

## **Worksheet : Neanderthals**

**A. Web site name: Palomar College, California**

**Web URL:** [http://anthro.palomar.edu/homo2/mod\\_homo\\_2.htm](http://anthro.palomar.edu/homo2/mod_homo_2.htm)

**Read “Neandertal”**

- 1) How long ago, and where, did Neandertals live?
- 2) Why did the fossil *Boule* examined walk hunched over?
- 3) What climate were Neandertals adapted for?
- 4) Why did adult Neandertals have multiple healed fractures?
- 5) How tall were adult Neandertals?
- 6) Why do new-born humans have such a small brain?
- 7) What does the DNA evidence suggest about the Neandertals?
- 8) Roughly how long ago did the Neandertals diverge from the line leading to modern humans?
- 9) What was unusual about the child’s skeleton found in Portugal in 1999?
- 10) What is the last secure date for a Neandertal site?
- 11) What is one hypothesis for the disappearance of the Neandertals?

**B. Web site name: BBC News**

**Web URL:** <http://news.bbc.co.uk/2/hi/science/nature/5343266.stm>

- 12) When did Neanderthals first appear in the fossil record?

- 13) What material in Gorham's cave was tested for radiocarbon dates?
- 14) What characteristics made this cave a "favored spot" for Neanderthals?
- 15) What animals were Neanderthals in this area eating?
- 16) What is the new explanation for why Neanderthals became extinct?
- 17) Look at the map at the bottom of the article. Why do you think that all the sites less than 30,000 years ago are concentrated in southern Europe, not in northern Europe?

**C. Web site name: Live Science**

**Web URL:** [http://www.livescience.com/health/061115\\_neanderthal\\_dna.html](http://www.livescience.com/health/061115_neanderthal_dna.html)

Read "Neanderthal: 99.5 percent human"

- 18) In what country was the cave where the 38,000 year old Neanderthal was found?
- 19) What evidence is there that Neanderthals were **not** just prehistoric brutes?
- 20) How many DNA bases are different between humans and Neanderthals?
- 21) How many DNA base pairs are different between humans and chimps?
- 22) How can Neanderthal DNA get contaminated with human DNA?
- 23) Explain the difference between "pyrosequencing" and "metagenomics"
- 24) How long ago did humans and chimps begin to diverge?

**D. Web site name: Smithsonian Institute**

**Web URL:** <http://humanorigins.si.edu/evidence/human-fossils/species/homo-neanderthalensis>

Read “*Homo neanderthalensis*”

- 25) When was the new species *Homo neanderthalensis* first recognized?
- 26) Neanderthal localities are known from Europe to \_\_\_\_\_
- 27) What “sophisticated behavior” is first seen in Neanderthals?
- 28) Which features of the Neanderthal skeleton are related to cold climate adaptations?
- 29) What **two** factors explain the good fossil record of Neanderthals?

Under “Key Fossils” Click on “Shanidar 1”

- 30) How old is this fossil?
- 31) In which country was it found?
- 32) What can anthropologists infer from the multiple injuries of this individual?
- 33) Click on a different “Key Fossil”. Which one did you pick?
- 34) Summarize the information about this fossil:

**E. Web site name: BBC News**

**Web URL:** [http://news.bbc.co.uk/1/hi/english/sci/tech/newsid\\_1342000/1342392.stm](http://news.bbc.co.uk/1/hi/english/sci/tech/newsid_1342000/1342392.stm)

Read “Fishy clue to rise of humans”

- 35) How long ago were the early modern humans in this study?
- 36) Early human bones from which three sites were studied?

- 37) What is “isotopic analysis”?
- 38) How much of the protein in the early modern human diet came from fish and waterfowl?
- 39) What were the main sources of protein for Neanderthals?
- 40) Which two items on the Neanderthal diet are **not** listed on the early modern human diet?
- 41) How could early modern humans store fish?
- 42) In what way were Neanderthals “victims of their own success”?

**F. Web site name: Science Daily**

**Web URL:** <http://www.sciencedaily.com/releases/2009/07/090720163729.htm>

Read “Human spear likely cause of death of Neanderthal”

- 43) How long ago did this Neanderthal live?
- 44) In which part of the world was his body found?
- 45) What are three proposals for what caused the extinction of Neanderthals?
- 46) In which part of his body was the Neanderthal injured?
- 47) Explain the difference in the way that humans and Neanderthals used spears.
- 48) What two pieces of evidence indicate that the wound was from a thrown spear, not a thrust spear?