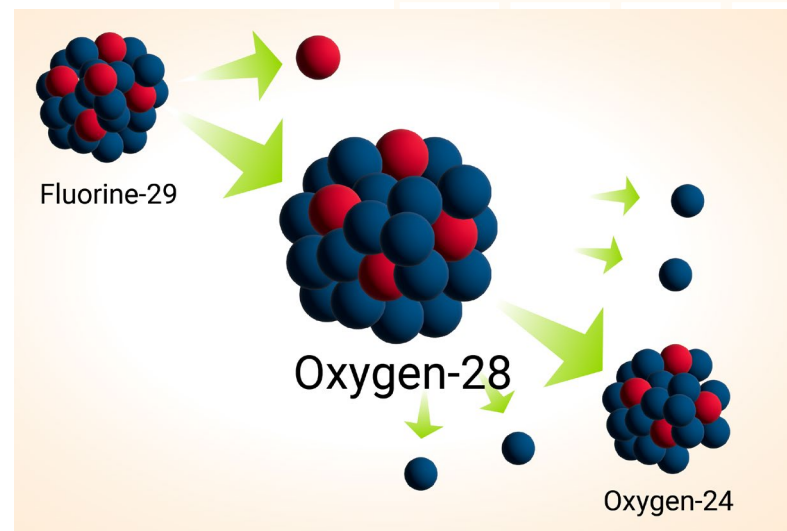


# Oxygen-28: the heaviest oxygen isotope

Slide by Neil Goalby. Available from [rsc.li/49FucJ1](https://rsc.li/49FucJ1)

Researchers have made oxygen-28, the heaviest oxygen isotope, by bombarding beryllium with calcium-48. This created some fluorine-29, which was then fired at liquid hydrogen, causing it to lose a proton, producing oxygen-28 nuclei.

Studying isotopes with unusual neutron-to-proton ratios can provide insight into atomic nuclei, especially nuclei that have a 'magic number' of protons or neutrons, which are known to be unusually stable. Researchers discovered that oxygen-28 was not stable. The nuclei formed only briefly, before decaying into oxygen-24.



*Scientists create oxygen-28, the heaviest isotope, and discover its surprising instability*

## Questions

1. What is meant by the term isotope?
2. Give the number of protons and neutrons in oxygen-28.
3. Suggest how oxygen-28 decays into oxygen-24.