

Interdisciplinary Science Online Lectures for Schools



The following are suggestions for follow-up questions and studies to the Channel Talent seminars offered by the Society for Natural Sciences linking the seminars to the A-level syllabuses. The Society welcomes contributions to these pages from teachers: contact ceo@socnatsci.org

AstroBiology

Physics:

Why is a planetary magnetic field important for the retention of an atmosphere?

- *Links to magnetic force on charged particles (Bev), heat and molecular speed, escape speed (gravity), cosmic rays (particles)*

Chemistry:

Why is free oxygen a potential sign of life on other planets? Where is the oxygen on Mars?

- *Links to redox reactions, electronegativity*

Biology:

One might imagine that given time the constituents of a viable cell might simply come together at random. The following calculation explains why this can't be true and hence that cells must evolve from simpler structures. How many proteins can be made from 20 amino acids? How many genes can be assembled from 4 nucleic acids?

- *Link to proteins and nucleic acids*

Proton transfer cascades across a membrane have been hypothesised as an energy source for prebiotic cells. Why do you think this is?

- *Links to proton pumps*