

## **Research Space**

Lecture

**CPD 1 - Embedding Epistemic Insight and Big Questions across a whole school curriculum**

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# The Epistemic Insight Initiative CPD 1

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# Opening survey

To inform the exciting Epistemic Insight research project, we would like you to fill in this initial survey - your responses will help inform the curriculum of the future.

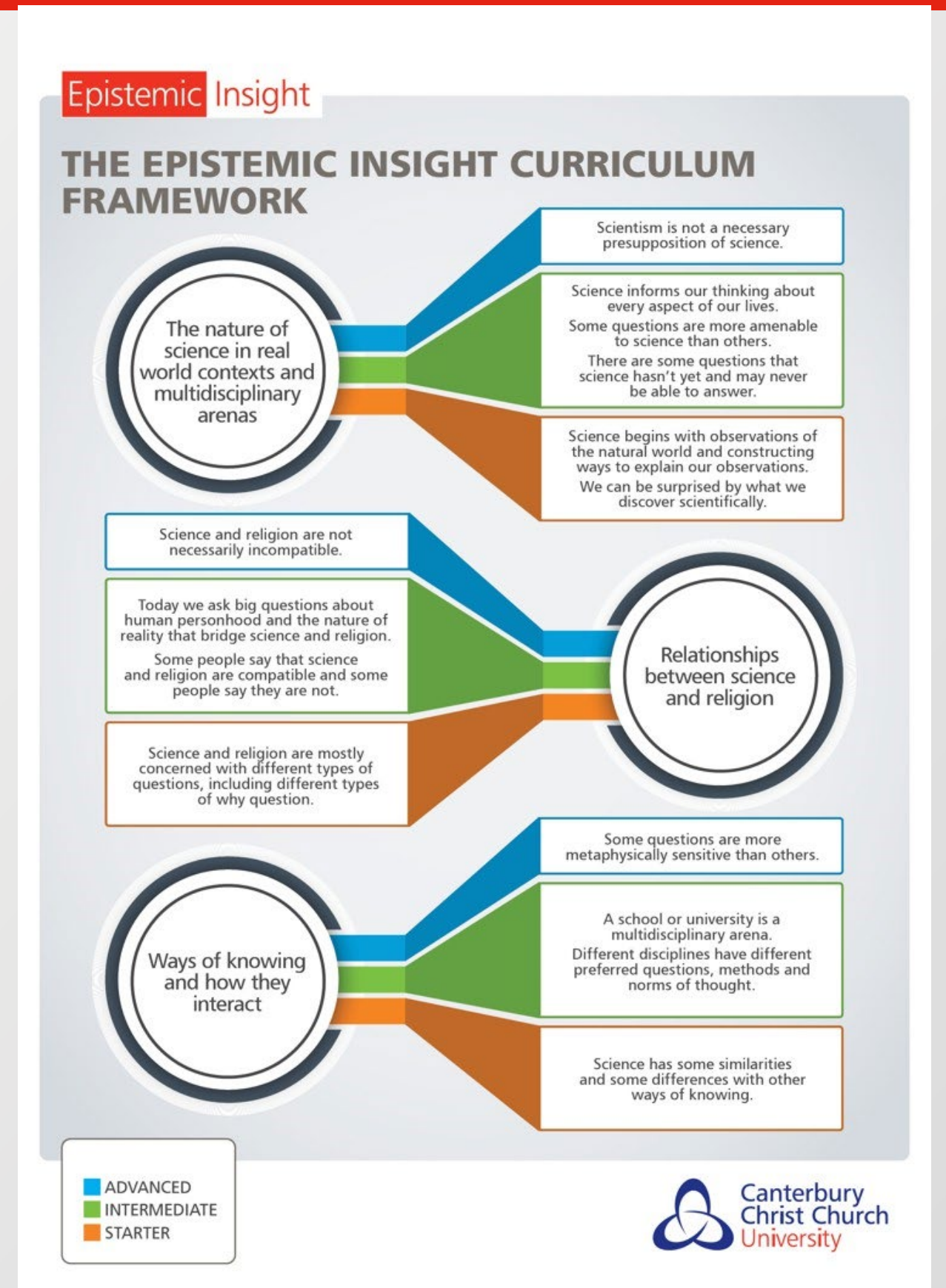
<https://canterbury.onlinesurveys.ac.uk/primary-pw-pre-intervention-teacher-21-22>



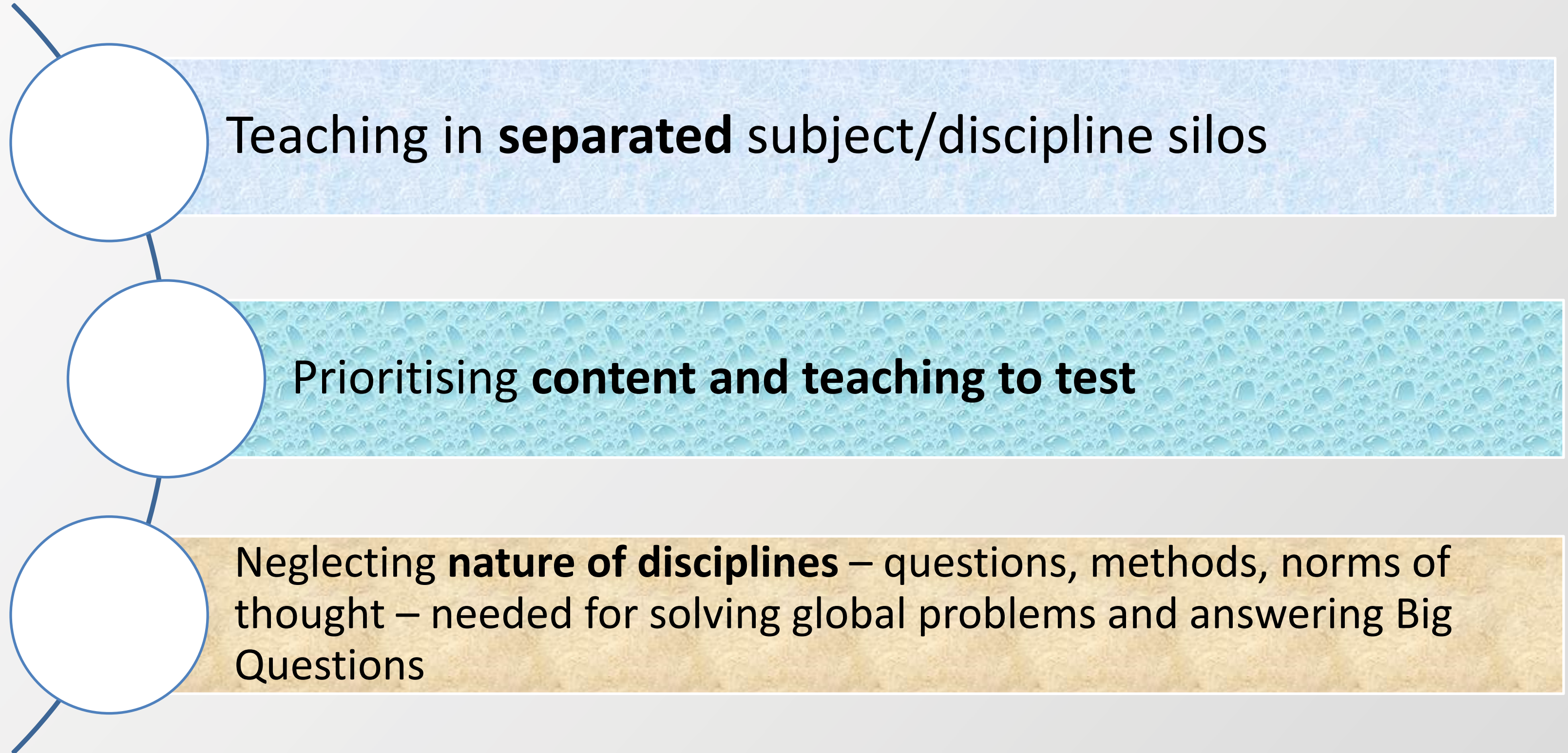
➔ The Epistemic Insight Initiative at CCCU is a £1.5 million **research and curriculum innovation project** that combines **research-engaged teaching** with a **national research project in schools** and in a **consortium** of participating HE institutions.

➔ The initiative proposes an **educational framework for schools and teacher education** with **curriculum objectives and teaching strategies** designed to detect and address gaps caused by **entrenched compartmentalisation**

Available here <https://bit.ly/3udAtsY>



## Entrenched compartmentalisation – what would you understand by it?



Intellectual  
virtue –teachable  
& assessable

- Knowledge about knowledge – particularly methods and norms of thought within disciplines and interactions between disciplines

Pedagogical  
approach

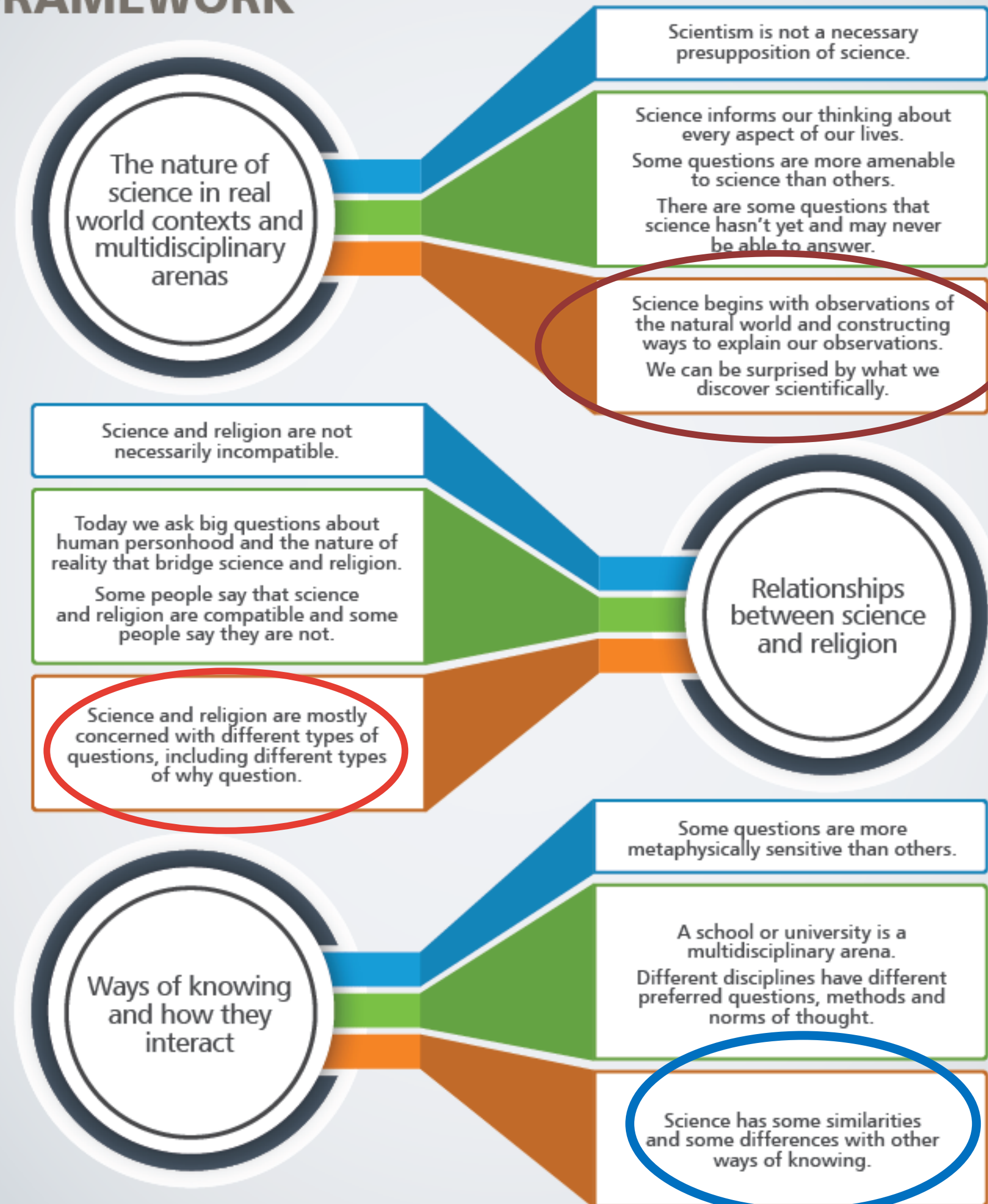
- Moving beyond discipline content through recognising the distinctiveness of and interaction between the disciplines

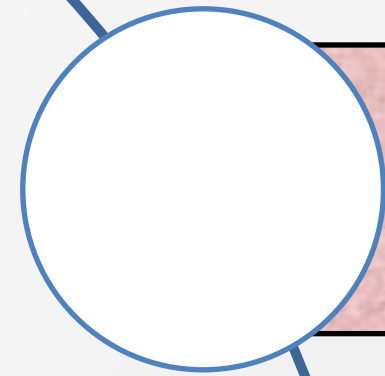


Building the capacity to be able to work with knowledge

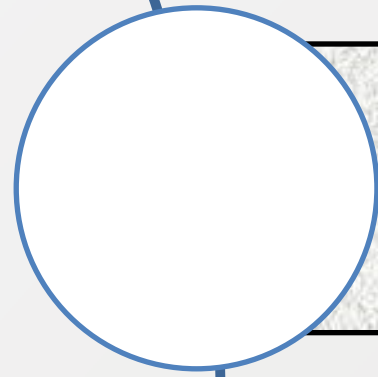
Creating conversations to be open to wise, critical and compassionate thinking

## THE EPISTEMIC INSIGHT CURRICULUM FRAMEWORK





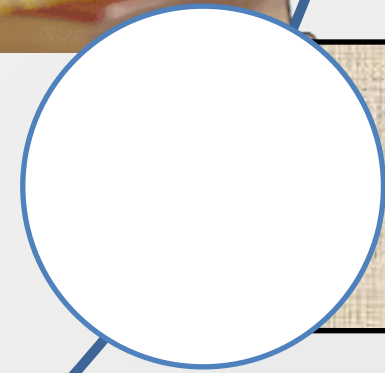
Builds students' capacities for critical thinking about the nature, application and communication of knowledge



Teaches appreciation of strengths and limitations of disciplines



Helps to address **Big Questions/global issues**



Epistemic insight is more than making cross-curricular links - develops **curiosity and critical thinking**, 'thinking like a scholar'





Different disciplines produce knowledge based on the specific questions, methods and norms of thought – SCIENCE:



**Questions:** How does my discipline understand/address this question? A question that is amenable to science is one where we can test our ideas by analysing **observations** and do **measurements**.

**Methods:** How does my discipline investigate this question? Working scientifically - **observe over time, fair and comparative test, identify and classify, pattern seeking, research**

**Norms of thought:** A good answer in science has **lots of evidence (observations)** to support it and is reproducible by other researchers.

## Affinity with OFSTED and OECD goals.

The new **Ofsted** education inspection framework (Ofsted, 2019) is calling for a change of focus from an education designed to get good test results to a more **holistic view** of the curriculum.

‘I don't want a **'pub quiz' curriculum** [...] formed from **isolated chunks of knowledge**’ – Amanda Spielman OFSTED

**OECD** explain future-ready students will need several different types of knowledge..and will **need a working knowledge of how disciplines can work together to address real-world questions and Big questions** that bridge the sciences and wider humanities and the capacity to think across the boundaries of disciplines, “**connecting the dots**”.

(OECD 2018, pp. 4-5)

### Spielman: I don't want a 'pub quiz' curriculum

Ofsted chief inspector says that a school's curriculum should not be formed from 'isolated chunks of knowledge'

By John Roberts  
18 September 2018

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What discipline(s) can answer this question, provide rationale?

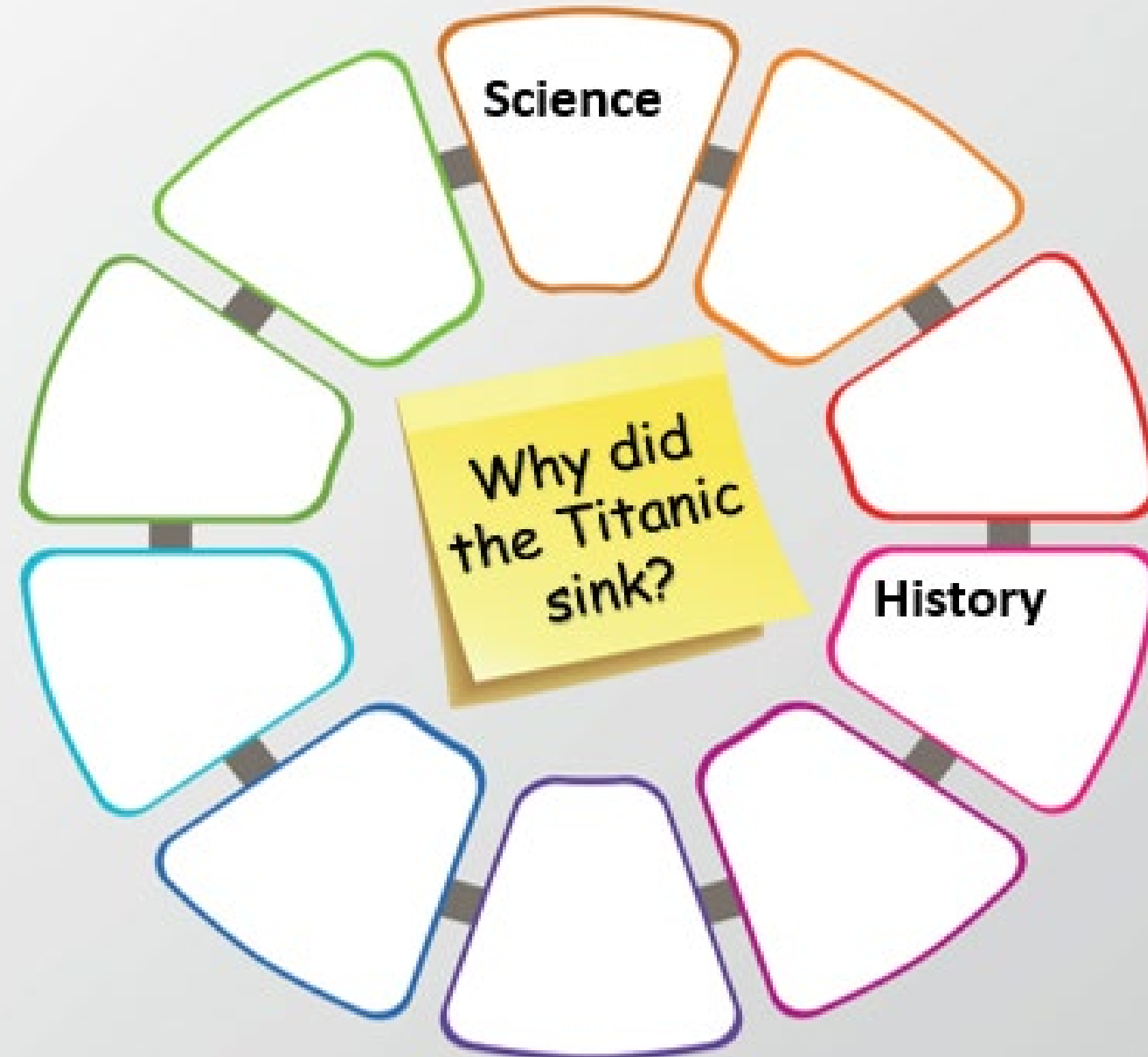
Can one discipline answer this question fully?





## Science

- Observe
- Experiment
- Test
- Predict
- Repeat
- Agree
- Scientific evidence



## History

- Collect, organise, interpret
- Sources
  - People's stories
  - Newspapers
  - Reports
  - Books
  - Objects/Artefacts
- Historical evidence

How are the methods similar or different?

How do we make a better answer? Could we look at other disciplines?

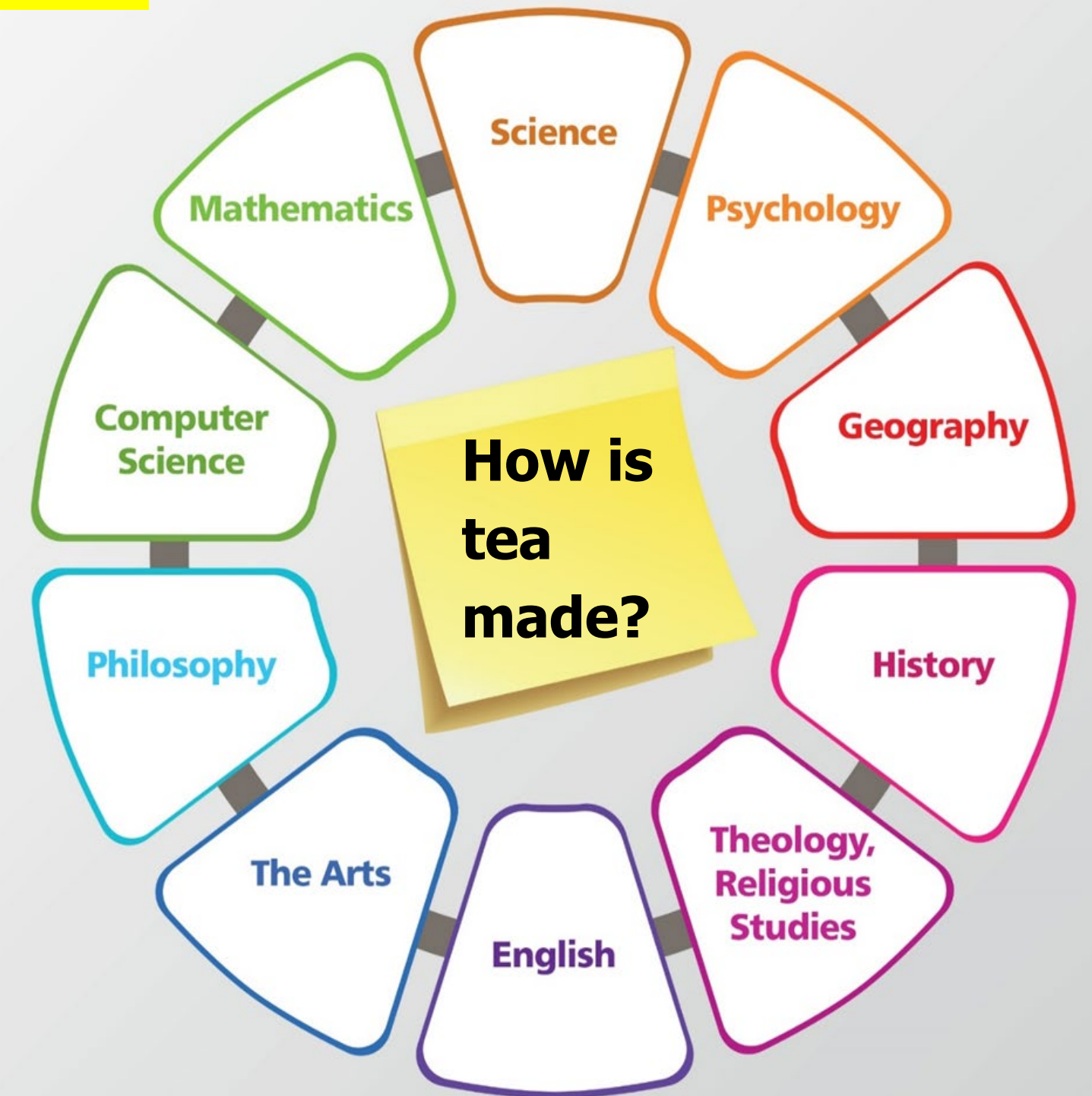


Different disciplines address a question by drawing from their unique 'ways of knowing':

- Preferred questions to ask
- Preferred methods to investigate
- What is valued in an answer

How would you answer?

1. What other discipline(s) could inform us?
2. What questions would they ask?
3. What methods would they use to investigate?
4. What does the discipline value from the answer?

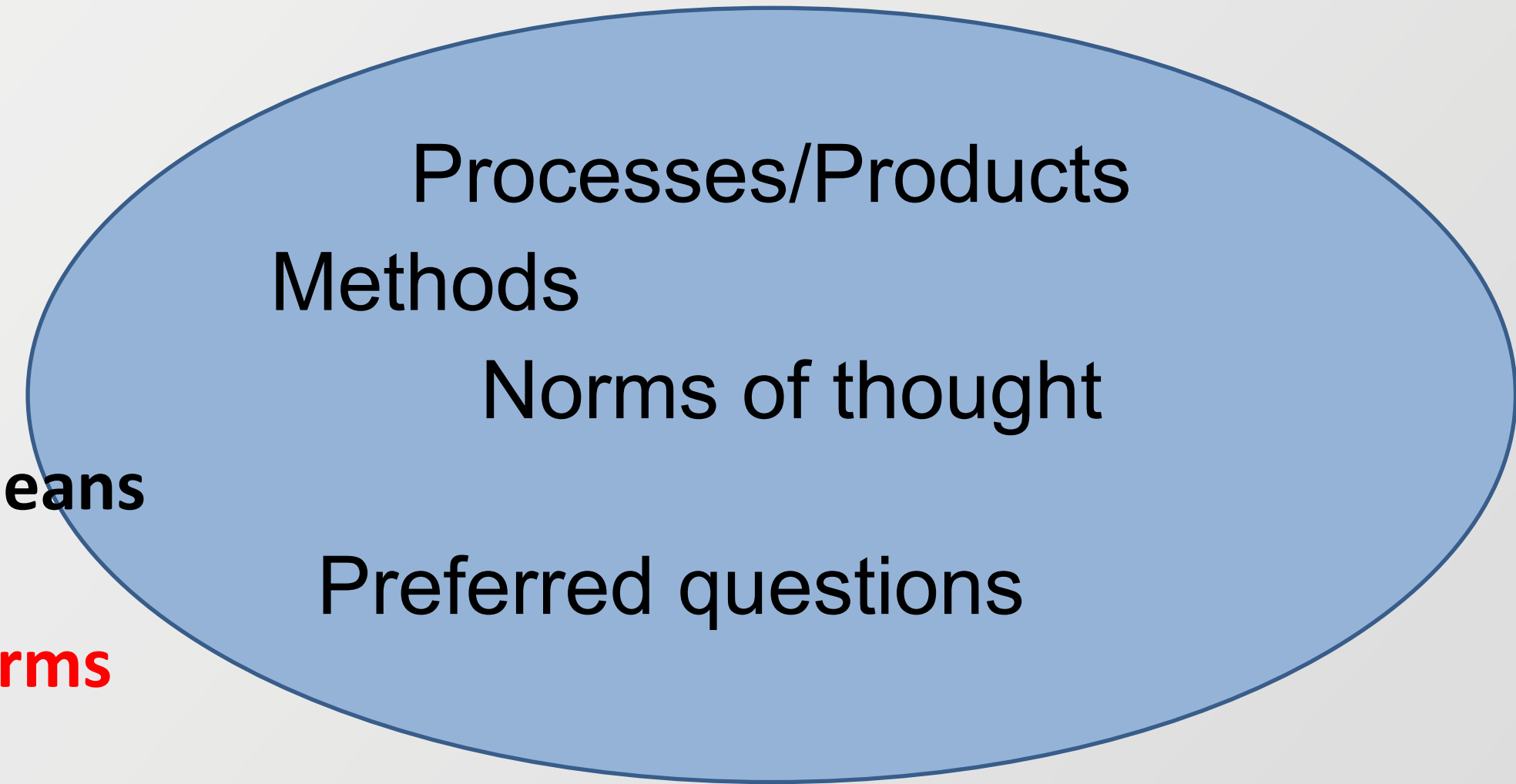


- Why did you select those questions?
  - ❑ Familiarity or confidence of one subject over another
  - ❑ Or one subject or another seemed easier
- How might other disciplines add to the investigation?
  - ❑ Does the question provide a full account?
  - ❑ Are details/aspects missing?
  - ❑ Has the discipline informed our thinking rather than fully answering the question
- What are the strengths and limitations for each discipline?
  - ❑ Knowledge comes from different ways of knowing
  - ❑ Distinct disciplines have preferred questions, methods and norms of thought (what is valued)





## What makes science distinctive?



Ofsted (2021) The science curriculum sets out what it means **'to get better' at science.**

Expertise in science requires pupils to **build at least 2 forms of knowledge.**

**'substantive'** - knowledge of products of science, such as models, laws, theories.

**'disciplinary'** - knowledge of the practices of science.

**Science investigates the natural world through observation! (KS2)**





Is discussing the methods of science in school overshadowed by an emphasis on learning *knowledge and the 'right' answers* in science?



If so - this creates two misperceptions about science –

- 1) That science is a one-stop-shop where you go to get questions answered – any question
- 2) That no other disciplines need apply

**POWER AND LIMITATION OF DISCIPLINES** Particularly important for science

**Epistemic Insight**

**Essential Experiences in Science**

## Are you what you eat?

On a paper outline of a person, draw what you think happens to food after it enters a person's mouth.

We can explore what happens to food after we swallow it by observing how mashed up cereal moves through the leg of some tights!

For this activity, you will need a pair of old tights, some breakfast cereal, water, two large bowls and a large spoon.

**Explore, Observe, Record**

- 1) Cut off one leg from a pair of tights. Cut a small hole at the 'toe' end of this tight leg. Place this in one of the bowls.
- 2) In a second bowl, mix in breakfast cereal with some water (it should not be too runny). Mix and mash this together with the spoon (this is like food being broken down into smaller parts in the mouth and stomach).
- 3) With the spoon, place the mashed food into the larger end of the tight leg. Holding it in the second bowl, push the food through the tight leg, all the way to and out of the hole in the toe.
- 4) Observe and record what is happening to the food. What is the food like that comes out of the end of the toe hole? Where else does any of the food go and why?

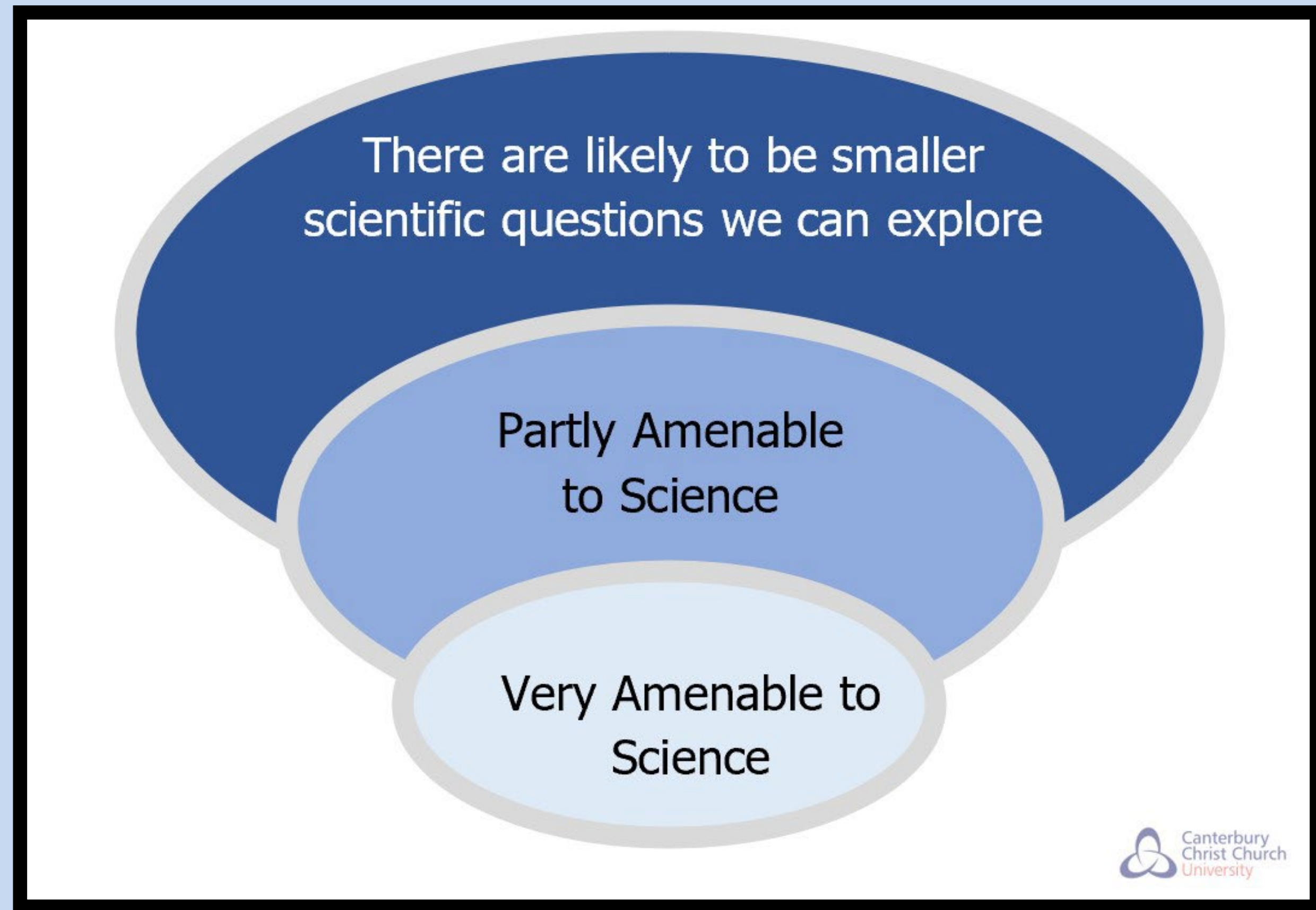


## How would you investigate this question?



## Are you what you eat?

1. Think of other questions
2. How amenable to science are they?
3. Can they be fully answered by science, or do they need one or several disciplines to respond?
4. Plot them on the bubble tool
5. Justify your rationale



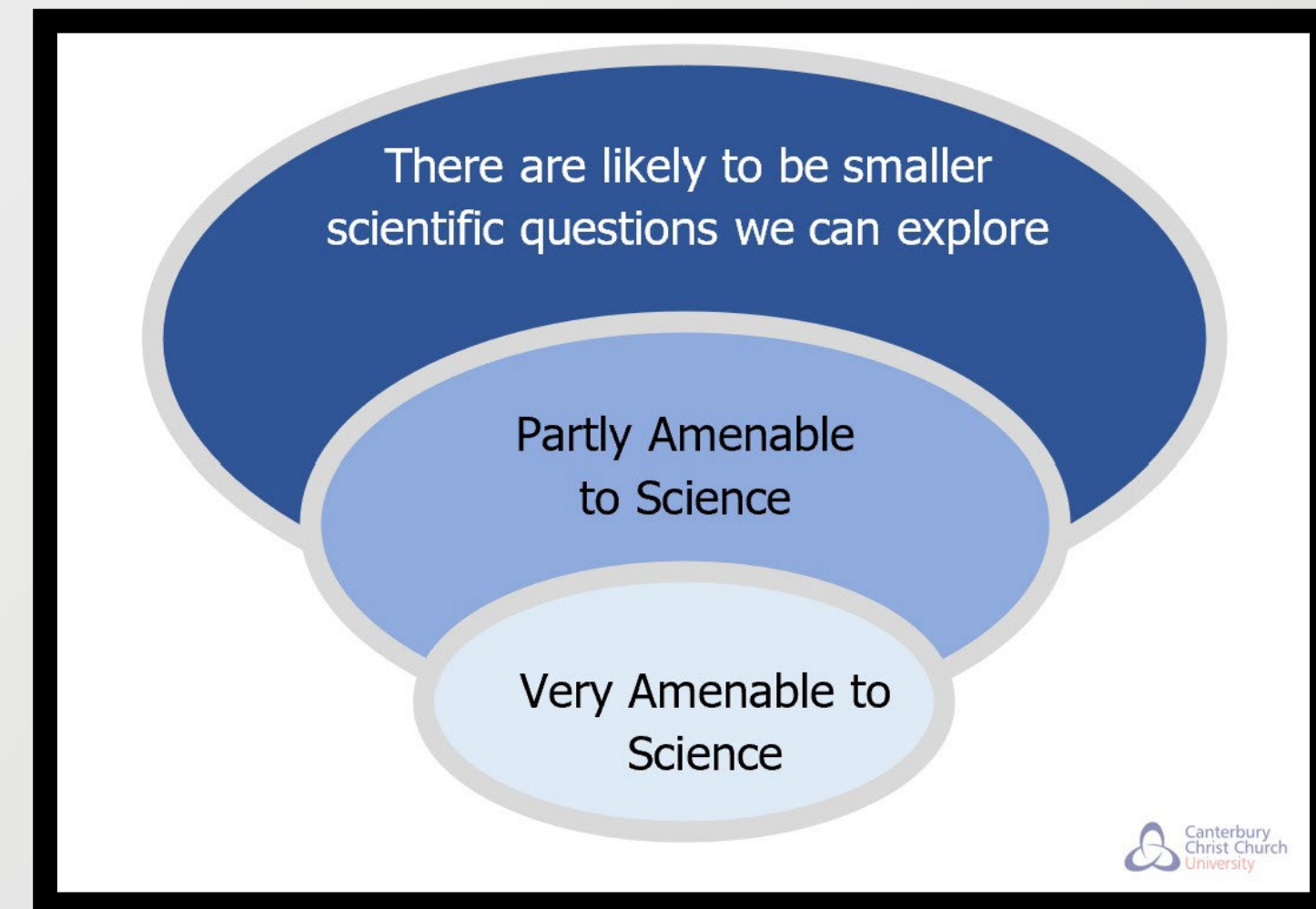


Big Question: **'Is it true...that you are what you eat?'**  
can ask many smaller questions.

Question **very amenable to science**: **'To what extent are the nutrients we eat important to sustain our existence?'** (This can be measured, observed and repeated).

Other questions may be more **amenable to other disciplines**.

For example, **'how does food affect how we identify who we are?'** is a question **more amenable to the methods and norms of thought** of history, psychology, geography or religious education etc.





What makes me 'me'?

But if I eat an apple, am I 'apple'?

Why might some people choose not to eat certain types of food?

**Psychology**... 'I am a thinking, emotional being'

**Biology**... 'I am an animal that has adapted with distinct and special skills'

**Chemistry**...  
'I am a mix of chemicals'

**Physics**... 'I am energy'

**History**... 'I am connected to a heritage, a country, and its stories'

**Philosophy**... 'I am a mind with ideas and values'

**Economics**... 'I am a producer, consumer, worker – part of system of exchange'

**Geography**  
'Place I come from'

**Theology**... 'I am a being that is on a journey that connects with a greater purpose and entity'



**What could be the Big Question here?**

**Things to think about!..**

**How might different disciplines inform our thinking about this BQ:**

*What are the kinds of questions a discipline might ask/investigate in the context of this BQ?*

*What methods might a discipline use to investigate this BQ?*

*What would be the kind of responses that would be of value to a discipline?*

**Term 4. Environment**





In preparation for 25<sup>th</sup> May...  
Think about the 6 overarching school concept Big Questions. Bring along your ideas - can you bring at least one Big Question to share and discuss.

1. Adventure
2. Rights
3. Leadership
4. Environment
5. Conflict
6. Adaptation

