

Resource 2

Scientific habits of mind

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 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, 2012

Taken from - 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, May 2014