

Managing Misinformation — Competency Checklist

SEP 8: Evaluating & communicating information

● epistemic trust

- I can describe how specialized knowledge in our society is distributed among experts in many fields, including science.
- I can recognize the limits of my own scientific knowledge.
- I can acknowledge when others know more about a scientific topic that I do, and respect their contributions.

● expertise

- I can exercise informed trust in drawing on the expertise of others, including identifying who is an expert and who is not, and explaining why.

● credibility

- I can identify credible sources of scientific information, distinguish them from unreliable or questionable sources, and explain why they are credible.

● role of media and filters in communication

- I am aware how information about science is communicated through various media and can evaluate how intermediaries in the process may alter or possibly misrepresent the nature of the claims.

● source bias

- I can inquire into the motives behind appeals to science, especially those related to political, commercial, or ideological contexts.

● conflict of interest

- I can describe how sources of funding may influence science: the questions that are asked, and the results and arguments that are published.
- I can describe how conflict of interest may bias the content of claims in public media.

● persuasive and deceptive tactics

- I can recognize persuasive and deceptive tactics in media messaging and provide several examples related to science.

● internet, social media, AI

- I can describe several benefits and potential pitfalls of electronic and social media related to trustworthy scientific information.
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SEP 7: Engaging in Argument from Evidence

● peer review / criticism

- I can describe the process of peer review in science and explain how scientific communities develop consensus.
- I can explain how competent scientists may justifiably disagree, including some examples.
- I can describe how scientists resolve their disagreement through appeals to the evidence.
- I can describe several historical cases of error or bias among scientists and how the scientific community identified and corrected them.

● consensus

- I can explain why consensus in science is important (when compared to the claims of individual scientists).

● scientific institutions

- I can identify many scientific institutions that serve as benchmarks for trustworthy scientific information.
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Cross-Cutting Concepts and the Nature of Science

● scientific uncertainty

- I can distinguish between settled science and the open uncertainties of ongoing research.
- I can explain how scientific concepts may change with new evidence.
- I can explain the importance of empirical evidence in substantiating claims.