Ecosystems – Everything’s Connected

How is everything on our planet connected together

Year 7-9

Learning Outcomes:

At the end of the session:

✓ All pupils will be able to link producers, consumers, and decomposers together into complex food webs

✓ Most pupils will start to recognise the complexity of ecosystems and how changes to one part can have a large impact on other components

✓ Some pupils will understand that toxins can bioaccumulate and biomagnify

Session Outline:

The session starts by explaining what an ecosystem is and different levels of environmental organisation (biosphere, organism, etc.). We’ll then look at the roles of consumers and producers. Working together the students will get to create their own example food webs (including producers, herbivores, carnivores, omnivores, etc.). We’ll then discuss how biomass pyramids can also be used to show connections between organisms. The students then play ‘ecosystem tag’ to highlight how energy and nutrients cycle. In a few different versions of this game we’ll illustrate the importance of decomposers, and how toxins can affect animals at higher levels. Next, bioaccumulation and biomagnification are defined in more detail and highlighted through examples – historical DDT use and ospreys, and the current problem of POPs, microplastics, and ocean rubbish. The session ends with examples of positive actions to help solve these problems, including what the students can personally do to help.

Curriculum Links

Science
- Relationships in an ecosystem
- Photosynthesis

Geography:
- Human and physical geography

Citizenship

Please note, no live animals are used in this session.