

Gravity Builds the Universe

Student Worksheet

1. Video

Watch the class video.

While watching, write:

Three facts about how gravity forms objects in space

1. _____

2. _____

3. _____

One question you still have

1. _____

2.. Reading: Gravity Builds Everything

Millions of years after the Big Bang, space was filled with huge clouds of gas and dust. These clouds were cold and spread out at first, but gravity slowly began pulling the particles closer together. As the cloud gathered more mass, its gravity grew stronger. This caused even more gas and dust to clump together.

When enough material gathered, the centre of the cloud became hot and dense. Eventually, the pressure became high enough for nuclear fusion to start. This is when atoms in the centre begin to fuse together and release energy. At that moment, a star was born.

The leftover gas and dust continued to swirl around the new star. Gravity pulled these pieces together into smaller clumps. Over millions of years, these clumps became round and solid. These are planets. Some planets collected enough gravity to form their own smaller systems. Dust and rock circling a planet can crash together until they stick. Once the clump becomes large enough, it forms a moon.

The same process can create asteroids, dwarf planets, and comets. Gravity shapes everything in the universe. It gathers material, squeezes it together, and slowly builds the objects we see in the sky. Without gravity, stars, planets, and moons could not exist.

3. Activity: Build Your Own Solar System

On the blank page or separate sheet, draw your own mini solar system. Include:

- A star
- At least two planets
- At least one moon
- Arrows showing how gravity pulled gas and dust together
- Labels explaining how gravity formed each object



4. Exit Ticket

Answer the following:

1. One thing I learned about how gravity forms objects in space.

2. One thing I still wonder about.

3. Rate your understanding from 1–5 and explain why.