

Resource 2 - Scientific Habits



Scientific habits

- **Open-mindedness** - Being receptive to new ideas, prepared to consider the possibility that something is true and willing to change ideas in the light of evidence
- **Scepticism** - Using critical questioning, adopting a critical appraisal approach, only according to provisional status to claims until proved otherwise
- **Rationality** - Appealing to good reason and logical arguments as well as a need to revise arguments in the light of evidence and argument
- **Objectivity** - Adhering to accepted modes of inquiry in different disciplines and recognising the need to reduce the idiosyncratic contributions of the investigator to a minimum and always looking for peer scrutiny and replication of findings
- **Mistrust of arguments from authority** - Treating arguments sceptically irrespective of the status of the originator
- **Suspension of belief** - Not making immediate judgements if evidence is insufficient
- **Curiosity** - Demonstrating a desire to learn, inquisitiveness and a passion for discovery Adapted from Çalik and Coll, 2012¹

Taken from - (2014a) *Thinking Like an Engineer - Implications for The Education System, a report for the Royal Academy of Engineering Standing Committee for Education and Training, full report*. rep. Available at: www.raeng.org.uk/thinkinglikeanengineer (Accessed: 2024).

¹ Çalik, M., & Coll, R. K. (2012). Investigating Socioscientific Issues via Scientific Habits of Mind: Development and validation of the Scientific Habits of Mind Survey. *International Journal of Science Education*, 34(12), 1909–1930. <https://doi.org/10.1080/09500693.2012.685197>

