STONE AGE TOOL AND TESTING DIFFERENT TYPES OF ROCK	
Respective blueprint	CREATING STONE TOOLS and LEARNING ABOUT ROCKS
Description	Pupils learn how humans in the Stone Age made their tools and which materials they used. In the process, pupils learn about different types of rocks.
Learning Objectives	Learn about rocks by making observations and comparing their features. Describe types and uses of tools in the Stone Age. Introduce materials used for stone age tools. How the stone tools were made in the Stone age.
Related curricular subject(s)	History, Art, Science, Chemistry, Geology, Engineering

Prerequisites / preparatory actions for teachers	Prepare the materials needed for the corresponding blueprint. Finding different types of rocks for testing is welcomed. Additional activity: Teachers prepare different materials and the pupils have to find natural materials and materials that were available in the Stone Age. Teachers prepare some stones, branches, antlers, leather, natural ropes (jute or similar) and some modern materials: fabric, plastic, glass, ceramics, steel...
Prerequisites / preparatory actions for students	None.
Age of students	8-15 years old
Duration	2-3 hours
Level of difficulty	Medium

Step by step description of the tasks

1. The teacher presents the topic – The Stone Age. How did humans live back then? Have they used some of these tools? Which materials were available back then?

The teacher can show this video about the Stone Age to the pupils: https://www.youtube.com/watch?v=KV6lpX79G2g&feature=youtu.be

2. Which materials were available in the Stone Age?

The teacher prepares different materials on the desk at the front of the class.

Then, the teacher specifies two places (two tables for example). At the first table should be written NATURAL MATERIALS, and at second MANMADE MATERIALS. Firstly, pupils are asked to get each object from the table with all the objects and place it on the correct table, being natural or manmade. Then, the teacher can ask pupils if natural materials were available in the Stone Age. Children will learn that some materials are natural but can be at the same time created with the modern techniques, which were not available in the Stone Age – glass for example.

3. Stone age tools.

Why do we need tools? Can you describe some tools that are in use today? Why did people in the Stone Age need tools? How did they create them?

The teacher presents different types of stone tools.

A STONE TOOL is, in the most general sense, any tool made either partially or entirely out of stone. Although stone tool-dependent societies and cultures still exist today, most stone tools are associated with prehistoric (particularly Stone Age) cultures that have become extinct.

Stone has been used to make a wide variety of different tools throughout history, including arrowheads, spearheads, hand axes and querns. Stone tools may be made of either ground stone or knapped stone, the latter fashioned by a flintknapper.

Knapped stone tools are made from cryptocrystalline materials such as chert, flint and others via a process known as lithic reduction. One simple form of reduction is to strike stone flakes from a nucleus (core) of material using a hammerstone or similar hard hammer fabricator.

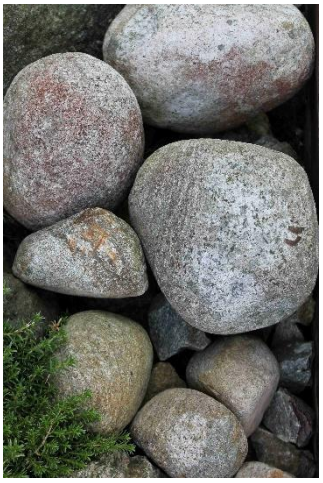
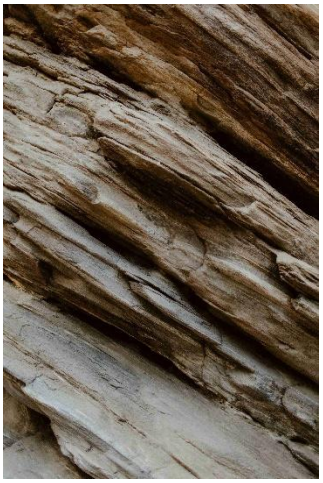
A flintknapper reduces the core to a rough uni- or bifacial preform, which is further reduced using soft hammer flaking techniques or by pressure flaking the edges.

Video, how stone tools were made by humans in the Stone Age:

Making Stone Tools | Unit 6: Big History Project | OER Project - YouTube

4. Implementation of the first part of the blueprint. Creating the stone tool axe.

5. Second part of the blueprint. The teacher can connect the topics in the blueprint with questions about types of rocks – do pupils know different types of rocks? What characteristics are the best for the creation of stone tools? The stone should produce flakes so we can sharpen it. It shouldn't be too hard or too soft. The use of the stone depends on its hardness - harder stones were used as a tool to create stone flakes from other stones. Nowadays, we can identify stones in a more detailed manner. Being able to identify rocks allows scientists, engineers, and others to choose the best rock for their needs.

Source: Stock image

Teacher can show the following online video of the rock cycle, if pupils do not have prior knowledge about it:

Types Of Rocks | The Dr. Binocs Show | Learn Videos For Kids - YouTube

DIFFERENT TYPES OF STONES:

Rock Identification Tips

First, decide whether your rock is igneous, sedimentary or metamorphic.

Igneous rocks such as granite or lava are tough, frozen melts with little texture or layering. Rocks like these contain mostly black, white and/or grey minerals.

Sedimentary rocks such as limestone or shale are hardened sediment with sandy or clay-like layers (strata). They are usually brown to grey in colour and may have fossils and water or wind marks.

Metamorphic rocks such as marble are tough, with straight or curved layers (foliation) of light and dark minerals. They come in various colours and often contain glittery mica.

6. Then, each pupil gets a stone and observes it. Their findings and observations should be written down on a sheet of paper. Try to identify which techniques could be used back then in the Stone Age and how.

The shape of the rock, along with any particles that make up the rock, can help you to decide which type of rock it is. Does the rock have striations, different layers, or any other unique characteristics? Be attentive to the colour of the rock and to its luster. Is it metallic or non-metallic? Record the texture of the rock. Is the rock smooth, rough, bumpy, pointy, or rounded? Be careful with sharp edges. How would you describe how it feels? If it feels like sandpaper, it is probably sandstone.

Also hearing the sound can help you to identify the rock. Pieces of flint, which are the best to use for a flint axe, have the louder and clearer sound as a porcelain. Try to hear what type of sounds can be created by banging the rocks together.

The hardness of the rock is important to know, which rock can be used for different tools, depending on what are our necessities. In modern times we use the Mohs Hardness test to find out whether or not a mineral can be scratched by another mineral. In the Stone Age humans simply scratch two rocks one to another and examine, which one is scratched – this one is softer and the other one harder.

After you have completed the observations and testing of rocks, it's time to decide which type of rock you have. Help yourself with the rock guide, which rock best matches the results of your tests.

Assessment activities

Describe different types of stone tools. How were they made?

List the materials available in the Stone Age and some objects made from them.

Describe the rock cycle.

What characteristics of the rock can humans identify in the Stone Age and how?

Why is it important to know the rock's characteristics to use it for creating stone tools?