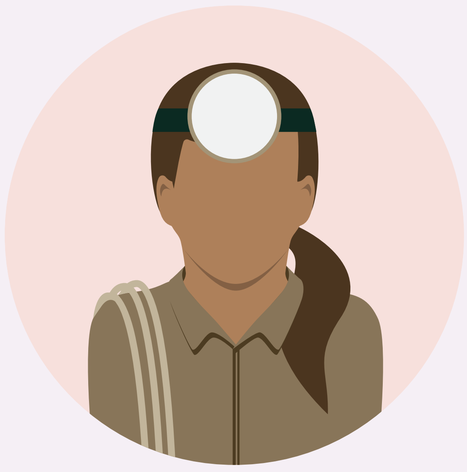
The Science in Jewellery

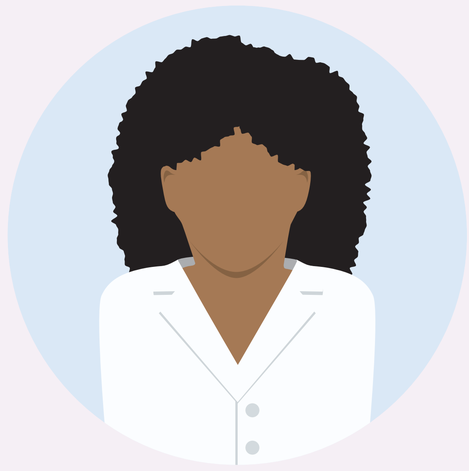
We think of jewellery making as a purely artistic endeavour but if you're interested in science there are lots of different careers for you in the jewellery industry.

The Explorer

Before precious metals and gemstones can be mined, they need to be found. The Explorer assesses geological data, including collecting and analysing rock samples, to locate and evaluate deposits of precious metal ore or gems. They use computers to make 3D models of what is below the ground and make recommendations on where to mine.

Studied: Geology; physics; chemistry.
Key Skills: Communication, organisation and planning, navigation.

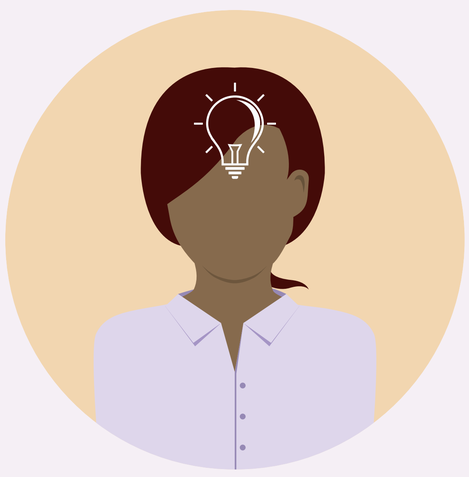


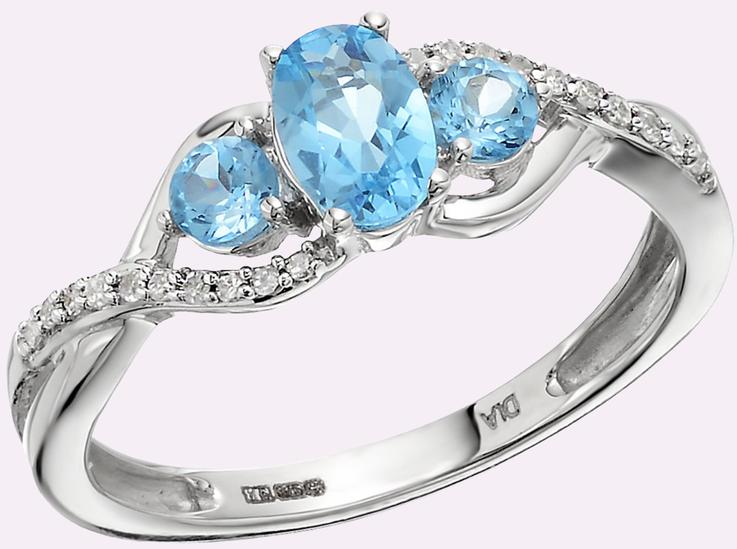


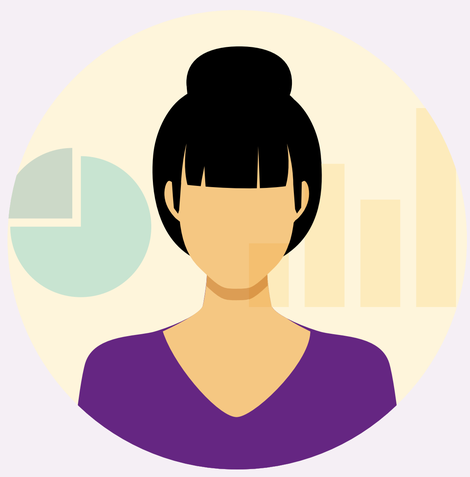
The Processor

Mining companies extract gemstones and ore, and refine precious metals. The Processor focuses on improving the chemical processes and reagents used to separate the precious metals from the ore so that they are efficient, safe and cost effective. They also ensure that the mine adheres to environmental and safety regulations.

Studied: Industrial chemistry; chemistry.
Key Skills: Problem solving, analytical thinking, numeracy.



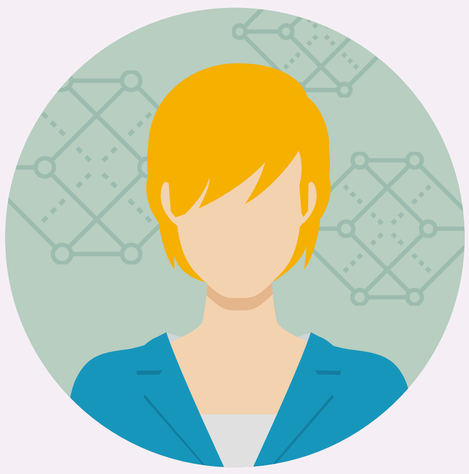




The Materials Scientist

The Materials Scientist studies the structures and chemical properties of natural and synthetic materials, looking for new and innovative ways to treat metals, gems and artificial stones. They might use lasers to colour titanium, work out why some metals colour your skin, or use cutting edge techniques to create new jewellery designs.

Studied: Materials science; chemistry; engineering.
Key skills: Creativity, innovation, attention to detail.



The Quality Controller

Assay offices test the purity of gemstones and precious metals, and add hallmarks to finished pieces. The Quality Controller is responsible for improving the test processes and methods, and interpreting test results. They manage the team of chemists and technicians who run the tests and train them in new testing methods.

Studied: Chemistry; analytical chemistry.
Key skills: Communication, patience, leadership.

The Gemmologist

The Gemmologist studies gems by observing and testing their properties to confirm their identity and determine if they are natural or synthetic, or have been treated or enhanced. They also certify and value gems, design jewellery settings that protect and best display the stones, and study their geological origins and historical journeys.

Studied: Geology; gemmology.
Key Skills: Observation, organisation, communication.

Want to work as a scientist in the jewellery industry?

If you like the sound of any of these careers, talk to your teacher about which subjects will help you become a scientist.

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