How Science Works: Fossil Record – Televised Debate - Teachers' Notes

Class 10 11	**Set** 1 2 3 4 5 6 Mixed Ability	**No. in Class** B: G: SEN: EAL:	**Staff**

Learning Outcome(s)

Pupils should learn:

- How explanations of many phenomena can be developed using scientific theories, models and ideas
- To recall […] apply and question scientific information or ideas
- To present information […] and draw a conclusion, using scientific language […] and ICT tools.

Context and Starter

- Before the lesson begins:
  1. Set up a DV camera on a tripod
  2. Organise the room. The scientific panel require a desk of their own at the front. The TV presenter should have a separate desk. Audience members must sit facing the panel.
- Explain the learning outcomes for the lesson
- See: '**How should we Interpret the Fossil Record?**'

The lesson begins with a TV programme transcript which acts as a DART. Pupils are introduced to the three theories currently used to interpret the fossil record: Phyletic Gradualism, Punctuated Equilibrium and Phyletic Discontinuity. Allow 3 minutes silent reading time, and 7 minutes to complete the questions.

Main Activity

- Explain to the pupils that they are going to plan the production of a televised debate in the style of '*Newsnight*'. You yourself will act as the directing manager.
- Organise groups of 6 learners. Pupils will adopt one of three roles: Presenter, Scientist, or Audience Member. To work effectively there should be: 1 Presenter, 2 Audience Members, and 3 Scientists. Distribute the laminated briefing sheets and allow 10 minutes for pupils to read about their different roles and generate relevant questions through small group discussion. Pupils will require help to get into their roles.

Transition

- Bring the discussions to an end. Explain that each group will be called up in turn to showcase their acting and debating talents.

Second activity

- Ask for silence on the set. Roll the DV camera and begin with the first presenter. Quickly repeat for each group of 6 learners, allowing no more than 5 minutes for each debate to unfold. A stopwatch is highly recommended. Assess pupils according to their grasp of the science and their presentation skills.

Plenary

- Set the homework. Pack equipment away. Ask three pupils to name two things that they have learnt this lesson.

Date: **Day:**

Period Length: 50 min

Key Vocabulary

- Fossils
- Punctuated Equilibrium
- Neo-Darwinism
- Phyletic
- Sedimentary rocks
- Common ancestry

Resources

- Digital Video Camera
- Laptop
- Computer Projector
- Laminated Briefing Sheets
- Photocopied Starter Sheets
- Stopwatch
- Clipboard prop (optional)

Differentiation

- Ask more able learners to construct a graphic organiser in their books to compare and contrast the three different theories.
- Some pupils may feel very inhibited about performing in front of the class. Suggest they form one of the audience members – and aid them to prepare a set of appropriate questions.

LSA Deployment

- Can help with the DV camera recording.
- Can aid in generating questions.

Homework – Occasionally, fake fossils have been artificially produced. Examples include 'Piltdown man' and some Chinese fossils. How have the fakes been detected? What motivated the fakers? Has anyone ever mistaken a genuine fossil for a fake? Research and write a 200 word essay.