Topic 4.1 What is the universe, and how do we make sense of it?

Title

Understanding the Universe: Space, Stories, and Perspectives

Big Question

How do people understand the universe in different ways?

Looking at the Night Sky



Context/Background

People have always looked at the sky.

They used the sky to tell stories, ask questions, and explain the world.

Some people understand the universe through science.

Some people understand it through stories, culture, and place.

Both are ways of making sense of what we see.

What Does “Universe” Mean?



Easy Explanation

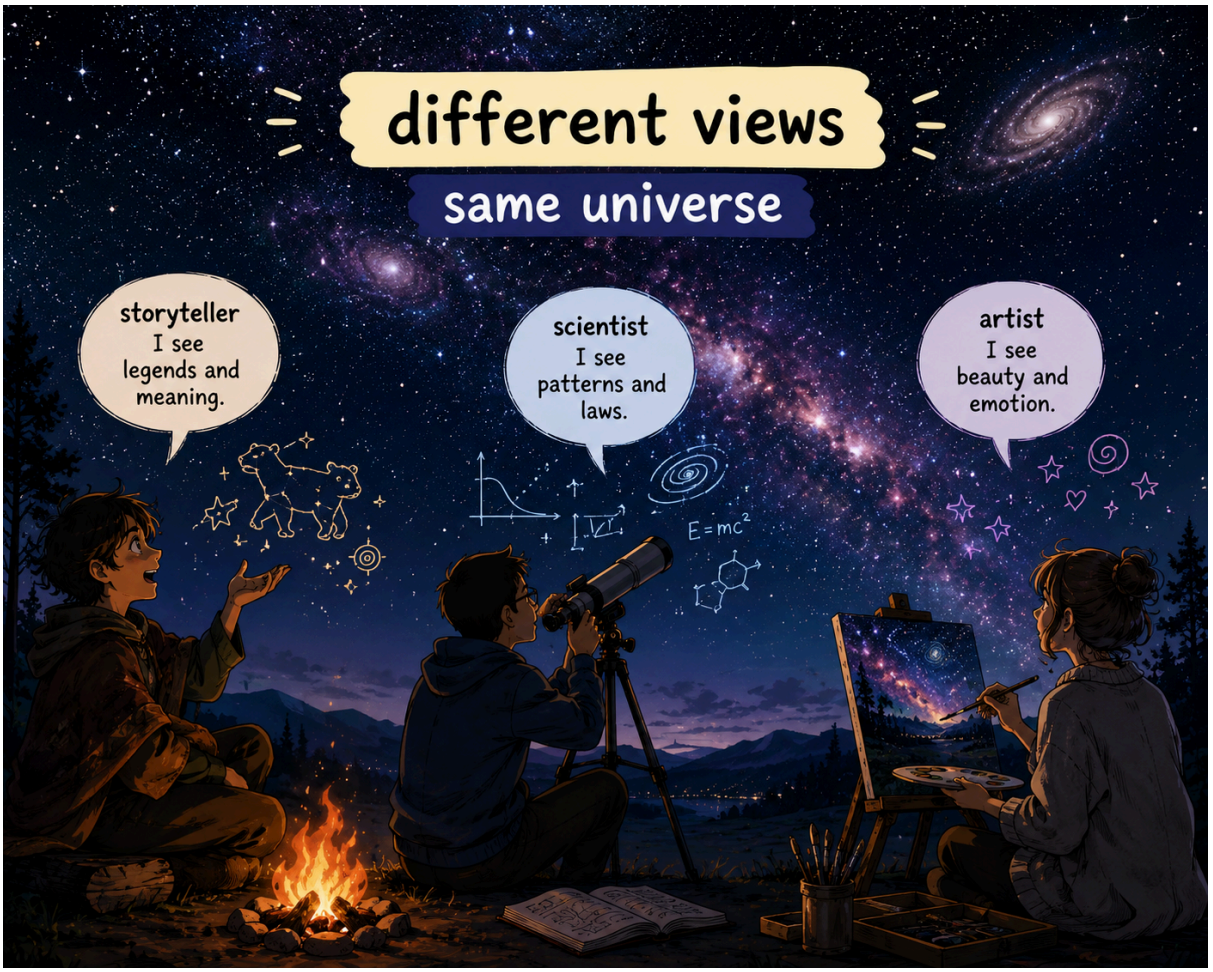
The **universe** means all that exists.

It includes: space / stars / planets / galaxies / energy / matter

But people may understand the word “universe” differently.

Your idea of the universe can depend on what you know, where you live, and when you live.

Different Views of the Same Universe



Background

People can look at the same sky and understand it in different ways.

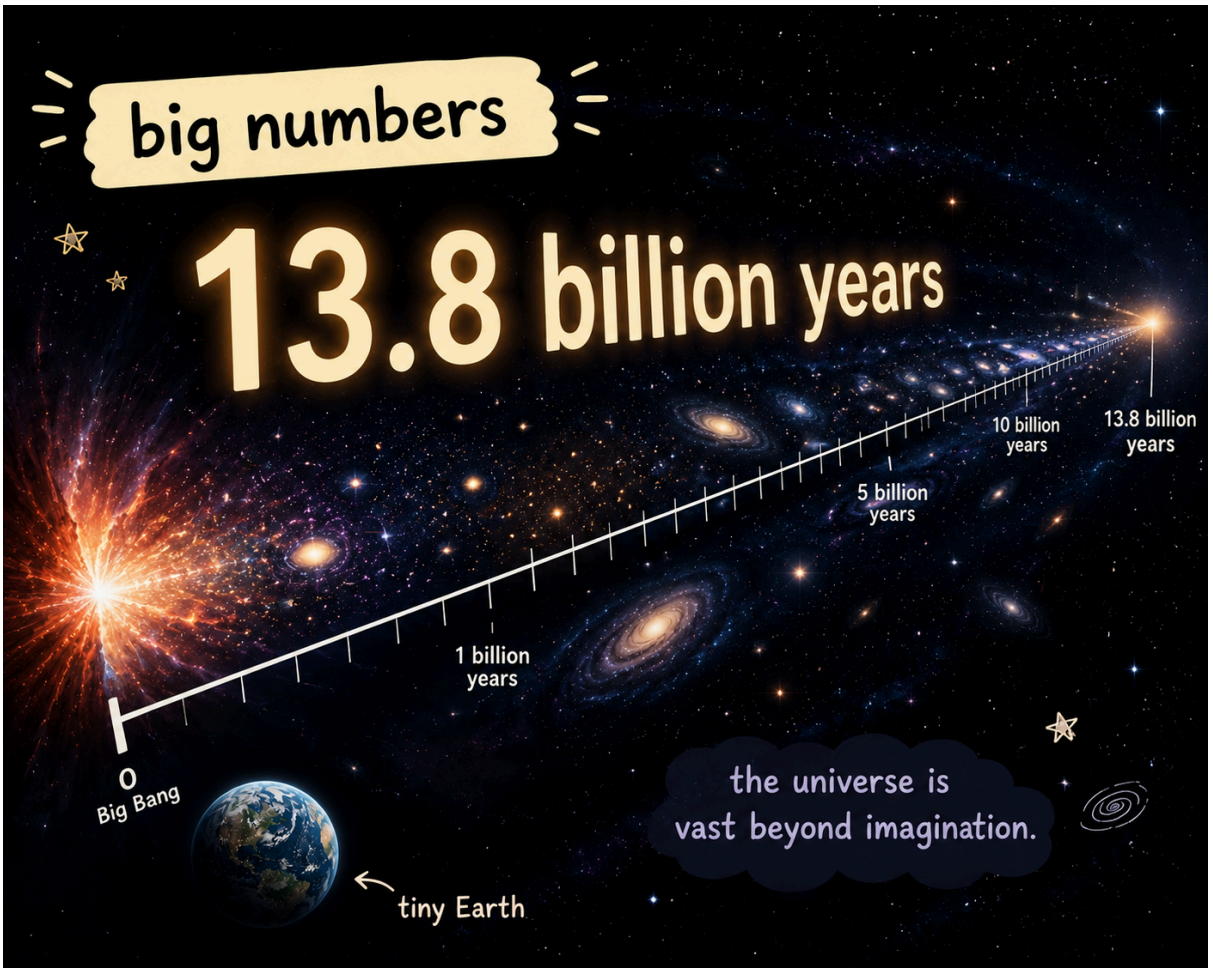
A scientist may ask, “How far away are those stars?”

A storyteller may ask, “What story does this pattern tell?”

An artist may ask, “How does this sky feel?”

Different perspectives can all help us understand the universe.

The Universe Is Very Large



Easy Explanation

Scientists estimate that the universe began about **13.8 billion years ago**.

That number is very difficult to imagine.

A worksheet should help students make large numbers easier to understand.

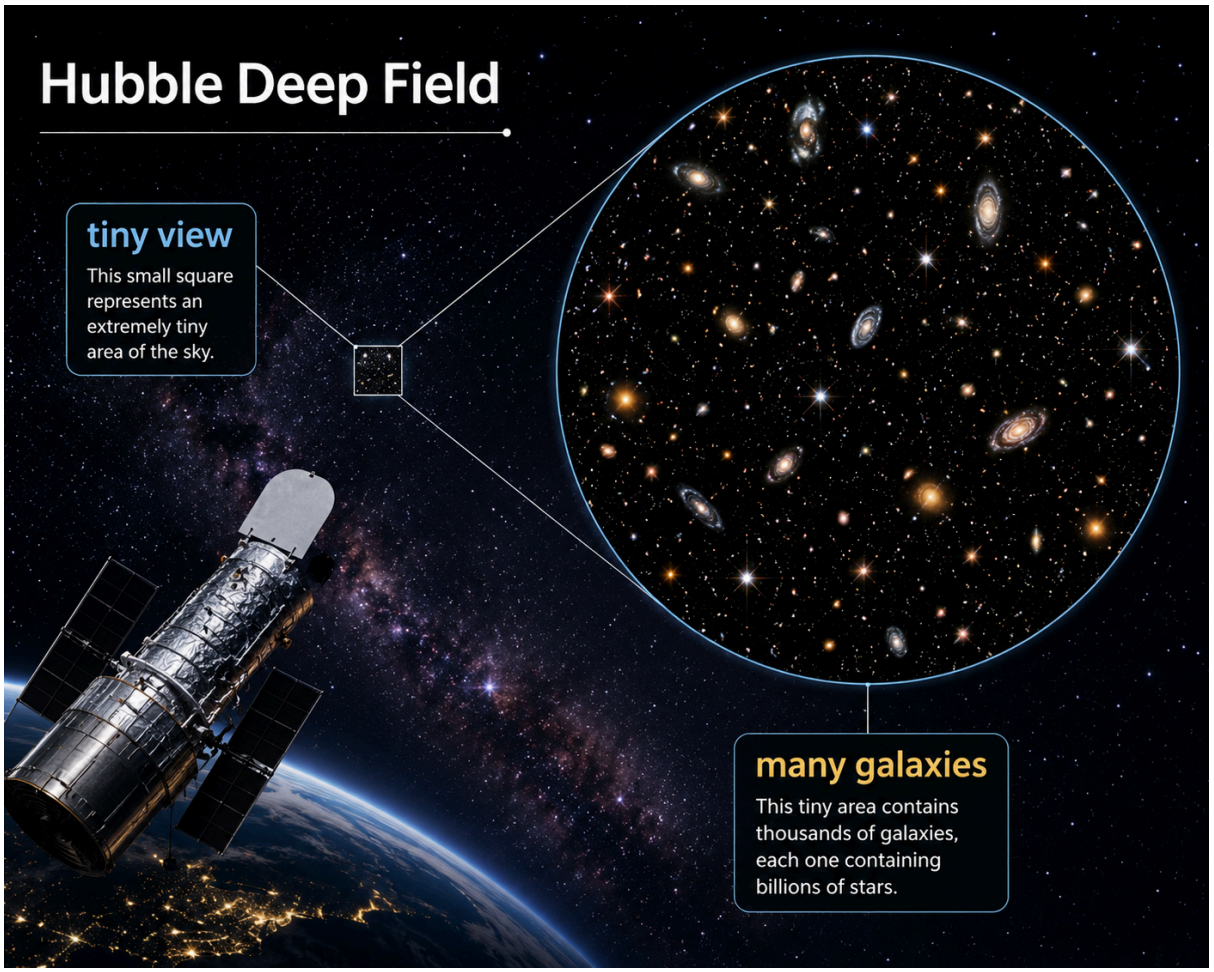
Example:

13.8 billion years is much longer than human history.

It is longer than the history of dinosaurs.

It is almost impossible to picture without models or analogies.

Tiny View, Huge Universe



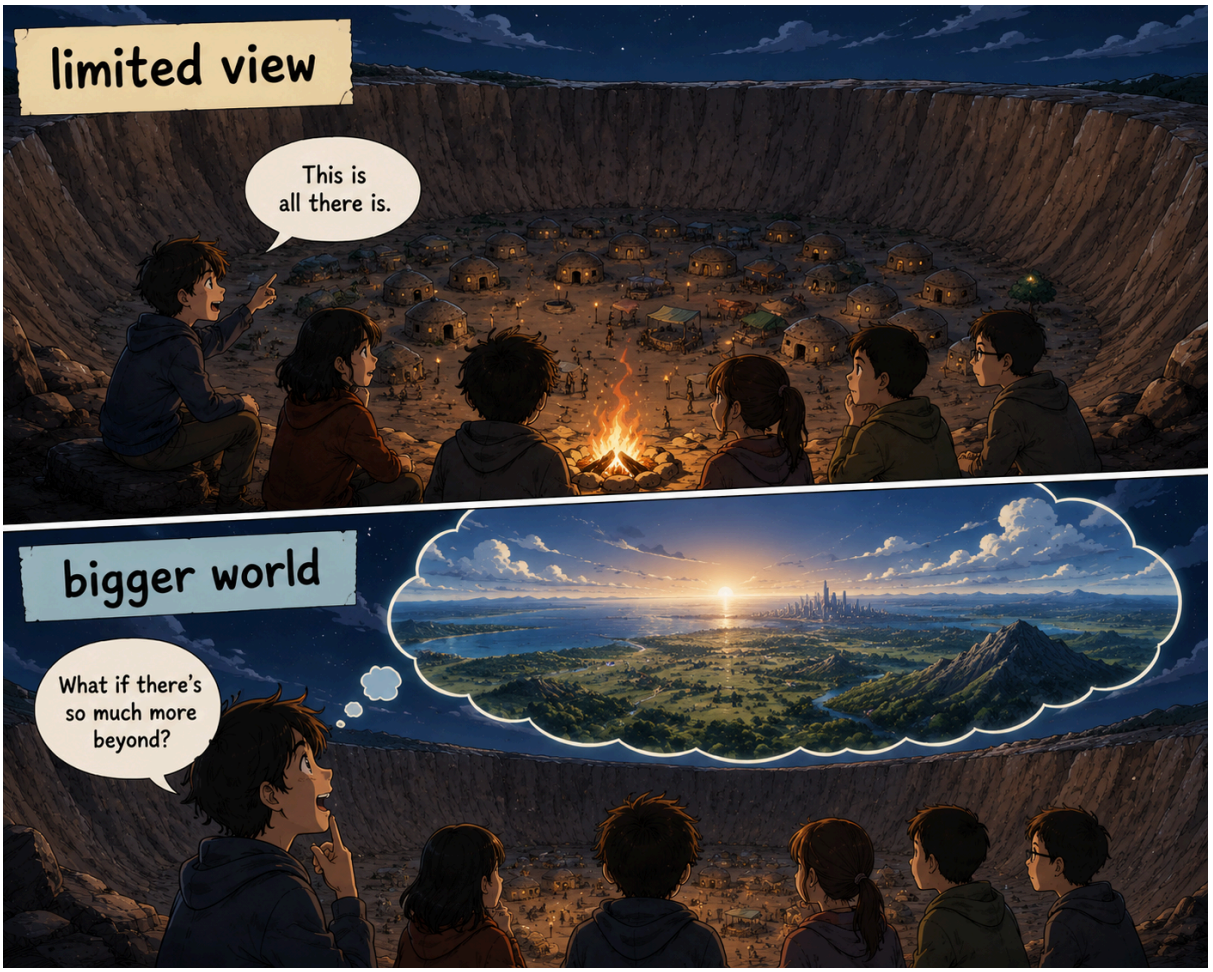
Easy Explanation

A small part of the sky can contain many galaxies.

This shows that the universe is much larger than what we can see with our eyes.

Modern technology helps scientists observe deeper into space.

The “Bowl of the World” Analogy



Easy Explanation

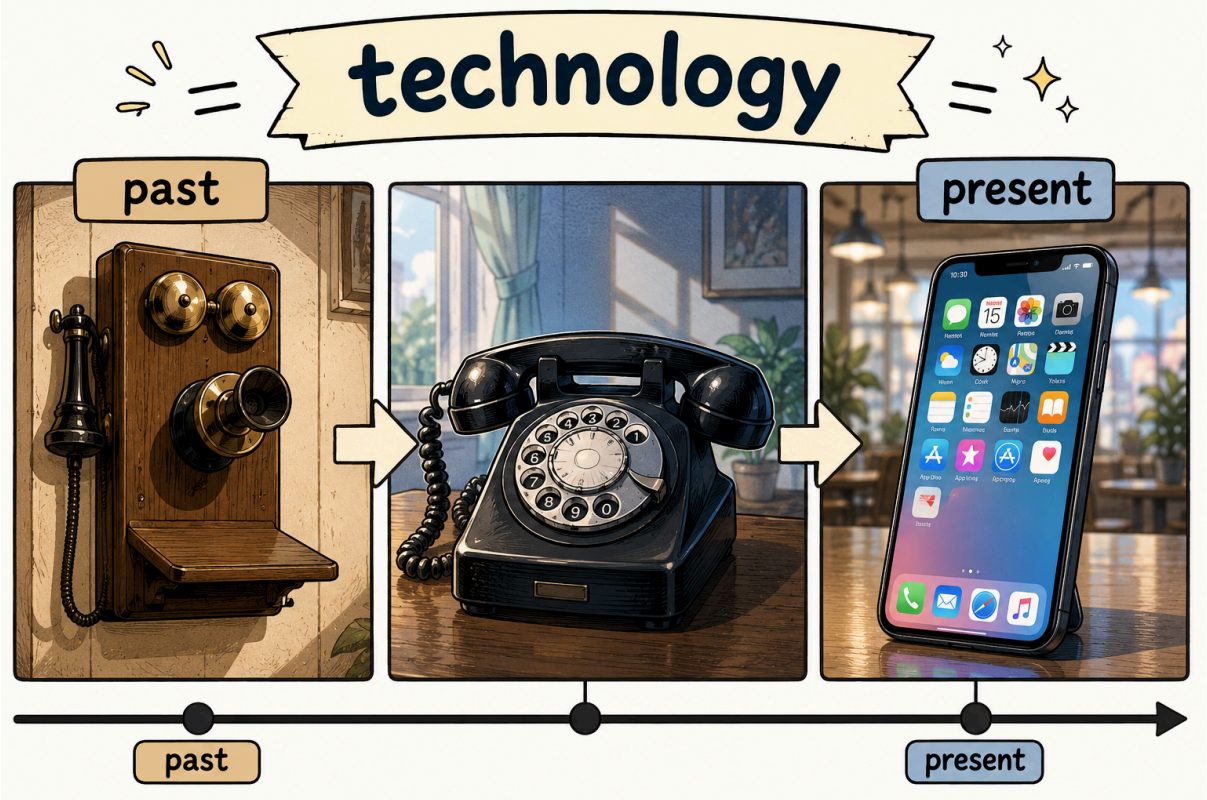
If someone lived inside a crater, they might think that the crater is their whole world.

But if they climbed above the crater wall, they would see much more.

This is like our understanding of the universe.

People’s understanding can change when they gain new knowledge.

Time, Place, and Knowledge Change Understanding



Easy Explanation

People from different times may understand the world differently.

Technology changes what people can observe, communicate, and know.

A person from the past might find modern technology confusing.

A person today might find older technology unfamiliar too.

This shows that understanding depends on time and context.

Light Pollution



Easy Explanation

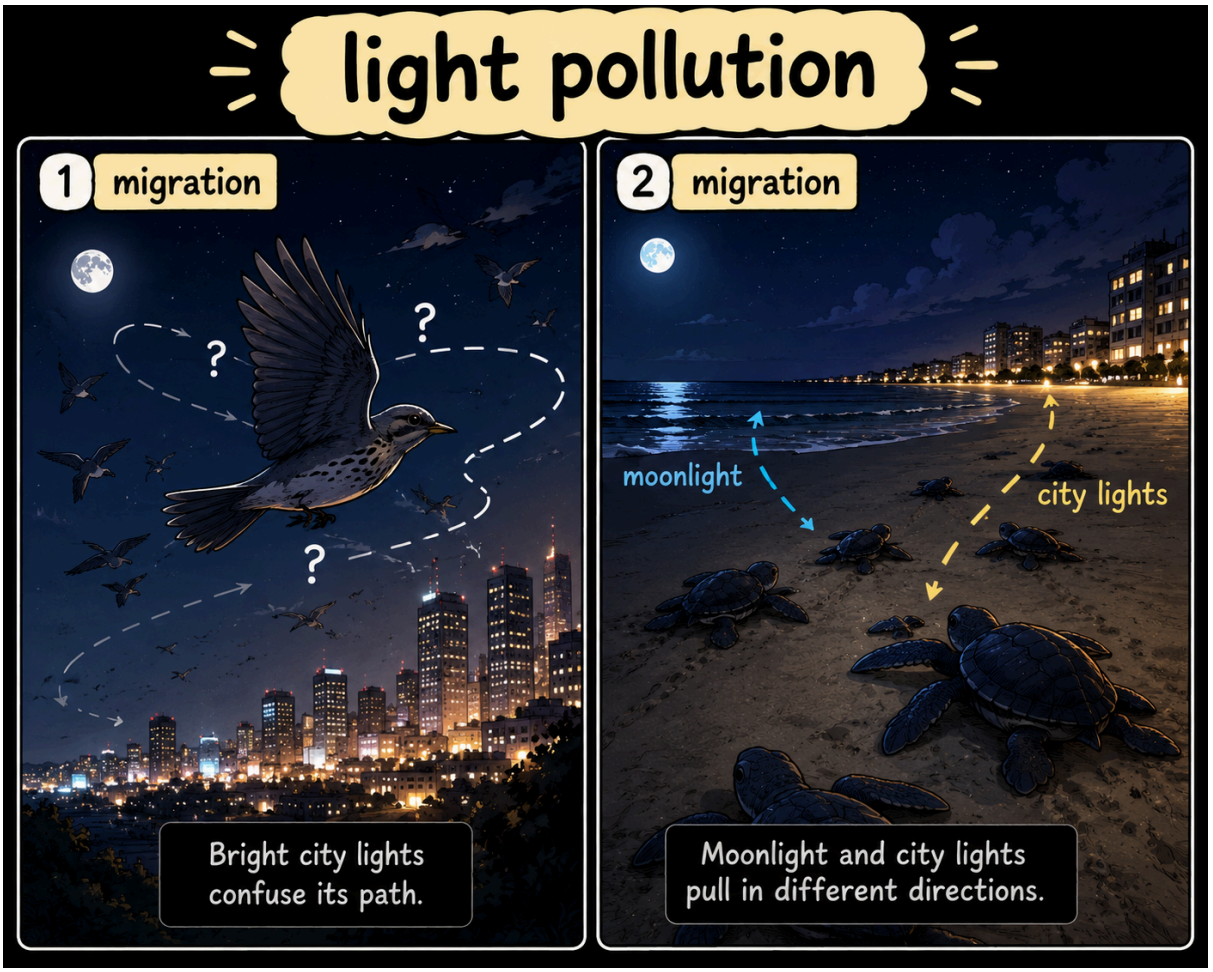
Light pollution happens when artificial light makes the night sky too bright.

In cities, it can be hard to see stars.

In darker places, more stars are visible.

Light pollution can also affect living things.

Living Things and Light Pollution



Easy Explanation

Some animals use natural light to move or find direction.

Birds may use stars during migration.

Sea turtles may use moonlight near the ocean.

Artificial light can confuse them.

Asking Scientific Questions

Easy Explanation

Science begins with observation.

When we look at the night sky, we can ask questions.

Examples:

How far away are the stars?
Why are some stars brighter?
Why do stars have different colours?
Are there other galaxies?

Good questions can lead to investigations.

Mini Activity

Write one question you have about space:

Final Summary

Final Explanation

People make sense of the universe in many ways.

They observe the sky.

They tell stories.

They use science and technology.

They learn from culture, place, and time.

The universe is not only something we study.

It is also something people connect to through meaning and perspective.