Task Overview

Throughout this unit, we have explored:

- the scale and structure of the universe
- how astronomers collect and interpret light
- spectra, redshift and the Doppler Effect
- evidence supporting the Big Bang Theory

Task Overview

Scientists cannot travel across the universe to investigate galaxies directly.

Instead, they use evidence collected from light and increasingly advanced technologies to develop scientific models explaining the origin and evolution of the universe.

Task Overview

In this task, you will investigate how redshift provided evidence for the Big Bang Theory and how advances in telescope technology improved scientific understanding of the universe.

The goal of this task is not to describe space.

The goal is to explain how scientists use evidence, how technology improves understanding and how scientific theories are supported and refined over time.

Task Question

How has scientific evidence and technological development contributed to the acceptance of the Big Bang Theory?

Success Criteria

You will be successful if you can:

- explain how redshift supports the Big Bang Theory
- use evidence to support scientific explanations
- evaluate the reliability of sources
- communicate scientific ideas clearly using appropriate terminology

Your Task

Using Word or PowerPoint, create a scientific report (600 – 750 words) that investigates:

- Part A: The Big Bang Theory and Red Shift
- Part B: Technology and Scientific Understanding
- Part C: Evaluating sources

More on that later

Timeline

Week	Focus
Tuesday Week 3	Research and note taking
Thursday & Friday Week 3	Drafting (Due 15/3/26) *
Tuesday Week 4	Editing
Thursday & Friday Week 4	Finalise report
Friday Week 4, 8pm	Submission (Due 22/3/26) *

* If you are unable to meet these deadlines, you need to speak to me ASAP

Suggested Structure

Introduction:

- What is the Big Bang Theory?
- Why do scientists need evidence to support theories?

Suggested Structure

Redshift and Expansion (Part A):

- What is the Doppler Effect?
- What is redshift?
- How does redshift show galaxies are moving apart?
- How does this support the Big Bang Theory?

Suggested Structure

Technology and Scientific Advancement (Part B):

- What technology did you investigate?
- Why was it developed?
- How does it work?
- How did it improve scientific understanding?

Suggested Structure

Scientific Models and Evidence (Part B):

- Why is the Big Bang considered a scientific theory?
- How has scientific understanding changed over time?
- Why is scientific knowledge contestable and refined?

Suggested Structure

Conclusion:

- Summarise how evidence and technology support the Big Bang Theory.

Include your bibliography with at least 3 different sources

Reliable sources

Here are some reliable sources:

- NASA
- CSIRO
- ESA
- Encyclopaedia Britannica
- Oxford Text book
- University Websites

Helpful Questions

Use these questions to guide your thinking:

- How can light provide evidence about the universe?
- Why was redshift an important discovery?
- Why are technological advances important in astronomy?
- Why do scientific theories change over time?
- What makes evidence convincing in science?

A Word on AI

AI is NOT a dirty word. However, plagiarism is.

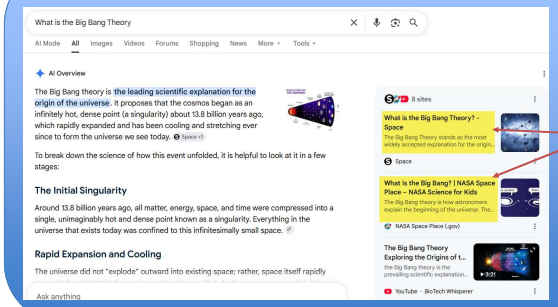
- I will be checking for plagiarism and signs of significant AI usage.
- It is important to use all sources (AI or not) ethically.

A Word on AI

Do NOT put the question directly into a search engine.

"What is the Big Bang Theory" will get you an answer, but I will know that it isn't your work and you will get an E.

A Word on AI

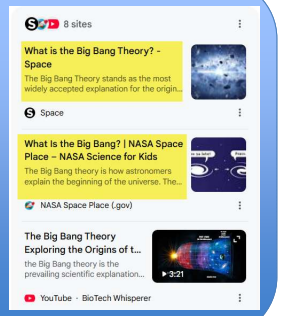


These are the important bits!

A Word on AI

Click on one of these sites, READ IT and it will give you the information you need.

Then write it IN YOUR OWN WORDS!!



A Word on AI

Then put your paragraph into EdChat with one of these prompts:

- What can I do to improve this? Do not rewrite it for me.
- Suggest spelling and grammar changes or if I could reword something better.
- Have I missed anything important?

A Word on AI

Then it is still your work.

Think of AI as a coach who guides you rather than someone who completes the task for you.