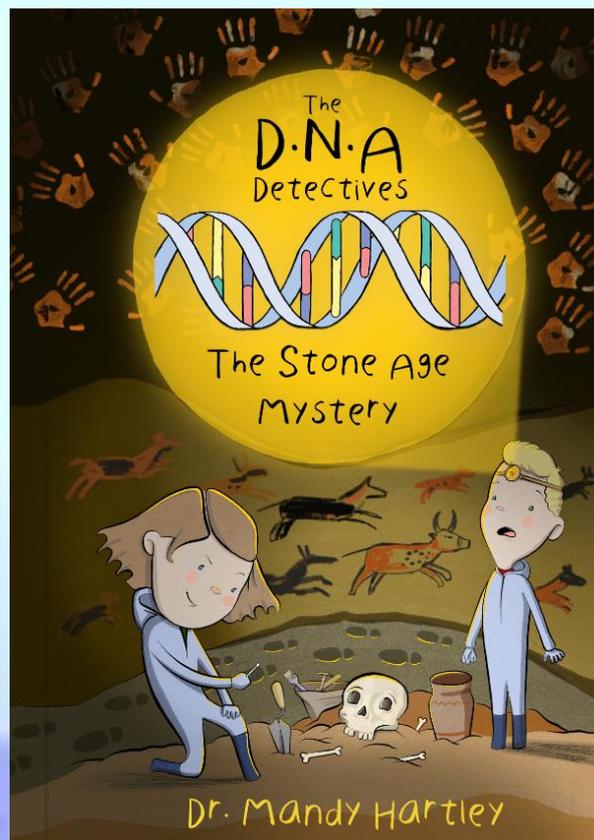
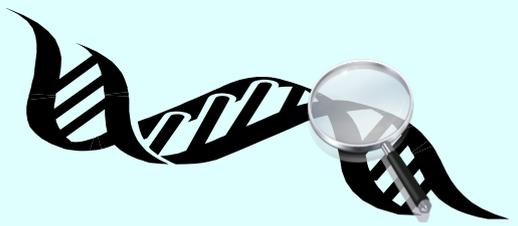


“The DNA Detectives – The Stone Age Mystery”



Weblinks



Web links for “The DNA Detectives – The Stone Age Mystery”

Chapter 2: A case for the DNA Detectives!

What do scene of crime officers wear? Would you like to find out more about DNA?

In Chapter 2 Annabelle and Harry dress up as Scene of Crime officers to collect evidence from the cave. You can find out what these outfits look like by clicking the weblink below.

Harry introduces us to DNA in this chapter. You can find out more about DNA and try these fun activities clicking on the web links for this chapter.

1. Follow this weblink to find out what Scene of Crime Officer’s wear (Look at slide 7).
<https://www.slideshare.net/06426345/introduction-to-forensics-37842207>
2. Watch this video clip to find out what DNA is.
<http://learn.genetics.utah.edu/content/basics/dna>
3. Watch this fantastic video to find out “What does DNA do?”
<https://www.yourgenome.org/video/what-does-dna-do>
4. Have a look at this great song all about DNA!
<https://www.youtube.com/watch?v=T5gEIViVAPw>
5. Have a go at making an origami DNA Helix.
<https://www.yourgenome.org/activities/origami-dna>
6. Have a go a making a DNA Helix out of sweets!
<https://www.yourgenome.org/activities/yummy-gummy-dna>

Chapter 3: DNA to the rescue!



Would you like to find out more about the cave paintings at Lascaux in France? How forensic scientists use DNA to catch criminals? What cells are? What a hair root looks like close up and why you can often see mist outside caves?

In this Chapter Mrs Arnold tells the children about the famous cave paintings at Lascaux in France. You can find out what they look like and try some fun activities by clicking on the links below.

Annabelle gives a great explanation of how forensic scientists use DNA to catch criminals. Click on the link to find out more!

Can you remember how Issy says you can identify a cave entrance? Find out why by looking at the link below.

1. There are some great facts here about the caves at Lascaux including pictures of the Hall of Bulls which Mrs Arnold talks about in the story.
<http://justfunfacts.com/interesting-facts-about-lascaux/>
2. Take a virtual tour of the caves at Lascaux.
<https://vimeo.com/40849516>
3. Why not have a go at creating your own cave art? There are some great ideas with this weblink (You could also have a go at making authentic cave paint – have a look at the weblinks for Chapter 9).
http://downloads.bbc.co.uk/history/handsonhistory/ancients_art.pdf
4. Maybe you could turn your classroom or hallway into a cave full of cave art!
<https://www.instructables.com/id/Kid-Friendly-Paleolithic-Cave-Art/>
5. Watch this video clip to see how forensic scientists use DNA evidence found at a crime scene to catch a criminal.
<https://www.youtube.com/watch?v=AkBUriMK9u8>
6. Find out more about Edmond Locard's famous principle "Every contact leaves a trace" by watching this video clip.
<https://www.facebook.com/EdmontonScience/videos/1088461287880998/?v=1088461287880998>



7. Why not watch the video clips below to help your understanding of what cells are?
<https://www.youtube.com/watch?v=8qFACgy7Ufw>
<http://ed.ted.com/on/lm7NqUdx>
8. Try these interactive games to find out just how big a cell in your body is!
http://www.cellsalive.com/howbig_js.htm
<http://learn.genetics.utah.edu/content/cells/scale/>
9. Watch this video clip to find out more about the structure and function of different cells.
<https://www.youtube.com/watch?v=hywRdDVR76A>
10. Ever wondered what the inside of the cell looks like? Click on this link to zoom into the cell, the nucleus and the chromosomes!
<https://www.abpischools.org.uk/full-screen-animation/231/228>
11. Why not make your own cell out of a cookie. Click on the link below to find out how.
<https://www.childrensmuseum.org/blog/saturday-science-homemade-animal-cell-cookie>
12. Find out what a hair root looks like close up.
<https://www.webmd.com/skin-problems-and-treatments/picture-of-the-hair#1>
<https://www.researchgate.net/figure/Photomicrograph-of-Human-Hair-Root-The-scale-pattern-of-the-cuticle-in-human-hairs-is fig10 318753108>
13. Can you spot the mist in this article about the world's biggest cave?
<https://www.telegraph.co.uk/travel/news/Worlds-largest-cave-to-be-preserved-in-its-natural-state/>



14. What happens when the warm air in the cave meets cold air outside? Click on this link to find out why mist forms.

<https://www.nationalgeographic.org/encyclopedia/mist/>

Chapter 4: The search for the cave entrance

Would you like to know who discovered the caves at Lascaux?

In this Chapter the children search for the entrance to the cave. But how was the entrance to the caves in Lascaux discovered? It's a really interesting story. Click below to find out more.

1. Click on the link to listen to the story of how the entrance to the cave and cave paintings at Lascaux were discovered.

<https://www.youtube.com/watch?v=dIkhob5bFg>

Chapter 5: Once more into the darkness

Would you like to find out what kind of creatures live in caves?

In this Chapter Annabelle encounters some of the residents of the cave! Click below to find out more about them.

1. Find out what creatures live in caves by clicking the link below.

<https://www.nhm.ac.uk/discover/creatures-that-lurk-in-caves.html>

2. What kind of bats do you find in the UK?

<https://www.nationaltrust.org.uk/features/our-guide-to-the-uks-bats>

3. Find out why bats like living in caves.

https://www.british-caving.org.uk/wiki3/lib/exe/fetch.php?media=conservation_access:bct_bats_underground.pdf

Chapter 6: Gathering evidence

What do you know about fingerprints?

In this Chapter the children analyse the evidence for fingerprints. Find out more by clicking on the links below.

1. Find out about people who don't have fingerprints by clicking the link below.

<https://www.nationalgeographic.com/news/2011/8/110809-fingerprints-skin-disease-health-science-weird/>



2. Find out where fingerprints come from by watching this video clip.
<https://www.youtube.com/watch?v=qX6hFXHDmk4>
3. Click on the link below to find out the difference between loops, whorls and arches.
<http://www.forensicssciencesimplified.org/prints/principles.html>
4. See if you can identify the fingerprint patterns and whether they match.
<https://www.newscientist.com/gallery/mg20527522600-guess-the-fingerprints>
5. Click on the link below to find out how to take your own fingerprints. There is even a fingerprint record card to print out just like the police use!
<http://buggyandbuddy.com/exploring-fingerprints-science-for-kids/>
6. Why not try putting your fingerprint onto a balloon find out how to collect fingerprints from different objects.
http://www.kidsciencechallenge.com/pdfs/2009activities/KSC_Fingerprint_2009.pdf
7. Try making your own fingerprinting kit with a pencil! Click on the link below to find out how.
<http://www.kiwicrate.com/projects/Fingerprint-Kit/2041>
8. Have a look at this video to see how DNA is used to catch criminals.
<https://www.youtube.com/watch?v=H8HZqIyWN4s>
9. Click on the web link below to find out how real Crime Scene Investigators and Forensic Scientists collect and analyse footprints from Crime Scenes.
<https://www.youtube.com/watch?v=7-esqwmLmCs>
10. Click on the web link below to find out how you can make your own plaster cast of animal or human footprints.
<https://www.wikihow.com/Make-a-Plaster-Cast-of-a-Footwear-Mark,-Tyre-Impression-or-Animal-Footprint>
11. Click on the link below and print out the footprints. Can you find the pair of shoes from the crime scene from the eight footprints? Good luck!
https://www.activityvillage.co.uk/sites/default/files/downloads/shoe_print_detective_2.pdf



12. See if you can solve the case! Print out the case book and evidence for this exciting footprint comparison activity!

<https://www.scienceworld.ca/resources/activities/shoeprint-identification-crime-fighters-station-5>

Chapter 7: Scientists at work

Have you ever seen DNA? Do you know the stories of any famous female scientists?

In this Chapter the children extract DNA from their samples. They also talk about some incredible female scientists who had a huge impact on our lives. Find out more by clicking on the links below.

1. Find out about Rosalind Franklin by watching this video clip.
<https://www.youtube.com/watch?v=BIP0IYrdiI>
2. Find out about Mary Anning by watching this video clip.
https://www.youtube.com/watch?v=N_UyUL6vDcE
3. Find out more about Ada Lovelace by watching this video clip.
https://www.youtube.com/watch?v=uOkmyICUW_c
4. Why don't you try extracting some DNA at home? Watch the video clip below to find out how.
<https://jwp.io/s/2TJuu0EI>
5. Why not have a go at extracting some DNA in this virtual laboratory with real pipettes and centrifuges?
<https://learn.genetics.utah.edu/content/labs/extraction/>

Chapter 8: What is an archaeologist?

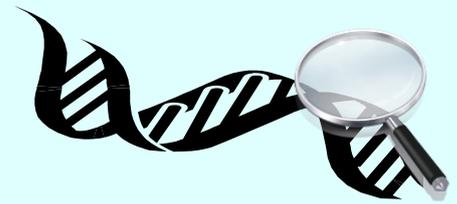
Do you know the difference between an archaeologist and a palaeontologist?

In this Chapter the children meet a real-life archaeologist. Ever wondered what it would be like to be an archaeologist? See if you have what it takes by clicking on the links below.

1. Find out the difference between archaeologists and palaeontologists by clicking on the link.
<https://www.youtube.com/watch?v=zOJICdMvWAI>

2. Find out what it's like to be an archaeologist.

<https://www.youtube.com/watch?v=R7uTIURvQ74>



3. Find out what it's like to be a palaeontologist

<https://www.youtube.com/watch?v=1FjyKmpmQzc>

4. Why not have a go at creating your own archaeological dig?

http://downloads.bbc.co.uk/history/handsonhistory/dig_family.pdf

5. Have a go at these activities to see if you would make a good archaeologist

https://www.nts.org.uk/learn/downloads/archaeology/Would_You_Make_a_Good_Archaeologist_0611.pdf

6. Have a go at excavating some stone Age tools with this online game

https://www.pbs.org/wgbh/nova/neanderthals/dig_flash.html

Chapter 9: Stone Age artists

Have you ever wondered how Stone Age people created their incredible paintings?

In this Chapter we find out how to tell the difference between DNA from a male and female. We also discover more about the Stone Age and cave art. Click on the links below to find out more.

1. Have a look at this picture. It shows the difference between DNA from males and females. The female is X, X, the male is X, Y.

<https://journals.plos.org/plosone/article/figure?id=10.1371/journal.pone.0169348.g006>

2. Find out more about the cave art discovered at Creswell Craggs.

<https://www.facebook.com/NottsTV/videos/1890638607672688/?v=1890638607672688>

3. Read about the Gower Cave Reindeer!

<https://www.bbc.co.uk/news/uk-wales-south-west-wales-18648683>

4. Find out more about the cave art discovered at Aveline's Hole in the Mendips.

<http://news.bbc.co.uk/1/hi/england/somerset/4243787.stm>

5. Have a look with Brian Cox at what are thought to be the oldest known cave paintings found in Spain.

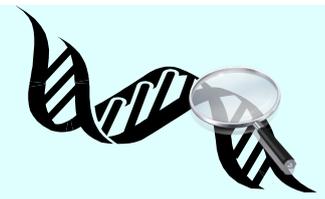
<https://www.youtube.com/watch?v=74woCKzVEIc>



6. This is a fantastic video from National Geographic all about cave art – there are some incredible examples.
<https://video.nationalgeographic.com/video/101-videos/00000162-9db6-dfbd-a3fe-bfbf021c0000>
7. Watch this incredible video of how scientists recreated 3D images of the Denisova caves using lasers.
<http://trimetari.com/en/projects/development-of-a-virtual-3d-model-of-denisova-cave-in-the-altai-mountains-for-virtual-environments-and-web>
8. Read about the different techniques used by archaeologists to survey a site.
<https://kids.kiddle.co/Archaeology>
9. There are some great pictures of what a laser scanner looks like in this article.
<https://pdfs.semanticscholar.org/c571/bd32bf5682d0166a6d7a5e9e26272a9384af.pdf>
10. Find out more about the three different periods of the Stone Age.
<https://kidzfeed.com/stone-age-facts-for-kids/>
11. Find out how the natural features in the rock were used in Cave Art. Watch the video at the end of this article to find out about animation in Stone Age art.
<https://besharamagazine.org/arts-literature/a-thing-of-beauty-5-graham-falvey-chauvet-caves/>

<https://www.treehugger.com/how-early-humans-painted-masterpieces-frances-chauvet-cave-4867824>

https://www.youtube.com/watch?time_continue=100&v=ZjejoT1gFOc&feature=emb_logo
12. Have a go at this mini quiz to find out how people from the Stone Age lit up caves.
<https://artsandculture.google.com/story/how-did-our-ancestors-light-up-caves-grotte-chauvet/DgWRRuGGVezPww?hl=en>
13. Read this article to find out about Stone Age lamps.
<https://arnesaknussem.wixsite.com/arnesaknussem/single-post/2015/09/17/Let-there-be-light>



14. Watch this video clip showing some of the animations that can be seen in cave art.
<https://www.youtube.com/watch?v=bPQRylcPZDI>
<https://vimeo.com/171478742>
<https://www.deccanherald.com/content/280827/cave-paintings-early-mans-animation.html>
15. Read about the world's oldest instrument – the flute.
<https://www.nationalgeographic.com/culture/2009/06/bone-flute-is-oldest-instrument--study-says/>
16. Find out more about bone flutes and what they sound like!
<https://www.youtube.com/watch?v=4YqcZ4XCeuU>
17. Find out what an Auroch is and what it looked like.
<https://www.wessexarch.co.uk/news/aurochsen>
18. Visit the "Hall of Bulls" at Lascaux showing Aurochs in this incredible virtual online simulation.
<https://archeologie.culture.fr/lascaux/en/visit-cave/salle-taureaux>
19. Find out what life was like in the Stone Age from the Palaeolithic to the Neolithic time periods.
<https://www.bbc.co.uk/programmes/p02mbf3m>
20. Find out what life was like as a hunter gatherer.
<https://www.youtube.com/watch?v=7FwR97NBUC0>
21. Have a look at these incredible hand prints found in a cave in Spain.
<https://www.youtube.com/watch?v=74woCKzVEIc>
22. Find out how hand prints were made in Stone Age cave art.
<https://www.youtube.com/watch?v=raB4hKeaVdA>
23. Find out why scientists think some of the handprints have fingers missing.
<https://www.dailymail.co.uk/sciencetech/article-6455341/Cave-art-ancient-humans-reveals-amputated-fingers.html>
24. Click on the pictures in this cave painting to find out more about the paints and tools used to create cave art.
<https://www.dkfindout.com/uk/history/stone-age/cave-painting/>
25. Have a go at making your own Stone Age paints and brushes!
<http://trench1.co.uk/wp-content/uploads/2015/08/Stone-Age-painting.pdf>
<https://kinderart.com/art-lessons/painting/make-your-own-cave-paint/>



26. Read about the oldest crayon in the world

<https://www.mentalfloss.com/article/536038/uk-archaeologists-have-found-one-worlds-oldest-crayons>

Chapter 11: Looking for a matching fingerprint

What fingerprint pattern do you have?

In this chapter Annabelle and Harry analyse the fingerprints from their suspects. Have you ever wondered what your fingerprint looks like? Click on the link below to find out if you are an arch, whorl or loop!

1. Try this exciting challenge to see what type of fingerprints you have.

http://www.kidsciencechallenge.com/pdfs/2009activities/KSC_Fingerprint_2009.pdf

Chapter 12: Milly is lost again.

How can animals be used to solve cases involving humans?

In this chapter Annabelle and Harry discover some shoeprints and make an exciting discovery that could help solve the case. Find out more by clicking on the links below.

1. See if you can identify the unique characteristics in the shoeprint to catch the criminal in this fun activity.

<https://www.scienceworld.ca/resource/shoeprint-identification-crime-fighters-station-5/>

2. Click on this link to see what a mosquito head net looks like.

<https://fightingmosquitoes.com/best-mosquito-hat/>

3. Read about how scientists can extract human DNA from mosquitoes to help solve crimes!

<https://www.mentalfloss.com/article/72295/blood-collected-mosquitoes-may-one-day-be-forensic-evidence>

4. Read about the true criminal case which was solved by extracting human DNA from a mosquito.

<http://news.bbc.co.uk/1/hi/world/europe/7795725.stm>



5. Read about how DNA from these incredible animals helped solve the case!

<https://edition.cnn.com/2019/07/03/us/shark-tooth-trnd/index.html>

<https://www.dailymail.co.uk/news/article-2179887/Burglar-snared-dog-bite-Criminal-attacked-Rottweiler-caught-police-DNA-evidence-teeth.html>

Chapter 13: What can a skeleton tell you?

What can you tell about a person from looking at their skeleton?

In this chapter we find out more about our skeleton. Why the bones are stained red, whether it is a boy or a girl and what diseases and injuries they have. Click on the links below to find out more.

1. Find out more about "The Red Lady of Paviland" and look at some of the finds that were discovered during the excavation.

<https://oumnh.ox.ac.uk/red-lady-of-paviland-0>

2. Watch this video clip to find out more about "The Red Lady of Paviland"

<https://www.bbc.co.uk/programmes/p02mbdxj>

3. Have a listen to this fantastic song about the skeleton.

<https://www.youtube.com/watch?v=WdCRrcfan44>

4. This is a great game to try to see if you can identify the bones in your skeleton.

https://www.sheppardsoftware.com/health/anatomy/skeleton/Skeleton_game_1.htm

5. Read this article to discover the difference between Homo Sapiens and Neanderthals.

<https://www.nhm.ac.uk/discover/who-were-the-neanderthals.html>

6. Find out how to identify if a skull is from a male or female.

<https://www.futurelearn.com/courses/forensic-facial-reconstruction/0/steps/25656>

7. Watch this video to see the difference between a male and female pelvis.

<https://www.youtube.com/watch?v=5j8sc48-0RM>

8. See if you can tell if this is a male or female from the skull and pelvis.

<https://naturalhistory.si.edu/sites/default/files/media/file/wibskeletonmaleorfemalefinal.pdf>



9. See if you can tell how old this person is by looking at their teeth and bones.
<https://naturalhistory.si.edu/sites/default/files/media/file/wibidentifytheagefinal.pdf>
10. This is a great article about how we can identify how old someone is using their bones and teeth.
<https://www.nhm.ac.uk/discover/analysing-the-bones-what-can-a-skeleton-tell-you.html>
11. Have a look at an image of a knee bone for someone who has arthritis.
<https://www.newsweek.com/2017/09/08/knee-arthritis-has-doubled-causes-obesity-aging-pain-sugar-650648.html>
12. Have a look at this incredible picture of an arrowhead embedded into a humerus bone.
https://www.researchgate.net/figure/Human-right-humerus-find-number-ALM1996-0277-0001-1-with-embedded-flint-arrowhead_fig2_272486724

Chapter 14: Ancient DNA, Skulls and tartar.

What is it like to extract DNA from ancient bones or teeth?

In this chapter Annabelle and Harry have an exciting visit to a laboratory to extract some DNA from the skeleton. Click on the links to find out more about how scientists do this.

1. These great videos show the precautions that need to be taken in laboratories where people work with ancient DNA. You can see scientists working in a fume hood in this video too.
<https://www.bing.com/videos/search?q=inside+a+ancient+dna+laboratory&&view=detail&mid=1D0C156AAB8A8A36DA151D0C156AAB8A8A36DA15&&FORM=VRDGAR&ru=%2Fvideos%2Fsearch%3Fq%3Dinside%2Ba%2Bancient%2Bdna%2Blaboratory%26FORM%3DHDRSC3>
<https://www.pbs.org/newshour/show/the-ancient-dna-revolution-unlocks-how-connected-we-all-are>
2. Some interesting facts and pictures showing the location of the petrous bone.
<https://exspaceproject.wordpress.com/2017/06/20/the-importance-of-being-petrous-bone/>



3. You can watch the whole of this video, "Who was Cheddar Man?" or you can go to the section about the petrous bone and how the DNA is extracted from this part of the skull which is about 12 minutes into the video.
https://www.youtube.com/watch?time_continue=779&v=TQ8dc0XhUMM&feature=emb_logo
4. Find out what tartar is by watching this video clip.
<https://www.youtube.com/watch?v=1jdEo-34QSk>
5. Watch this amazing video from Dr Christina Warinner talking about her work using tartar on teeth to study ancient people.
<https://www.youtube.com/watch?v=2TmRoPTa4IU>
6. Watch this video which shows how scientists think birch tar was made.
<https://www.youtube.com/watch?v=EYKRVsY2QiI>
7. This is a really interesting article about how scientists were able to get DNA from some ancient birch tar and shows a great picture of what it looks like!
<https://www.smithsonianmag.com/science-nature/human-genome-recovered-5700-year-old-chewing-gum-180973801/>

Chapter 15: Stone Age Tools

What kind of tools did Stone Age people use?

In this Chapter Ruby, the archaeologist talks to the school children about the Stone Age tools discovered with the grave. You can find out more about Stone Age tools and even have a go at making your own by clicking on the links below.

1. Find out more about "Cheddar Man" by listening to this live session with scientists working at the National History Museum.
<https://www.youtube.com/watch?v=TQ8dc0XhUMM>
2. Read this article to find out how Adrian Targett found out he was a relative of Cheddar Man.
<http://the-history-girls.blogspot.com/2012/08/who-do-you-think-you-are-by-sue-purkiss.html>



3. Watch these interesting videos about flint knapping to make stone tools.
<https://www.bbc.co.uk/teach/class-clips-video/history-ks2-discovering-stone-age-tools-made-of-flint/zjtjmfr>

<https://www.youtube.com/watch?v=GdkqNXWluiw>
4. Try these great activities to identify and make your own stone age tools.
<https://www.museumoflondon.org.uk/application/files/3914/5573/1038/prehistory-archaeology-activity-pack.pdf>
5. Find out more about one of the most important Stone Age tools - the hand axe. by clicking on this link.
https://wiki.kidzsearch.com/wiki/Hand_axe
6. Read about the oldest arrows in the world.
<https://www.bbc.co.uk/news/science-environment-11086110#:~:text=Researchers%20in%20South%20Africa%20have,about%20how%20they%20were%20used.>
7. Read this article to find out more about "microliths".
<http://www.stoneagetools.co.uk/microliths.htm>
8. Have a look at some of the tools used by people in the Stone Age to make clothing.
<https://www.pbs.org/wgbh/nova/stoneage/tool-nf.html>
9. Have a look at what kind of clothes people wore in the Stone Age.
<https://prezi.com/1-hw2emvoerz/what-did-they-wear/>
10. Read about the history of the sewing needle!
<https://www.sapiens.org/archaeology/fashion-history-sewing-needles/>
11. Try some of these great ideas for making Stone Age clothing.
<http://www.youthwork-practice.com/adventure-camps-events-programs/stone-age-craft-ideas-clothing-objects.html>

12. Find out about amber by clicking on this link.

<https://sciencing.com/amber-stone-5104371.html>



13. Read this interesting article discussing the evidence that Stone Age people traded amber.

<https://www.dailymail.co.uk/sciencetech/article-6111039/Prehistoric-humans-traded-AMBER-Archaeologists-evidence-Stone-Age-people-traded-gem.html>

Chapter 16: Waiting for the police.

What can the soil or teeth tell us about the lives of Stone Age people?

In this Chapter we find out about the incredible discoveries that the archaeologists are able to find from looking at the soil in the grave. Also, we discover a wealth of information from studying the skeletons teeth! Find out more by clicking on the links below.

1. Find out what some of the plants around in the Stone Age looked like by clicking on the links below.

<http://www.lubera.co.uk/blog/plants/fruity-secrets-of-the-stone-age#:~:text=Stone%20Age%20people%20may%20very%20well%20have%20done,bit%20of%20the%20stone%20age%20-%20the%20Neolithic.>

<http://finnishness.blogs.tamk.fi/2018/05/06/the-dwarf-birch/>

<https://historyoflangarforyoungpeople.jimdofree.com/a-little-history/the-stone-age/langar-during-the-stone-age/>

<https://www.gardeningknowhow.com/ornamental/trees/pine/common-pine-tree-varieties.htm>

<http://medicinalherbinfo.org/000Herbs2016/1herbs/mugwort/>

<https://nature.mdc.mo.gov/discover-nature/field-guide/yellow-wood-sorrel>

2. Read about the pollen grains found in the soil at the site of "The Red Lady of Miron.

<https://www.newscientist.com/article/mg22530134-200-red-lady-cave-burial-reveals-stone-age-secrets/>



3. Watch these videos to find out what tapeworms and whipworms look like.
<https://www.webmd.com/digestive-disorders/tapeworms-in-humans#1>

<https://www.youtube.com/watch?v=xrlu13AoXcE>
4. Find out about parasitic worms in humans by reading this article.
<https://www.yourgenome.org/facts/what-are-helminths>
5. Read about how tapeworms were found at a Mesolithic archaeological site in Ireland.
<https://www.irishtimes.com/news/environment/irish-hunter-gatherers-may-have-become-ill-from-undercooked-fish-1.3587338>
6. Find out how scientists determined Otzi's last meal.
<https://www.nationalgeographic.com/science/2018/07/news-otzi-iceman-food-DNA-diet-meat-fat/>

<https://www.youtube.com/watch?v=57hgPEDUmPI>
7. Read about what we think Neanderthal's diets consisted of by analysing DNA from the tartar on their teeth.
<https://www.nationalgeographic.com/news/2017/03/neanderthals-teeth-diet-medicine-microbiome-humans-science/>

https://www.ted.com/talks/christina_warinner_tracking_ancient_diseases_using_plaque?language=en
8. Find out what was discovered on the teeth of Neanderthals discovered in Spain.
<https://www.science.org.au/curious/people-medicine/what-did-neanderthals-eat>
9. Read this incredible article about how scientists were able to get DNA from birch tar – ancient chewing gum and find out what the person who chewed it looked like!
<https://www.nationalgeographic.co.uk/history-and-civilisation/2019/12/dna-stone-age-chewing-gum-tells-incredible-story>



10. Have a go at this fun activity and match the DNA to work out what your mystery skeleton looks like.

<https://www.yourgenome.org/activities/recreate-a-face>

Chapter 17: The big Stone Age man reveal

How can we use DNA to find out what someone looked like or who they were related to?

In this exciting chapter we have the big reveal and find out what our skeleton looked like and who they are related too. To help you understand more about how this is done and how humans have evolved click on the links below.

1. Find out about chromosomes and genes by clicking on the links below.

<https://learn.genetics.utah.edu/content/basics/dna>

<https://www.youtube.com/watch?v=hywRdDVR76A>

https://www.youtube.com/watch?time_continue=12&v=eOvMNOMRRm8&feature=emb_logo

2. Why don't you zoom in and have a look at your cells and chromosomes!

<https://www.yourgenome.org/video/zoom-in-on-your-genome>

3. Have a go at this fun "chromosome challenge" using socks.

<https://mrc.ukri.org/documents/pdf/chromosome-challenge-activity-pack/>

4. Have a go at colouring in your chromosomes!

Boys - <https://www.somethingextra.org/resources/new-expecting-parents/karyotype-coloring-pages/male-karyotype/>

Girls - <https://www.somethingextra.org/resources/new-expecting-parents/karyotype-coloring-pages/female-karyotype/>

5. Have a go at some mindful "chromosome" colouring!

<https://www.yourgenome.org/sites/default/files/downloads/activities/mindfulness-colouring/mindfulnesscolouring-sheets.pdf>



6. Find out what a gene is.

<https://www.youtube.com/watch?v=5MQdXjRPHmQ>

7. Watch this video to help you understand what evolution is.

<https://www.youtube.com/watch?v=GhHOjC4oxh8>

8. Find out about some of the myths and misconceptions about evolution.

<https://www.youtube.com/watch?v=mZt1Gn0R22Q>

9. Find out about Charles Darwin and Andrew Wallace's Theory of Evolution.

<https://www.bbc.co.uk/programmes/articles/2L3mmGh5hjbpXXBH1PPbd0y/charles-darwin-evolution-and-natural-selection>

10. What evidence do we have for evolution?

<https://www.bbc.co.uk/programmes/p02mtc4r>

11. Find out about the evolution of skin colour.

<https://humanorigins.si.edu/evidence/genetics/human-skin-color-variation/modern-human-diversity-skin-color>

<https://www.youtube.com/watch?v=r4c2NT4naQ>

12. Watch this video to find out about the evolution of blue eye colour.

<https://www.youtube.com/watch?v=Dsjz8TCahe4>

13. Try this cool interactive weblink to find out more about human evolution.

<https://media.hhmi.org/biointeractive/click/explore-your-inner-animals/>

14. What is natural selection?

<https://www.nhm.ac.uk/discover/what-is-natural-selection.html>

<https://www.bbc.co.uk/bitesize/topics/zpffr82/articles/z7hj2nb>

15. See if you can crack the code and see what proteins the DNA sequences codes for to give animals their adaptations for survival.

<https://www.yourgenome.org/activities/code-crackers>



16. Find out how scientists determined what "Cheddar Man" looked like.
<https://www.youtube.com/watch?v=r4c2NT4naQ>
17. Find out how scientists determined what "Lola" looked like from her chewing gum!
<https://www.nationalgeographic.co.uk/history-and-civilisation/2019/12/dna-stone-age-chewing-gum-tells-incredible-story>
18. To work out what someone looks like using their DNA scientists have to "sequence" the DNA. Have a go! Can you beat the machine?
<https://www.yourgenome.org/interactives/you-vs-machine>
19. Watch this incredible video showing how the remains of Richard III were discovered.
<https://www.youtube.com/watch?v=eLkHDFqSA-Y>
20. Have a look what scientists think Richard III looked like.
<https://www.channel4.com/news/what-did-king-richard-iii-really-look-like>
21. These are really cool games to find out about all the organelles inside a cell.
https://biomanbio.com/GamesandLabs_old/Cellgames/CellExplorerAnimalCell.html
<https://www.youtube.com/watch?v=TQ8dc0XhUMM>
22. Have a go at this interactive video to look inside a cell at the nucleus, mitochondria and lots more!
<https://www.nationalgeographic.org/interactive/cell-explorers/>
23. Find out how mitochondrial DNA can be used to trace your family.
<https://www.youtube.com/watch?v=ru7Wyt778QQ>
<https://www.youtube.com/watch?v=kS5qREISS-Q>
<https://www.youtube.com/watch?v=MT27a3d4sLI>