



## Assessing Science at Gawber

We all assess in many ways throughout the day and in all lessons, making both formative and summative assessments, and this helps us know what we need to teach, how best to teach and what the children have learnt.

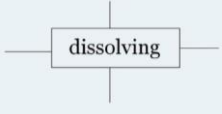
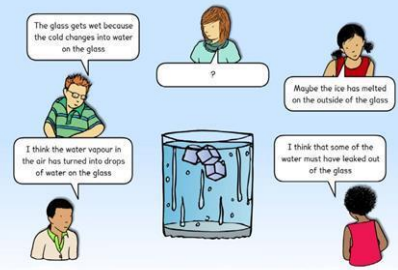
This is how we assess Science at Gawber:

- **Checking prior knowledge and understanding**
  - Following our teaching sequence provides opportunities for children to revisit knowledge from previous lessons and ensures that skills, knowledge and understanding is built on sequentially over the years too.
  - We are aware, from our focused strand progression documents, what children have previously been taught. Staff can use this as a tool to ensure children have retained knowledge and understanding from previous years. If not, this is recapped before moving on.
  - If gaps in learning are found, then reading non-fiction books, providing homework projects and having time to discuss these issues as a class helps get them ready for their next steps in learning.
- **'Day to Day' assessing and feedback**
  - During Science lessons, we are constantly assessing our children and giving instant support and feedback if needed.
- **Use of Pre and Post Unit/ Topic assessments**
  - **Pre Assessment**

Before the start of every new Science topic, we gauge what the children already know so we know what has to be taught. This can be done in a range of ways:

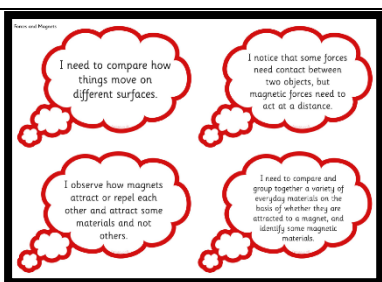
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| <b>Mind Map or Knowledge Shower</b> prior to starting the unit. Children are given the topic title and writes down or talks about what they already | <b>Vocabulary understanding check</b> prior to learning e.g. can the children read them? Understand them? Use them in a sentence? Talk about what they mean? Give a definition? | <b>Concept maps</b> provide children with a wider range of words and/ or pictures and arrows which they need to connect, arrange and discuss. This can be |
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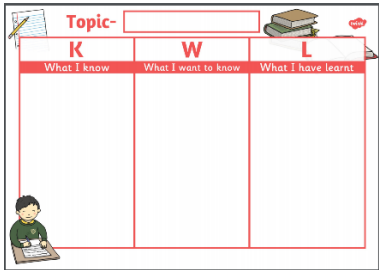
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| <p>know about what they will be learning.</p> <p><b>Word association</b> is a basic way of children to record what they know about a particular concept.</p> <p>This allows them to show how different areas of knowledge are linked and it shows connections between apparently unrelated aspects of understanding e.g.:</p> <p>Write the word 'dissolving' - what do you link/associate with that word?</p>  | <p><b>Concept Cartoons</b> is where children are given a concept cartoon based on their unit. They then study the cartoon and the responses made on it and decide what their opinion or idea is about it. This could be recorded in writing, pictures or discussed as a group or class. This allows us to see their understanding and misconceptions of that key scientific concept. This activity also shows children that science is not just straight facts; it can be a matter of opinion and is certainly not straightforward!</p> | <p>done individually, by a group or as a whole class.</p>                                                                                                                                               |
| <p><b>KWL Grid</b> where children complete a grid for the topic about what they <b>know</b> already, what they <b>want</b> to know and after the topic, what they have <b>learnt</b>.</p>                                                                                                                                                                                                                                                                                                       | <p><b>Questioning / Quiz</b> allows us to start the topic by a quiz / questions involving key facts about the topic.</p>                                                                                                                                                                                                                                                                                                                                                                                                                | <p><b>Positive, Minus Interesting</b> is where children come up with something positive, negative and interesting about a key question or science concept from the unit e.g. What if there was no friction? Answers will allow us to gauge what children already know about the topic.</p> |

### Post Assessment

We look for evidence of their learning after a Science Topic to ensure they have grasped the key areas of learning. This can be done in a number of ways:

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| <p><b>Re visit the Mind Map or Knowledge Shower</b> - How much more do they know and understand now?</p>                                                                                                                                                     | <p><b>Re visit Vocabulary</b> and check how many key vocabulary words they can now define, explain and use in sentences to show their understanding of the topic.</p> | <p><b>Re visit Concept Cartoons or Use Concept Cartoon as an assessment tool</b> - Children given cartoon again and show the knowledge gained by elaborating and answering more scientifically and accurately than before.</p>  |
| <p><b>Child Self Assess</b> and consider their learning:</p> <ul style="list-style-type: none"> <li>"I used to think that..., but now I know that..."</li> <li>"My favourite piece of work in this topic was..."</li> <li>"I liked it because..."</li> </ul> |                                                                                    | <p><b>Self and Peer assessment</b> allows children to assess themselves against learning outcomes for the topic e.g. check lists, 'I can' speech bubbles etc.</p> <p>This allows children to see where their next steps for</p> |



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| <ul style="list-style-type: none"> <li>"The most interesting thing I learnt was..."</li> </ul>                                                                                 |                                                                                                                                                                                                                                                                                                                                                            | learning are too E.g.' I need to' thought bubbles.                                                                                                     |
| <p><b>Re visit KWL grids</b> where children can now add to the 'what I now know' column.</p>  | <p><b>Observation and Questioning</b> of children at work, individually, in pairs, in a group and question is a great assessment tool. We take time to listen to children's ideas and discussions and address misconceptions and encourage explanation. We can also look for further evidence of learning in books and by the outcomes of experiments.</p> | <p><b>End of Unit Summative Tests</b> are available for each year and all units which some use as a further tool to evidence the child's learning.</p> |

- Assessing the children's 'Working Scientifically' skills**
  - Using the Working Scientifically posters as a class, group or individual to discuss, date and traffic light the skills covered and learnt throughout the year will help monitor and assess their working scientifically and enquiry skills.
  - Children are monitored in lessons and observed during practical sessions to help develop accurate use of vocabulary and to dispel any misconceptions.
  - A '*skills assessment*' could take place by doing an investigation and seeing if the skills needed were demonstrated.
- The Key Question**
  - This is a way of checking the subject knowledge retention throughout the year
  - The Key Questions for units will be asked to children after a topic is finished and revisited throughout the year to see if they can still answer it accurately.
  - We can use the Key Questions as an end of term / year quiz to see if they have retained knowledge of previous science topics and spend time refreshing key principles and vocabulary if needed.
  - 'Snapshots of Science' sheets are available for KS2 units. These sheets recap and review key skills and to test their embedded knowledge and understanding of the key questions.



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| <p><b>SWs</b><br/>What is the name of the process that turns a liquid into a solid?</p> <p>Where do particles move most (which state)?</p> <p>When does condensation happen?</p> <p>Why do solids turn into liquids?</p> <p>Who used the term 'absolute zero'?</p> | <p><b>Key word unscramble</b><br/> <b>1. r e p i c i a t i o n</b><br/>         Hint: These particles can fall from the sky.<br/> <b>2. n o c n e d e s</b><br/>         Hint: A gas turns into a liquid.<br/> <b>3. g s a e s</b><br/>         Hint: They don't have a fixed shape but they do have a mass.<br/> <b>4. l o d s i s</b><br/>         Hint: The particles in these are close together and can not move.<br/> <b>5. e e r f i z n g</b><br/>         Hint: When a liquid turns into a solid.<br/> <b>6. t m l e</b><br/>         This is when a solid changes to a liquid.</p> | <p><b>3, 2, 1</b><br/> <b>Name 3 states of matter:</b></p> <p><b>Describe 2 ways to change the state of a material:</b></p> <p><b>Describe the movement of particles in 1 state of matter:</b></p> | <p> <b>Y4 States of Matter</b></p> |
| <p><b>Speedy Pencils</b><br/>         Write down as much as you can remember about the water cycle.</p>                                                                                                                                                            | <p><b>Quiz</b><br/> <b>Which of these happens when a solid changes to a liquid?</b><br/>         a) Freezing b) evaporating c) melting<br/> <b>Which of these happens when a liquid turns into a gas?</b><br/>         a) Freezing b) evaporating c) melting<br/> <b>Which of these happens when a gas changes to a liquid?</b><br/>         a) Freezing b) evaporating c) condensing<br/> <b>b) Which of these does water turn into when it evaporates?</b><br/>         c) Snow b) sleet c) water vapour</p>                                                                               | <p><b>High Five</b><br/>         Write the names of 5 examples of liquids below:</p>                             |                                                                                                                       |

## ● **Back of the Book Work**

- In KS2, Children use the back of the book for quick activities which may be part of the science lesson or a stand-alone task.
- These 'back of the book' activities allow for previous learning to be checked, retention of key vocabulary and understanding to be checked as well as being a way of developing further their enquiry skills like asking and answering and answering questions in a range of ways.
- Task are often practical based, quick, effective and allow instant assessment of children's skills and knowledge of the chosen area.
- Teachers often use the website 'Explorify' in the 'back of the book' work as it promotes discussions and scientific thinking using a range of interesting stimuli.

## ● **Pupil progress documents**

- Using the above assessment opportunities and considering how the children have responded throughout the unit, we complete pupil progress documentation commenting on the progress and achievements of the children.
- We complete pupil progress forms and decide if a child is WTS, EXS or GDS.