

## History of X-rays

### Worksheet 1 Teacher's notes

1. Have you ever had any injury ? Have you had anything broken? What can cause an injury?

*students' own answers*

2. Complete the sentences using the words from the box<sup>1</sup>

1. I tripped on a loose paving stone as I was walking down the street and fell flat on my face.
2. I stumbled and lost my footing and twisted my ankle.
3. I stubbed my toe on a chair. I may have fractured it, but I hope I haven't.
4. I banged my knee on a metal table. I am surprised I didn't smash my kneecap to pieces.
5. I twisted my ankle when I went over and now I can barely walk. I don't think it's broken or anything. It's more likely to be a sprain.
6. I slipped on the wet floor and went over and landed on my bottom.
7. The motorbike went over on my ankle and crushed my leg.
8. I think I've dislocated my shoulder and I can barely move it.
9. I squashed my finger in the door and it's throbbing like mad.
10. I pulled this splinter out of the side of my fingernail and now it is infected.

3. Do you know what an X-ray is ? Where are they used? How helpful are they? Who discovered them ?

*X-rays are used to analyze problems with bones, teeth and organs in the human body; to detect cracks in metal in industry; and even at airports for luggage inspection.*

Go online and find the answers to these questions:

- Who discovered X-rays?

*German physicist Wilhelm Conrad Röntgen in 1895*

- Why are they called X-rays?

*While experimenting with electrical currents through glass cathode-ray tubes, Röntgen discovered that a piece of barium platinocyanide glowed even though the tube was encased in thick black cardboard and was across the room. He theorized that some kind of radiation must be traveling in the space. Röntgen didn't fully understand his discovery so he dubbed it X-radiation for its unexplained nature.*

- What did the first rontgenogram show?

*To test his newfound theory, Röntgen enlisted the help of his wife for his first X-ray photos and captured images of the bones in her hand and her wedding ring in what would become known as the first **röntgenogram***

- Why wasn't the discovery patented?

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<sup>1</sup> taken from Oxford English for Careers, Medicine by Sam McCarter, page 14

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*Röntgen deliberately didn't patent his discovery, feeling that scientific advances belonged to the world and should not be for profit.*

4. Watch a short film about X-rays:

<http://science.howstuffworks.com/innovation/inventions/who-invented-the-x-ray.htm> .

5. As it turns out X-rays can also inspire artists, have a look at the stunning gallery : [http://www.x-rays.nl/WebGalerie\\_e.htm](http://www.x-rays.nl/WebGalerie_e.htm)

*exercises 4 and 5 do not require students' answers*

<http://www.nlm.nih.gov/medlineplus/xrays.html>

<http://science.howstuffworks.com/innovation/inventions/who-invented-the-x-ray.htm>

<http://www.unc.edu/~afulp/history.htm>

