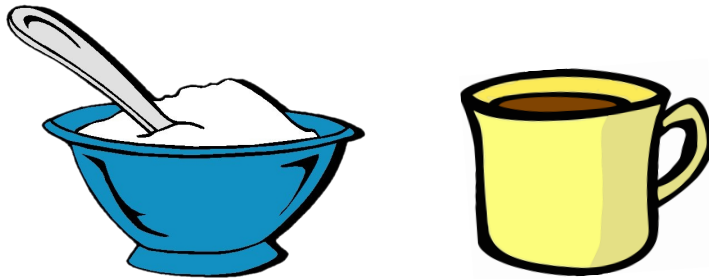


2. Is it evidence?

Some children did an investigation to find out more about sugar dissolving. They made lots of observations and measurements and had lots of ideas.

At the end they said one of the things they had found out: was:

'Sugar dissolves more quickly when the water is hotter.'



Read the statements the children made about sugar dissolving. Which could they use as **evidence to support what they found out**? Can you **explain** how you decided? Are some statements **stronger or weaker evidence** than others?

Sugar dissolved in water from the cold tap and the hot tap.
When the water was not stirred, the sugar took two minutes to dissolve but when it was stirred, the sugar dissolved in one minute.
The sugar took one minute to dissolve in hot water and two and a half minutes to dissolve in cold water.
Caster sugar dissolved more quickly than granulated sugar.
When people put sugar in their tea it dissolves quickly.
The sugar dissolved more quickly in the water by the radiator than the water on the table.



3. True or false?



Decide in your groups whether these statements are true or false

Sound cannot travel around corners.

Loud sounds can make you deaf.

Sound travels better through solids than gases.

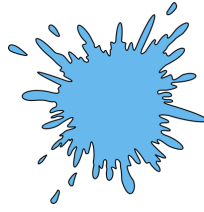
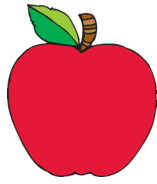
Small musical instruments make quieter noises than big ones.

You can hear sounds underwater.





You cannot hear sound on the moon



4. Is it alive? Has it ever been alive?



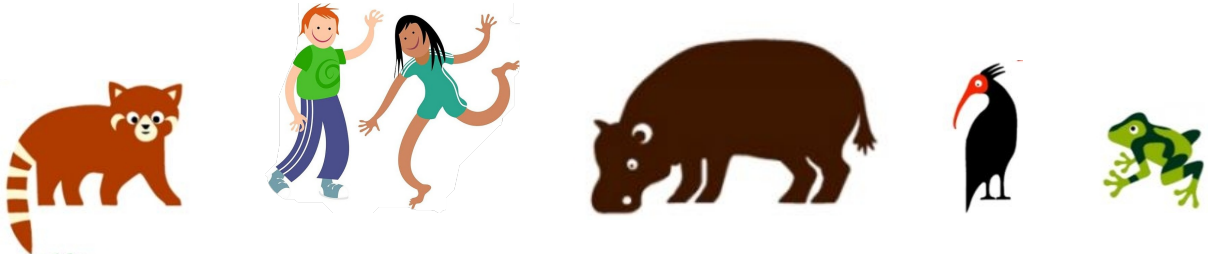
Decide if each item is alive, has once been alive or has never been alive

	Alive? Once alive? Never alive?	Why we think this (evidence for)	What makes us doubt this (arguments against)
Shell 			
Apple 			
Rubber tyre 			
Water 			



5. Weighing up the evidence

Read the statement below. It may or may not be true. How will you decide? What arguments can you construct to show that it could be true? What arguments can you construct to show that it may not be true? Is there any other evidence that would help you decide?



'Humans are not animals'

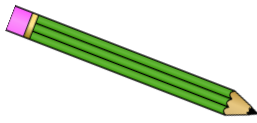
Arguments for

Arguments against

Further evidence we need to help us decide



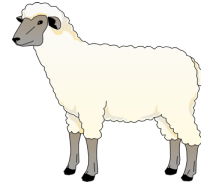
6. Odd one out





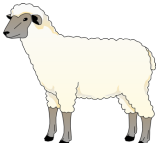
Pencil



Bag of sweets



Sheep

<p>Why the pencil could be the odd one out</p> 	
<p>Why the sweets could be the odd one out</p> 	
<p>Why the sheep could be the odd one out</p> 	

We think the odd one out is _____ and not the others because

