

Contemporary Science Issues

Physics		Lesson 15: Are mobile phones bad for your health?	
Curriculum Key:	OCRA P1	OCRB P1h	(plus Additional Science specifications)
Objective(s) 1. Be able to use information to form an opinion or argument. 2. Understand the importance of evidence to support a claim or a new theory.		Resources needed: Starter Task cards for each group. Copies of newspaper articles and press release for each group. Information cards for each group. Copy of map and task instructions for each group. PowerPoint - "Mobile Phones".	
Starter: 10 - 15 minutes Introduced on PowerPoint slides 1 and 2. Recap on the electromagnetic spectrum. Students have to sort the parts of the spectrum into the correct order and match the parts of the spectrum with their uses and possible dangers. They then answer questions based on the EM spectrum.		Teacher input/assessment Distribute Starter task instructions and cards. Display slide on PowerPoint and explain the starter task. Go through answers after task (answers included).	
Main Activity 1: 10 - 15 minutes Students are given two newspaper articles and a press release from a mobile phone company. They have to answer a series of questions based on the articles. They should comment on the importance of evidence when making a claim.		Teacher input / assessment Distribute newspaper articles and press release with activity instructions. At the end of the task ask students to volunteer their answers.	
Main Activity 2: 20 - 25 minutes Students are told that a mobile telephone company want to put a new mast up in a town, with a choice of three sites. The students are to decide where they should place the mast, working in small groups (3 – 4). They are give a map and the task sheet (which has some information) and have 5 minutes to make a decision. They are then given 4 information cards and have 10 minutes to make a final decision with supporting evidence.		Teacher input / assessment Distribute instructions and maps and information cards in an envelope (students must not see these before they are instructed to do so). Teacher to use PowerPoint presentation. Students will write down their findings. NB: There is no right or wrong answer!!	
Plenary: 5 - 20 minutes (depending on method of presentation) Students could present their findings to the rest of the group. The Class could debate on the best position of the new mast. The teacher should end the lesson by stressing the importance of having evidence to support a scientific idea.		Teacher input / assessment Act as mediator during presentation / Discussion.	
Learning Outcomes: All students must: Be able to make a decision based on information given. Most students should: Be able to justify their decision with evidence provided. Some students could: present their decision to a class and justify with scientific evidence.			
Key Skills: scan articles to select evidence and reject conjecture. Key words: electro-magnetic spectrum, radiation Homework: Survey the locations of mobile phone masts in their local vicinity.		Differentiation: More able: can offer a rationale for the application of a scientific approach to making a decision. Less able: can make a decision based on evidence.	