Big Questions



What questions might this image raise?

STFC Astronomy and AI Summer School 2024 – Day 1 Plenary











Big Questions...

...about the nature of reality, the meaning of life, and the significance of being unique

"the nature of reality"

consider this in the age of GenAI



how would you describe 'the nature of reality'?

Show drafts V





The nature of reality is a head-scratcher that's been contemplated by philosophers and scientists for millennia, and there's no one definitive answer. Here are a couple of key ways to think about it:

- Independent Reality: This view says there's an objective reality "out there" that
 exists independent of our minds. Mountains stand tall whether we're looking at
 them or not, and gravity keeps us grounded even if we don't believe in it. Science
 thrives on this idea, constantly uncovering the rules that govern the universe.
- Perceived Reality: This perspective focuses on how our minds interpret the
 world. Our senses take in information, and our brains construct our understanding
 of reality. Colors might be mind-made interpretations of light waves, and what we
 see as a solid chair is actually made of mostly empty space with tiny particles
 zipping around.

Here are some disciplines that delve into the nature of reality:

- **Metaphysics:** This branch of philosophy explores the fundamental nature of existence, asking questions about being, time, space, and knowledge.
- Physics: Science investigates the objective world, uncovering the laws and principles that shape everything from subatomic particles to galaxies.

Ultimately, the nature of reality is likely a combination of these perspectives. There's an objective world out there, but our perception of it is shaped by our minds. Even science, which relies on the objective world, is limited by our tools and current understanding.

Three 'Big Questions' to consider this afternoon:

1. 'Is it real or fake?'

- 2. Can a robot* have its own sense of curiosity?
- 3. What is the future of knowledge?

* for example, a remote telescope in space



LASAR (Learning about Science and Religion) Research Centre



- Epistemic insight (EI)
- refers to those 'aha' moments when suddenly we realise something about knowledge that was hidden before.
- It means 'knowledge about knowledge' including knowledge about disciplines and how they interact.

What is 'real'? What is a fact?

Where was the camera that took this photo? Outside our Galaxy?

We see images like this all the time in science books ... is this a science 'fact'?

This picture is what we predict we would see. So far Voyager is only now leaving our solar system!

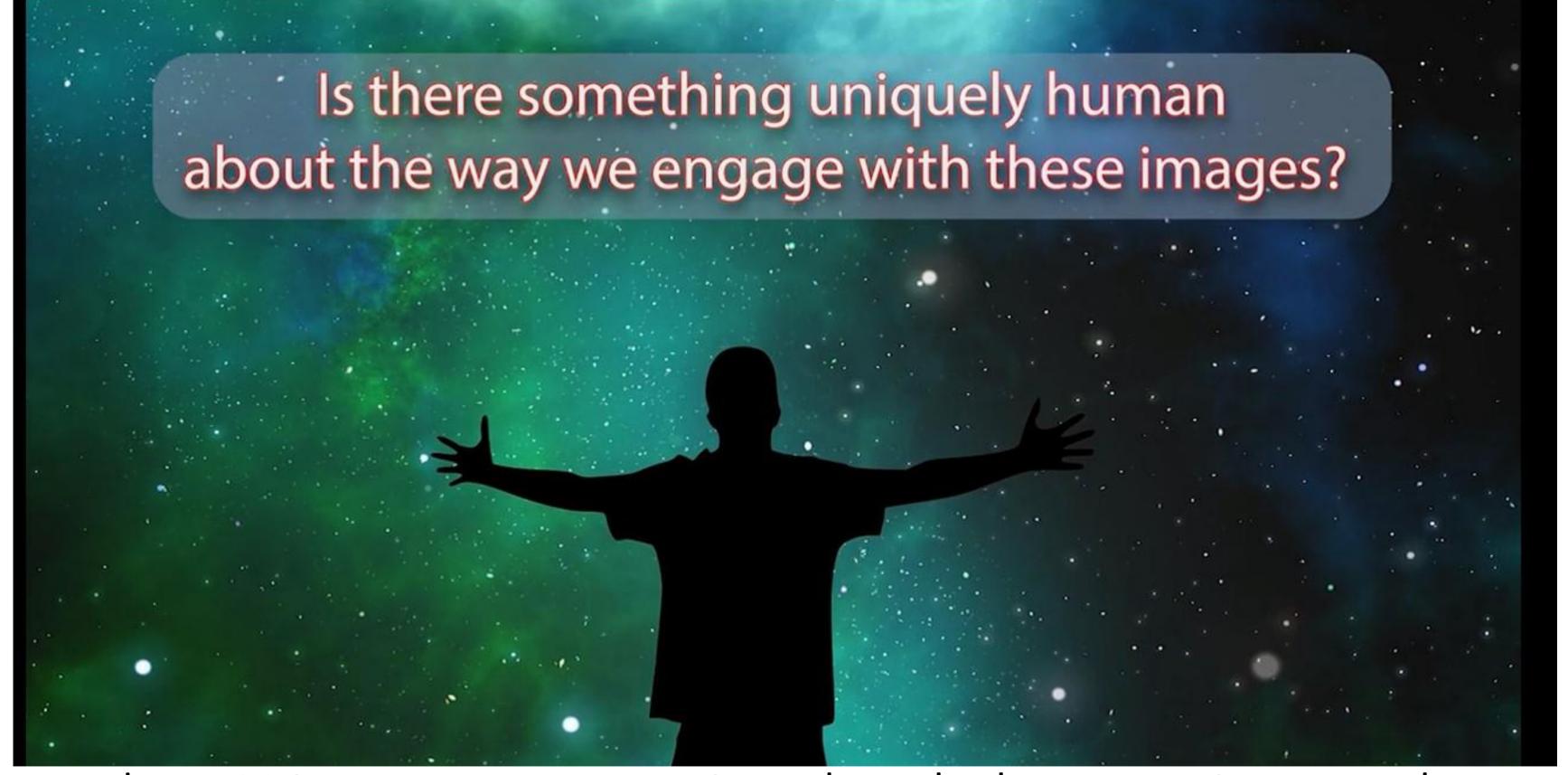


When children are asked 'What is science' many of them tell us 'facts'.



1. 'Is it real or fake?'

2. Can a robot* have its own sense of curiosity?



If we send an Al into space – can it only ask the questions we have prompted it to ask – or can it develop a sense of curiosity and come with questions of its own... does it need to have a sense of curiosity to do this?

Engaging young people in the nature of science

What did you observe?

Was your prediction correct?

Did this surprise you?



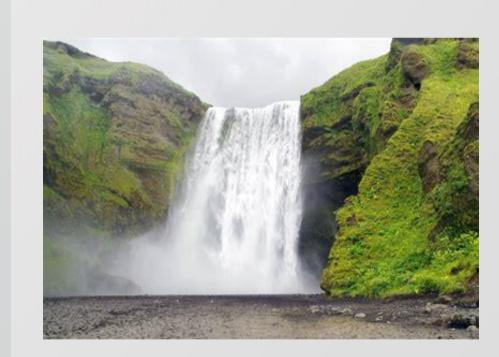
The Discipline Wheel











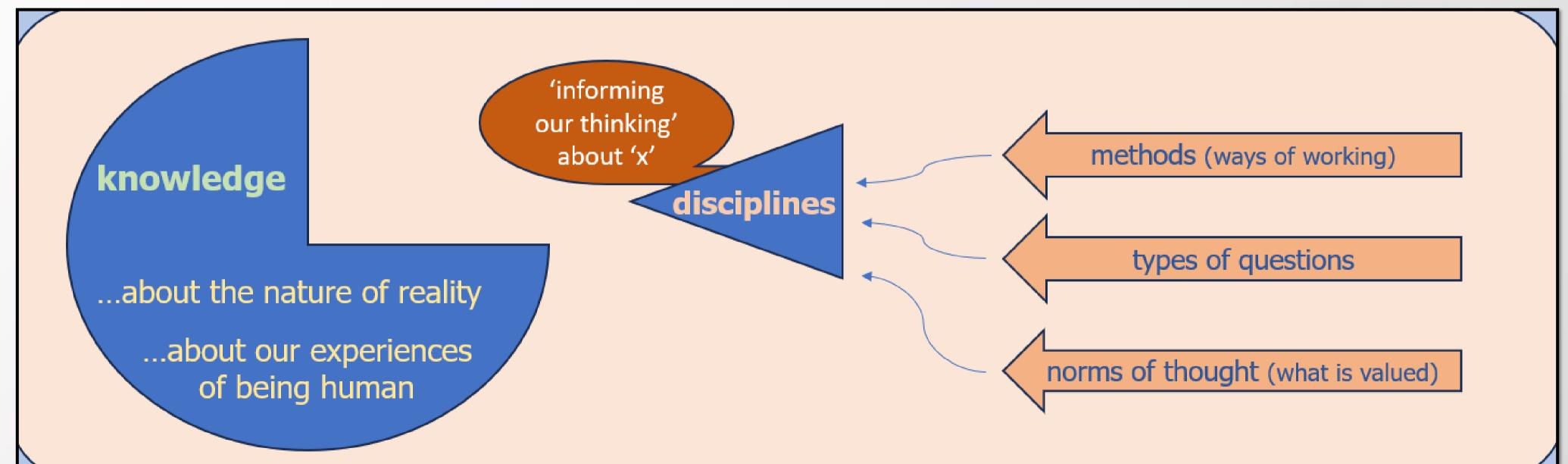






building knowledge working with knowledge





What are Big Questions?

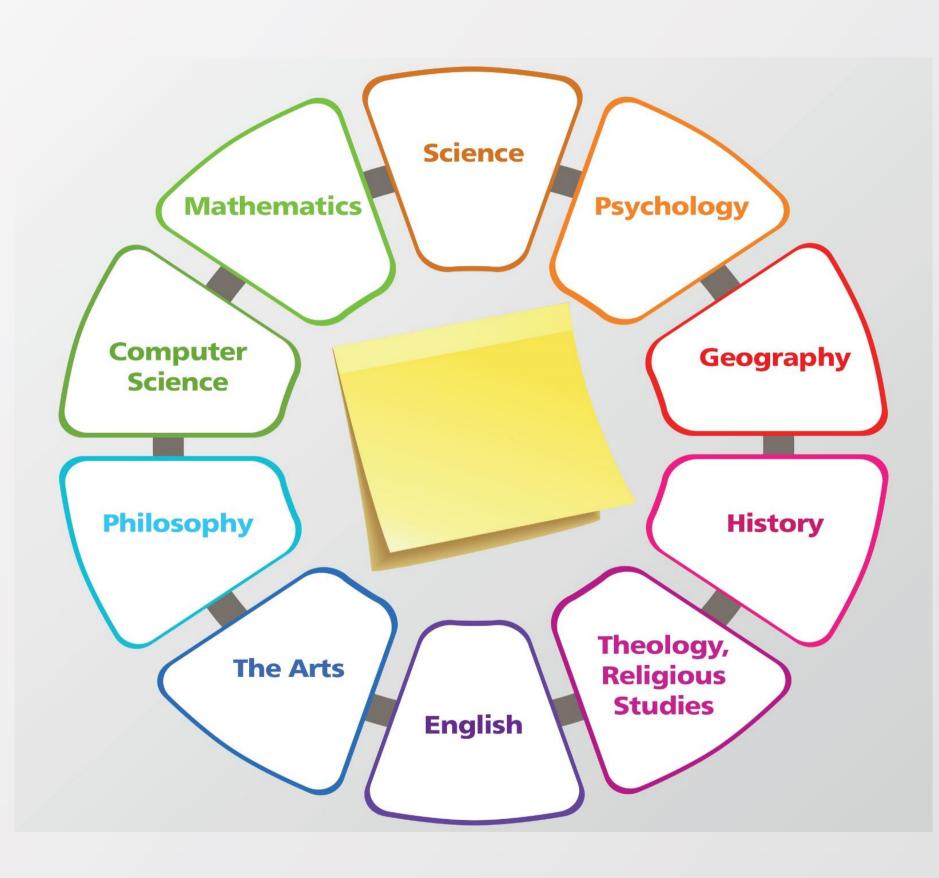
Science -

observations of the natural world

Maths – number, shape, space and measure

The Arts -

beauty, originality, expression



Geography – the world and our place in it

History – events of the past

RE – belief, culture, tradition, meaning, symbolism

The Discipline Wheel

 Can science fully answer this question? Why/why not?

 How can science inform our thinking – what does it add to our understanding?

What about other disciplines?



Psychology... 'I am a thinking, emotional animal"

Mathematics

What

makes

me 'me'?

Languages and Literature

Engineering and Computer

Philosophy

Psychology, Social Sciences

Theology, Religious Studies

Geography

History

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

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

Physics... 'I am energy'

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

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

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

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



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