

# Palaeolithic Archaeology Teaching Resource Box

## Quiz Questions: Answers

### Palaeolithic Stone Tools: Basic

1. *What are the main advantages of using stone to make tools?*

A. Flaked stones such as flint and chert provide sharp and strong edges for cutting, while the edges can also be modified (a process known as retouch) to provide different types of edges, for example for engraving wood and bone or for scraping animal skins.

2. *What are the advantages of the other, non-stone, raw materials that Palaeolithic peoples used to make tools?*

A. Different raw materials offer different properties: wood, bone, and antler can be shaped and sharpened in different ways to stone, to create artefacts such as wooden spears, bone needles, and antler barbed harpoons.

3. *Why would Palaeolithic people want to clean the skins of dead animals?*

A. If the skins were to be used to make clothing or tent coverings (for which there is occasional evidence), then Palaeolithic peoples would want to remove any remnants of flesh or meat from the skins, as these would decay and the smell of rotting flesh/meat might attract predators.

### Palaeolithic Stone Tools: Advanced

1. *Why might Lower Palaeolithic hominins choose to make both handaxes and flake tools?*

A. A likely reason is that the tools were used for different purposes: for example handaxes as butchery knives, scrapers (flake tools) as skin cleaning tools, and notches and denticulates (flake tools) as wood-working tools.

2. *Does the production of distinctive and repeated flake tool types tell us anything about Neanderthal societies?*

A. The repetitive making of distinctive flake tool types in the Middle Palaeolithic suggests a more structured and organised approach to tool-making (and perhaps more organised social groups as well). As to what these distinctive types (and assemblages) of flake tools mean, they may represent task-specific tool-kits (e.g. hunting kits, butchery kits, and wood-working kits), or perhaps they reflect different Neanderthal groups, each of whom made distinctive types of tools.

3. *What factors could explain the relatively (compared to the Lower and Middle Palaeolithic) rapid turnover of stone tool industries during the Upper Palaeolithic?*

A. One factor might be the frequent replacement of one group of modern humans with another, with each cultural group making different stone tool industries. However, the fact that each industry covered large areas of Upper Palaeolithic Europe may suggest that other factors were involved. One of the most important may have been artefact style: in other words, there were widespread changes in artefact styles (rather like changes in fashion today) which did not require population replacement or even major changes in the uses (functions) of the stone tools.

### Hominin Species: Basic

1. *What does bipedalism mean?*

A. Walking upright on two legs.

2. *Why would relatively short limbs help you survive in a very cold climate?*

A. Medical studies have indicated that our limbs are where much of the body's heat is lost: relatively short limbs therefore reduce the problem of heat loss and aid survival in a very cold climate.

3. *What sorts of behaviours might be characteristics of a modern human?*

A. There are a range of behaviours that might be characteristics of modern humans, some of the most commonly discussed with reference to Upper Palaeolithic humans (*Homo sapiens*) are the production of art, the use of symbols, complex spoken language, trade and

exchange, forward planning, and structural architecture (including stone-built hearths and mammoth bone houses).

### **Hominin Species: Advanced**

*1. Should archaeologists ever be 100% certain that a particular hominin species made a particular collection of stone tools?*

A. Archaeologists can probably never be 100% certain, but in many instances they can be almost as certain as they can ever be: for example, only modern human fossils have been found in Europe after roughly 28,000 years ago, and it is therefore reasonable to assume that modern humans made all the stone tools found in Europe from after this date. By contrast, there are other periods when two or more hominin species were alive, and because there are no direct associations between the fossils and the stone tools, archaeologists must be cautious in identifying one species or the other as the maker.

*2. What might the well-developed musculature of the Neanderthals and *Homo heidelbergensis* tell us about their lifestyles?*

A. The well-developed musculature of the Neanderthals and *Homo heidelbergensis* suggests that both species lived a physical, outdoor lifestyle, involving demanding activities such as gathering resources, transporting raw materials, and hunting. Interestingly, the skeletons of very young Neanderthals also show evidence of this strong musculature, suggesting that it was an inherited trait that they were born with, rather than a musculature solely developed through an active lifestyle.

*3. What aspects of modern human behaviour might allow modern humans to out-compete the Neanderthals for food resources?*

A. It is difficult to be certain, but it is possible that some of these aspects included more sophisticated hunting technology, a more sophisticated language system (enabling the exchange of information about herd movements and migrations for example), and the use of art and symbols (to potentially enable the storage of painted information about hunting methods).

### **Palaeolithic Chronology: Basic**

*1. How old are the Palaeolithic sites at Boxgrove and Paviland Cave?*

A. Boxgrove is approximately 500,000 years old, while Paviland Cave is roughly 26,000 years old.

*2. What percentages of the entire Palaeolithic are made up by the Lower Palaeolithic, the Middle Palaeolithic and the Upper Palaeolithic?*

A. The Lower Palaeolithic (c. 700,000–250,000 years ago) represents 65%, the Middle Palaeolithic (c. 250,000–40,000 years ago) represents 30%, and the Upper Palaeolithic (c. 40,000–10,000 years ago) represents 5%.

*3. What can archaeologists conclude about the handaxes that were made throughout the Lower Palaeolithic period?*

A. The first, and most certain, conclusion is that the handaxes were extremely successful, functional tools (they were made over a 450,000 year period). The second conclusion is that the task or tasks for which the handaxes were made remained a constant part of Lower Palaeolithic life throughout the period.

### **Palaeolithic Chronology: Advanced**

*1. Approximately what percentage of the Middle Palaeolithic saw Britain occupied by the Neanderthals?*

A. Assuming that Britain was abandoned between 180,000 and 70,000 years ago, 48% of the Middle Palaeolithic saw occupation of Britain by the Neanderthals.

*2. What factors might persuade hominins to migrate to new areas?*

A. A key factor is likely to have been changing climates (especially worsening climates), and a series of further factors (the majority of which are related to, or caused by, changing climates): changing habitats (this could also be caused by the over-grazing of large

mammals such as mammoths), the migration (or local extinction) of key prey species, and rising sea-levels (resulting in the flooding of low-level lands).

*3. How might the Neanderthals have been replaced by modern humans at the start of the Upper Palaeolithic?*

A. There are a number of possibilities, including direct conflict, the introduction of new diseases against which the Neanderthals had no natural defences, and indirect competition for resources (including the most productive hunting grounds and suitable living sites).

### **Pleistocene Climate, Flora and Fauna: Basic**

*1. Would woodlands or grasslands be better environments for Palaeolithic people to live in?*

A. This question has been much debated by archaeologists: a key issue is that the animals of the grasslands (including species such as horse and reindeer) are of a sufficient size to provide large quantities of meat when killed, whereas the animals of the woodlands are often much smaller and therefore less productive (requiring hominins to catch or kill more of them). On the other hand the woodlands would have provided a rich source of fuel (wood) for fires, and plentiful materials (wood and other plants) for the construction of temporary shelters and other organic tools (including wooden spears).

*2. What impact might migrating animals have upon hominins?*

A. The most obvious impact is that the migration of those animals upon which the hominins relied for food would also force the hominins to migrate as well (as they followed the animal herds into new areas). The migrations of new animals into the hominin's habitats could be both beneficial (it might provide a new food resource) and detrimental (it might upset the ecosystem and lead to the loss of pre-existing food resources).

*3. What would be the ideal size of animal for Palaeolithic people to hunt?*

A. There is no ideal answer to this, but hominins would have presumably tried to avoid hunting animals that were: firstly, so small that more energy would have to be used up in catching and killing them than would be gained from eating them (squirrels are an extreme example of this); and secondly, so large that they provided more meat than the hominins could eat/take away with them and/or that there was a serious danger of injury and/or death involved in hunting them (mammoths might well fall into this category).

### **Pleistocene Climate, Flora and Fauna: Advanced**

*1. What are the benefits of the deep sea core and the ice core climatic records?*

A. The key benefit of the deep sea cores and the ice cores is that they have provided a continuous record of climate change over the Pleistocene. By contrast the on-land (terrestrial) records of climate (based on plant pollen for example) tend to be highly discontinuous and fragmented.

*2. Were any mammal species driven to extinction by human over-hunting during the Palaeolithic?*

A. There is no clear evidence for this in Palaeolithic Britain: one of the reasons why is that it is very difficult to disentangle the effects of human hunting from the impacts of climate change. It is possible however that many of the extinctions that occurred at the end of the Pleistocene (such as of woolly mammoths and woolly rhinoceros) were not only due to climatic warming (there had been several similar climatic warming events throughout the Pleistocene, through which many species had survived), but were also due, at least in part, to the effects of human over-hunting.

*3. Should we expect all the pollen diagrams from the same interglacial to look the same?*

A. No. This is for two reasons: firstly, even vegetation of the same age will vary between different, local habitats: for example, the vegetation of a grass meadow is different to that of a small woodland by a river. Secondly, not all pollen diagrams will span the entire interglacial, and if they are from different pollen zones then they will show different types and proportions of plant pollen.

### **Pleistocene Landscapes: Basic**

1. *How quickly could Palaeolithic hominins have crossed between continental Europe and Britain during periods of low sea-level?*

A. It is difficult to tell, although the narrowest distance (between what is now Dover and Calais) is little more than 20 miles (not much more than one day's walk). However it is important to remember that there was a major river (the Channel River) blocking the hominins path during periods of low sea-level, and the hominins may in fact have preferred to stay on the floodplains of the Channel River, which was presumably a rich source of herd animals.

2. *Does the association of archaeology with rivers, raised beaches, and caves mean that Palaeolithic hominins only lived in those parts of the Pleistocene landscape?*

A. Probably not: although it is likely that these habitats were important places for Palaeolithic hominins, the favourable preservation of archaeological material in these locations has often resulted in their importance being over-emphasised and the potential role of other environments (such as upland areas) being forgotten.

3. *Why might rivers have been more attractive environments to Lower Palaeolithic hominins than lakes?*

A. By definition (rivers flow from A to B) rivers may have been much more useful as corridors of movement through the landscape. Unlike many lakes and large ponds rivers also provided a constant supply of fresh, flowing water, and also supplied (especially during the colder periods) a large supply of stone raw materials (in the form of cobbles and pebbles from gravel bars) for tool-making.

### **Pleistocene Landscapes: Advanced**

1. *Why do archaeologists assume that Palaeolithic hominins could not have reached Britain during high sea level phases when Britain was an island?*

A. At the simplest level because there is no evidence for boats or rafts in the Palaeolithic of Europe. However, it may be a dangerous assumption to make, because we do have evidence from Australasia that both Lower Palaeolithic (*Homo erectus*) and Upper Palaeolithic (*Homo sapiens*) hominins did cross large expanses of water, probably using basic watercraft (*Homo sapiens*) or maybe nothing more than large clumps of drifting vegetation (*Homo erectus*). It is also worth remembering that any boats or rafts made out of wood would be unlikely to preserve in the archaeological record.

2. *What are some of the benefits of in situ archaeology?*

A. The key advantage of *in situ* archaeology is that the material (for example stone tools and animal bones) are found by archaeologists in exactly the places where they lay during the Palaeolithic: for example the stone tools are found where they were left by the hominins, and the animal bones are found where the animals died (or where the bones were left by hominins or other carnivores such as hyenas after they had processed the carcasses). *In situ* archaeology therefore preserves the associations between stone tools and animal bones, and between stone tools and the local habitats: this tells archaeologists valuable details about hominin behaviour, including stone tool-making techniques, butchery techniques, hominins' use of space, and their habitat preferences.

3. *How might archaeologists be able to tell whether the stone tools found within river sediments had been washed long distances downstream?*

A. The most common way is to look at the condition of the stone tools themselves: artefacts that have been washed downriver tend to have rounded, smooth edges, due to their being rolled along the river bed and the abrasive action of the water and other river sediments.

### **Palaeolithic Lifestyles & Behaviour: Basic**

1. *What are the principal differences in hominin behaviour between the Lower and the Middle Palaeolithic?*

A. The key differences are the first appearance of burials, new techniques of stone tool-making (the Levallois technique), formal types of flake tools, and a greater use of caves and

rockshelters as habitation sites. There is also evidence for more specialised hunting, targeting specific species and specific times of year.

*2. Which aspects of the Upper Palaeolithic had not been seen in the earlier periods of the Palaeolithic (the Lower and Middle Palaeolithic)?*

A. The key aspects are art and symbolism, deliberate grave goods, the first substantial shelters and houses, and new types of stone and organic tools (and new techniques of tool-making).

*3. What would be the advantages and disadvantages of living in small, as opposed to large, groups?*

A. The advantages of living in small groups are that the social relationships require less maintenance and the groups are easier to keep together, while the groups also require smaller quantities of food (although they have fewer people to get it), and potentially require smaller living sites and/or territories. The disadvantages are that small groups may be vulnerable to threats from other groups and to small numbers of deaths (either from disease and illness, or through hunting accidents).

### **Palaeolithic Lifestyles & Behaviour: Advanced**

*1. Would wooden spears or stone handaxes have been more valuable to a Lower Palaeolithic hominin?*

A. It is possible that neither were: there is evidence at Boxgrove and Schöningen, respectively, for the discard of handaxes and wooden spears which were in apparently usable condition. This may suggest that artefacts were quick and simple to manufacture (modern knappers can produce a handaxe in under 20 minutes), and that they had a relatively low value (although the variable availability of stone and wood might change this). However, their discard at hunting sites might also just represent a simple case of prioritising: it was more important to carry away carcass parts than tools. Finally, there are examples of antler soft hammers (used in tool-making) at Boxgrove that were kept and re-used over long periods: this suggests that the tools that were used to make tools were more important than the resulting stone tools.

*2. What knowledge would the targeted hunting (of specific species in specific places at specific times of the year) of the Middle Palaeolithic require?*

A. Targeted hunting would require knowledge of the local landscape (including places in which animals could be cornered or constrained such as narrow valleys), the seasons, and the migratory movements (and more general behaviours) of the animal being hunted.

*3. Is art the most important innovation of the Palaeolithic period?*

A. This is a very difficult question to answer, but there is no doubt that the appearance of art and symbolism in the Upper Palaeolithic is linked to the so-called 'creative explosion' which characterises every group of humans alive today: this includes the representation of the natural world through cave paintings and engravings, the use of art to create symbolic artefacts (for example spear-throwers carved in the shape of a leaping horse), and the creation of personal ornaments such as pendants (linked to the notion of individual identity).