



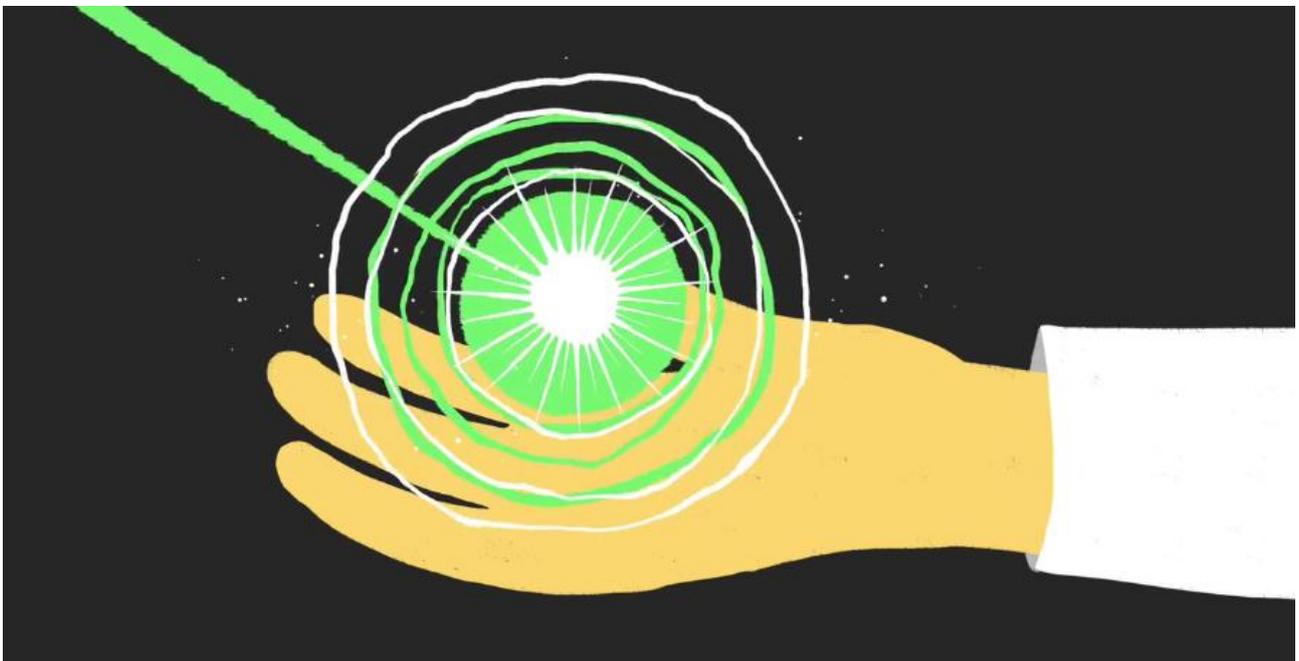
Key Stage 5 – Table top supernova

Notes for teachers

At a glance

This activity is based on work being carried out at The University of Oxford. A team is using laser-light to create tabletop supernovas to understand the origins of magnetic fields in our universe.

Students will act as science journalists and use a range of sources to find out more about the research and its aims before writing an article for a science news website. In doing so they will learn about the art of good science communication as well as the science of supernovas and magnetic field generation.



Learning Outcomes

- Students understand what a supernova and supernovae remnant are
- Students are able to use a variety of sources of information in order to write a science article outlining research taking place at The University of Oxford

Each student will need

- 1 copy of the pupil worksheet
- 1 copy of the research article
- 1 copy of the press release
- Access to the internet and presentation



You will also need

- Examples of science articles from websites, magazines e.g. New Scientist or newspapers

Possible Lesson Activities

1. Starter activity

- Show the video 'Shedding Light on the Situation' to the class which outlines a range of research projects being carried out at The University of Oxford using electromagnetic (EM) waves. Discuss the work being done creating table-top supernova. Ask students to suggest why scientists would want to do this.
- Ask students to read through page 1 of the pupil worksheet which gives some background information on supernovae.

2. Main activity: Writing the article

- Give the class a variety of short (less than 1000 words) science articles for them to read taken from magazines, newspapers and/or websites. Alternatively, use short extracts so students can read a variety. You could choose to have them all on a light/EM wave or space theme.
- Ask them to use page 2 of the pupil worksheet to highlight any signs of good science communication.
- They can then share their thoughts in pairs or small groups and discuss what their article was about, what they thought about the quality of writing and the tactics the journalist used to engage the reader.
- Students then work alone to write their article on the 'table-top supernova' research. The sources they can use are the pupil worksheet, a copy of the introduction to the Nature article, the press release (which can also be accessed through the website shown in the link below) and access to the PowerPoint presentation. This is a simplified version of a presentation used by a researcher on the project, Jena Meinecke. Students can use images from the sources in their article.
- The research article contains challenging terminology and concepts. Explain that as they progress in their studies they will come across information that they struggle to understand but there are tactics they can use which will make this easier. One technique is to highlight all the words and terms that they don't understand. They can then look these up on the internet and substitute these simpler meanings into the article. The article contains space for them to do this if they wish.
- Students can also carry out their own research to help them to write their article. For a human angle, they may wish find out more about Jena Meinecke and her work in promoting women in science and her physics outreach activities with children.

3. Plenary

- Ask students to read each other's articles and act as an editor to provide feedback using the checklist on page 2 of the pupil worksheet.



Weblinks

<http://www.ox.ac.uk/news/2014-06-02-lasers-create-table-top-supernova>

Press release from The University of Oxford which can be used instead of the paper version.

<http://physicsworld.com/cws/article/news/2014/jun/06/lasers-ignite-supernovae-in-the-lab>

An online article about the research.