

Science capabilities and ARBs map

Science capabilities and ARBs map

Lorraine Spiller, 2018

Below is a map of the ARBs and the Science capabilities:

Science capability	Level 1	Level 2	Level 3	Level 4	Level 5
<p>Gather and interpret data ⓘ</p> <p>We gather data by using our senses-sight, hearing, touch, taste, and smell-to make observations. Making careful observations can include measuring, noticing patterns, and testing predictions.</p> <p>Interpreting data involves making meaning from observations. A conclusion you draw from observations is called an "inference".</p>	Gather and interpret data at Level 1	Gather and interpret data at Level 2	Gather and interpret data at Level 3	Gather and interpret data at Level 4	Gather and interpret data at Level 5

<p>Use evidence ⓘ</p> <p>In science, explanations need to be supported by evidence that is based on, or derived from, observations of the natural world. Science ideas</p>	Use evidence at Level 1	Use evidence at Level 2	Use evidence at Level 3	Use evidence at Level 4	Use evidence at Level 5
---	-------------------------	-------------------------	-------------------------	-------------------------	-------------------------

provide the theoretical framework for interpreting evidence.					
<p>Critique evidence ⓘ</p> <p>To evaluate the trustworthiness of data, we need to know about the qualities of science evidence such as observations, claims, and tests. We need both methodological knowledge and statistical knowledge to know what sorts of questions to ask about the data and how it was gathered.</p>	Students at this level could not answer questions that asked them to critique evidence.	Students at this level could not answer questions that asked them to critique evidence.	Critique evidence at Level 3	Critique evidence at Level 4	Critique evidence at Level 5

<p>Interpret representations ⓘ</p> <p>Scientists represent their ideas in a variety of ways, including graphs, charts, diagrams, written texts, and models. A model is often used when the idea, object, process, or system scientists want to talk about is not directly observable. It is often a limited representation of the "thing" itself</p>	Interpret representations at Level 1	Interpret representations at Level 2	Interpret representations at Level 3	Interpret representations at Level 4	Interpret representations at Level 5
---	--------------------------------------	--------------------------------------	--------------------------------------	--------------------------------------	--------------------------------------

the thing itself.

<p>Engage with Science ⓘ This capability requires us to use the other capabilities to engage with science in real-life contexts. It involves taking an interest in science issues, participating in discussions about science, making judgements and suggesting actions to solve issues.</p>	<p>Engage with Science at Level 1</p>	<p>Engage with Science at Level 2</p>	<p>Engage with Science at Level 3</p>	<p>Engage with Science at Level 4</p>	<p>Engage with Science at Level 5</p>
---	---------------------------------------	---------------------------------------	---------------------------------------	---------------------------------------	---------------------------------------