

# HUMAN OSTEOLOGY

COLOUR AND LEARN

ANA CURTO



*This book belongs to:*

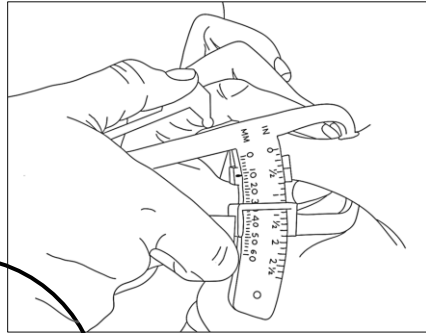
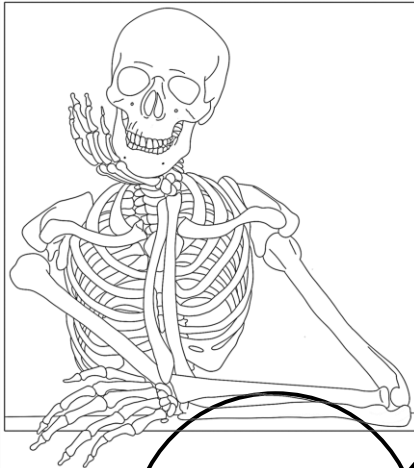
*Future osteologist*



IMPrensa  
UNIVERSIDADE DE ÉVORA

**Translated to English from the original in Portuguese by Ana  
Curto and Adriana Lowe**

# WHAT IS BIOLOGICAL ANTHROPOLOGY?



Medical Anthropology

Human Osteology

Primatology

Biological Anthropology



Human Evolution

Forensic Anthropology



# HUMAN OSTEOLOGY

Biological Anthropology has several areas of study, one of them is human osteology. This area studies anatomically modern skeletons (*Homo sapiens*) from archaeological excavations and aims to reconstruct the lives of past populations (gender, age at death, health and diseases, physical activity, diet and mobility).



# FIELDWORK



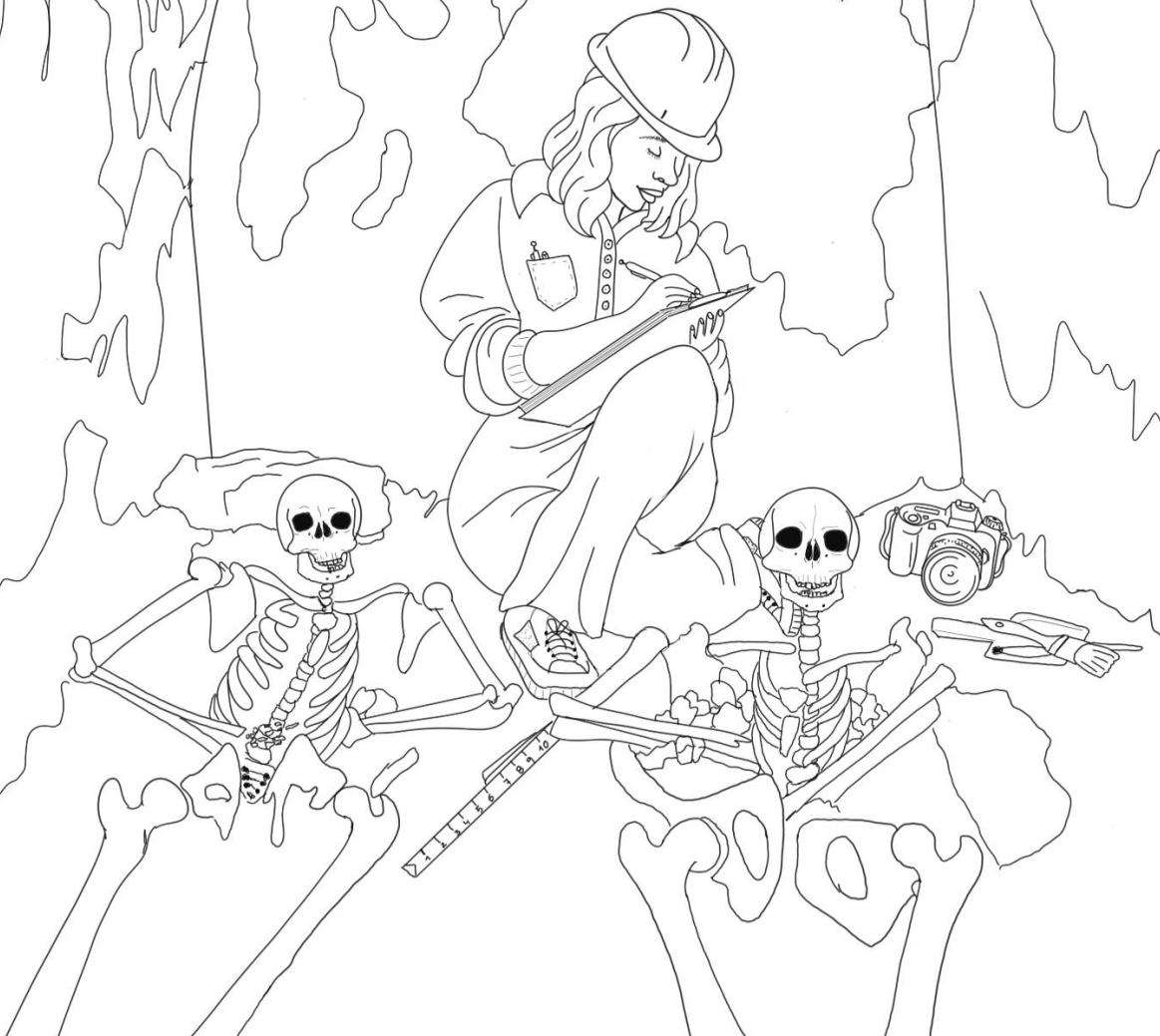
Anthropologists work on archaeological digs wherever human bones are found.



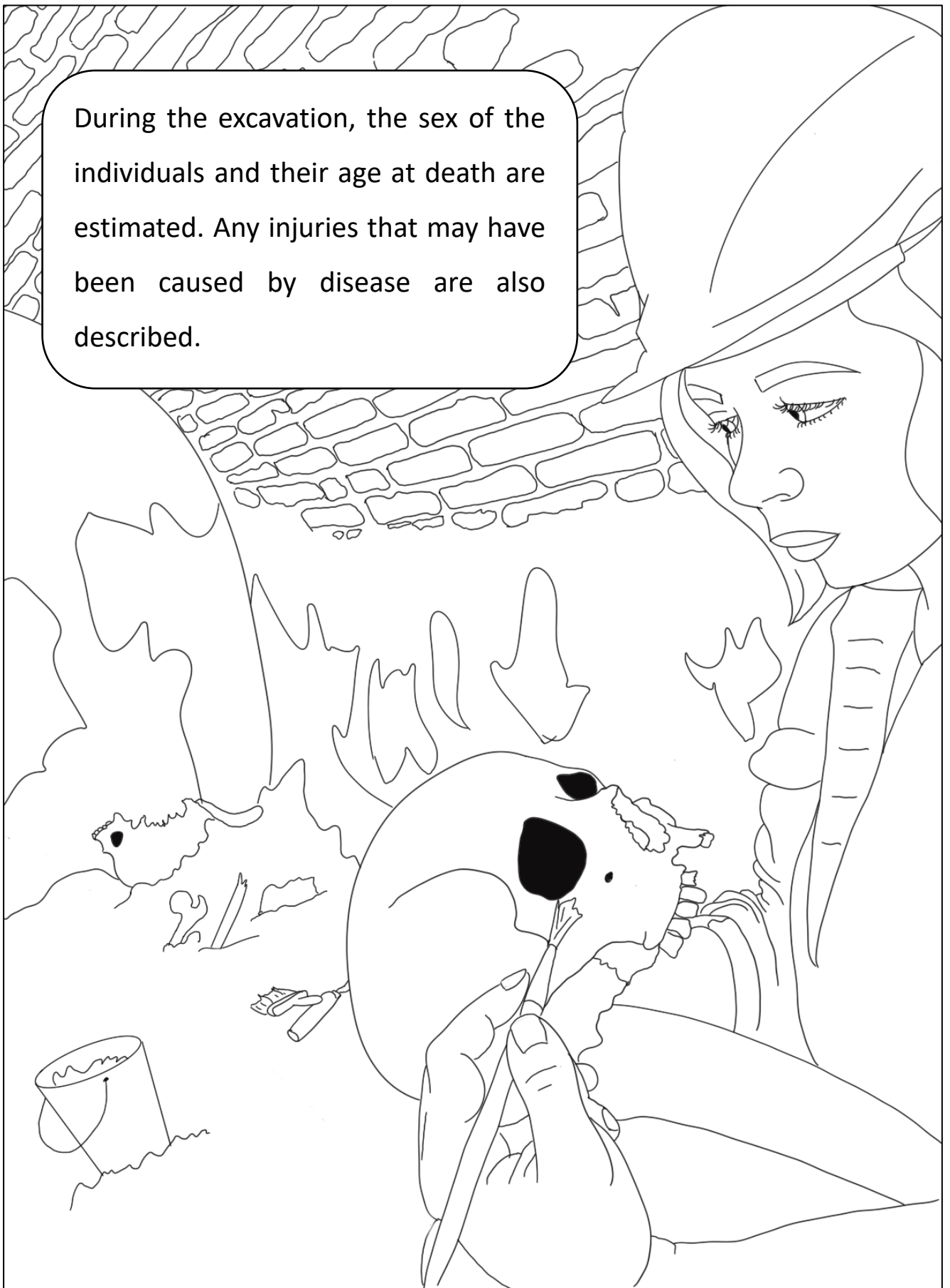
The bones recovered from the excavations are then studied in greater detail in the laboratory.

# LABORATORY

During the excavation, various information about the skeletons is collected. Everything that was found is described, photographs are taken and bones and graves are measured.



During the excavation, the sex of the individuals and their age at death are estimated. Any injuries that may have been caused by disease are also described.

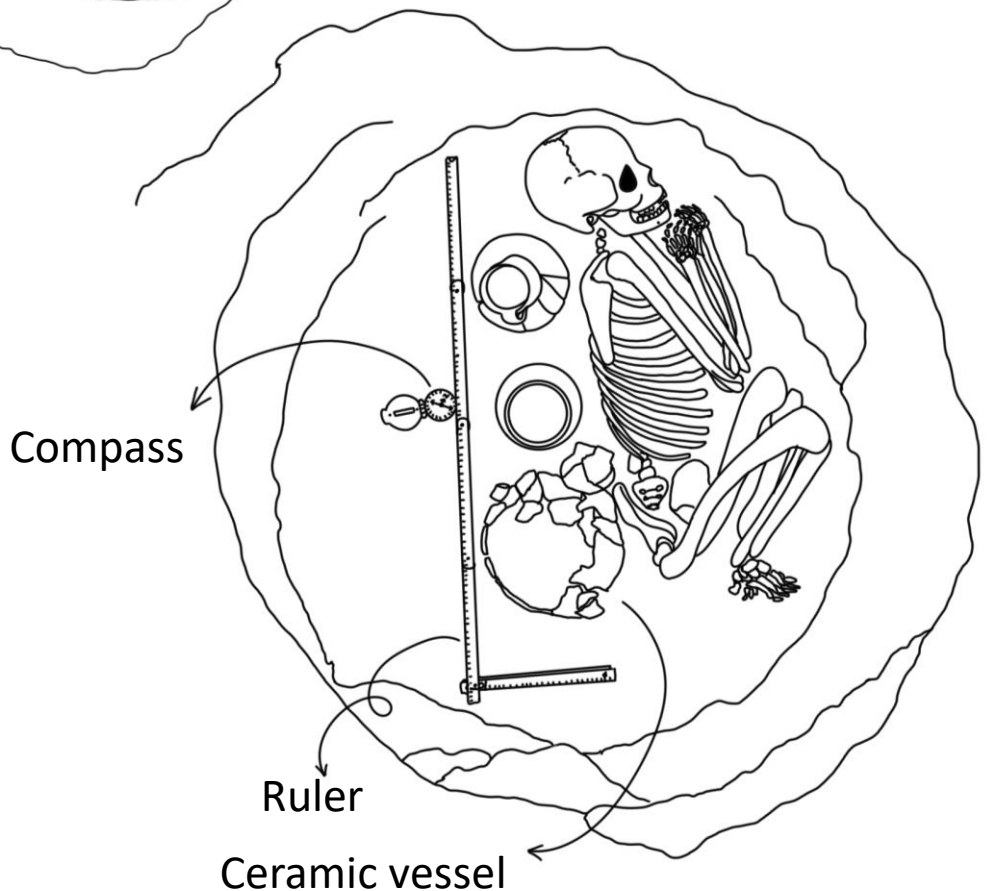


# DID YOU KNOW...?

Throughout history, different peoples buried their dead in different ways.



In prehistoric times they were often buried in the position with objects (cups, jewellery, daggers...) and bones of other animals.





# DID YOU KNOW...?

The Romans treated their dead differently over time. Their skeletons are sometimes found cremated, leaving only ashes. Other times they are found lying on their backs and often with objects such as lamps, coins, earrings, rings and ceramic or glass containers.



Anphora

Coins



Oil lamo



# DID YOU KNOW...?



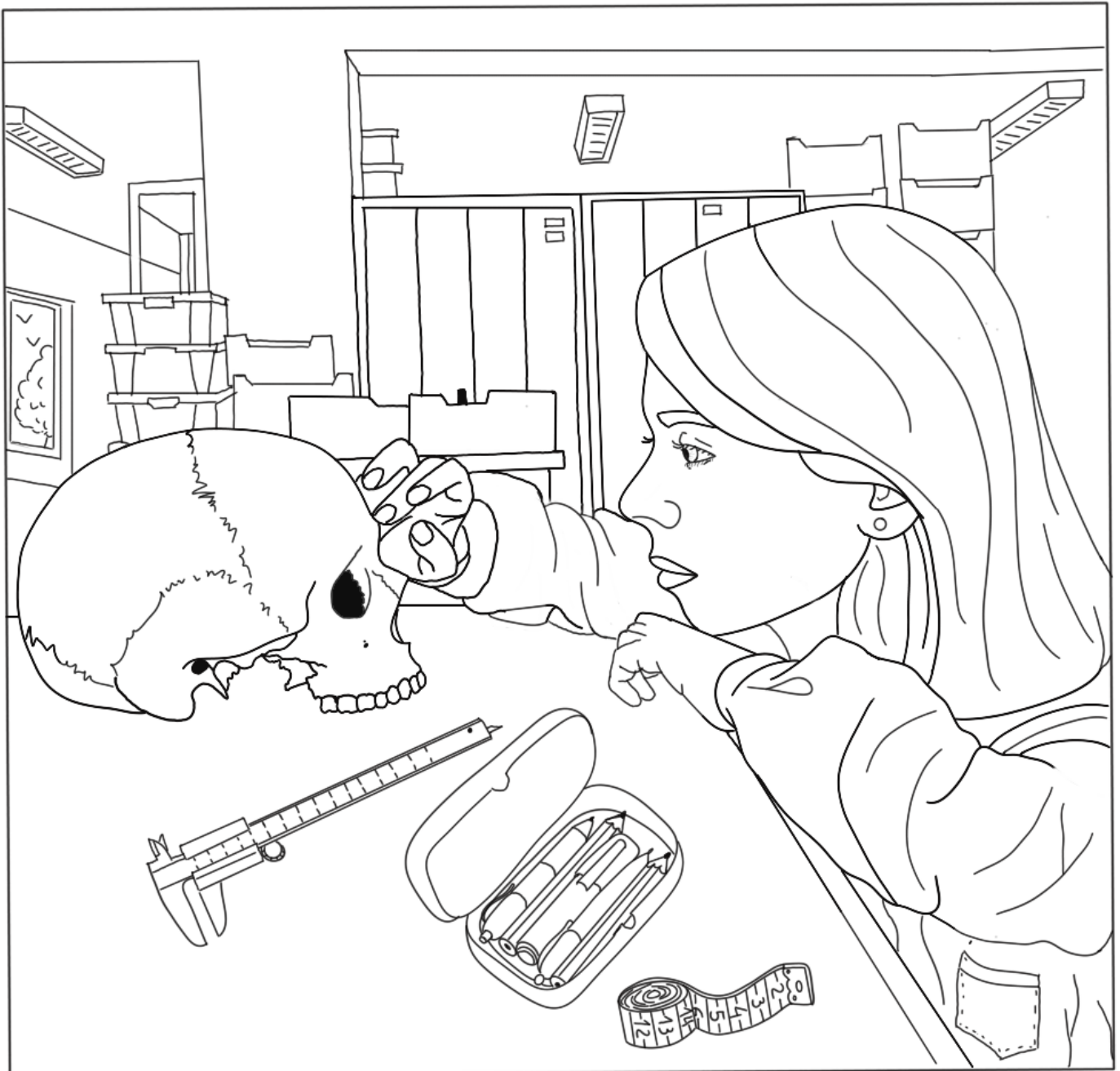
Skeletons of Muslims are found outside city walls, lying on their sides, facing Mecca and have no archaeological objects in the graves.

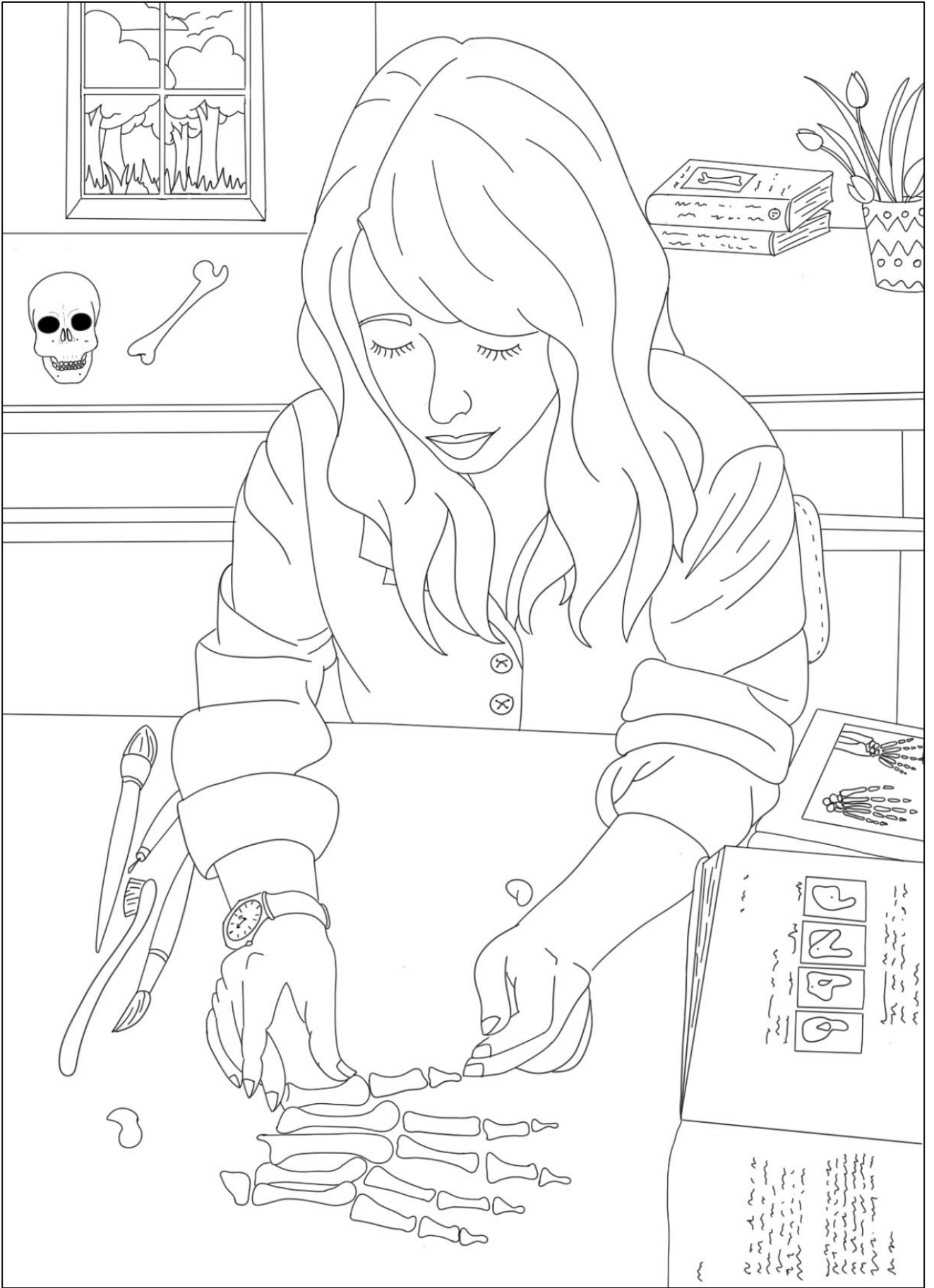
Skeletons of Christians also lack archaeological objects but are found lying on their backs, in or around churches.



# IN THE LAB

After being excavated, the skeletons are cleaned and studied in more detail. The sex and age at death are estimated during the excavation are confirmed and each bone and tooth is analysed in detail.

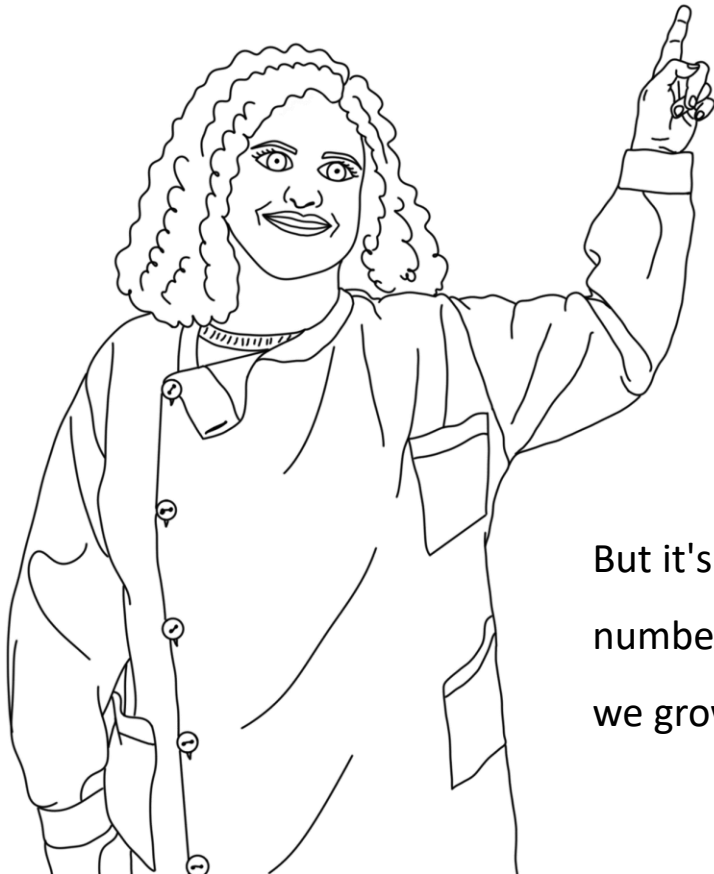
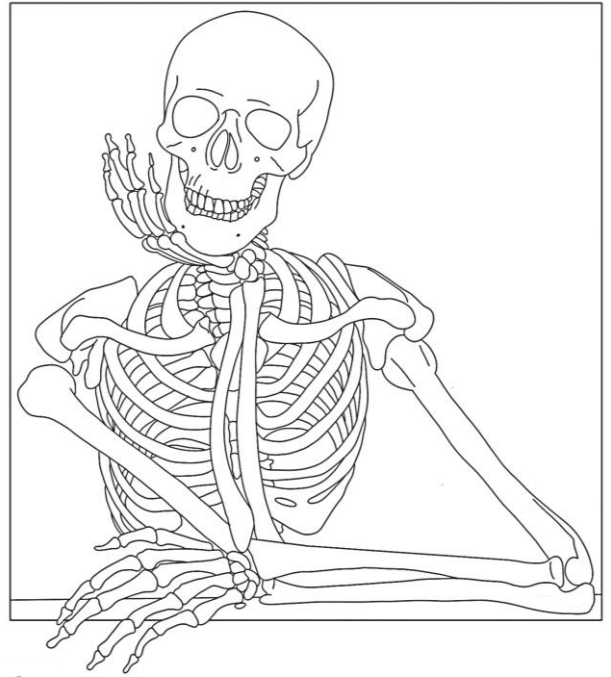




# DID YOU KNOW...?

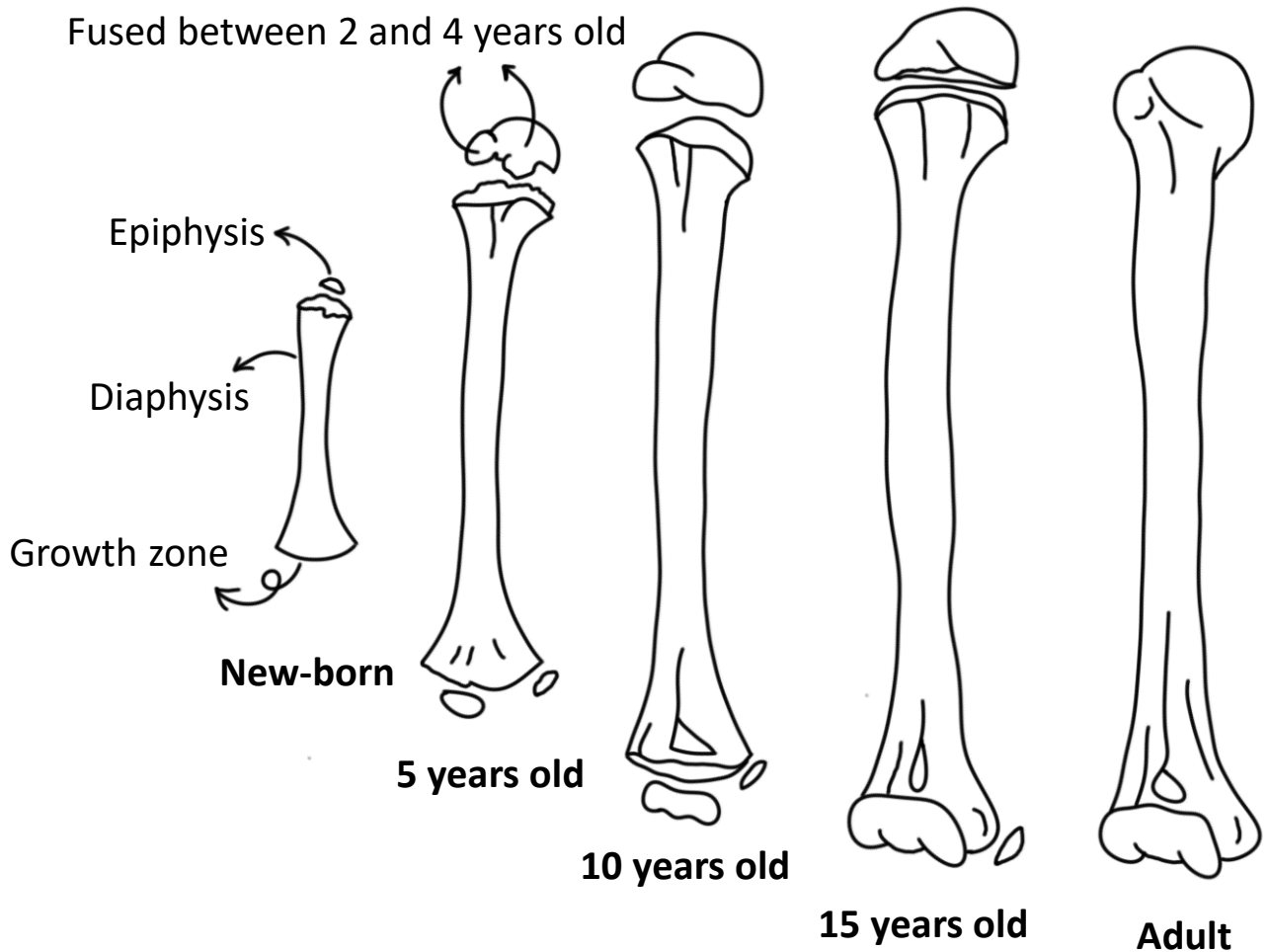
**A human skeleton has 206 bones:**

- 29 bones form the skull
- 32 vertebrae
- 12 pairs of ribs
- 1 sternum
- 5 bones in each arm
- 27 bones in each hand
- 5 bones in each leg and
- 26 bones in each foot



But it's not always like that. The number of bones we have varies as we grow into adults.

# OUR SKELETON GROWING



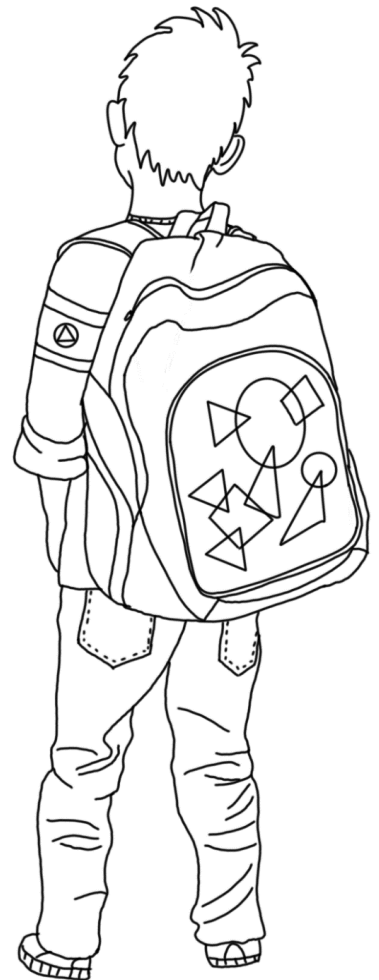
As we grow, the different parts of each bone appear and come together to form a single bone. This is why children have more bones than adults. When the pieces all come together we stop growing.

# DID YOU KNOW...?

A new-born has about 300 bones. Almost a hundred more bones than an adult.



The number of bones we have varies as we grow. As we know at what age the different pieces appear and come together, we are able to estimate the age through the bones.



# WHAT HAPPENS TO BABY TEETH?

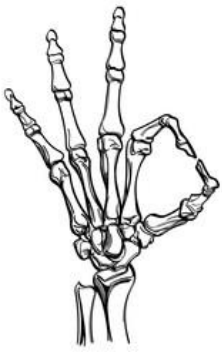


Don't forget to brush yours well!

Did you know that a 4-year-old child already has permanent teeth? These teeth are hidden within the bones of the jaw and jaw. As the permanent teeth grow, they push the baby teeth that eventually fall out.







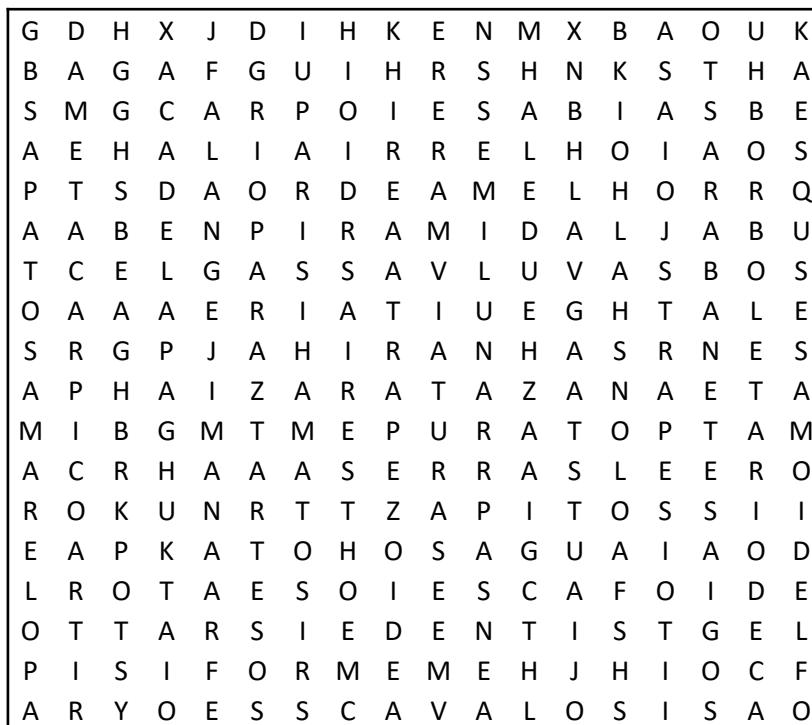
# HOW MANY BONES FIT IN A HAND?

Did you know that a hand has 27 bones?

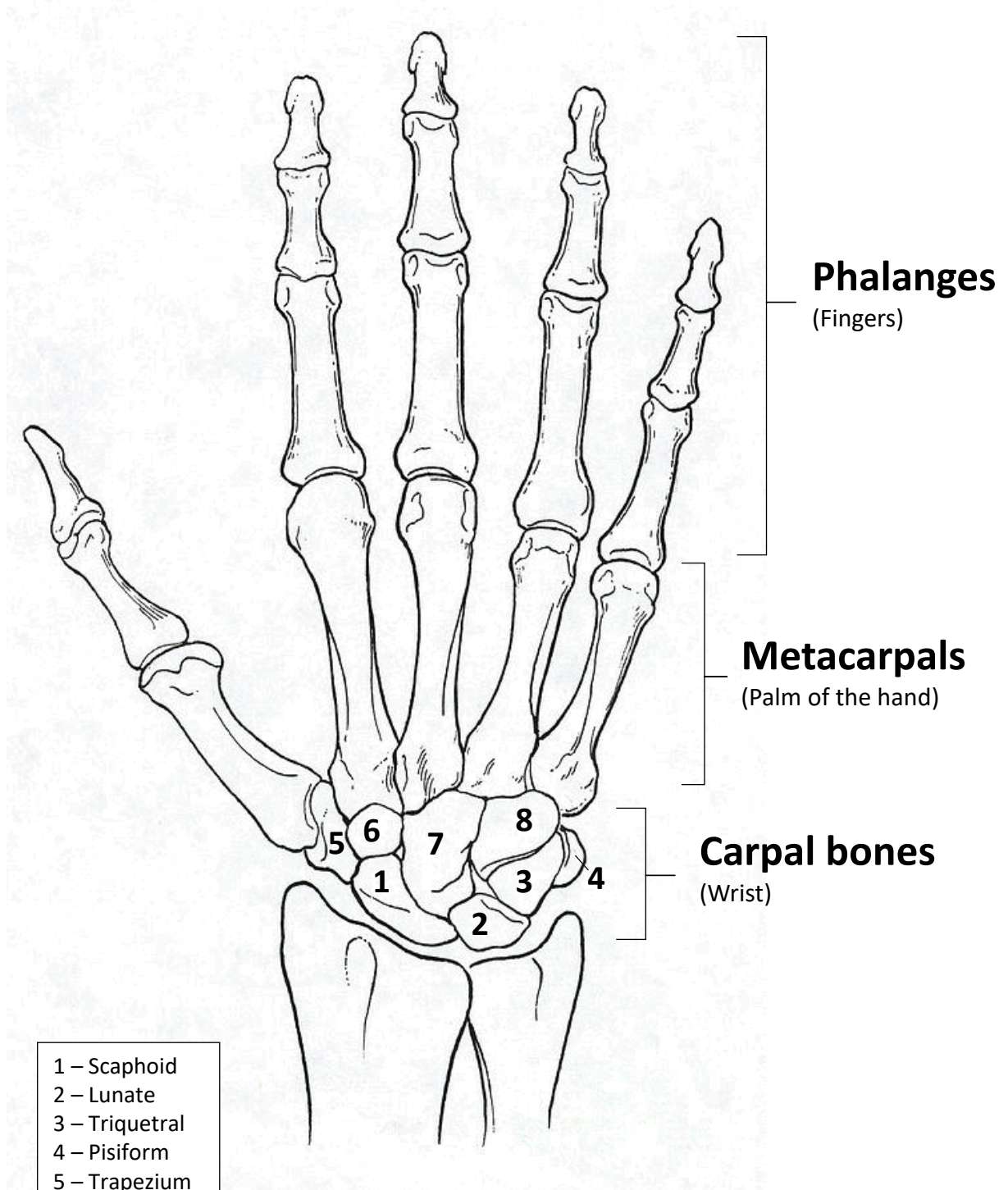
- **8 carpal bones** in the wrist (Scaphoid, Lunate, Triquetral, Pisiform, Trapezium, Trapezoid, Capitate & Hamate);
- **5 metacarpals** in the palm of the hand, 1 for each finger;
- **14 phalanges** in the fingers, each finger has 3 phalanges except the thumb which only has 2.

In addition to these 27 bones, there are **2 sesamoid bones**, in the "palm" of the hand, at the base of the thumb. The base of the remaining fingers may also have more sesamoids.

Find the names of the 12 hand bones in the alphabet soup:



# HOW MANY BONES FIT IN A HAND?



- 1 – Scaphoid
- 2 – Lunate
- 3 – Triquetrum
- 4 – Pisiform
- 5 – Trapezium
- 6 – Trapezoid
- 7 – Capitate
- 8 – Hamate

Draw the shape of the hand and colour it however you like.



# HOW MANY BONES DOES A FOOT HAVE?

Did you know that a foot has 26 bones?

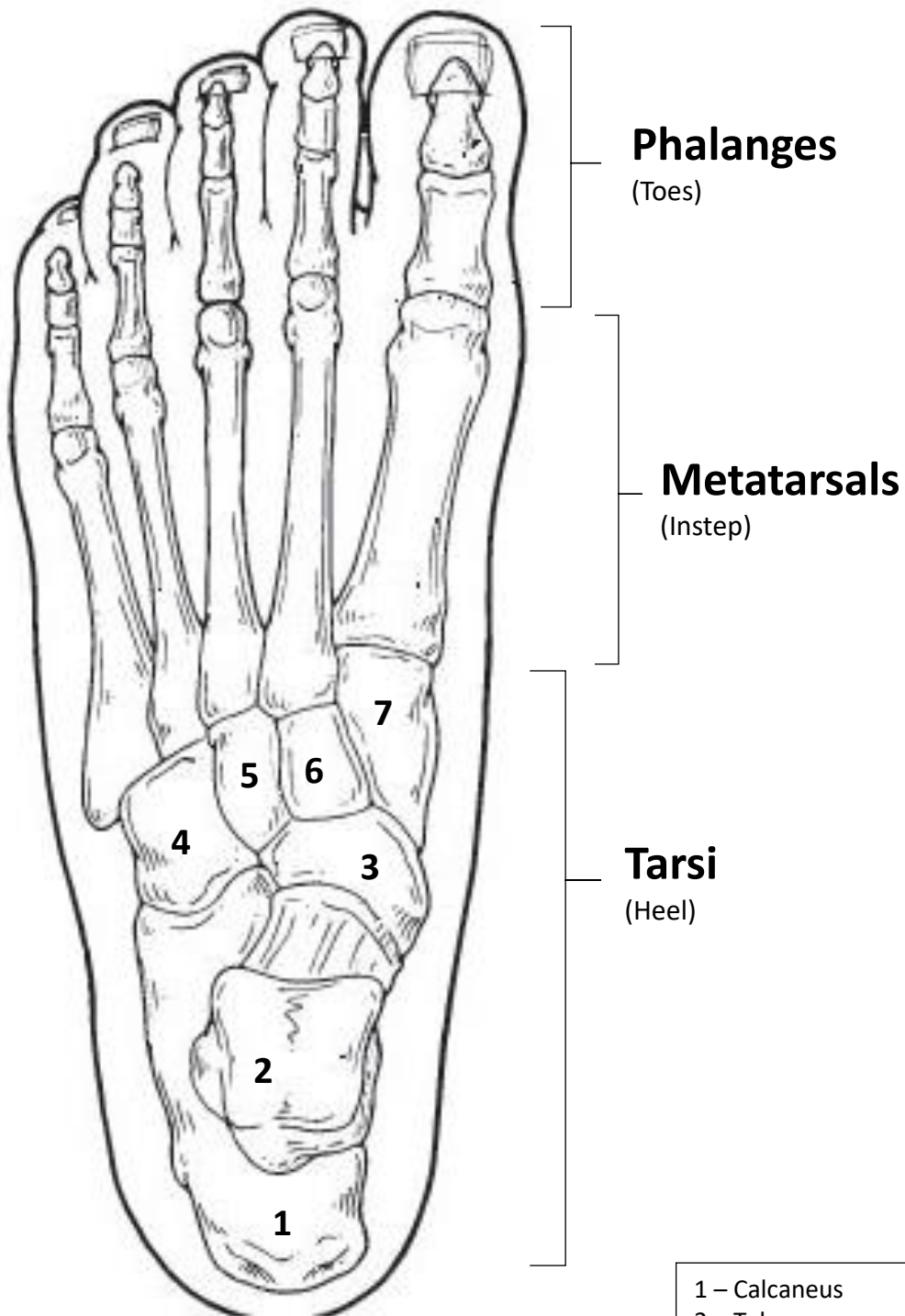
- **7 tarsi** on the sole of the foot and ankle (Calcaneus, Talus, Navicular, Cuboid, Lateral Cuneiform, Intermediate Cuneiform & Medial Cuneiform);
- **5 metatarsals** on the sole of the foot, 1 for each toe;
- **14 phalanges** in the fingers, each finger has 3 phalanges except the big finger which only has 2.

In addition to these 26 bones, there are 2 **sesamoid bones** in the sole of the foot, at the base of the big toe. Other areas of the foot may also have more sesamoids.

Find the names of 9 foot bones in the alphabet soup:

H	M	E	S	A	L	T	O	P	I	N	D	I	D	S	E
J	Y	M	R	E	D	A	T	A	R	S	I	A	S	O	L
D	J	E	T	C	O	M	T	O	F	A	N	T	U	T	A
A	I	T	Q	A	Z	P	N	A	V	I	C	U	L	A	R
G	N	A	U	S	T	H	S	O	L	C	U	B	O	L	I
B	E	T	E	S	L	A	I	L	H	A	B	A	T	U	E
I	T	A	Y	I	O	L	R	R	I	U	O	T	G	S	J
P	N	R	Z	T	G	A	U	S	S	O	I	A	K	X	O
O	H	S	E	U	O	N	S	T	I	P	D	T	Y	H	A
T	I	A	R	V	E	G	S	I	N	C	E	A	A	A	N
C	A	L	C	A	N	E	U	S	N	H	O	S	O	L	N
I	D	U	T	R	A	B	A	L	H	O	S	S	S	U	A
T	N	S	E	S	A	M	O	I	D	E	S	A	L	X	P
A	J	A	N	O	I	T	S	O	L	E	R	A	M	A	O
D	I	T	C	U	N	E	I	F	O	R	M	E	N	H	A
E	L	O	S	A	P	A	T	O	S	K	A	T	O	I	Z

# HOW MANY BONES DOES A FOOT HAVE?



Colour each type of bone the same colour.

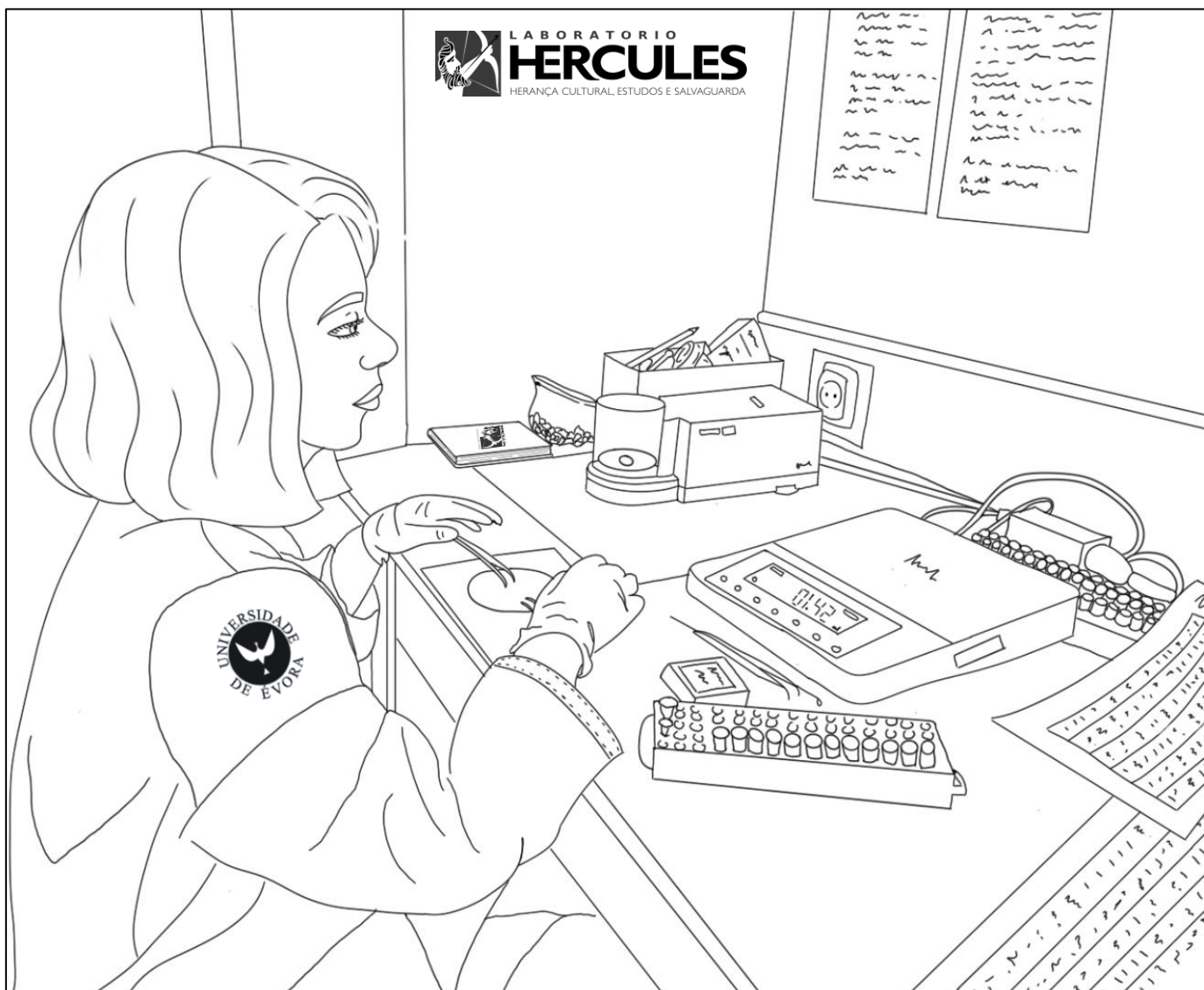
- 1 – Calcaneus
- 2 – Talus
- 3 – Navicular
- 4 – Cuboid
- 5 – Lateral Cuneiform
- 6 – Intermediate cuneiform
- 7 – Medial cuneiform

# DID YOU KNOW...?

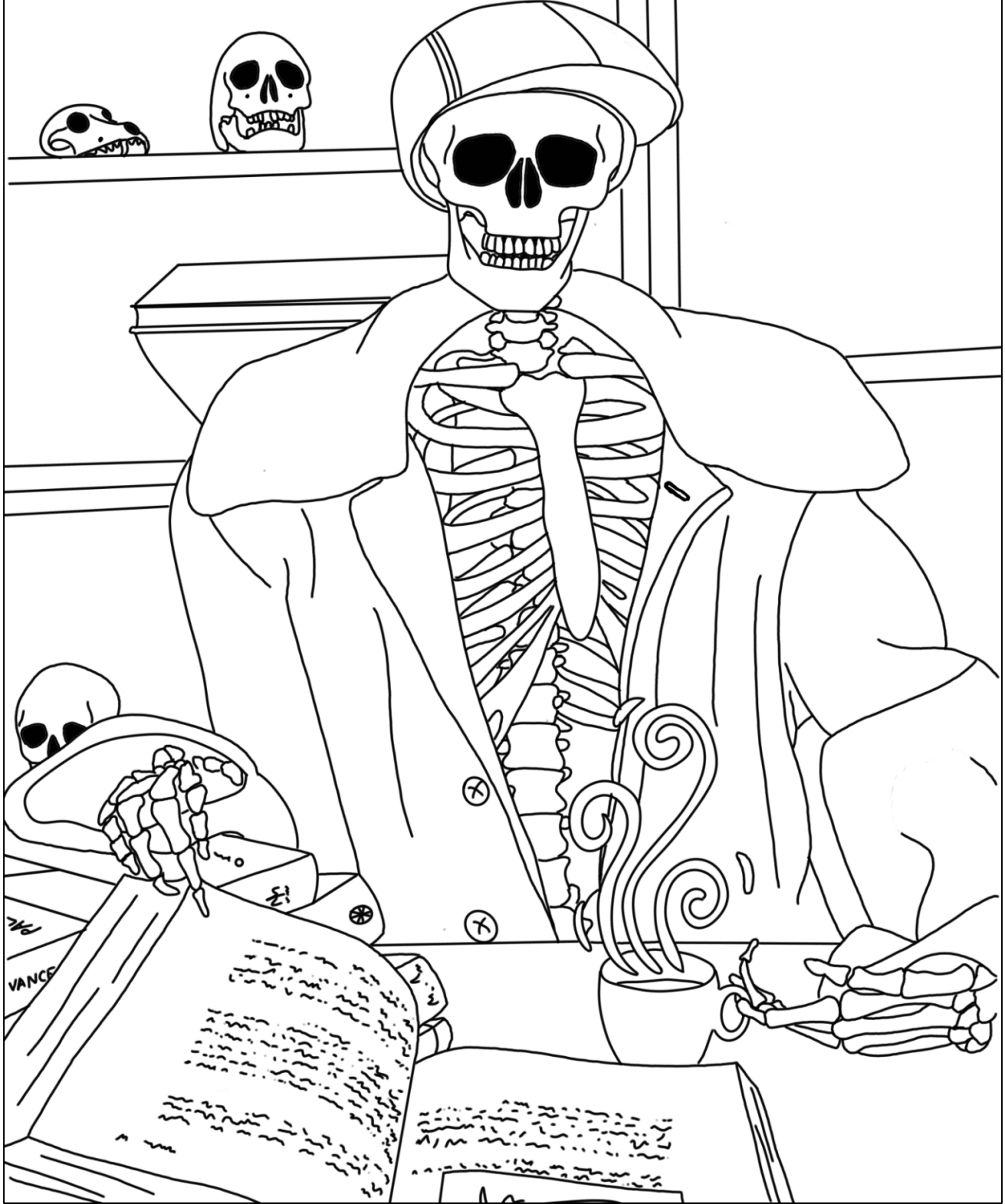
There are several biochemical analyses that we can do on bones and teeth.

Genetics makes it possible to study the family relationships between individuals and the diseases they suffer from.

Stable isotopes can tell us what they ate and whether they travelled.



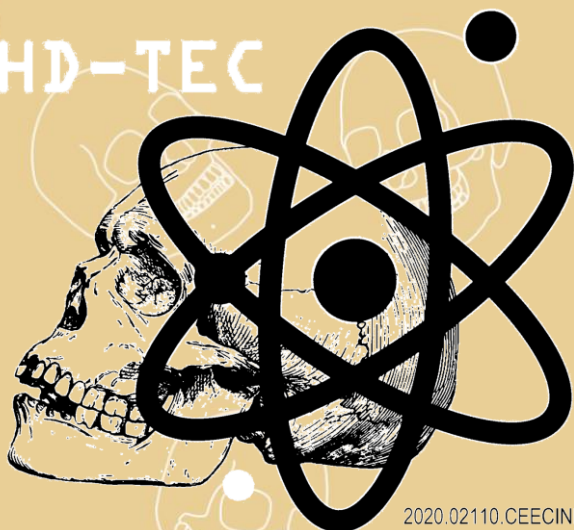
Thank you!







HD-TEC



2020.02110.CEECIND

The impact of childhood Diet on adult Health, comparing three Portuguese archaeological collections: Tomar, Estremoz and Crato



LABORATORIO  
**HERCULES**

HERANÇA CULTURAL, ESTUDOS E SALVAGUARDA



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SCAN ME