Teaching guide: Fracking

This resource supports the Level 3 Certificate and Extended Certificate in Applied Science. It will help you prepare students for Unit 3: Science in the modern world.

**Unit type:** Externally assessed (pre-release)

**Guided Learning hours:** 60

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| **Focus of the Topic** | **Suggested teaching/delivery ideas** | **Links to AO** | **Resources**  |
| Ethical/moral and commercial impacts of fracking specifically in UK | Learners can explore different scientific issues and related ideas. Using both textual and numerical information they can demonstrate their understanding when comparing different articles and resources with reference to different audiences and different purposes.Teachers present both [textual](http://frack-off.org.uk/category/news/) and [numerical data](http://www.environmentamerica.org/sites/environment/files/reports/EA_FrackingNumbers_scrn.pdf) from different articles and Learners read, assess and comprehend the information.Using the [link](http://frack-off.org.uk/mounting-evidence-the-harm-caused-by-fracking/) teacher can divide the class into small groups/pairs to look at each of the articles and discuss or debate public perception of Fracking, and how the media has influenced this.orLearners can watch the following videos and discuss or debate public perception: [The Dash For Gas: Independence at a Price](http://www.talkfracking.org/resources/) [Fracking Hell: the untold story](https://www.youtube.com/watch?v=dEB_Wwe-uBM)Learners can develop critical thinking and evaluative skills by assessing these articles and drawing conclusions on generalist media perception of fracking.Learners can compare the articles from generalist media against the specialist media information such as briefings and reports from [friends of the earth](https://www.foe.co.uk/page/key-information-fracking-shale-gas) and identify how these approaches and styles are used for different audiences.Using the same link above, working in groups learners can look at the impacts of fracking and present their findings to others. Look at impacts of fracking on the environment, including:* climate change
* wildlife and
* pollution
* water contamination
* radioactive contamination
* fracking waste.

Social impacts including:* human health
* agricultural and animal health
* water usage

 commercial including* economics.

Learners can then use this information individually to identify the benefits and drawbacks of fracking.Using information from [local pressure groups](http://frack-off.org.uk/local-group-specific-pages/local-groups-news/), [getting involved](http://frack-off.org.uk/get-stuck-in/)  and the [resources](http://frack-off.org.uk/campaign-materials/), Learners produce a summary of the key arguments and how campaigns are being used to influence political decisions.Learners compare how the local campaigns differ from campaigns by national group such as [friends of the earth](https://www.foe.co.uk/page/key-information-fracking-shale-gas) eg research and briefingsLearners can research roles of different scientists involved in the Fracking industry. The roles and responsibilities they could explore include:* Environmental scientist
* Material Scientist
* Research scientist
* Physicist
* Laboratory technician .

Learners can identify common/transferable skills and how these roles might overlap within this industry.  | AO1 Use information about topical scientific issues obtained from a variety of media sources.AO2: Understand the public perception of science and the influence the media have(General and specialist media)AO3: Understand the ethical, moral, commercial, environmental, political and social issues involved in scientific advances, and how these are represented in the media.AO4 Understand the roles and responsibilities that science personnel carry out in the science industry. | Fracking by the numbers report [environmentamerica.org/sites/environment/files/reports/EA\_FrackingNumbers\_scrn.pdf](http://www.environmentamerica.org/sites/environment/files/reports/EA_FrackingNumbers_scrn.pdf)[drillordrop.com/2015/12/18/fracking-by-numbers-figures-from-the-new-oil-and-gas-licences/](http://drillordrop.com/2015/12/18/fracking-by-numbers-figures-from-the-new-oil-and-gas-licences/)See Resources section of the specification( pages 72-73 ) Frack Off Extreme Energy Information Network[frack-off.org.uk/resources/](http://frack-off.org.uk/resources/)See Resources section in the specification(pages 72-73) [sciencecareerpathways.com/a-z-of-roles](http://www.sciencecareerpathways.com/a-z-of-roles)[nationalcareersservice.direct.gov.uk/advice/planning/jobfamily/Pages/scienceandresearch.aspx](https://nationalcareersservice.direct.gov.uk/advice/planning/jobfamily/Pages/scienceandresearch.aspx)[kent.ac.uk/careers/ScienceJobs.htm](http://www.kent.ac.uk/careers/ScienceJobs.htm)See Resources section in specification (pages 72-73) |