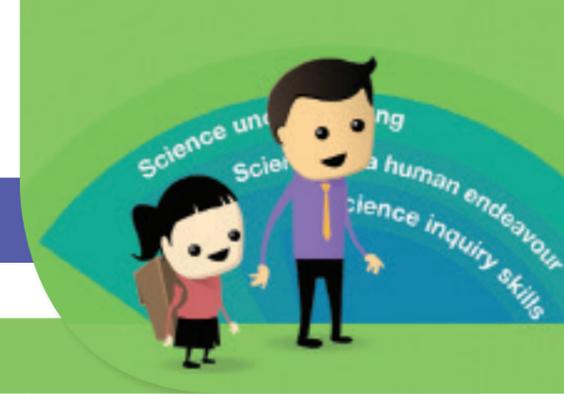


# The BitL tool – science years 3–4



## Science: Years 3–4

<p><b>What do you notice?</b> Make observations in order to group similar things together and then name the group (classify). What observations change over time?</p>	<p><b>What patterns and relationships can you see?</b> Group according to similarities and compare differences. Using prior knowledge describe patterns and relationships you see. Identify exceptions.</p>	<p><b>What do you think if?</b> Using prior knowledge and specific examples predict how patterns and relationships change within a system.</p>	<p><b>How can you explore?</b> Identify questions that can be investigated scientifically. Plan and conduct an investigation considering safety and fairness.</p>	<p><b>How can you review and communicate?</b> Record data and represent ideas in diagrams, simple tables and graphs, physical representations and simple reports in order to identify trends. Compare your results with your predictions, suggesting reasoning.</p>	<p><b>So what? What next?</b> Describe how science knowledge could help people to understand the effect of their actions.</p>
<p><b>Pedagogical questions:</b></p> <ul style="list-style-type: none"> <li>• What do you see/hear/smell/taste/feel?</li> <li>• What features/properties are the same?</li> <li>• What features/properties are different?</li> <li>• Which features/properties change over time?</li> <li>• What is interesting?</li> </ul>	<p><b>Pedagogical questions:</b></p> <ul style="list-style-type: none"> <li>• What similarities and differences are there?</li> <li>• How could you group them? Are they always the same?</li> <li>• How does it change?</li> <li>• What patterns do you notice?</li> <li>• Is there anything unusual?</li> <li>• What is happening?</li> <li>• What questions do you have?</li> <li>• What is it like?</li> </ul>	<p><b>Pedagogical questions:</b></p> <ul style="list-style-type: none"> <li>• Is there another way to group them?</li> <li>• What would happen if you added/removed...?</li> <li>• If we changed... then how might that affect...?</li> <li>• Scientists currently think..., how does this relate to your idea?</li> </ul>	<p><b>Pedagogical questions:</b></p> <ul style="list-style-type: none"> <li>• What are you going to investigate?</li> <li>• How will you investigate?</li> <li>• What ideas do you have?</li> <li>• What could you try?</li> <li>• Which is your best idea?</li> <li>• How could you test your idea?</li> <li>• How can you keep yourself and others safe when doing the investigation?</li> <li>• How could you make your test fairer?</li> </ul>	<p><b>Pedagogical questions:</b></p> <ul style="list-style-type: none"> <li>• How might you represent your data and ideas?</li> <li>• How will you communicate your thinking?</li> <li>• How might grouping and sorting help you?</li> <li>• How might you show other students the groupings you have decided on?</li> <li>• What tools (list, table, graph, drawing) might you use to identify patterns and share this information?</li> <li>• How could you improve your investigation?</li> <li>• How did your thinking change?</li> </ul>	<p><b>Pedagogical questions:</b></p> <ul style="list-style-type: none"> <li>• Who might be interested in this? Why?</li> <li>• What else could you investigate?</li> </ul>

### Example: Year 3 – Biological Sciences

*Living things can be grouped on the basis of observable features.*

<p>What features do living things have? What features do non-living things have? Which features of living things change as they grow?</p>	<p>How are living things the same as and/or different to each other? How could you group them? Are there any exceptions?</p>	<p>Can you think of another way we could group living things? What would happen to your grouping if you had to include/remove this criteria...? (eg if you removed all living things). How could you change the rules to include...?</p>	<p>Can you find out if there are any exceptions to the sorting rules? Which living things do your rules not work for? How could you include them? What ideas do you have? What could you try? Which is your best idea? How could you test your idea? Which other grouping systems could you investigate? What will you record? What safety aspects do you need to remember?</p>	<p>How might you use a list, diagram or table to record and share the living and non-living groups that you have decided on? What else could you use? What are the advantages and disadvantages of each method? How did you change your rules?</p>	<p>Who might be interested in/need to know about grouping living things? Why? How might you use this in your life? What else could you investigate?</p>
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