

# Supporting students in the Sciences

## IA3: Research investigation

Effective processes and practices: Developing the research question

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### Purpose

Effective implementation of a research investigation involves five processes organised around a research question, as shown below. This resource supports students in developing the research question from the claim.



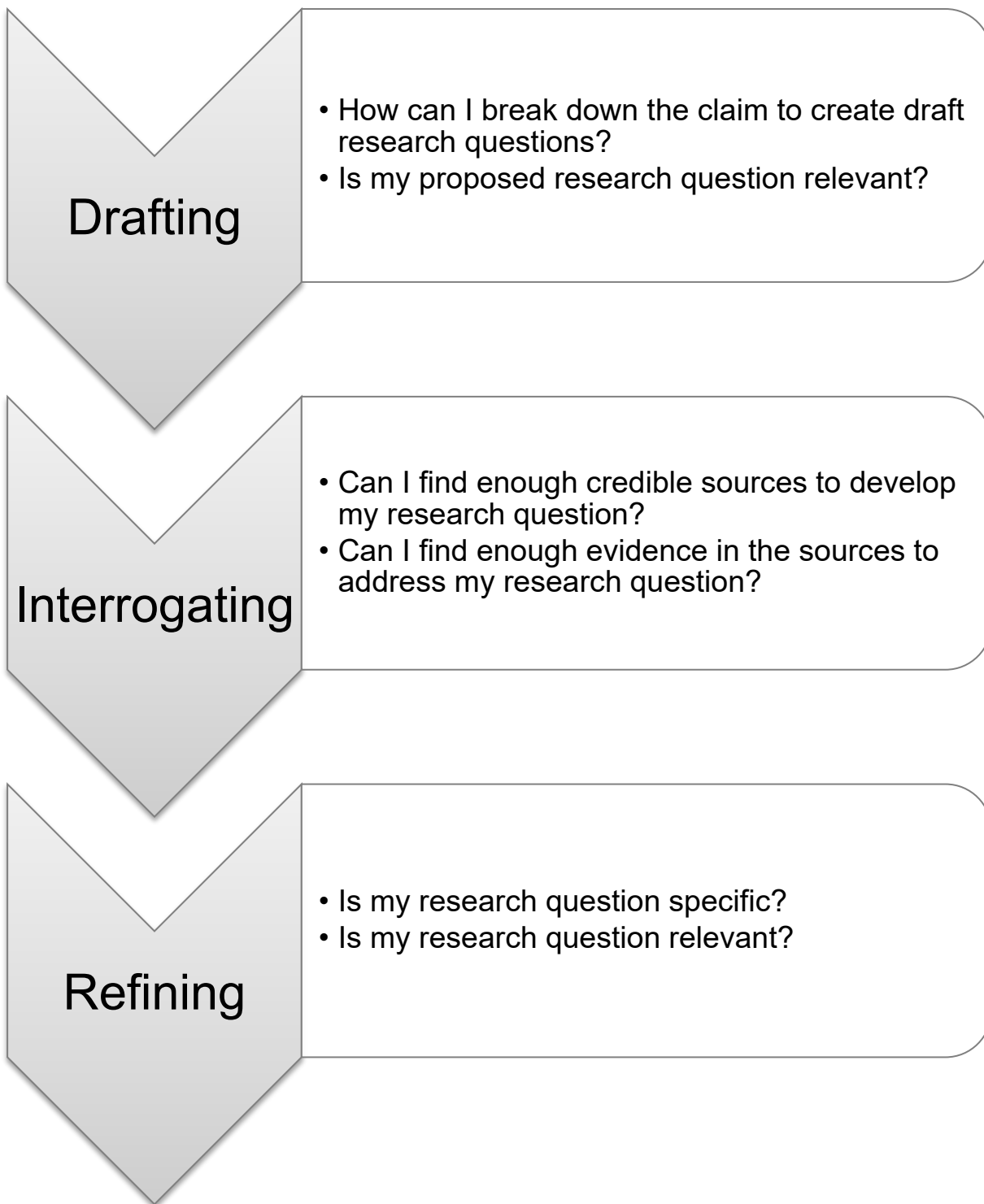
### What is a research question?

In the research investigation, students develop a research question to evaluate a claim. The research question focuses and informs the direction of the research and guides all stages of the investigation.

The research question is developed by:

- drafting — breaking down the claim to create a draft research question
  - interrogating — conducting preliminary research to ensure that sufficient evidence is available to answer the research question
- refining — linking specific measurable variables to relevant subject matter.

# Key questions when developing a research question



# Ideas for developing research questions

## Drafting

### How do I draft my research question?

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- How can I break down the claim to create draft research questions?
  - Identify the keywords or phrases from the claim that you will investigate.
  - Unpack the meaning of each keyword or phrase with reference to syllabus subject matter.
  - Use your keyword breakdown to draft several possible research questions.
- Is my proposed research question relevant to the claim and the syllabus subject matter?
  - Choose one of your draft research questions to consider more closely.
  - Look for background information about the research question in your textbook. If you cannot find any, then the research question probably does not link to relevant subject matter.
  - If necessary, look for new keywords and draft a new research question.

## Interrogating

### Do I have the right research question?

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- Can I find enough credible sources to develop my research question?
  - Start with a broad research question.
  - Conduct preliminary research on the research question.
  - Document your research. You will use this to construct your rationale.
  - Use your research to refine your research question to fit the sources that are available.
- Can I find enough evidence in the sources to address my research question?
  - Ensure the sources you locate are credible, accessible and interesting.
  - Remain open about your research question until you have enough evidence to answer it.
  - If you cannot find sources for your research question, then change your research question.

- Is my research question specific?
  - Clearly identify the independent, dependent and controlled variables.
  - Check that the independent and dependent variables are measurable.
  - The controlled variable could be the context for the research.
- Is my research question relevant?
  - As you refine your research question, check that it is still aligned to the claim and the syllabus subject matter.
  - Check that the context to be investigated is linked to the syllabus subject matter.
  - Remember that your research question may continue to be refined throughout the research process.

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