

Activity: Cosmic Scale Hunt

Time: 15–20 minutes

Format: Individual or pairs

Resource: [Scale of the Universe – Interactive](https://scaleofuniverse.com/en)

<https://scaleofuniverse.com/en>

Part 1 – Explore

Open the interactive and begin zooming outward.

As you explore, find examples of the following:

Object/Structure	Example you found	Approximate size
Planet		
Star		
Solar System-scale object/region		
Galaxy		
Galaxy cluster or larger structure		
Observable Universe		

Don't worry if the numbers seem enormous. That is part of the investigation.

Part 2 – Put the Universe in Order

Arrange these from **smallest to largest**:

Milky Way – Earth – Sun – Observable Universe – Solar System – Galaxy Cluster

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Now turn this into a hierarchy by completing:

Earth is part of the _____.

The Solar System is part of the _____ galaxy.

The Milky Way is one of many _____.

Galaxies can form groups and _____.

These structures form part of the _____.

Activity: Cosmic Scale Hunt

Part 3 – Powers of Ten Challenge

One of the most important ideas in the interactive is that astronomical objects differ by **orders of magnitude**.

For example: 1 000 000 000 000 km = 1×10^{12} km

Use the interactive to find **three astronomical measurements** and record them using scientific notation.

Object or Distance	Measurement	Scientific Notation

Part 4 – The Scale Model Problem

Now give students this challenge:

Imagine you had to draw the **Solar System, Milky Way galaxy, and observable Universe** accurately to scale on one sheet of paper.

Could you do it while still making the Solar System clearly visible? **Yes / No**

Explain:

Then ask: **Why are scale models useful in astronomy?**

Why must every scale model leave out some information or simplify reality?

Final Challenge – “Where Am I?”

Without looking back, complete the cosmic address:

Me → **Earth** → _____ → _____ → **galaxy group/cluster** → _____

Then answer: **What surprised you most about the scale of the universe?**
