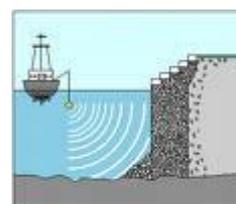


How does Ernest Rutherford's work affect us?



It is now 100 years since Ernest Rutherford was awarded the Nobel Prize “for his investigations into the disintegrations of the elements, and the chemistry of radioactive substances”. Some of the knowledge and applications coming from Rutherford's research over the past century are as follows.

- Some atoms give off radiation
- What an atom looks like
- Atoms can be changed into other types of atoms
- The electronic age
- Modern ways of communication
- The information age
- The age of the Earth
- X-rays
- Radiography
- Radiotherapy
- Nuclear energy
- Nuclear weapons
- Smoke detectors
- Geiger counters
- TV
- Radio
- Sonar
- Particle accelerators
- Sterilising bandages
- Finding cracks in metal





How does Ernest Rutherford's work affect us? Task sheet

Task 1

Make lists of knowledge and applications from the list above

Knowledge	Applications

Task 2

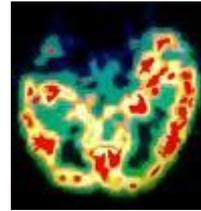
What are some of the things we use in the electronic age that people in 1908 never used?

Task 3

What are some of the different ways we communicated in 1908 and 2008?

Task 4

How was information communicated in 1908 and 2008?



Task 5

How has knowing about X-rays helped us?

Task 6

Make a list of good and bad things associated with nuclear energy. Be prepared to give a reason for your answer.

Task 7

Can computers, cell phones and TVs have disadvantages?

Task 8

If you were making decisions about how we decide to use these applications such as nuclear energy, TV, computers, what would you need to know?

Task 9

How has these newer devices made our life's better or easier?

How does Ernest Rutherford's work affect us? Task Sheet Answers

Task One

Make lists of knowledge and applications from the list above

Knowledge	Applications
<ul style="list-style-type: none">• Some atoms give off radiation• What an atom looks like• Atoms can be changed into other types of atoms• Nuclear energy• X-rays	<ul style="list-style-type: none">• The electronic age• Modern ways of communication• The information age• Radiography• Radiotherapy• Nuclear power stations• Nuclear weapons• Smoke detectors• Geiger counters• TV• Radio• Sonar• Particle accelerators• Sterilising bandages• Finding cracks in metal

Task Two

What are some of the things we use in the electronic age that people in 2008 never used?

Electronic weather stations

Electronic watches, stop watches

Electronically controlled washing machines, dishwashers and clothes dryers

Microwave ovens

Etc

Task Three

What are some of the different ways we communicated in 1908 and 2008?

Hand written letters delivered by mail

Telegraph

Telephone

E-mail

Texting

Facebook, Bebo, Skype etc

Cell Phones

Task Four

How was information communicated in 1908 and 2008?

Town Cryer

Newspapers

Putting up posters/notices

Television and radio

On-line news

Websites and blogs

Computers

Smart phones

Task 5

How has knowing about X-rays helped us?

Radiography, radiotherapy and finding cracks in plane fuselages.

Task 6

Make a list of good and bad things associated with nuclear energy. Be prepared to give a reason for your answer.

Smoke detectors

Nuclear power stations (a debateable area)

Nuclear weapons

Task 7

Can computers, cell phones and TVs have disadvantages?

Computer and TV addicts

Computer fraud and harmful sites

Text and cyber bullying

Driving hazard

Thinking the information given is true or the whole story

Reduces communication between people

Task 8

If you were making decisions about how we decide to use these applications such as nuclear energy, TV, computers, what would you need to know?

Nuclear energy: do we need it, is it safe, how about waste?

TV: for educational uses as well as entertainment?

Computers: for educational uses as well as entertainment and communication?

Task 9

How has these newer devices made our life's better or easier?

Can keep in contact with family anywhere at all times

Can find out about what is happening, where and when, a lot easier

Helped in detection and treatment of injury and disease

Be protected from house fire when asleep

Can detect fish in ocean easier

Easier access to information

etc