ENGLISH
For Forensic Science Students

2024

UNIT I. WHAT IS FORENSIC SCIENCE?

Warm-up

1. Discuss the following questions:

1) What is forensic science?
2) Why is forensic science popular?
3) Why do people need forensic science?

2. Answer the questions using the pictures and key words given below.


justice to investigate to find a criminal to help the police
to collect evidence to analyze to take photos

Vocabulary

Activity 1 Fill in the table. Not all forms will be used for each word. Use dictionary, if necessary. Translate the words into Arabic.

Verb	Noun (thing or concept)	Noun(person)	Adjective
	science		scientific
	justice		
		investigator	
to prove			
to identify			
		a suspect	

Activity 2. Read the word combinations and translate them into Arabic.

An investigation of a crime, to collect evidence, to be collected by the field officers, prove or disprove claims, to study fingerprints, to identify and incriminate suspects, scientific means, to administer justice, forensic scientists, DNA profiles, physical evidence.

Activity 3. Choose the correct word from the list to complete each sentence. One word is odd. Translate the sentences into Arabic.

science	prove	suspected	suspect
justify	suspicious	collecting	identify
investigating	incriminates	incriminate	scientific
proof	justice	scientists	investigation

1) Forensic _____ is an umbrella term that has various areas under it.
2) There is not enough evidence to prove such _____ .
3) The state police are _____ the incident.
4) Can you _____ that you were at home at the time of the attack?
5) In Roman society, _____ was administered in the market place.
6) Both men had originally been _____ of Brown's murder.
7) A 32-year-old man from London is the prime _____ in the murder _____. It will be conducted by _____ means.
8) The police knew she was guilty, but they had no _____.
9) Police hope that a member of the public will be able to _____ a man seen acting suspiciously a few hours before the murder took place.
10) Forensic _____ are skilled in _____ evidence and analyzing it.
11) These tapes _____ a number of well-known politicians.
12) Evidence found at the crime scene _____ the defendant.
13) They are instructed to report about any _____ activity in the neighborhood.

Activity 5. Read the text to check your guesses.

What is forensic science?

Forensics is the term given to an investigation of a crime using scientific means. It is also used as a synonym for "related to courts". The word forensic is derived from the Latin word “forum”, which means “the market place”. In Roman society, justice was administered in the market place. We continue to use the word forum for a public speaking place and have adopted the word forensic as the name for anything related to the administration of justice.

There are many professional fields within forensic science: chemistry (chromatography, pH and other chemical tests); biology (fingerprinting, hairs, DNA testing etc); physical science (blood spatter analysis, ballistics, car movements in car accidents). Each professional field in forensic science is based on a common type of evidence which is often found at crime scenes.

Forensic science can be used to identify and incriminate suspects, by studying fingerprints, blood types or DNA profiles for example. It can also be used to prove or disprove claims made by suspects about an incident. For example, if a suspect claims they were never at the crime scene, but unique fibres or debris turn up on the suspects` clothes, possessions, or in their ear wax, then police can prove that the suspect is lying.

Forensic science is an umbrella term that has various areas under it. When a crime is committed and the forensic team is called in, there are many experts who cover their specialized fields. Although all these people could be considered forensic scientists, they have specific areas that they work in. There are two main areas of forensic science and these are the minimum requirements for a criminal investigation. Field officers are technicians who visit the scene of a crime and collect the physical evidence that may be related to the crime. They also document and record the scene by taking photographs and videos. Lab officers are technicians who analyze and complete tests on the evidence collected by the field officers [10].

Activity 6. Scan the text and find out the definitions.

Forensics, forensic science, forensic scientists, field officers, lab officers.

Activity 10. Make up as many sentences as possible using the table below.

S	V	O	P	details
Forensic scientists A field officer A lab officer The police A suspect Technicians A forensic team Forensic science	identify work collect document arrive analyze know prove disprove record take incriminate use find	- photos -the scene - a possible suspect -potential evidence -evidence -DNA profile - tests - scientific means - fibres or debris	-in investigating -at the crime scene - in the market place - on the suspects clothes - in car accidents	for a criminal investigation related to the crime by the field officers

Reading and language study 2

Activity 12. Read the text below and divide it into logical parts.
Explain the key idea of each paragraph.

When is forensic science required?

A police officer investigating an incident will seek clarification of three issues. Has a crime been committed? If so, who is responsible? If the responsible person has been traced is there enough evidence to charge the person and support a prosecution? Forensic science can be expected to make a contribution to the clarification of all three issues. In most cases there may be no doubt that a crime has been committed but there are a number of occasions when only a scientific examination of items can inform the investigator that this is the case. For example to support an offence of driving under the influence of drink or drugs a blood sample taken from a motorist will require an accurate analysis not only to establish that alcohol or a drug is present but that any alcohol exceeds a permitted level. Similarly the demonstration of toxic levels of a poison in tissues removed at post-mortem from a body of an individual believed to have died from natural causes will be a strong indication of a crime. If a latent fingerprint is recovered from a crime scene and the criminal's prints are already in a database then the person potentially responsible for that crime may soon be identified. Similarly the existence of a database of DNA profiles may enable identification of an offender who has bled at the scene of violence or who has left other body fluids in a sexual assault. Although specific identification of an offender may not be provided by scientific examination it will enable the investigator to reduce the field of enquiry. The scientific examination will normally be directed towards two aspects: examination of material left on the victim or at the scene which is characteristic of the suspect; examination of the clothing and property of the suspect for the presence of material characteristic of the victim or the scene [9; 11; 15; 16].

Activity 13. Find Arabic equivalents to the following words and word combinations.

1) to exceed a permitted level -
2) the demonstration of toxic levels of a poison in tissues -
3) the person potentially responsible for -
4) to support an offence -
5) to support a prosecution -
6) an accurate analysis -
7) to enable -
8) an offence of driving under the influence of drink or drugs -

⌖Youtube corner

https://youtu.be/_58XsN6XJWQ

Activity 17. Watch the video "What is forensic science?" and answer the questions.

1) Does the word "forensic" refer to the law or crime?
2) What scientific fields do forensic scientists specialize in?
3) What separate branches of forensic science are talked in this video?

Speaking

Activity 20. Study the pictures presented at "Warm up" and describe them using the active vocabulary.

Activity 21. Study useful vocabulary and dramatize the interview.

Variant 1 (basic).

Student A roles: a senior constable, a forensic lab officer, a medical examiner.

Student B role: a journalist interviewing one of the professionals of forensic science.

Variant 2 (advanced)

Student A roles: a senior constable, a forensic lab officer, a medical examiner.

Student B role: a journalist writing an article about the differences in fields of forensic science. Interview two professionals, compare and sum up the similarities and differences.

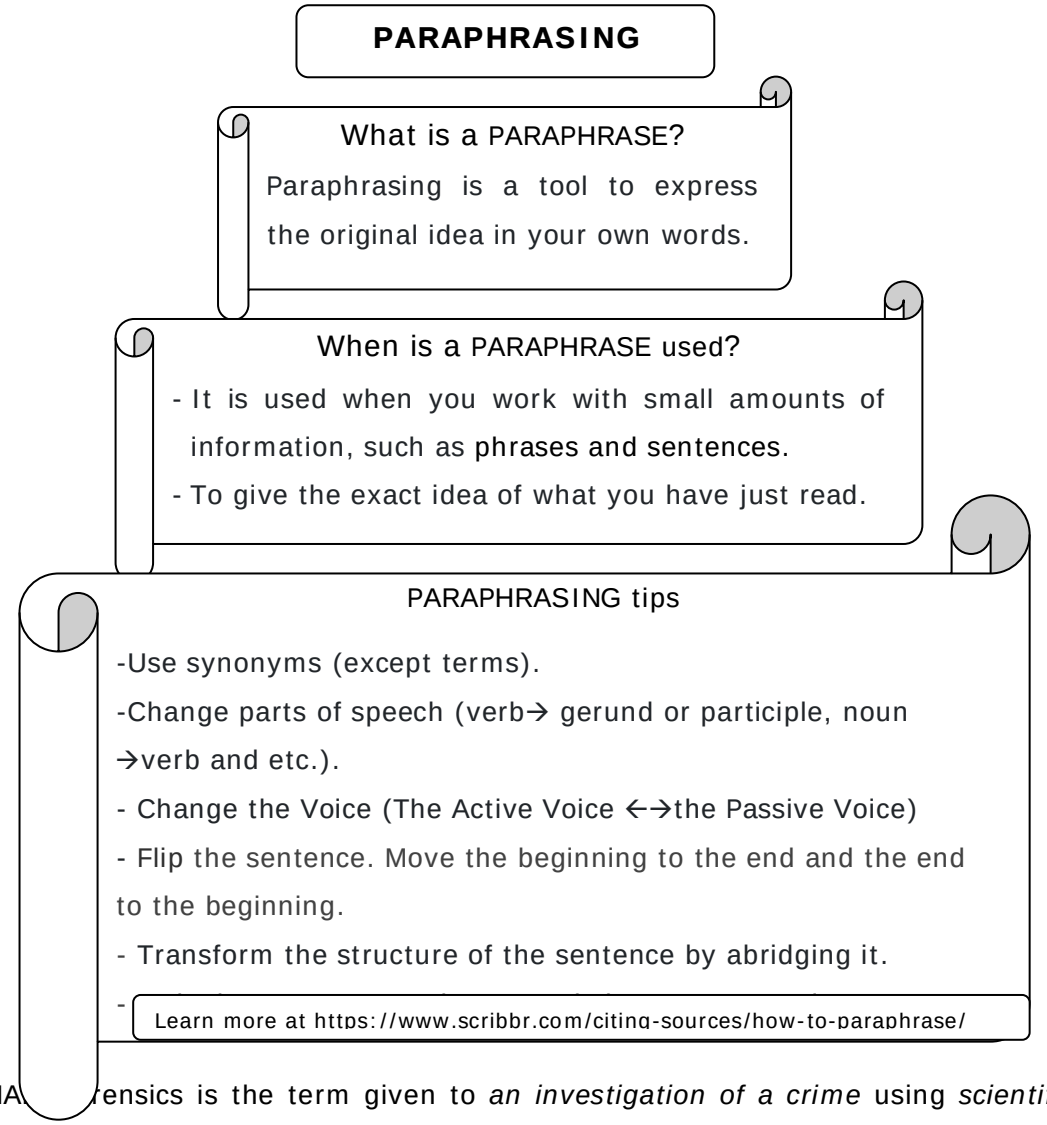
a senior constable	a forensic lab officer
-involved in crime scene investigation; -to prevent the contamination of a crime scene / evidence; -to provide an initial interpretation or reconstruction of the crime; -to help detectives/ investigators -to collect fingerprint / DNA evidence; -to photograph victims / crime scenes; -to take statements from victims and etc.	-to specialize in areas of biology, chemistry or physics; -to include the analysis of physical evidence; -bloodstains, fingerprint and footprint analysis; -document analysis as handwriting recognition; -ballistics and DNA profiling; -don`t do field work; -don`t catch criminals; -to determine how a person died and etc.
a medical examiner	
-to involve medical procedures; -to perform autopsies and examination of bodies after death; -to analyze blood samples from a victim or suspect; -dentistry, psychiatry and psychology; -forensic pathology; -to determine causes of death and interpret injuries and etc.	

Activity 22. Discuss and sum up the information from the unit 'What is forensic science?' by completing the table below.

Definitions of forensic science	
Professional fields within forensic science	
The main duties of a forensic team	
The role of forensic science in investigating crimes	

Develop your skills

Activity 23. Read the information about paraphrasing tips and do the following activities.



ORIGINAL. Forensics is the term given to *an investigation of a crime* using *scientific means*.

PARAPHRASE. Forensics is the application of *scientific techniques* to *a crime investigation*.

ORIGINAL. Forensic botany is *a study* of plant life in order *to gain* information regarding possible crimes. (From Wikipedia)

PARAPHRASE. Forensic botany is *a science* that helps in *receiving* information regarding offences connected with plants.

What paraphrasing techniques are used in the examples?

Activity 24. Go to the website the website https://en.wikipedia.org/wiki/Forensic_science and study the part "Subdivisions". Paraphrase ten terms and present your results in class.

Glossary

What is forensic science?

Basics

1) a forensic science / forensics
2) a forensic scientist
3) justice
4) a field science; a field officer, a field technician
5) a lab science; a lab officer; a lab technician
6) a CSI; an investigator
7) a medical examiner; a coroner
8) a crime scene

Professional fields within forensic science

9) chemistry (chromatography, pH and other chemical tests)
10) biology (fingerprinting, hairs, DNA testing etc)
11) physical science (blood spatter analysis, ballistics, car movements in car accidents)

Verbs and word combinations

12) to analyze and complete tests
13) to charge the person
14) to collect evidence
15) to commit a crime
16) to be derived from
17) to document; a document
18) to find a criminal
19) to identify; to identify and incriminate suspects
20) to investigate
21) to justify
22) to lie
23) to make a contribution
24) to perform autopsies
25) to support an offence
26) to support the prosecution
27) to visit the crime scene
28) to record; a record
29) to prove; to prove or disprove claims
30) to suspect; a suspect

Nouns and word combinations

31) assault

32) blood; ~ type; ~ sample; ~ splatter; bloodstains

33) a body

34) debris

35) a digital forensic investigation firm

36) a DNA profile

37) earwax

38) evidence; a trace ~; a physical ~

39) an examination; forensic ~; handwriting ~

40) a fingerprint; ~ examination; ~ analysis

41) a fibre

42) an incident

43) post-mortem

44)a statement

45) toxic levels of a poison in tissues

46) validity of signature

47) an umbrella term

Adjectives

48) forensic; ~ science, ~ pathology; ~ scientist; ~ discipline; ~lab; ~ examination; ~ expertise

49) accurate; an ~ analysis

50) related to; ~ courts; ~ the administration of justice; ~ crime)

Check yourself

Activity 25. Translate the following words and word combinations. Which of them will help you to describe the picture.

1) forensics
2) field science and lab science
3) bloodstains, fingerprint and footprint analysis
4) to perform autopsies and examination bodies after death
5) to support the prosecution

Activity 26. Study the list of questions. How many can you answer?

1) What is forensic science?
2) Forensic science is the synonym of forensic examination, isn`t it?
3) Where is term word derived from?
4) Where was justice administered in Roman society?
5) How did forensic science become very popular?
6) Are field officers or laboratory experts involved in crime scene investigation?
7) What scientific fields do forensic scientists specialize in?
8) What separate branches of forensic science are there?
9) What three questions should be answered in investigation?
10) What helps to identify the identity of criminal / victim?

UNIT II. HISTORICAL BACKGROUND OF FORENSIC SCIENCE

Warm-up

1. *Discuss the following questions:*

1) When is forensic science required?
2) What fields of forensic science do you know?
3) How can forensic science help people?
4) What Arabic (foreign) famous forensic scientists and researchers do you know?

Vocabulary

Activity 1. Fill in the table. Not all forms will be used for each word. Use dictionary, if necessary. Translate the words into Arabic.

Verb	Noun (thing or concept)	Noun (person)	Adjective
autopsy			autopsied
recognize			
	highlight		
establish			
determine			
	examination		
	detection		detective
devise		devisor	
testify		testifier	
charge			

Activity 2. Read the word combinations and translate them into Arabic.

To file a charge, on a false charge, charged with the murder of her husband; to be in the highlight, highlighted by the work of Orfila; devised a fingerprint classification scheme, a devisable classification; the first lie detection method; to examine the body, examination of the internal organs from the body; impossible to determine; has already recognized hair, the earliest recognition; to testify upon a trial, from the testifier, testified on the basis of chemical tests.

Activity 3. Choose the correct word from the list to complete each sentence. Translate the sentences into Arabic.

lie detector	determining	highlights
recognition	examined	charged
testified	devised	autopsy
detective	established	examination

1. A medical examiner (a coroner) performed an ____ on the murder victim's body.
2. A fingerprint _____ helps to identify the criminal by his/her fingerprints.
3. The genre of the _____ novel was extremely popular in the XXth century.
4. There are some _____ in the history of forensic science**.**
5. The earliest _____ that fingerprints were unique to individuals was in ancient Babylon.
6. How many people have _____ to the truth of the prisoner's statement?
7. The researcher _____ the body early in the morning.
8. Mr. Simon has already _____ a new technique for examining evidence, a training programs, and taught training workshops.
9. Defendant is a person _____ with committing a crime in a criminal trial.
10. For example, depending on their interests and backgrounds, forensic research scientists might be involved in creating: databases of materials (such as soils, pollens, or animals) for _____ the origin of physical evidence.
11. A polygraph is the other name of _____.
12. Faulds, a Scottish physician, _____ the fact that fingerprints remain unchanged throughout the life of an individual.

Reading and language study 1

Activity 5. Read the text to check your guesses. Give a headline to the text.

(I) Certain aspects of forensic science have been known and used throughout the ages and in many cultures. Perhaps the earliest recognition that fingerprints were unique to individuals was in ancient Babylon, where tablets used to record business transactions were marked with fingerprints. In 250 b.c., a Greek doctor named Erasistratus observed that his patients' hearts beat faster when they were not telling the truth. This doctor used his observations as what is believed to be the first lie detection method. In China, in 1248, a judge, and a forensic medical scientist Song Ci wrote a handbook for coroners. He described methods on post-mortem examinations, various causes of death (i.e. drowning and asphyxiation) and methods of treatments to certain injuries of a wounded person. Not long afterwards, the Bolognese surgeon Bartolomeo da Varignana performed a medical autopsy in a murder case.

(II) Other types of scientific evidence did not start to evolve until the 18th and 19th centuries, a period during which much of our modern-day chemistry knowledge was just starting to be developed. Toxicology, the study of poisons, emerged as one of the new forensic disciplines, and was highlighted by the work of Orfila in 1840 with his investigation into the death of a Frenchman, Monsieur Lafarge. Following examination of the internal organs from the body, Orfila testified on the basis of chemical tests that these contained arsenic. This evidence resulted subsequently in Madame Lafarge being charged with the murder of her husband. She couldn`t escape punishment and the justice was served.

(III) During the latter part of the 19th century there was also considerable interest in trying to identify an individual. A successful development in personal identification was to come from fingerprint examinations. Henry Faulds, a Scottish physician established that fingerprints remain unchanged throughout the life of an individual. It was not until 1901, when he devised a fingerprint classification scheme for cataloguing the prints.

(IV) Body fluid samples have also been found to contain information that can help to identify an individual. The progress made in this area and major advances have occurred within the past decade. Up until 1900 it had been impossible to determine if a blood sample or stain was of human or animal origin, or to classify human blood into four main groups: A, B, AB and O. It has only become possible through recent studies of DNA.

(V) Rapid developments in computer technology have also played an important role in the advancement of forensic science. Computers permit the storage of massive amounts of information that can be searched very quickly. With computers has come the establishment of databases for DNA recovered from body fluids and sometimes tissues and hair, fingerprints and footwear marks *etc.* These and other databases can save a tremendous amount of time and effort in a case and are beneficial to both the police in following their enquiries and the forensic scientists in providing evidence and information for the courts [11].

Activity 6. Fill in the table with keywords.

Paragraphs	Keywords
(I)	*Forensic science, unique fingerprints,*
(II)	
(III)	
(IV)	
(V)	

Activity 7. Put the words into the correct order and answer the questions.

1)What / methods / establish /did /the scientists / forensic identification?

2)Was / lie detection /the first/ method/ Madame Lafarge /developed/ by?

3)How / computers / quickly / allow / do / to find /the certain footmark?

Activity 8. Revise the text and decide if the following statements are true, false or doesn`t say.

1) History of forensic science is a modern science.
2) First lie detection method appeared in Ancient Greece.
3) Madame Lafarge played a great role in the development of toxicology.
4) Sir Arthur Conan Doyle contributed greatly to the development of this field of study.
5) DNA examinations started when the classification of blood was developed.
6) The main advantages of using computers in forensic science are controlling instruments and producing analytical data.
7) DNA and other databases are beneficial only for the police.

Think about your own 'true, false or doesn`t say' statements.

8) _____

9) _____

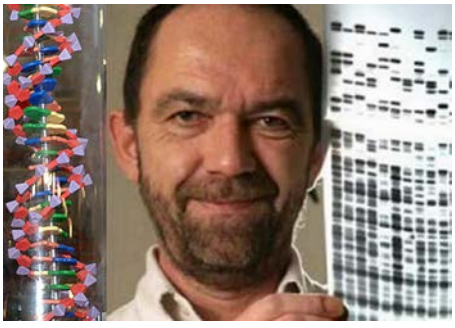
Activity 10. Read the text again and fill in the gaps. Present your findings in class.

When?	Who?	What?	What`s for?	Where?
250 b.c.		first lie detection method		
				China
1300-1310		a medical autopsy		
	Mathieu Orfila			
				Scotland
	Karl Landsteiner	major human blood types		Austria

Reading and language study 2

Activity 12. Read the text below and divide it into logical parts.

Explain the key idea of each paragraph.



Alec Jeffreys, a British geneticist, who developed techniques for DNA fingerprinting and DNA profiling was born in 1950. Jeffreys's achievements are used worldwide in

forensic science to assist police work and to resolve paternity and immigration disputes. His technique of DNA fingerprinting is used for unique identification of humans, animals and other organisms from their DNA material. Jeffreys was educated at Oxford, where he completed his PhD in 1975. After spending two years at the University of Amsterdam as a research fellow he joined the genetics department of the University of Leicester. He was appointed professor of genetics in 1987 and knighted in 1994 for his research in genetics. DNA fingerprinting has become important for forensic science investigations, paternity issues, and detection of hereditary disease. On the 10th of September 1984, Jeffreys and his team got their first DNA fingerprint purely by chance and he could spot the family group present in that blot and distinguish all three members by what appeared to be a simple pattern of inheritance “We suddenly realized that we'd stumbled upon a DNA-based method for biological identification. My life completely changed at that point,” he says. After the discovery of the first DNA fingerprint his life changed. In 1986, as Jeffreys and his small laboratory handled all the DNA test requests for issues regarding immigration, paternity, and the like, Jeffreys faced challenges for making DNA fingerprinting appropriate for use in forensics. In 1986, Jeffreys was contacted by local police regarding a murder case where two schoolgirls had been raped and murdered 3 years apart in an apparent copycat crime. The police had a suspect in custody, but although he confessed to the second murder, he denied the first. Jeffreys was asked to use DNA profiling to tie the suspect to both cases. The results were completely unexpectable: both samples belonged to the same man but were not from the suspect. Then the police totally believed DNA and launched what proved to be the world's first DNA-based manhunt, asking for blood samples from men from the entire local community. Perpetrator was found so that was the birth of forensic DNA in real casework. Since that time DNA has potentially saved the life of many victims [8].

Activity 14. Find Arabic equivalents to the following words and word combinations.

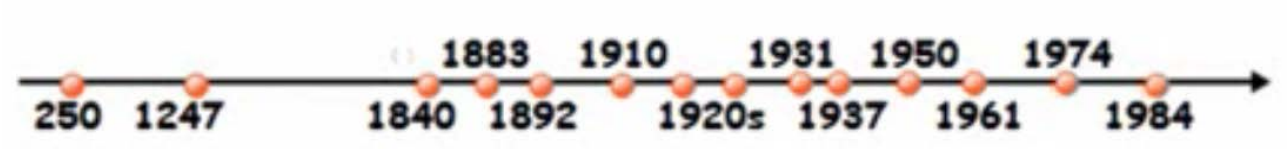
1) unique identification of humans -
2) detection of hereditary disease -
3) forensic science investigations -
4) spot the family group in a blot-
5) a simple pattern of inheritance -
6) to stumble on -
7) appropriate for use in forensics -
8) apparent -
9) to face challenges -

Activity 16. Skim the text and do a mind map to the text.

Youtube corner

https://www.youtube.com/watch?v=TbuTirBdZjQ

Activity 17. Watch a video "Forensic Science Timeline" and *match the date and the scientist*



Erasistratus Hsi Duan Yu Sir Francis Galton Luke May

Mathieu Orfila Alphonse Bertillon Max Frei Sulzer

Edmond Locard Franz Holzer

Activity 18. Watch again and tick a true answer.

1) In 250 b.c., a Greek doctor named Erasistratus _____ .

A. invented lie detection method.

B. performed a medical autopsy in a murder case.

C. made a bullet comparison to solve a murder.

D. developed a fingerprint classification system.

2) Alphonse Bertillon applied _____.

A. anthropometry to law enforcement

B. identification system of blood types

C. the establishment of databases for DNA

D. the comparative microscope

3) The first police crime lab was established in France by _____.

A. Mathieu Orfila

B. Sir Alec Jeffreys

C. Edmond Locard

D. Alphonse Bertillon

4) The first blood testing was used ___

A. After DNA analysis

B. Before DNA analysis

5) In the 19th century forensic science saw real progress.

Choose all that you that did NOT apply:

A. fingerprints classification.

B. the Marsh test application.

C. the tape lift method.

D. the anthropometry.

5) Almost every year in the 1900s an advance was recorded in the field(s) of…

Choose ALL that you saw:

A. Study of voiceprint identification.

B. Identification of knives, tools and instruments.

C. Crime lab establishment.

D. Evaluation of the gas chromatograph for forensic purposes.

E. Development of blood type technique.

F. Invention of the comparison microscope.

7) Luminol is a chemical that gives a ___ glow when it mixes with blood.

A. green

B. blue

C. orange

D. balck

8) In 1984 Sir Alec Jeffreys discovered _____ the most important forensic science discovery up to date in England.

A. DNA profiling tests

B. the comparison microscope

C. lip prints identification

D. blood type technique

E. “trace evidence” term

F. luminal

Activity 19. Watch the video again and fill in the gaps. Present your findings in class.

1.	first lie detection method
2.Mathieu Orfila	
3.Alphonse Bertillon	
4.Sir Francis Galton	fingerprints classification
5.Edmond Locard	
6.Luke May	striation analysis
7.Franz Holzer	blood type technique
8.Maz Frei Sulzer	tape lift method of collecting trace evidence
9.Scientists at Aerospace Corporation	the detection of gunshot residue (GSR)
10.Sir Alec Jeffreys	

Compare & contrast

Activity 20. Read the article "Forensic Science History"
https://www.troopers.ny.gov/Crime_Laboratory_System/History/Forensic_Science_History/
Use comparing linking expressions as "like", "both", "unlike", "describes/shows", "be focused on" to answer the questions:

What achievements were reached in those centuries?

Were there any similarities and differences?

How did scientists identify the suspects / criminals / victims?

Speaking

Activity 21. Role play.

Case: a person was found dead in the library.

Instruction: The group is divided into two parts. Two or three students are forensic reporters. The others are famous scientists as Erasistratus, Mathieu Orfila, Alphonse Bertillon, Sir Francis Galton, Franz Holzer, Max Frei Sulzer, Edmond Locard Sir Alec Jeffreys, Franz Holzer and etc.

Reporters` task: to interview the scientists how they will solve the crime.

Scientists` task: to inform about your method and the previous ones.

Develop your skills

Activity 22. Study the section "Annotation" (Лапекина Ю.Ю. Speed reading: forensic science on the BBC news? pp.11-12) and write down an annotation to the text (Activity 20).

Glossary

Historical background of forensic science

Verbs and word combinations

1) to advance
2) to autopsy
3) to belong to
4) to confess; confession
5) to deny
6) to devise
7) to detect; to ~ a hereditary disease
8) to determine
9) to distinguish
10) to face challenges
11) to establish
12) to highlight
13) to knight; a knight; to be knighted
14) to observe
15) to murder; a murder
16) to rape; a rape
17) to recognize
18) to spot the family group in a blot
19) to stumble on
20) to testify
21) to tie; ~ the suspect to both cases

Achievements, discoveries and inventions

22) anthropometry
23) comparison microscope
24) blood type technique
25) bullet comparison
26) DNA profiling tests
27) fingerprint classification system
28) gas chromatograph for forensic purposes
29) lie detection method
30) lip prints identification
31) luminal
32) the Marsh test application
33) medical autopsy in a murder case

34) tape lift method

35) voiceprint identification

Nouns and word combinations

36) arsenic

37) a body fluid sample

38) a casework

39) a copycat; a ~ crime

40) DNA profiling (DNA testing, DNA typing, or genetic fingerprinting)

41) a database

42) an identification of humans

43) a manhunt; DNA-based ~

44) paternity; ~ issues; ~ fraud

45) a pattern of inheritance

46) a research fellow; a ~ in genetics

47) team; a CSI ~

48) a tissue; a bone ~

Causes of death through autopsies

49) asphyxiation

50) drowning

Adjectives and adverbs

51) apparent

52) appropriate; ~ for use in forensics

53) beneficial

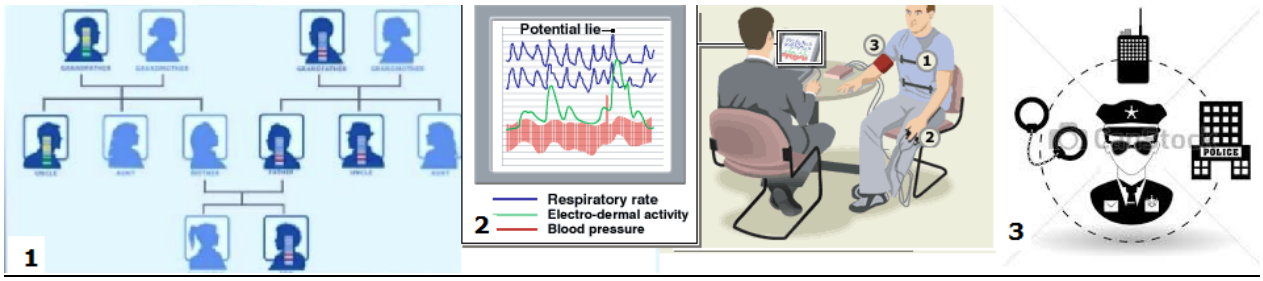
54) (un)expectable

55) pure; purely by chance

Check yourself

Activity 23. Which of them will help you to describe the pictures.

1) toxicology and fingerprint examination
2) to handle/ perform / conduct DNA tests for issues regarding immigration, paternity
3) lip prints identification
4) appropriate for use in forensics
5) the world's first DNA-based manhunt



Activity 24. Study the list of questions. How many can you answer?

1) How can forensic science help people?
2) What Arabic (foreign) famous forensic scientists and researchers do you know?
3) What methods of forensic identification did the scientists establish?
4) When was the first lie detection method?
5) How quickly do computers find the certain footmark?
6) What made Sir Alec Jeffreys famous?
7) How does DNA help to find the criminal?
8) How did the discovery of the first DNA fingerprint change the criminal justice?
9) Are DNA profiling and fingerprinting used in forensic science investigations or in detection of hereditary disease?
10) Did DNA examinations start when the classification of blood was developed?

UNIT III. FORENSIC SCIENCE CAREERS

Warm-up

1.Discuss the following questions.

Do you work?

Yes

- What do you do?
- Do you like your job?
- Which of the things below you do in your job?

No

- What would you like to do?
- Why?
- Which of the things below would you do in your ideal job?

2.A crime scene investigator and a forensic scientist do two very different jobs. Which of the things below they don`t do?

wear a uniform	work at night	use your hands
give orders	drive a car	work in an office/lab
travel	work with money	use a computer
work outside	sell food/clothes	speak on the telephone
advertise and promote activities	protect/help people	identify items and make notes

Crime scene investigator	Lab officer

Vocabulary

Activity 1. Fill in the table. Not all forms will be used for each word. Use dictionary, if necessary. Translate the words into Arabic.

Verb	Noun (thing or concept)	Noun(person)	Adjective
to analyze			
			safe
			responsible
	crime		
	cause		
	search		
to compare			

Activity 2. Read the word combinations and translate them into Arabic.

Comfortable and safe forensic labs, a significant portion of the workday, to analyze an accident, in search of clues, to search for evidence, a cause of death, solving crimes, to compare DNA found at the scene to the suspect`s, a working environment, potentially dangerous substances, conduct scientific experiments, to test the collected evidence, to put in protective containers.

Activity 3. Choose the correct word from the list to complete each sentence. One word is odd. Translate the sentences into Arabic.

tests	responsible	compare	safely
analyzing	searches	caused	analyst
collected	criminal	dangerous	responsibility

1)Expert is the synonym of scientist or _____.
2)Experts are trying to find out what _____ the death of the victim.
3)A forensic scientist will need to carry out some _____.
4)The age of criminal _____ in England and Wales is 10 years old.
5)Many substances are analyzed by forensic scientists at the crime lab to determine the presence of controlled substances in plant materials, powders, liquids, capsules, and tablets.
6)Experts are still _____the DNA evidence in the case.

7)The data is _____and then analyzed on computer.

8)_____records are private and protected info under various privacy regulations so I doubt you will find them just available for free.

9)Even the most dangerous chemicals can be used _____in the forensic laboratory if people recognize the risks to which they may be exposed.

10)Forensic scientists are _____for presenting impartial scientific evidence in courts.

11)In the crime lab, forensic scientists _____samples of evidence from the crime scene to known samples.

12)Crime scene _____ and evidence collection are the backbone of criminal investigation.

Reading and language study 1

Activity 5. Read the text to check your guesses and subtitle each paragraph.

(I) Forensic scientists as crime scene investigators* (CSIs) and lab officers play a crucial role in investigating and solving crimes. Crime scene investigators primarily analyze the scene of a crime or accident and collect evidence. Lab officers analyze that evidence in search of clues pointing to a possible suspect, cause of death or other key information.

(II) Lab officers must always have a bachelor of science. The experts often need only a science degree because they don't investigate crimes directly. Instead, they conduct scientific experiments and analysis. Some, however, supplement their science training with master degree in forensic investigation. Crime scene technicians may have only an associate degree (completion of a study course usually lasting two years) and police academy training.

(III) CSIs are often the first law enforcement officials to identify key pieces of evidence. They tour the entire scene, search for anything that might shed light on what happened, how it happened, and who is responsible. After identifying potential evidence, they collect it. They also document everything they collect and put it in protective containers. Lab officers test the collected evidence and can tell investigators about the crime. For example, they can compare DNA found at the scene to the suspect`s.

(IV) CSIs often work outdoors and in extreme conditions such as heat, cold, rain or snow. They visit remote or unsafe, or unsanitary areas where they could encounter anything from poison ivy to potholes. Lab officers often handle potentially dangerous substances such as bodily fluids or chemicals, but face less risk because the materials have already been placed on sterile slides or otherwise been rendered safe.

(V) CSIs visit crime scenes to collect evidence, and spend a significant portion of the workday on their feet. They never know until they arrive at the scene what conditions they'll be working in or how long it will take. Forensic scientists usually work in forensic labs, which are kept comfortable and safe. They know exactly what kind of environment they'll be working in every day and typically work a traditional 40-hour work week [25].

* Crime scene investigator (CSI) goes by many names, including evidence technician, crime scene technician, forensic investigator, crime scene analyst, criminalist officer and more.

Activity 6. Put the words into the correct order and answer the questions.

1) what/ should/ forensic/ their/ duties/ degree / have/ to/ scientists/ perform?
2) do / / do/ what?
3) where / lab/ do/ officers / work?
4) where / crime scene investigators/ do/ work?
5) who/ irregular/ work/ hours?
6) crime scene investigators/ the/ between/ difference/ officers / what/ key/ lab/ is/ and?

Activity 7. Revise the text and find out whether the following statements are true, false or doesn`t say.

1) There are usually 5 crime scene investigators working at the crime scene.
2) Crime scene investigators seldom work a 40-hour work week.
3) The job of forensic scientists is less risky than crime scene investigators'.
4) Lab officers usually work in comfortable and safe forensic labs.
5) After collecting evidence, crime scene investigators identify it.
6) Crime scene investigators sometimes work in unsanitary areas.

Think about your own 'true, false or doesn`t say' statements.

7) _____

8) _____

9) _____

Activity 9. Make up as many sentences as possible using the table below.

S	V	O	P	details
Forensic scientists A crime investigator A lab officers Crime scene technicians A forensic scientist	identify compare work collect encounter handle put document arrive analyze know play shed light can point to	- on what happened -the scene - a possible suspect -potential evidence -a crucial role - evidence -poison ivy to potholes -DNA -environment -potentially dangerous substances -materials -cause of death	-in investigating -at the scene outdoors/ -in extreme conditions/ -remote /unsafe/ unsanitary areas -on sterile slides -in forensic labs -in protective containers	as heat, cold, rain or snow as bodily fluids or chemicals

Reading and language study 2

Activity 11. Read the text below and divide it into logical parts. Explain the key idea of each paragraph.

Economists are social scientists who study commercial activity including the manufacturing, allocation, and utilization of goods and services. When difficult economic factors lead to legal issues, specialists called forensic economists contribute to their resolution. These experts are consultants who provide various forensic economic services to attorneys, businesses, government agencies, non-profit organizations, and others. They assist on litigious cases that involve either individuals or organizations across the spectrum of economic power. They analyze the financial impact suffered by organizations in litigious circumstances arising from the wrongful death or injury of an employee. They assess damages and losses that organizations incur in intellectual property cases such as copyright, trade secret, and patent violations. Many forensic economists offer litigation support services to attorneys, who may work for either the defense or the plaintiff. They may be involved in criminal cases, civil litigation, or regulatory matters. They perform such general tasks as: collecting evidence, interviewing witnesses, formulating lists of questions that lawyers may ask to cross-examine witnesses, helping lawyers determine the facts and issues of a case, educating attorneys about the various economic topics involved in a case. They also analyze and evaluate cases to help

lawyers determine whether they should be brought to trial and prepare detailed reports, including references, information sources, spreadsheets, and other documentation for lawyers to use in negotiation of settlements as well as court proceedings. Typically, economists complete many years of work experience before becoming forensic consultants. To be effective consultants, forensic economists need excellent communication and interpersonal skills, as they must be able to work well with attorneys and other people. In addition, they must have strong self-management, analytical, organizational, report-writing, and presentation skills. Some personality traits that successful forensic economists share include being fair, honest, trustworthy, objective, diligent, curious, and personable [11].

Activity 12. Find Arabic equivalents to the following words and word combinations.

1) to provide economic services to attorneys –
2) to manufacture, allocate and utilize goods and services –
3) trustworthy and diligent –
4) trade secret and patent violations –
5) to assess damages and losses –
6) to be brought to trial –
7) to be involved in criminal cases –
8) economic factors -
9) to assist on litigious cases –

Activity 15. Skim the text and do a mind map to the text.

Video Corner

The CSI effect is one way in which the exaggerated portrayal of forensic science on crime television shows such as CSI: Crime Scene Investigation. The term most often refers to the belief that jurors demand more forensic evidence in criminal trials, thereby raising the effective standard of proof for prosecutors.

Activity 18. Watch the video https://www.youtube.com/watch?v=EQUE8IeVmpA and answer the questions.

1) What do people think the crime scene investigators should do?
2) What do they really do? (2 functions)

Activity 19. Watch the video again and fill the gaps.

On certain TV shows crime scene investigators seem to do it all the _____ and _____ but that's not what real CSIs do. Senior investigator John Carey and his _____ do one thing and one thing only. “We are very specialized. Our job is specifically dealing with the evidence going into the scene _____”. The work John and his crew perform, creates the basis of the entire _____.

If they smudge _____ or don't perfectly fulfill _____, they would contaminate the scene. And the whole investigation would be thrown out of court, and _____ could walk free. Thanks to TV, crime scene investigators have _____what they call the CSI effect when they _____in front of jurors.

Activity 20. Discuss the questions in pairs.

1) Is it a position of a forensic scientist or a criminalist John Carey is talking about?
2) Why is it very important to do the job accurately?

3) What is John Carey speaking about exactly?

Compare & contrast

Activity 21. Study the article of Elena A. Frolycheva "Forensic expertise. Different approaches to the education of experts in Russia and foreign countries" presented and decide if the statements are true or false. http://ov.conf.udsu.ru/econ-law/article/view/1068/1056 .

1) Professional education for forensic specialists in Scandinavian countries and Russia has much in common.
2) Scandinavian educational approach is more theoretical.
3) Scandinavian forensic experts are trained in forensic labs or law enforcement agencies and afterwards they obtain MS degree.
4) Forensic science students in both countries tend to study three majors.
5) The author describes the concept of "adaptive graduate" that meets requirements of professional activity.
6) Applicants who are positively selected get a two year internship in a forensic lab.
7) Bachelors of Science are more welcome.
8) Forensic scientists are highly-demanded in Finland.
9) Higher education courses are not offered by forensic labs in Russia.
10) There is a part-time course of Master of Forensic science in Udmurt State Univercity.

Activity 22. Read the article again and define how the Arabic system is compared with the education of experts in the Nordic countries.

Activity 23. Study the article and compare the duties of forensic experts in Russia to those who work in the UK. What similarities and differences can you find? Present your findings in class.
http://base.garant.ru/12123142/7a58987b486424ad79b62aa427dab1df/

Speaking

Activity 24. Choose one of the jobs mentioned in the unit 'Forensic science careers' and fill in the chart for that job. Tell your partner about your choice.

Job	Hours (long? Irregular?)	Education	Place of work
Goal	Uniform	Risk	Pay (good?)

Activity 25. Choose a role card and take part in a discussion according to your role.

Role 1. Personnel officer in the recruitment agency. A crime lab requires one more forensic scientist. Interview the applicants and report about your choice to the manager. Task: to find the employee. Education requirement: BS in Chemistry/ Biology, courses (degree) in Forensic science. Experience: a year in a crime lab.
Role 2. 40-year-old law enforcement officer, fired not long ago (staff reduction). Education: master`s degree in Education and Chemistry, degree in Law Enforcement. Experience: two years as a police officer, a year as a private detective, three years as a teacher of chemistry.
Role 3. 28, moved to other town, have dreamt about it since your childhood. Education: master`s degree in Biology. Experience: two years in different biological labs as technician.
Role 4. 30-year-old criminal investigator from Russia, married, two children. Skills: foreign languages (English, read, translate). Education: specialist degree in forensic science and master`s degree in crime investigation. Experience: ten years in a private crime investigation agency. Extra: a residence permit to live in the USA.
Role 5. young, physically fit, a healthy life style, a desire to work Education: bachelor degree in fire investigation. Experience: -
Role 6. You are a manager of a crime agency. A personnel officer has interviewed several applicants on a forensic scientist job position. Listen to his / her report attentively, ask questions and make a final choice.

Develop your skills

Activity 26. Study the article and the report sample. Write down a crime report on a case 2.

The Elements of Reporting

In writing a crime report, police officers must include the following:

1) The “Elements of the Crime” (evidence).

It must be evident that something against the law has been done.

Example: Something has been taken from a person against his will. Johnny Jones’ bike was taken from his front yard without his permission.

2) A Description of the Crime Scene The place in which a crime took place must be described.

Example: The crime took place in a residential neighborhood of single family homes. (Include address, cross streets, etc.)

3) Statements by Witnesses Exactly what has been said by people who saw what happened and their descriptions of the people involved must be written.

Example: Witnesses say a boy of about 14 with shaggy, brown hair was seen taking the bicycle.

4) A Summary of the Crime The summary must tell a story of what happened. It must be in chronological order—that is, the order in which it happened.

Example: Johnny left his bike on the lawn while he went inside the house. A neighbor saw another boy ride off on the bike. When Johnny came out of the house, he saw his bike was gone. He called the police.

5) The Purpose of the Report—To Tell Who, What, When, Where, Why, and How a Crime Happened.

A crime report does not entertain and is written with mostly nouns and verbs. It is short and to the point. A crime report is factual and does not speculate.

Using these facts gathered at the scene of a crime by a police officer, write a summary of the crime. First, make sure the elements of a crime are present:

• Was a crime committed, such as stealing?

• Next tell exactly what happened.

Describe where the crime happened. What does it look like? What did witnesses say? Tell what happened in the correct order in which it happened. Write only the facts [27].

Case 1: A bike was stolen from a front yard in a neighborhood of small, clean homes with green trees and lawns.

Witness #1 said this has been happening a lot lately. He doesn't know what's gotten into these kids lately. They're sure doing a lot of bad things.

Witness #2 said Lion Kerk shouldn't have left his bike out on the lawn; he was just asking for trouble. This is what the witness saw happen. He was cooking his dinner and looked out the window. A boy about 14 years old was walking by, saw the bike, jumped on it, and rode off. The boy was about average height and had scraggly, brown hair. The witness couldn't see his eyes.

A boy called the police station to report his bike missing. He left it in the front yard while he went in the house to get some cookies. When he came back out, the bike was gone. He doesn't know anyone who would steal his bike. He's really upset. He bought that bike two weeks ago. He earned the money raking leaves and mowing lawns. He doesn't think it's fair. His name is Lion Kerk, and he lives at 321 Brave Alley. He was born November 27, 1988.

Example: The victim reported his bike stolen after he left it on the lawn for a few minutes. Neighbors across the street saw another boy approximately 14 years old walking by the house. This boy jumped on the bike and rode away. The neighborhood is a clean street with small, well-kept houses and lawns. Another neighbor said there have been a lot of bikes stolen lately.

Case 2: Someone has been riding a bicycle onto the front lawn of the college. There has been a lot of rain the past several weeks, so the lawn is very wet and very soft. The bicycle tires make big gouges in the lawn and will cost 300 dollars to repair. A neighbor across the street saw two boys doing wheelies on the lawn with their bikes. The principal got to college early this morning and saw John Lewis riding his bike away from the school. The tires of the bike were covered with mud. He detained John Lewis and called the police. John's mother says she knows that her son couldn't do something as bad as ruin the lawn because he's always good, and everybody knows he's always good. The neighbor says John isn't always good and that he was one of the boys doing wheelies [27].

Glossary

Forensic science careers

Verbs and word combinations

1) to analyze
2) to assess damages and losses
3) to be brought to trial
4) to cause
5) to compare
6) to contaminate the scene
7) to cross-examine witnesses
8) to determine the facts and issues of a case
9) to encounter poison ivy to potholes
10) to exaggerate
11) to follow certain protocols and standards
12) to formulate lists of questions
13) to gain; ~ basic knowledge; ~ experience
14) to incur
15) to interview witnesses
16) to prepare detailed reports
17) to provide various forensic economic services to attorneys
18) to pursue a career
19) to respond
20) to save
21) to search; a search
22) to smudge
23) to suffer
24) to testify in court as expert witnesses
25) to tie; ~ the suspect to both cases
26) to be thrown out of court

Nouns and word combinations

27) advancement and employment prospects
28) an applicant
29) bodily fluids
30) a crew (a team)
31) CSI effect
32) the defense / the prosecution
33) a full-time or part-time job

34) a government agency

35) an impact

36) a key piece of evidence

37) a litigation support service

38) manufacturing, allocation, and utilization of goods and services

39) negotiation of settlements

40) a non-profit organization

41) an opportunity

42) a salary

43) a sterile slide

44) a supplement

45) work experience

Crime scene and criminal investigation personnel

46) Crime Scene Investigator (CSI)

47) Patrol Officer

48) Fire Investigator

49) Polygraph Examiner

50) Fingerprint Technician

Crime lab personnel

51) Criminalist

52) Crime Lab Technician

53) Crime Lab Supervisor

54) Crime Lab Director

Forensic scientists

55) Bloodstain Pattern Analyst 46

56) DNA Analyst

57) Firearms Examiner

58) Forensic Biologist

59) Forensic Chemist

60) Forensic Drug Chemist

61) Forensic Serologist

62) Latent Print Examiner

63) Trace Evidence Examiner

Medicolegal death investigation personnel

64) Medical Examiner (Coroner)

65) Forensic Pathologist

66) Forensic Toxicologist

67) Forensic Pathology Technician

Forensic Experts in Art and Multimedia

68) Forensic Photographer

69) Forensic Video Analyst

70) Forensic Audio Examiner

71) Forensic Artist

Forensic experts in other sciences

72) Forensic Engineer

73) Accident Reconstruction Specialist

74) Forensic Architect

75) Forensic Accountant

76) Forensic Economist

77) Fraud Examiner

78) Forensic Linguist

79) Computer Forensics Specialist

80) Crime Reporter

Skills and personality traits

81) interpersonal skills

82) strong self-management

83) analytical and organizational skills

84) report-writing and presentation skills

85) honest

86) trustworthy

87) objective

88) diligent

89) curious

90) personable

Cases forensic economists involved into:

91) criminal cases

92) civil litigation

93) regulatory matters

Types of reports of forensic economists

94) references

95) information sources

96) spreadsheet

Intellectual property cases

97) copyright

98) trade secret

99) patent violations

Check yourself

Activity 27. Translate the following words and word combinations.

1) work for either the defense or the plaintiff
2) civil litigation, or regulatory matters
3) ask to cross-examine witnesses
4) excellent communication and interpersonal skills
5) trustworthy

Activity 28. Study the list of questions. How many can you answer?

1) What is the difference in functions of lab officers and CSIs?
2) Is there anything similar in job positions of a lab officer and a CSI?
3) What is a CSI effect? What do people think the crime scene investigators do?
4) Lab officers test the collected evidence and can tell investigators about the crime, don`t they?
5) What professions of forensic scientists do you know? What is the difference between an economist and a forensic economist?
6) What skills and personality traits should a forensic economist have?
7) What does a forensic economist do?
8) Are Scandinavian forensic experts trained in forensic labs or law enforcement agencies?
9) Are forensic scientists highly-demanded in Finland or in Russia?
10) You can easily complete CSI online courses and work as a forensic scientist in Russia, don`t you?

UNIT IV. CRIME SCENE INVESTIGATION

Warm-up

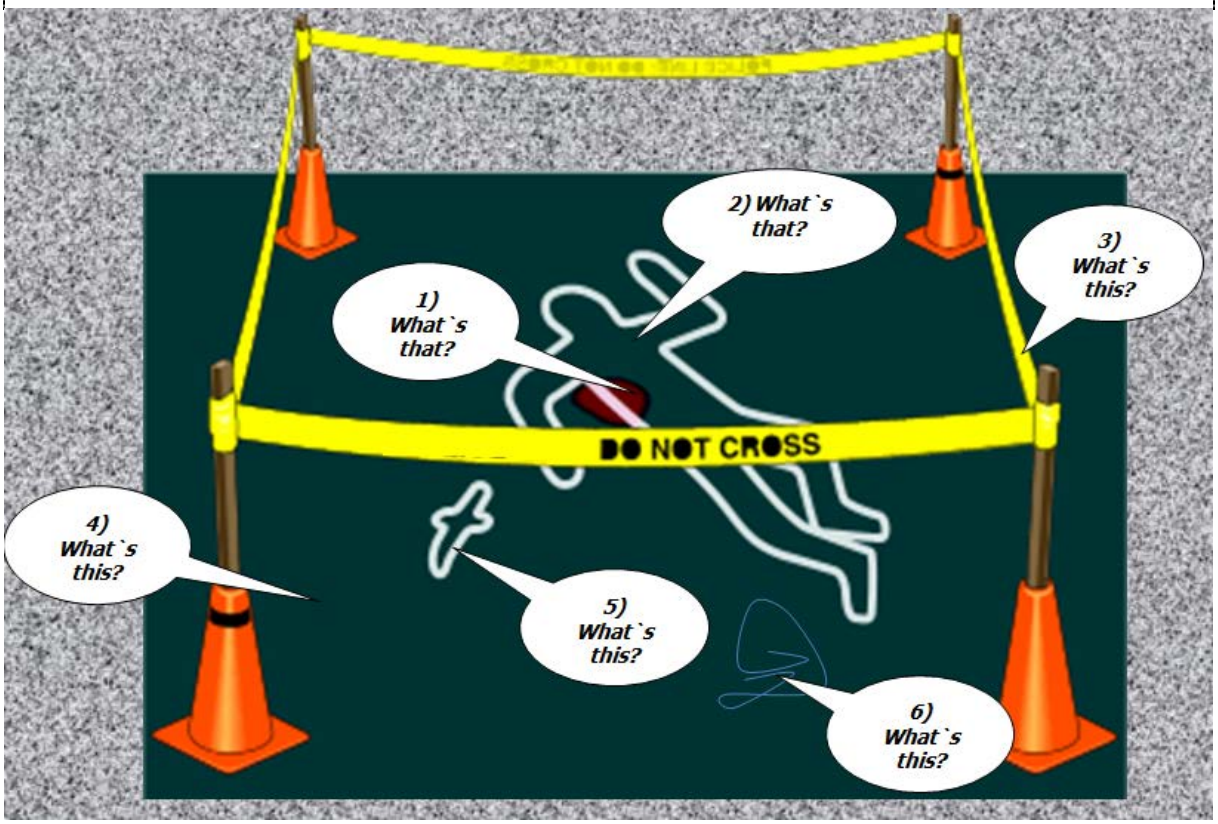
1. *Discuss the following questions.*

1) Why is crime scene investigation important?

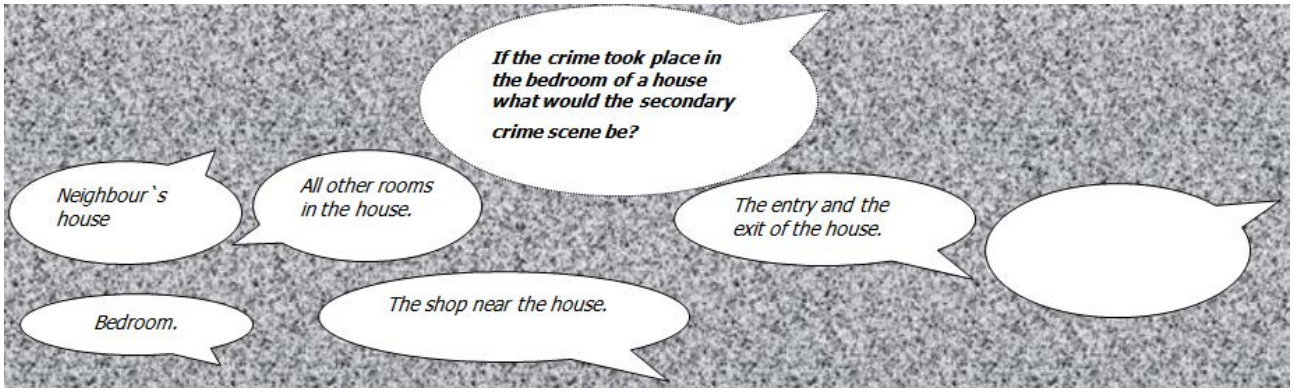
2) What professionals examine the scene?

2. *Look through the words in the table. Match them with numbers at the picture. Some words are odd.*

police line tape	body	evidence	crime instrument
criminal	primary crime scene	suspect	blood



3.Choose the appropriate answers to the question below. Add more if possible.



Activity 1. Fill in the table. Not all forms will be used for each word. Use dictionary, if necessary. Translate the words into Arabic.

Verb	Noun (thing or concept)	Noun(person)	Adjective
	collection	collector	
to document			
to furnish			
	involvement		
to issue	issue	issuer	issued
	occurrence		
		recorder	
to exchange			
to secure			

Activity 2. Read the word combinations and translate them into Arabic.

To document and collect evidence at the crime scene; requisite evidence; requires medical examination; evidence collectors; furnishes proof of a crime; evidence furnished by the plaintiff; a secure place; responsible for securing the scene; involves many important steps; recorders to record the data; issues a search warrant; actually occurred; common occurrence.

Activity 3. Choose the correct word from the list to complete each sentence. Translate the sentences into Arabic.

responsible	occurrence	secures	collecting
collected	recording	occurs	exchange
document	involved	furnishes	issues

1) The goal of a crime scene investigation is to recognize, ___, and collect evidence at the crime scene.
2) He is ___ for investigating a scene and ___ evidence. He also ___ the scene.
3) To counter this risk, digital forensic investigation firms provide assistance in conducting the forensic analysis after ___ of any cyber crime.
4) Even if the ___ does not appear to be very clear or useful, all relevant footage should be ___.
5) Jurors often give forensic science more weight, because it is provided by “experts”, however, when misconduct ____ the added weight is damaging and can lead to wrongful convictions.
6) Punitive measures will be permanently suspended if the person cooperates with the Commission, presents full and valid testimony, and ___ sufficient evidence against other perpetrators.
7) The key principle of crime scene investigation is a Locard’s ___ concept.
8) Who is ___ in a crime-scene investigation?
9) A district attorney ___ a search warrant if it is necessary.

Activity 5. Scan the text and find out the definitions of crime scene, evidence, professionals of a crime-scene investigation crew.

Basics of crime scene investigation

Crime scene investigation is an essential aspect of the criminal law system. The goal of a crime-scene investigation is to recognize, document, and collect evidence at the scene of a crime. To solve the crime depends on piecing together the evidence and forming a picture of what happened at the crime scene. *Crime scene* is a place where some form of illegal activity, such as a robbery or a murder, happened. There are primary and secondary crime scenes. The *primary crime scene* is where a crime actually occurred. *A secondary crime scene* is an alternate location where additional evidence, something that furnishes proof of a crime and is used in a court of law, may be found.

A crime scene may be a single room, an entire house, everything on a property, or even a whole neighborhood. For example, in a bank robbery, the bank is the primary scene, but the get-away car and the thief's hideout are secondary scenes.

Crime scenes can be classified by:

-*location of criminal activity* (indoors, outdoors, vehicle, etc),

-*size of the crime* (macroscopic and microscopic),

-*type of crime* (homicide, robbery, sexual assault, etc.).

Examination of a crime scene is a long, tedious process that involves many important steps. The key principle of crime scene investigation is a Locard's exchange concept. Edmond Locard (1877-1966), a pioneer in forensic science, considered that when a person comes into contact with an object or another person, *a cross-transfer* of physical evidence (DNA, hair, skin cells, blood, bodily fluids, pieces of clothing, fibers and more) can occur. The exchanged materials indicate that the two objects were in contact.

Who is involved in a crime-scene investigation? The CSI crew is made up of legal and scientific professionals who are responsible for investigating a scene and collecting evidence. Professionals at the scene of a crime may include police officers, detectives, crime-scene investigators, district attorneys, medical examiners, and scientific specialists.

• Police officers are usually the first to arrive at a crime scene. They arrest the perpetrator if he's still there and call for an ambulance if necessary. They are responsible for securing the scene.

• A district attorney issues a search warrant if it is necessary.

• Crime-scene investigators document the crime scene in detail and collect physical evidence. CSIs include recorders to record the data, sketch artists to sketch the scene, photographers to take photos of the crime scene, and evidence collectors.

• Medical examiners may be necessary to determine the cause of death when a homicide has occurred.

• Detectives look for leads by interrogating witnesses and talking to the crime-scene investigators about the evidence.

• Specialists such as forensic scientists and forensic psychologists may be called if the evidence requires their expertise [10; 11; 20].

Activity 6. Scan the text and find out the duties of these professionals.

A police officer, a district attorney, a detective, a forensic scientist, a medical examiner.

Activity 7. Put the words into the correct order and answer the questions.

1) what / be / types / crime scene / can / divided?
2) how /can /be / crime scenes / classified?
3) is / about / Locard`s exchange principle / what?
4) what /can / be /sort / examined / of /evidence /by / forensic scientists?
5) does /the CSI / crew /who / include?

Activity 8. Revise the text and find out whether the following statements are true, false or doesn`t say.

1) Crime scene investigation is a tedious process.
2) There are many classifications of crime scene.
3) John Carey devised a cross-transfer of physical evidence.
4) The key principle of crime scene investigation is DNA fingerprinting.
5) A medical examiner arrives at a crime scene and arrests the perpetrator is s/he's still there.
6) A district attorney determines if the investigators require any search warrants.
7) Forensic audio examiners work with audio recordings.

Think about your own 'true, false or doesn`t say' statements.

8) _____
9) _____
10)_____

Activity 10. Make up as many sentences as possible using the table below.

Fill in the missing information if necessary.

S	V	O	*P*
Crime-scene investigators Field officers Lab officers The CSI crew A district attorney Medical examiners U.S. courts The Bertillon method	document be responsible issues perform conduct accepted determine involved sketch devised	DNA/ footprint examination the scene the crime scene the cause of a death fingerprint identification evidence a search warrant the recording and subsequent matching of scrupulous measurements of bodily structures a cross-transfer of physical evidence	in Germany in France at the crime scene at the forensic lab

Reading and language study 2

Activity 12. Scan the text below and define basic crime scene procedures. What stages are completed by police officers, CSIs and lab officers?

General Crime Scene Procedures

Despite the variation among crime scenes, there is a standard procedure to ensure a scene is handled in an appropriate manner. The 1st stage is the first officer attending. Safety is the primary concern. The first officers arrive on the crime scene, do emergencies, secure the scene and preserve evidence. The second stage of processing is scene analyzing. CSIs take notes and interview witnesses (collect testimonial evidence). Before anything is moved or even touched, the entire scene must be fully documented. The third step is recording the scene. Photography is the most important form of crime scene documentation, producing a permanent visual record of the crime scene and discovered evidence. Objects must not be moved until photographed from all necessary angles. The personnel keep free hand drawings of the crime scene to reconstruct it. All major items of physical evidence and their location in relation to the crime scene must be included in the crime scene sketch. Videography of the crime scene should follow the scene survey. When documentation of the scene is complete, the officers start the search to collect the evidence effectively. Crime scene search patterns may vary but they share a common goal of providing organization and systematic structure to ensure that no items of evidence are missed or lost. There are a number of search patterns that may be followed: a zone search, a line or strip search, a spiral pattern, and a wheel search. The way in which the scene is processed is determined by the nature of the crime. The next stage of processing is the collection of physical evidence. Some evidence is clearly visible, such as weapons, bullet casings, documents. Trace evidence includes smaller items such as hair, tool marks, paint chips, glass fragments, and fibers. Other evidence, such as fingerprints or footprints, is invisible to the eye. CSIs package evidence in sealed bags or envelopes and deliver them to crime labs for analysis and preparation for use in court proceedings. All evidence must be properly packaged, sealed and labeled using specific techniques and procedures, and transported to the forensic laboratory for analysis. Reconstruction of a crime is the final step in the forensic examination process. The goal is to identify or individualize the evidence at the scene. The "how" of the crime scene is more important than the "who" [10; 11; 14].

13 b. Find Arabic equivalents to the following words and word combinations.

11) to photograph from all necessary angles -
12) to package, seal and label the evidence -
13) invisible to the eye -
14) reconstruction of a crime -
15) individualize the evidence -

Activity 14. Study the part of a student book "Criminalistics" by N.P.Yablokov http://be5.biz/pravo/k009/20.html and find Arabic equivalents to the following crime scene search patterns. Which one stays unknown?

1) a zone pattern -
2) a spiral pattern -
3) a line or strip search -
4) a wheel search -

Activity 15. Skim the text and find all verbs refer to "evidence". What other actions can be done with evidence? Who is responsible for these duties? Make up the sentences using the collocations.

Example: "to preserve evidence"; Police officers are responsible for preserving the crime scene.

Activity 17. Skim the text and do a mind map to the text.

Youtube Corner

https://www.youtube.com/watch?v=JgzdhUAJrBA

Activity 18. a) Watch a video track and fill in the gaps.

From the second 1._____ is committed, 2._____of the crime are left in the environment. The _____ where the crime scene took place can be full of 3._____ evidence which can link the crime to the 4._____ and ultimately assist the 5. _____in their 6._____. This location is known as a 7._____. Crime scenes can be anywhere: 8._____, 9._____, business premises, domestic dwellings or 10._____ and no two are ever the same.

b) Watch the video and define:

1)the goals of crime investigator,

2)a protective clothing,

3)common approach path,

4)description of documenting the scene,

5)environmental factors that may cause harm to crime scene investigation.

c) Match the pieces of clothing with their names. What is odd?

a) disposable boot covers

b) latex gloves

c) a protective mouth guard

d) an overall suit

Activity 19.Watch again and tick a true answer. Correct a false one.

1. The key role of CSI is to document the scene and collect evidence carefully.
2. Before starting to collect evidence CSIs interview witnesses.
3. A full set of protective clothing helps them to avoid poisonous substances.
4. CSIs are the first to come at crime scene.

5. Police officers use cordon to protect evidence and not let the mass media to come in.
6. An approach path is a scientific term of stepping plates that CSIs use not to contaminate the scene.
7. Stepping plates are used only at serious crimes.
8. CSI should be more careful with preserving the evidence indoors that outdoors.
9. CSIs never speak to the witnesses and remove furniture at the crime scenes.
10. SCI usually fasten the process of collecting evidence when it snows or rains.
11. Lifting carpets, taping the upholstery and analyzing trace evidence are usual steps in CSI`s job.
12. Crime scenes do have some basic principles in common: cordon, CAP, systematic collection and recovery of evidence.

Activity 20. Nancy Ludwigsen, forensic chemist from Sarasota County Sheriff`s office, is videotaking you through "a day in life of a forensic scientist".
Watch this video episode and find out whether the following statements are true, false or doesn`t say. https://www.youtube.com/watch?v=bztlYwckmVE

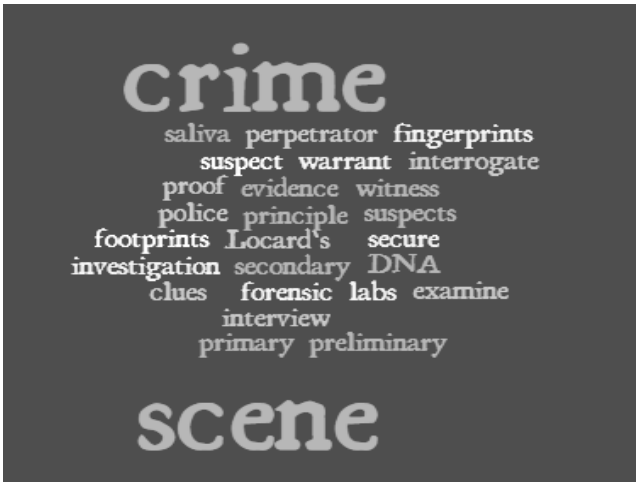
1. She works with bits of hair, skin, and fibers mostly.
2. She`s been in forensic science for twenty three years.
3. The 1st thing that she does in the morning is checking emails.
4. There is only one way of receiving evidence.
5. Any kind of narcotic analysis can be done in the lab.
6. Everything is tested three times to avoid a wrong result.
7. Reporting is an obligatory part of Nancy`s work.
8. Forensic examination can be evidence for the defense.
9. There is no difference between a chemist and a forensic chemist.

Compare & contrast

Activity 21. Read the articles devoted to general procedures of crime scene investigation in Arabic and English using the links. https://aboutforensics.co.uk/crime-scenes/ *and* https://cyberleninka.ru/article/v/etapy-protsessa-rassledovaniya-i-ih-harakteristika
Use comparing linking expressions as “like”, “both”, “unlike”, “describes/shows”, “be focused on” to answer the questions: What stages of crime scene investigation are distinguished by Arabic and British scientists? What are the similarities and differences?

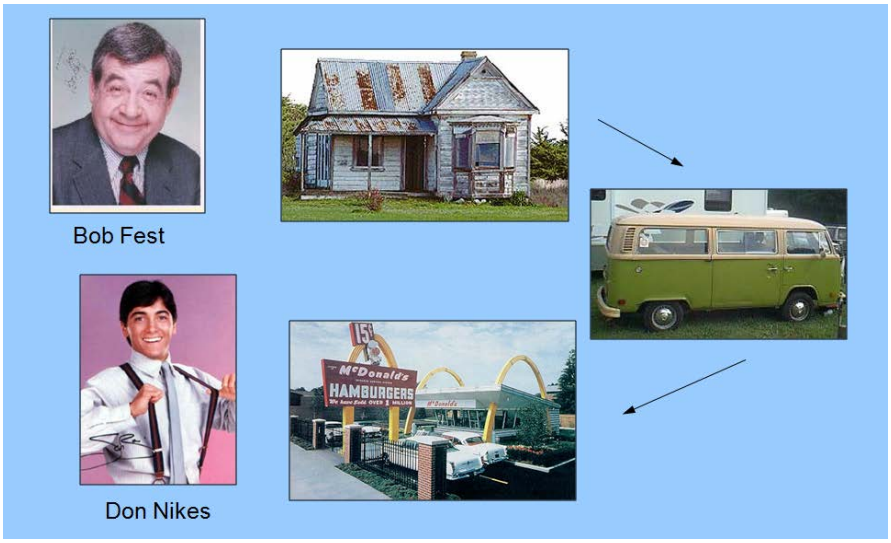
Speaking

Activity 22. Look at the word cloud and speak about the basis of crime scene investigation.



Develop your skills

Activity 23. Look at the picture and define the victim (_____), the perpetrator (_____), the primary (_____) and secondary crime scenes (_____). Make up a story, describing the picture in pairs. Present it in class.



Activity 23. Using the site below make up the story and present it in class.

https://www.storyboardthat.com/

Glossary

Crime Scene Investigation

Verbs and word combinations

1) to collect
2) to document
3) to furnish
4) to involve
5) to issue, to issue a search warrant
6) to occur
7) to record
8) to require
9) to secure
10) to determine the cause of death
11) to piece together the evidence
12) to solve the crime
13) to sketch the scene
14) to handle smth in an appropriate manner
15) to call for an ambulance
16) to do emergencies
17) to secure the scene
18) to preserve evidence
19) to discover evidence
20) to put evidence into in sealed bags or envelopes
21) to deliver evidence to crime labs

Nouns and word combinations

22) a digital forensic investigation firm
23) cyber crime
24) misconduct
25) a primary crime scene
26) a secondary crime scene
27) a location of criminal activity
28) a cross-transfer of physical evidence
29) a homicide

Adjectives

30) relevant
31) tedious
32) invisible to the eye

A CSI crew

33) a police officers

34) a detective

35) a crime-scene investigator

36) a district attorney

37) a photographer

38) a sketch artist

39) a recorder

40) a medical examiner

41) a scientific specialist

Search patterns

42) a zone search

43) a line or strip search

44) a spiral pattern

45) a wheel search

Trace evidence

46) smaller items as hair, tool marks, paint chips,

47) glass fragments, and fibers

General Crime Scene Procedures

48) the first officer attending

49) the scene analyzing

50) the scene recording

51) videography

52) the search

53) the collection of physical evidence

54) reconstruction of a crime

Protective clothing

55) overall suit, protective mouth guard, latex gloves

56) disposable boot covers

57) latex powder-free gloves

Toolkit

58) evidence collection tweezers

59) evidence collection containers

60) CSI evidence knife

61) evidence ID labels

62) 'Warning/Police Seal-Do not Remove' (red)

63) evidence collection kit

64) evidence plastic bags

Check yourself

Activity 24. Translate the following words and word combinations. Which of them will help you to describe the pictures.

1) расследование места преступления
2) анализировать место преступления
3) вещественные доказательства
4) принцип обмена Локарда
5) возможные подозреваемые

1) law enforcement officials
2) to document and collect evidence
3) identifying potential evidence
4) to contaminate the scene
5) conduct scientific experiments

Activity 25. Study the list of questions. How many can you answer?

1. What did Edmond Locard develop?
2. Does a CSI or a forensic scientist visit crime scenes to collect evidence, and spend a significant portion of the workday on their feet?
3. What types can crime scene be divided into?
4. What does a day in life of a forensic scientist include?
5. How is physical evidence collected?
6. What are the procedures of crime scene investigation?
7. Who is included in a CSI team? What functions do they perform?
8. CSI usually conduct a DNA analysis, don`t they?
9. What does a forensic or SCI`s protective suit consist of?
10. Can forensic examination be evidence for the defense?

EXTRA TASKS

UNIT I

Activity 1.Choose one of the cards. Study your role and dramatize the interview.

Card 1. You are a journalist writing an article about a famous forensic anthropologist Clea Koff. Her work with the United Nations-based Criminal Tribunal for Rwanda was the main in identifying and bringing some of the genocide offenders to trial.

Task: arrange an appointment with Clea Koff and ask about her career of a forensic scientist, the role of it in her research and the skills that helped her in identifying the victims of genocide in Bosnia in 1995.

Card 2. You are a famous forensic anthropologist Clea Koff. Your book 'The Bone Woman: Among the dead in Rwanda, Bosnia, and Croatia' was a great success.

Task: agree to have an appointment with a journalist and answer his questions.

Card 3. You are a 2nd year student of law faculty. You`re fond of forensic science a lot and have a wonderful opportunity to ask a famous forensic anthropologist Clea Koff questions about role of forensic science in the world and the areas of its use.

UNIT II

Activity 1.Study new inventions of the 20th-21st centuries. Make up sentences using the Passive Voice.

New inventions in XXI century in forensic science

1987	**DNA catches the criminal** Tommy Lee Andrews, a rapist, was convicted of a series of sexual assaults by using DNA profiling.
1996	**DNA evidence certified** National Academy of Sciences announces DNA evidence is reliable.
1999	**Faster fingerprint IDs** FBI establishes the integrated automated fingerprint identification system, cutting down fingerprint inquiry response from two weeks to two hours.
since 2000	**3D reconstruction programs** Computer graphics are now used to create compelling visual evidence to clarify the events of a crime for jurors. 3D reconstructions of crime scenes and traffic collisions (столкновения) are all used to solve crimes. Forensic science will continue to develop the power of its techniques to deliver justice through logic and science.
2001	**Faster DNA IDs** Technology speeds up DNA profiling time, from 6-8 weeks to between 1-2 days.
2007	**Footwear detection system** Britain's Forensic Science Service develops online footwear coding and detection system. This helps police to identify footwear marks quickly.
2008	**Detection after cleaning** A way for scientists to visualize fingerprints even after the print has been removed is developed, relating to how fingerprints can corrode metal surfaces.
2011	**Facial sketches matched to photos** Michigan state university develops software that automatically matches hand-drawn facial sketches to mugshots (снимки преступников) stored in databases.
2011	**4 second dental match** Japanese researchers develop a dental x-ray matching system**.** This system can automatically match dental x-rays in a database, and makes a positive match in less than 4 seconds.

UNIT III

Activity 1. Study the list of professions given at https://thebestschools.org/careers/criminal-justice-jobs/ and fill in the table.

Activity 2. Using the professions from the activity 1, fill in the gaps.

1. ____ analyses odd or fraudulent patterns surrounding customer accounts.
2. ____ analyzes evidence collected by ____.
3. ____ is a legal assistant.
4. ____ deals with digital evidence
5. ____ produces a portrait or psychological profile of a perpetrator.
6. ____ studies financial records to find suspicious transactions.
7. ____ examines DNA samples with traces from the clothing of victims and crime scenes.
8. ____ uncovers and restores lost or hidden files.

UNIT IV

Activity 1. Scan the text and answer the question: What items are used by lab officers?

Tool kit for a forensic scientist

Forensic investigators find, methodically collect, take photos and document the crime scene, protect and transport evidence from it. Forensic scientists have no contact with witnesses, suspects or others. Their role is purely collection and analysis of evidence. There are typical tools or kits that all forensic scientists use.

Safety is the major principle of forensic scientists. They should be extremely careful when handling any evidence (chemical) and use rubber gloves to protect their hands and be careful of the clothing, shoes, tools, etc. which could transfer to their vehicle, office and home.

Activity 1. *Look at the picture below match the images with definitions.*

Contents of evidence collection kit**:**

__latex powder-free gloves
__evidence collection tweezer
_ evidence collection containers
_ CSI evidence knife
_ evidence ID labels
__'Warning/Police Seal-Do not Remove' (red)
_ evidence collection kit
__evidence plastic bags

Activity 2. *Match the forensic tools with their functions.*

a crime scene tape	to secure the scene and the around area;
a camera and a film	to collect evidence such as hair and fibres;
a sketchpad and pens	to establish positive fingerprint identification;
overall suits, face masks and gloves	for making casts of shoe/footwear prints, animal prints, tyres and tool markings;
a torch, or other light sources	for collecting samples of fluid evidence;
tweezers	not to contaminate the items;
a magnifying glass	for handling hazardous materials (опасные материалы)/evidence;
cotton wool buds	for scene sketches;

to label evidence and keep evidence uncontaminated;
to help with finding trace evidence;

to uncover certain types of evidence;

to photograph scene and evidence.

Activity 3. What are the functions of these items? Use the example.

Latex powder-free gloves are used to take pieces of evidence for the examination.

EXTRA READING

Duties of the forensic scientist

A

Now we can identify forensic scientist's duties as follows:

1. Examine material collected or submitted in order to provide information previously unknown or to corroborate information already available.

2. Provide the results of any examination in a report that will help the investigator to identify an offender or corroborate other evidence to prepare a case for presentation to a court.

3. Present written and/or verbal evidence to a court to enable it to reach a right decision as to guilt or innocence.

It is essential for the scientist to be able to demonstrate competence, impartiality and integrity by attention to issues such as the following:

1. The scientist should only give evidence on work which he/she carries out personally or under a direct supervision.

2. The methods which are used in an investigation should be based on established scientific principles and validated.

3. It is important to realize that the responsibilities of the individual forensic scientist are personal and not corporate. So, in giving evidence he or she is completely responsible for their own experimental results and for the opinions which he or she expresses.

B

Having established when the service of a forensic scientist could be required their duties can now be identified as follows:

1. Examine material collected or submitted in order to provide information previously unknown or to corroborate information already available.

2. Provide the results of any examination in a report that will enable the investigator to identify an offender or corroborate other evidence in order to facilitate the preparation of a case for presentation to a court.

3. Present written and/or verbal evidence to a court to enable it to reach an appropriate decision as to guilt or innocence. In the United Kingdom, the United States of America and many other parts of the world the individual forensic scientist may be regarded as, and claimed to be, an independent witness for the court but may not always be so regarded.

It is essential therefore for the scientist to be able to demonstrate competence, impartiality and integrity by attention to issues such as the following:

1. The scientist should only give evidence on work carried out personally or under direct supervision. However, an expert witness can interpret factual evidence given by another witness under oath in the light of scientific findings and knowledge.

2. Where scientific examinations are relied on for legal purposes the methods used should be based on established scientific principles, validated and, preferably, published in reputable scientific literature.

3. Where the scientific findings require interpretation the basis of any interpretation should be available to the scientific community. It is important to recognize that the responsibilities of the individual forensic scientist are personal and not corporate. Thus in giving evidence he or she is completely and solely responsible for their own experimental results and for the opinions expressed. However the corporate environment will usually be a supportive structure to provide appropriate training, standardized methods and procedures, evaluation of performance and a quality management system [11].

Computer forensics specialist

In recent years, computer forensics has grown to be increasingly important as computers have become more pervasive in modern society. It is, according to some experts, one of the fastest growing areas of forensics. The experts who work in this field are known Computer forensics specialists. Their job is to examine digital evidence. They isolate, remove, preserve, analyze4, and keep a record of data that has been stores or encrypted on computer media. They inspect computer hard drives as well as other computer media such as CD-ROMs, zip disks, personal digital assistants (PDAs), flash memory cards, portable media players, and cellular telephones.

Many law enforcement agencies have computer crime units, or a high-technology crime units, that are responsible for investigating computer and computer-related crimes.

Computer forensics specialists who work in these special details may be law enforcement officers or civilians. They examine data from computers found at crime scenes to uncover potential evidence that may lead to the arrest and conviction of suspected criminals.

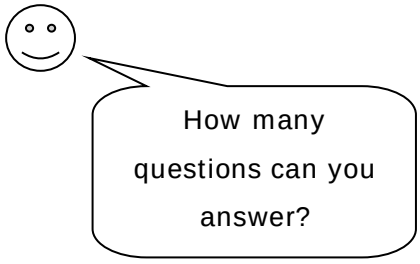
These specialists are involved in the investigation of such crimes as theft of computer systems, trade secrets, and information assets (data), as well as the destruction or damage of computer files. They also conduct or assist in investigations in which computers were used to commit, plan, or document crimes such as credit fraud, identity theft, kidnapping, rape assault, arson, and terrorism. In addition, they provide assistance to other law enforcement officers with preparing search warrants to seize computers, as well as with the proper handling of that equipment. Furthermore, they may assist in collecting and processing evidence at crime scene.

Some Computer forensics specialists work in the private sector, where they offer their forensic services to various individuals and groups. Some of them are employed as staff members of organizations, while others work as forensic consultants or as private investigators.

Expert Witness # 2 - Dr. Lillian Tuesdays

Dr. Lillian Tuesdays is a forensic scientist. She has a Ph.D. in Chemistry. She has been employed by the JNB Forensic Lab for twelve years, and has worked in the fingerprinting department for that entire period. She examined the vehicle in question on October 11, 2017. She has found that most of the fingerprints on the interior of the vehicle had been wiped clean. However, she did find one full print on the back of the steering wheel. After police officers made an arrest, they gave her the fingerprint of their suspect, Clark Jameson. That fingerprint perfectly matched the fingerprint on the steering wheel of the Explorer. She said that it was likely that the person who had left the fingerprint was behind the wheel of the vehicle. In addition, she found a partial print on the outside of the passenger-side door. She said that that fingerprint was likely left by a passenger when he or she left the vehicle. That print was consistent with the fingerprint of Robert Noonly. She also said that she did not find any usable fingerprints on the stick found at the scene by Constable Dan McForden. On cross-examination, she said that she admitted the placement of Clark Jameson's fingerprint on the back of the steering wheel does not prove that he was driving the vehicle at any time. She admitted that it was possible that the print could have been left at any point during the night whether Clark was driving or not.

REVISION



1. What does the term “forensic science” mean in Russia and the UK?
2. What are three the most important discoveries in the sphere of forensic science in your opinion?
3. Who is Edmond Locard and what’s his contribution to forensic science?
4. What can forensic science make a contribution to?
5. When is forensic science required?
6. What are the main duties of the forensic scientist?
7. What separate branches of forensic science are there in the UK?
8. What three questions should be answered in investigation?
9. What helps to identify the identity of criminal / victim?
10. What are the main differences between lab officers and field officers (working environment, duties, risks)?
11. What types can a crime scene be divided into? What’s the difference between them?
12. What can a crime scene be classified by?
13. What professionals are responsible for investigating a scene and collecting evidence? State their main duties.
14. State the general crime scene procedures.
15. Describe a CSI’s suit.
16. Describe a tool kit for a forensic scientist. What are these tools used for?
17. State the main duties of forensic economists and types of cases they deal with.
18. Talk about experience, special skills, personality traits which forensic economists should have.
19. State the main duties of computer forensic specialists and types of cases they deal with.
20. Talk about experience, special skills, personality traits which computer forensic specialists should have.