

Scenario

Crime Scene

University of Bonn, Biology Education





Scenario description

“The Mysterious Case of Juliana”

1. First, the photo of the crime scene is presented to the students.
2. You may want to tell a story: a dead woman has been found by the neighbour who called the police and the doctor.
3. After the medical investigation the doctor writes a report , which is given to the students.
4. The students (in small groups) are asked to solve the case by selecting only one expert for further investigation.
5. For their selection the groups should use the job descriptions of available experts\* and justify their choice (by filling in the expert report request sheet). Each student group needs the five job descriptions.
6. Each student group receives only the report of the expert they’ve chosen. Several groups might choose the same expert, so please have enough copies ready.
7. If the case has not been solved after the first round, each group can choose a second expert, and so on…

\* the job descriptions might have to be adapted to each countries specifications

Material:

* Crime Scene Photo
* Doctor's Report
* 5 Career Descriptions
* Expert Report Request Sheet
* 5 Expert Assessments

Next steps: inquiry (science learning) & consolidation

* e.g.: electricity, conductor vs. non-conductor, functionality of a fuse, risk of electric shock, first aid, safety at home, risk of cheap electric products, …



DOCTOR’S REPORT

Date: 30/03/2016

In case: residual case of death: Juliana Chalala, Diesunddasstr. 18, 56788 Bonn; verheiratet, aufgefunden am 12.03.16

Expert name: Stefan Stethoskop, Hauptstr. 43, 51111 Bonn

Expertise: Medical Doctor, Dr. med., 21 years working experience

A1



**PHOTOS**

Piece of evidence / Issue #: **A1**

Description:

* Small wound on right forehead
* Minor blood loss

Piece of evidence / Issue #: **A2**

Description:

* Black marks on finger (right hand, forefinger)

Additional remarks:

* Strong, unidentifiable smell in the room

Assessment:

**A1:**

* Superficial injury, no lesion of head bone
* Head injury not lethal
* Blunt force trauma can be excluded for cause of death

SUMMARY:

* **Cause of death unclear**
* **Further specific investigations are needed, expert assessment is required!**

A2



**Electrician**



http://ringelectric.ca/choose-right-ottawa-electrician/

Name: Peter Power

Age: 33

He likes: Coffee roasting

He hates: 3D printing

Educational background: Electricians spend three and a half years in training. Apprentices spend three to four days a week at a company providing vocational training, where they acquire the practical skills required for their work. One or two days are spent at a vocational school, where they learn the theory for their future job.

Electricians install, inspect and test equipment, make sure that electronical systems work, and find and fix faults. Theywork in a very wide range of areas, from bringing power to people's homes to major engineering projects. They also work with renewable technology, such as wind turbines, 'smart' heating systems and photovoltaic systems that produce solar power.

**Pharmacist**

http://www.botswanayouth.com/vacancy-pharmacist-wanted-at-bokamoso-private-hospital/

Name: Helena Healthy

Age: 42

She likes: Creative writing

She hates: Flower arranging

Educational background: Becoming a pharmacist requires years of education and training at university to obtain the necessary knowledge in physics, chemistry, biology and calculation skills.



A pharmacistis an expert in medicines and medication. Pharmacists usually work in private pharmacies as experts and in customer service. Pharmacist uses their expertise to evaluate proper and effective medication. He or she assesses whether the product is suitable and provides adequate guidance for using medicines. Pharmacists also make medicines in pharmacies, although this happens rarely today. Pharmacists are educating staff in health care. They may also plan and develop medication.

**Zoologist**

http://www.wisegeek.net/how-do-i-become-a-zoologist.htm

Name: Fritz Frog

Age: 35

He likes: Magic

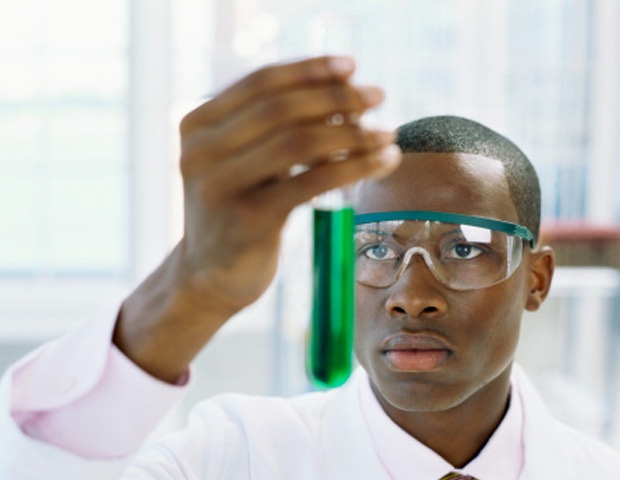
He hates: Crossword puzzles

Educational background: First you need a Bachelor of Science degree in zoology or a closely related field such as environmental science or biology. Depending on your career ambitions and interests, you might also need a Master degree or even a PhD in zoology or biology.



Zoologists examine the form and function of animals. Studying forms and their development provides the basis for understanding fauna and relationship between species. A zoologist often specializes in a certain group of animals. Research subject can be the living conditions, behavior or vital functions of these animals. Task of a zoologist may vary a lot, but usually the job requires quite a lot of fieldwork.

**Forensic Chemist**



https://www.tolajob.co.za/experiential-training/sapref-analytical-chemistry-inservice-in-kzn-in-isipingo/21295/

Name: Vito Invitro

Age: 38

He likes: Astronomy

He hates: Squirrels

Educational background: A Bachelor degree in forensic science or a natural science with extensive coursework in mathematics, chemistry, and biology is needed.

Forensic chemists analyse non-biological trace evidence found at crime scenes in order to identify unknown materials and match samples to known substances. Working in a lab, they run tests on samples collected by investigators. They use a variety of techniques, including microscopy, optical analysis (such as UV and infrared), gas chromatography and other technologies. They carefully document their findings and write reports that are used to support criminal investigations. Forensic chemists may also testify to their findings in court.

**Horticulturist**



https://www.bildungsserveragrar.de/ausbildung/gruene-berufe/gaertner-mw/

Name: Flora Florida

Age: 34

Likes: Origami

Hates: Glassblowing

Educational background: The three-years apprenticeship combines practical work and learning in vocational schools to acquire knowledge about plants and their cultivation.

Horticulturists are experts for plants and their growth. They use scientific knowledge to cultivate and propagate plants. Horticulturists sometimes work in the field of landscaping design to create gardens, recreational areas, botanical gardens, and parks.

Expert Report Request

Datum: \_\_ /\_\_ /\_\_\_\_\_\_\_

In case: residual case of death: Juliana Chalala, Diesunddasstr. 18, 56788 Bonn; verheiratet, aufgefunden am 12.03.16

Name of the expert:

Justification / Expertise required for investigation:

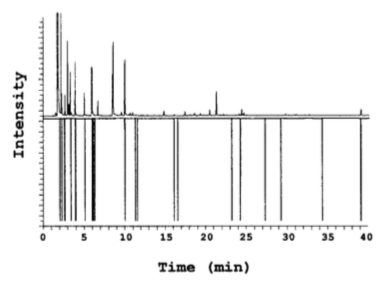
EXPERT ASSESSMENT

Date: 30/03/2016

In case: residual case of death: Juliana Chalala, Diesunddasstr. 18, 56788 Bonn; verheiratet, aufgefunden am 12.03.16

Expert name: Vito Invitro, Einsteinweg. 43, 51111 Bonn

Expertise: Forensic investigator, 11 years working experience



Piece of evidence / Issue #: **Z14**

Description:

* Strong, unidentifiable smell in the room
* Detected by first person at the place of finding (Doctor)

Assessment:

* Sample of room air has been taken and analysed in Forensic Headquarter
* Detection of substance was performed using a gas chromatograph, which revealed a mass spectrometry signature typical for **Bananas**
* The smell, detected in the room, is harmless for humans

EXPERT ASSESSMENT

Date: 01/04/2016

In case: residual case of death: Juliana Chalala, Diesunddasstr. 18, 56788 Bonn; verheiratet, aufgefunden am 12.03.16

Expert name: Flora Florida, Margeritenweg 1, 52211 Bonn

Expertise: Horticulturalist, 18 years working experience



**PHOTOS**

Piece of evidence / Issue #: **X77**

Description:

* Unknown plant
* The leaves show a velvety, purple-haired foliage
* Three shoots are placed together in a glass of water

Assessment:

* The plant is a **Velvet Plant** (*Gynura aurantiaca)*
* The Velvet Plant is not toxic
* Originally from Java, but very common as a houseplant throughout the world

EXPERT ASSESSMENT

Date: 30/03/2016

In case: residual case of death: Juliana Chalala, Diesunddasstr. 18, 56788 Bonn; verheiratet, aufgefunden am 12.03.16

Expert name: Helena Healthy, Beethovenstr. 14, 45897 Bonn

Expertise: Pharmacist, officially recognised, 24 years working experience



**PHOTOS**

Piece of evidence / Issue #: **A12**

Description:

* Empty aluminium blister pack on table
* Unlabelled, no packaging could be found
* Number “B729B365” at the margin of the blister
* Contained 10 portions
* In surrounding:
  + Glass of water   
    (filled for 1/3)

Assessment:

* The blister contained **Peppermint Chewing gums**, “Power Mint”
* Confirmed by toxicological testing, performed by ToxiTest Lab, Bonn,   
  Ref. #1235
* No toxic substances traceable
* This piece of evidence could not cause death in the present case from the toxicological point of view

EXPERT ASSESSMENT

Date: 30/03/2016

In case: residual case of death: Juliana Chalala, Diesunddasstr. 18, 56788 Bonn; verheiratet, aufgefunden am 12.03.16

Expert name: Fritz Frog, Anacondastr. 99, 53333 Bonn

Expertise: Zoologist, PhD, 11 years working experience

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Piece of evidence / Issue #: **C05**

Description:

* Unknown reptile (snake)
* Found behind file cabinet next to window
* Lethargically, captured alive
* Body length: 1.2 m

https://www.flickr.com/photos/42389547@N00/88959356; Tom Spinker

Assessment:

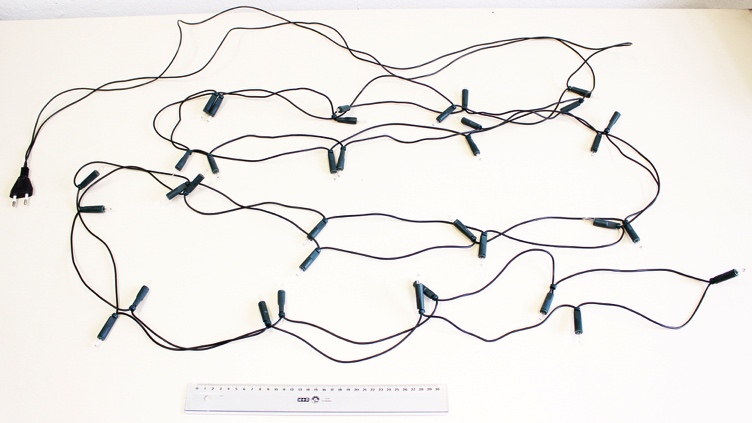
* The snake is a **Corn Snake** (*Pantherophis guttatus)*, female,   
  about 7 years old
* The corn snake is not poisonous and cannot seriously harm humans despite of minor injury of upper skin layers through a bite attack
* Originally from the South-Eastern part of the USA, but Corn snake are often kept as a pet and raised for this purpose
* DNA analysis (by GenLabInc, Cologne, Ref.#4711) confirmed that this specific Corn Snake has been kept in the terrarium on the file cabinet

EXPERT ASSESSMENT

In case: residual case of death: Juliana Chalala, Diesunddasstr. 18, 56788 Bonn; verheiratet, aufgefunden am 12.03.16

Expert name: Peter Power, Einsteinweg. 43, 51111 Bonn

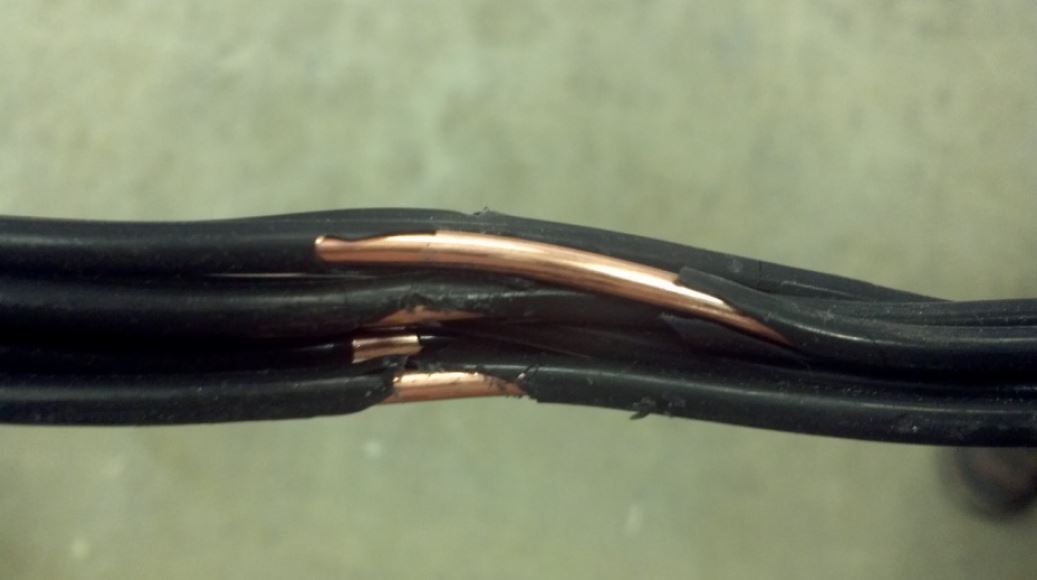
Expertise: Electrician, 11 years working experience



Piece of evidence / Issue #: **E18**

Description:

* Chain of lights
* 3 m long
* 220V (no transformer)
* Naked (not isolated) wire next to plug



http://eidetec.com/electric-wire-with-insulation

Assessment:

* Cheap quality of light chain, no sign of technical test safety certificate on product
* Extensive damage (3.5 cm) of isolation on one conductor
* Touch of current-carrying wire (220V) incl. malfunction of main fuse can cause major injuries or even **lethal electric shock**, indicated by soot residues in contact area