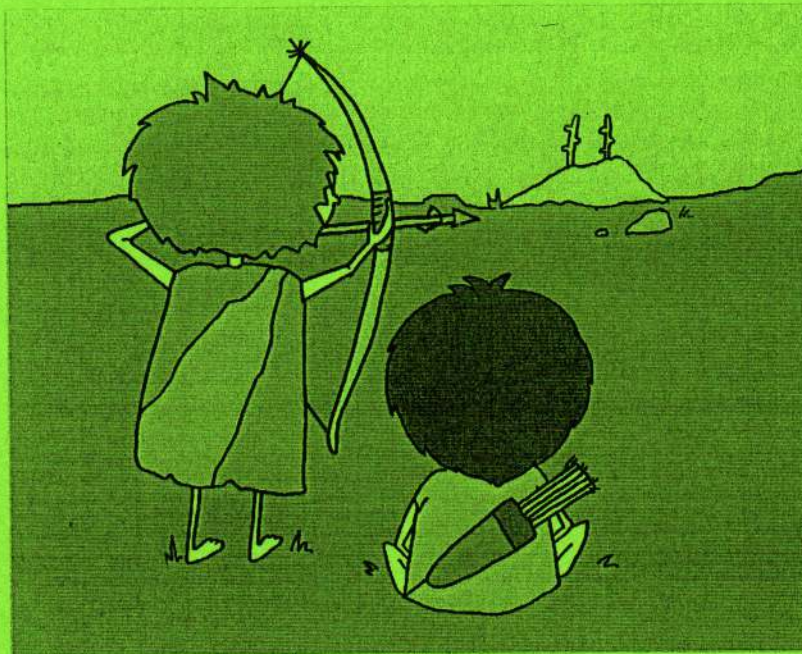


TOOLS R US



Can you make tiny "microliths"
into useful hunter-gatherer
tools?

In association with:

THE UNIVERSITY of York

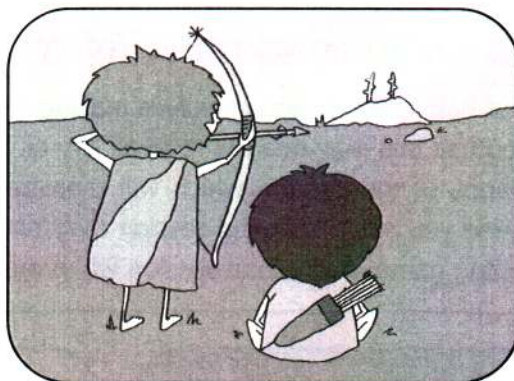


Leader Information Sheet

AIM OF THE SESSION

During this session we will explore the flint technology which the Mesolithic is most famous for - **microliths**.

By making replica microliths and experimenting with different haftings the participants will discover the versatility of these tiny flint tools.



BACKGROUND INFORMATION

Microliths are found on archaeological sites in Britain from the start of the Mesolithic period (9,500BC) and continue to be used until the beginning of the Neolithic period (4,000BC). They are found in great numbers and are often used as the diagnostic artefact for identifying Mesolithic activity at a site.

Microliths are small stone tools that have been manufactured from stone blades and retouched to form a variety of different shapes. In the Early Mesolithic (9,500-6,500BC) microliths were slightly larger c. 40mm in length with more minimal retouch across the leading edge. Later Mesolithic (6,500-4,000BC) microliths were much smaller c. 20mm in length and were retouched to form geometric shapes.

Further information about what microliths were used for and why Mesolithic groups might have started using them is available on the *Microlith Worksheet* included in this pack.

MATERIALS AND RESOURCES NEEDED

Starter Activity

- * Colouring pencils

Activity 1

- * Air drying clay/ Fimo modelling clay (one golf ball sized piece per person)
- * Modelling tools for clay
- * Rulers to act as a size guide for the replicas
- * Protective covering for modelling with clay
- * *Optional:* Circle of leather or cloth to make a carrying pouch. Base this on the Viking pouch example available on the YAC website <http://tinyurl.com/bxcdwvx>

Activity 2

- * Wood in varying widths & lengths (collect twigs etc. or buy dowelling from a DIY shop)
- * Sand paper
- * Plasticine- 8 sticks

General

- * Tools R Us resources from this pack
- * 4 tables for hafting game

SUGGESTED 2-HOUR SESSION PLAN

1. **Starter activity:** Find the microlith (10 mins)
2. **Introduction:** Background to Mesolithic tools (10 mins)
3. **Activity 1:** Making replica microliths (20 mins)
4. **Break** (15 mins)
5. **Discussion:** What do hunter-gatherers need tools for? (10 mins)
6. **Activity 2:** Hafting microliths game (40 mins)
7. **Round-up:** Judging microlith hafting and discussion of versatility of this type of tool (10 mins)
8. **Pack-up/ End**

Leader Information Sheet

NOTES FOR RUNNING THE ACTIVITY

The first half of the session involves making replica microliths out of modelling clay. Depending on the type of clay you use this may need time to air dry or be baked in the oven. You might want to prepare some replicas in advance of the session which will then be used in the hafting games which makes up the second half. Otherwise you could split the session over two meetings and make the replicas in the first session, and play the hafting game in a second session when the replicas have dried. *N.B. Fimo will need to be cooked to harden.*

AGE RELATED ADAPTATIONS

Younger participants could use pre-made microliths and simply try hafting them into a variety of tool types. Or they could make their own replicas by simply moulding and cutting the right shapes into the clay.

Older participants could follow the stages of making a microlith (on the worksheet) to make the replica making process more realistic.

RISKS TO CONSIDER*

- ◆ Wooden hafts may cause splinters; sand rough edges before use
- ◆ Wood and modelling tools can be poked into eyes; ensure supervision
- ◆ Fimo replica microliths can be quite sharp; careful handling needed

* **Intended as a guide only and does not constitute a full risk assessment.**



OTHER USEFUL INFORMATION

Websites:

- ◆ www.stoneagetools.co.uk: A great website organised like a museum with lots of information about how stone tools were made and some additional teaching resources.
- ◆ www.ancientcraft.co.uk: An ex-YAC member who is now a flint knapper. Replica tool kits are available to buy and there is lots of information and useful links.

General books:

- ◆ Lord, John William. 1993. *The Nature and Subsequent Uses of Flint: The Basics of Lithic Technology*. First ed.
- ◆ Waddington, C. 2004. *The Joy of Flint: An Introduction to Stone Tools and Guide to the Museum of Antiquities Collection*. Museum of Antiquities: University of Newcastle-upon-Tyne.

References used for this resource:

- ◆ Butler, C. 2005. *Prehistoric Flintwork*. Stroud, Tempus.
- ◆ Clarke, D. 1976. Mesolithic Europe: the economic basis. In: Sieveking, G. D. G., Longworth, I. H. & Wilson, K. E. (eds.) *Problems in Economic and Social Archaeology*. London: Duckworth.

TOOLS R US:

Mesolithic Flint Tools



People in the Mesolithic used **flint** (a type of stone) to create lots of their tools



Mesolithic people made tiny flint tools for the first time. These are called **microliths** and were less than 0.5cm long

Microliths were made by breaking a blade into smaller pieces. Several microliths were stuck into a haft to make **composite tools**

They shaped the flint using a stone hammer or a piece of antler. This is called **knapping**

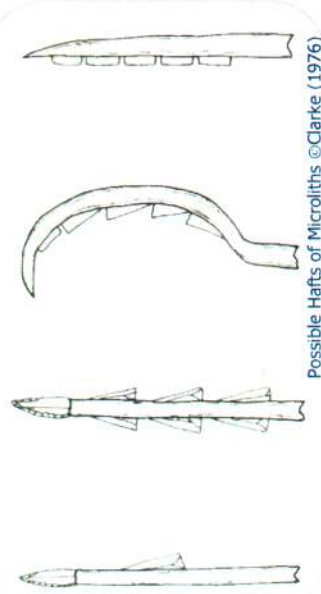


A San Tribesman
©Wikimedia Commons

Archaeologists are not sure how the microliths would have been hafted, so they have studied **modern day hunter-gatherers** to get inspiration



Long thin pieces of flint called **blades** were taken off the flint **core**



Possible Hafts of Microliths ©Clarke (1976)

Life in the Mesolithic lifeinthemesolithic.wordpress.com

2,000 AD

1,000 AD

Vikings

0 BC/AD

Romans

1,000 BC

Egyptians

2,000 BC

3,000 BC

4,000 BC

5,000 BC

6,000 BC

7,000 BC

8,000 BC

9,000 BC

10,000 BC

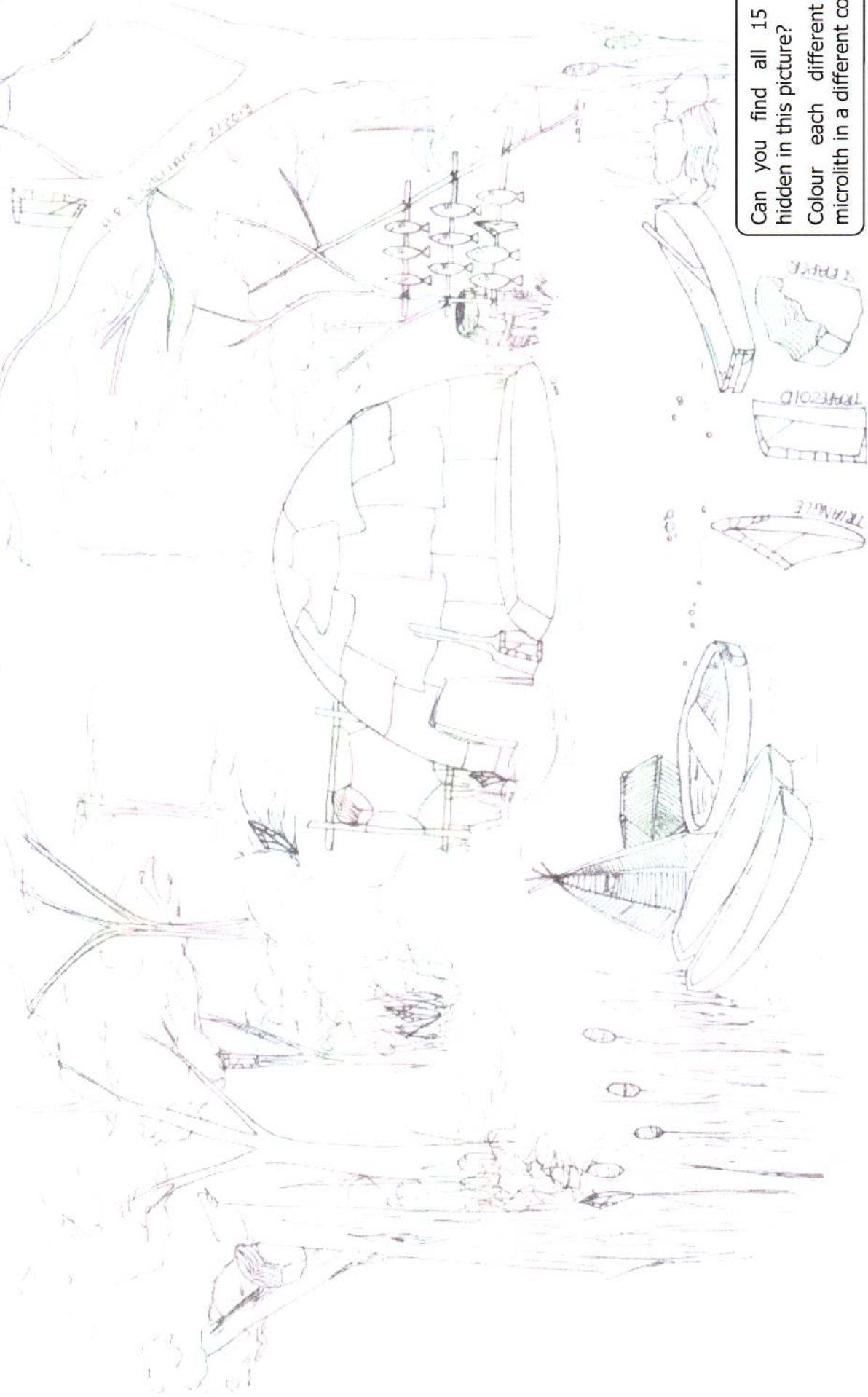
MESOLITHIC



TOOLS R US— Mesolithic Flint Technology

Starter Activity: Find the microlith

Mesolithic people made a special type of stone tool called a microlith.

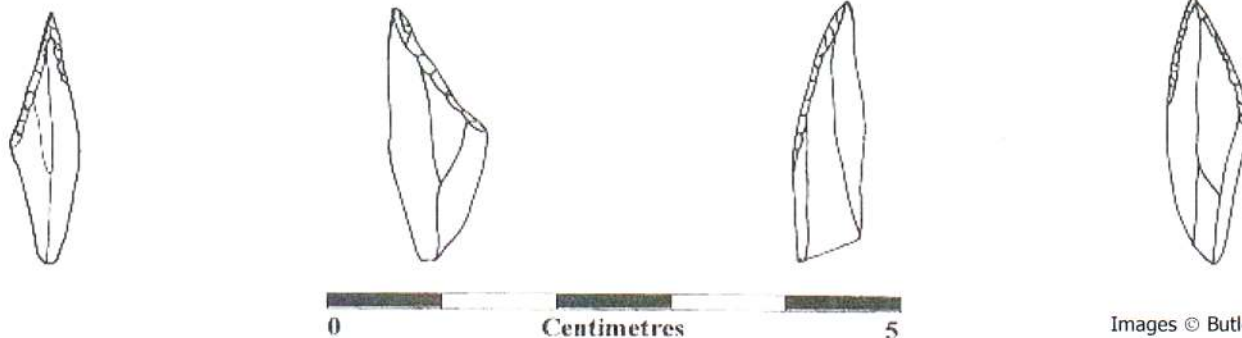




Microlith Worksheet

This worksheet shows some common shapes for **Mesolithic microliths** and gives some additional **background information** about the tools. Use this with the *Tools R Us Activity 1* sheet to make your own microlith replicas. To use them in the *Tools R Us Hafting Game (Activity 2)* you will need about 20 microliths per person.

EARLY MESOLITHIC MICROLITH TYPES



Images © Butler 2005

LATE MESOLITHIC TRIANGLE



Image © Butler 2005

TRAPEZOID

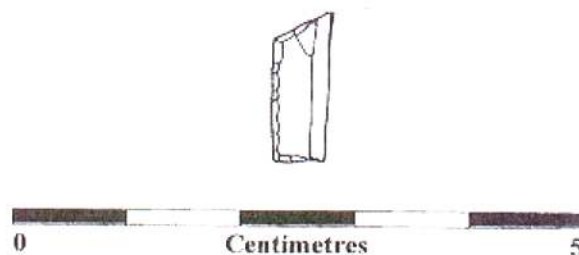
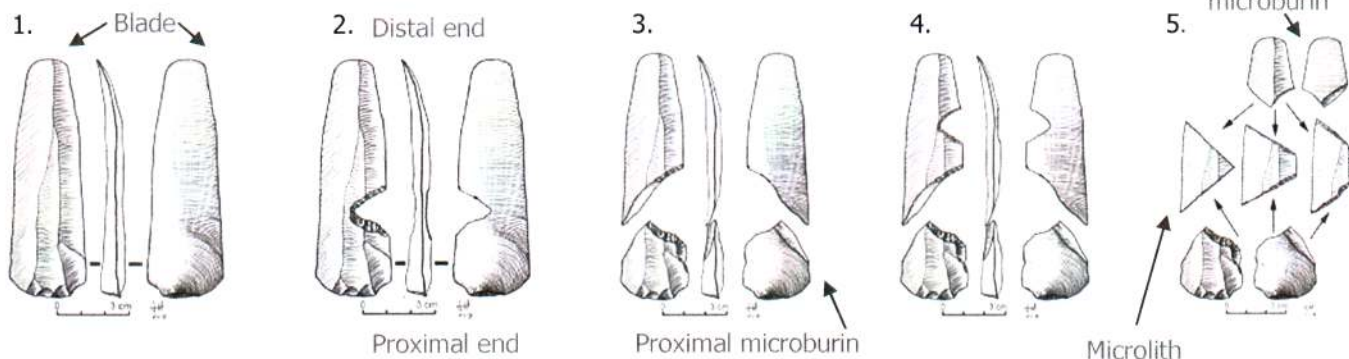


Image © Butler 2005

MAKING A MICROLITH



1. Start with a blade
2. Make a notch on the edge of the blade
3. Snap the blade to remove the proximal end of the piece (the broken off piece is called a proximal microburin)
4. Make a notch in the distal end of the blade and snap the end off (to make distal microburin)
5. Retouch the edges of the middle section to make the shape of a microlith

Pictures © José-Manuel Benito Álvarez, Creative Commons



Microlith Worksheet

ADDITIONAL BACKGROUND INFORMATION

WHAT WERE MICROLITHS USED FOR?

Ethnographic research pioneered by David Clarke showed that small stone tools are used by hunter-gathers around the world to make a vast variety of tools and it is likely that microliths were hafted onto wooden or bone hafts to form larger composite weapons and tools. Their small size makes it unlikely that they were used individually as cutting tasks could be better carried out with a simple flint flake with a sharp unretouched edge. Microliths have been found on archaeological sites deposited in a line with the wooden haft having decayed (eg. Dean Clough, England). In waterlogged sites in Scandinavia there are examples still attached to their haft. Microliths were probably hafted using combinations of birch glue and animal sinews or plant fibres.



Images © Butler 2005

WHY DID MESOLITHIC GROUPS START TO USE MICROLITHS?

A number of factors relating to the changing conditions of the post glacial landscape probably drove the development of microlith technology. The environment warmed considerably during the Mesolithic with open tundra giving way to an increasingly forested environment. In the preceding Upper Palaeolithic hunter gatherers may have used spears with larger flint points to take down larger mammals of the tundra. While in the Mesolithic the environment meant that smaller more fleet of foot animals such as red deer were hunted with microliths making excellent barbs for arrows.

Microlithic technology also allowed the replacement of individual components should they break during use and their small size made it possible to carry a supply of readymade replacements. This would have been a great advantage as groups moved great distances from sources of flint. Different patterns of mobility after the Ice Age may have made large flint nodules hard to find and meant that microliths, which are made from smaller blade blanks than Upper Palaeolithic points, became more suitable tools.

Technology is also entwined with the social interactions of a society. The manufacture of microlithic tools involves collecting a variety of raw materials for a number of different tasks (woodworking, flint knapping, making birch glue, hafting etc.). These may have been carried out by different members of the group and the traditions of making microliths may have played a large part in the persistence of this technology throughout the Mesolithic.

TOOLS R US– Mesolithic Flint Technology

Activity Sheet 1: Making Replica Microliths

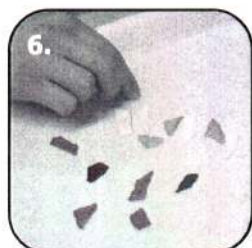
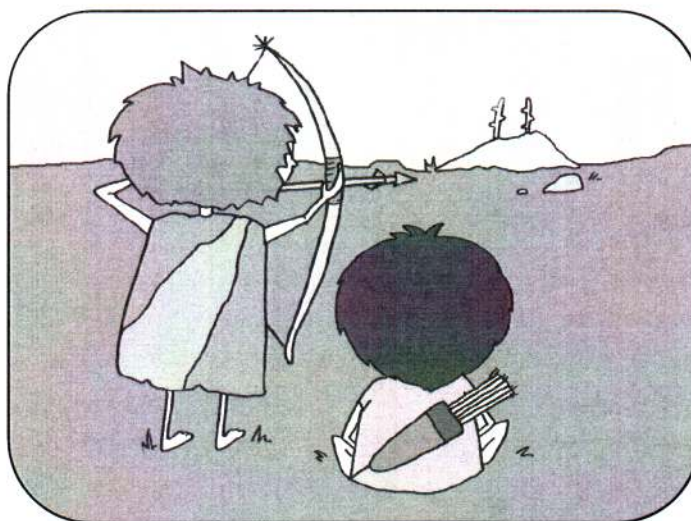


BACKGROUND

You will be making replica **Mesolithic microliths**. These are tiny stone tools, half the size of a 1p coin, which are often found on Mesolithic sites.

Mesolithic people made their microliths out of **flint**, a type of stone, because it has very sharp edges when it is broken.

Try to make your replicas as small as you can—imagine how fiddly it must have been for Mesolithic people making them out of stone!



INSTRUCTIONS

You will need:

- * A ball of modelling clay the size of a 50p coin
- * Modelling tools
- * A ruler to check the size of your microliths
- * A plate or tray to put your microliths on to dry
- * Microlith worksheet
- * *Optional:* Circle of leather or cloth and cord to make a carrying pouch

What to do:

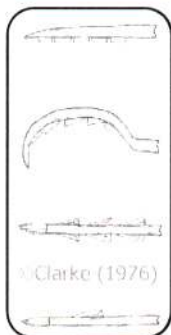
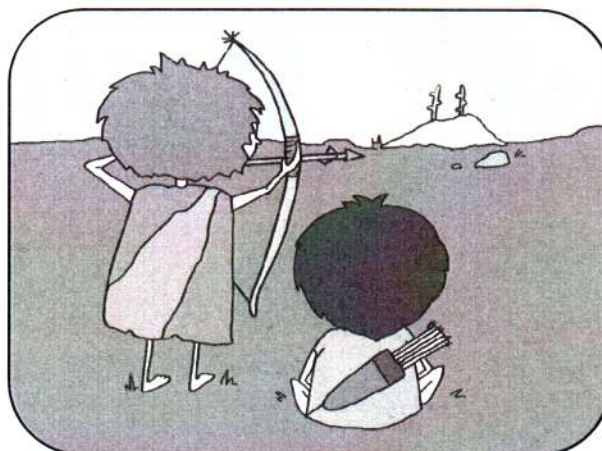
1. Warm the modelling clay by rolling it around in your hands until it is soft enough to work with
2. Break off a very small amount of clay; you don't need much because your tool should be less than 1cm big
3. Choose which microlith you will make from the Microlith Worksheet
4. Flatten out the clay and cut it into a microlith shape
Tip: Make sure that you can still lift the clay off the table after you have flattened it out.
5. Press down the edges of the clay so that they are thinner than the middle. This will look like **retouching** of the tool, where Mesolithic people sharpened the microliths after they had been used for a while
6. Put your replica microliths on a plate or tray to dry
7. Keep making lots of different types of microlith for your Mesolithic toolkit. You will need at least 20 microliths to do well in the Mesolithic hafting game!
8. If you want to you could make a pouch to carry your microliths in

Activity Sheet 2: Hafting Game

BACKGROUND

Mesolithic hunter-gatherers were the first people to use bows and arrows. After the Ice Age most of the landscape was covered in forest and it would have been easier to fire an arrow than throw a spear, especially because the animals were smaller and faster in the Mesolithic too.

Archaeologists think that **microliths** are so small because Mesolithic hunters used a few of them to make an arrow. Their small size also made them ideal for making all sorts of other tools. Each tool would have been made out of several microliths which were **hafted** (stuck) onto wood- these are called **composite tools**.



INSTRUCTIONS

Depending on the size of your group and resources available you can either split the participants into 4 teams who will haft one tool per team per station, or split them into 4 groups and each individual hafts one tool at each station. Allow at least 5 microliths and one piece of wood per tool.

You will need:

- * 4 tables positioned around the room to act as stations for hafting tools
- * 4 hafting resource sheets, 1 for each station
- * Plasticine– 2 sticks at each station
- * Wood in varying widths & lengths (enough for 1 piece of wood per person/team at each station)
- * 20 replica microliths per person/ team
- * *Optional:* Pouch for each person/ team to carry the microliths in

What to do:

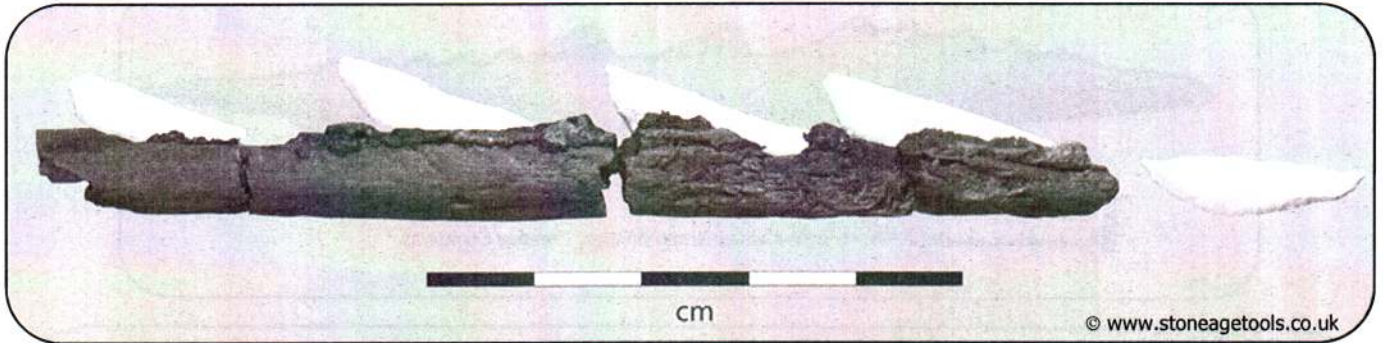
1. 10 minute discussion on what types of activities that hunter-gatherers might have been doing in their lives, eg. hunting and skinning animals, cutting and processing plants etc.
2. Split group into 4 teams and allocate one group to each hafting station.
3. Spend up to 10 minutes at each station. Think about the activity and design and haft a tool which can be used for this activity.

Tip: Choose the microliths and wood wisely as there are only limited resources and each person/ team will need to leave enough to make all four tools.

4. After 10 minutes each team moves round to the next station and repeats the hafting for a new activity type. At each move they should take their completed tools with them ready to be judged at the end.
5. When every team has been to each station come back together as a group and compare the designs of each tool. Have they come up with similar designs? Judge which individual/team has the best Mesolithic toolkit and declare a winner!



Station 1: Hunting



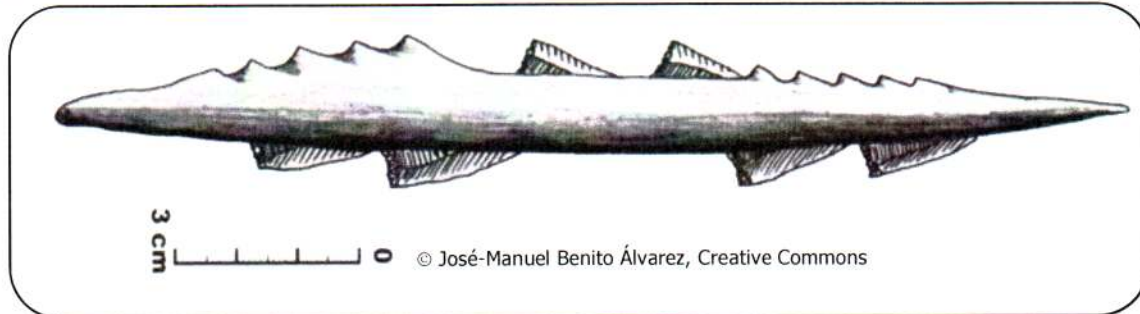
What type of tools did Mesolithic people need for hunting animals?

1. Choose a type of wood that you would like to make your tool out of
2. Decide which shapes of microliths you will use to make this hunting tool
Tip: Don't use too many microliths for this tool- you need to leave some for the other tools at the other stations
3. Use plasticine to haft (stick) the microliths to the wood to make the best tool possible
Question: What would Mesolithic people have used instead of plasticine to haft their microliths?
4. Keep your tool safe when you move to the next station, you will need to show it to everyone else at the end of the game





Station 2: Fishing



We know that Mesolithic people ate a lot of fish. Can you make a fishing tool out of wood and microliths?

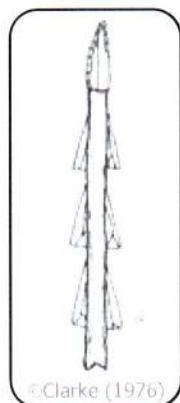
Question: What type of tools apart from nets can you use to catch fish?

Answer: Harpoons were probably used as well as nets during the Mesolithic.

1. Choose a type of wood that you would like to make your tool out of
2. Decide which shapes of microliths you will use to make this fishing tool

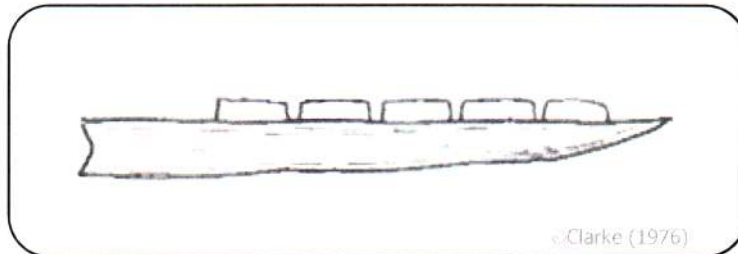
Tip: Don't use too many microliths for this tool- you need to leave some for the other tools at the other stations

3. Use plasticine to haft (stick) the microliths to the wood to make the best tool possible
4. Keep your tool safe when you move to the next station, you will need to show it to everyone else at the end of the game





Station 3: Butchering



If you hunted wild animals like deer, you would need a tool to help you butcher the meat. Can you design something that would help?

Tip: There are lots of different jobs to do when you are butchering an animal, skinning, cutting up the joints of meat, taking the bones out. Think about which job your tool will be used for.

1. Choose a type of wood that you would like to make your tool out of
2. Decide which shapes of microliths you will use to make this butchery tool

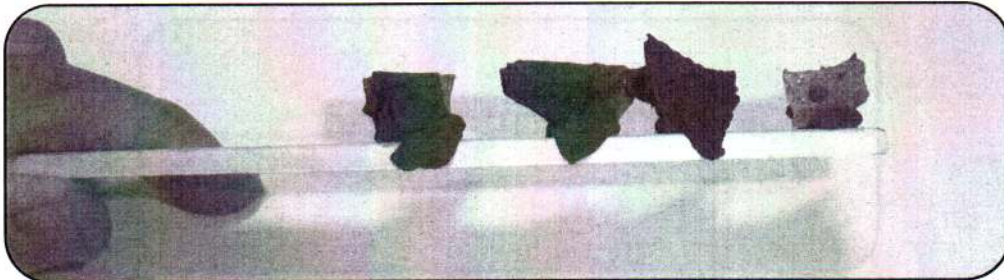
Tip: Don't use too many microliths for this tool- you need to leave some for the other tools at the other stations

3. Use plasticine to haft (stick) the microliths to the wood to make the best tool possible
4. Keep your tool safe when you move to the next station, you will need to show it to everyone else at the end of the game





Station 4: Gathering



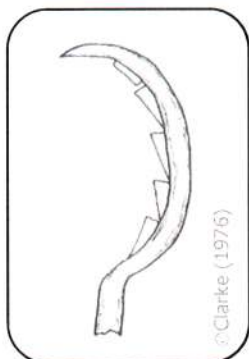
Mesolithic hunter-gatherers didn't only eat meat and fish. They must have eaten a lot of gathered foods, like hazelnuts, berries and roots. What type of tool would you find useful when gathering?

Tip: Think about how you would gather roots and plants which are tough and hard to pick by hand.

1. Choose a type of wood that you would like to make your tool out of
2. Decide which shapes of microliths you will use to make this gathering tool

Tip: Don't use too many microliths for this tool- you need to leave some for the other tools at the other stations

3. Use plasticine to haft (stick) the microliths to the wood to make the best tool possible
4. Keep your tool safe when you move to the next station, you will need to show it to everyone else at the end of the game



We know that Mesolithic people liked hazelnuts because we often find burnt shells at Mesolithic sites.