

# APPRENTICE MINER

NOTEBOOK



LOOK

TOUCH

THINK

EXPLORE

KNOW

# WELCOME, APPRENTICE MINER!

Are you ready to discover the traces of the mining history of the Mont Avic Nature Park, and in particular the Lac Gelé area?

## YOU NEED

▪ **Curiosity and perceptiveness**

▪ **A smartphone with camera and QR code reader**

▪ **A pen or pencil**

▪ **A magnet**

▪ **This notebook**

## HOW TO USE THIS NOTEBOOK

The route from the Covarey visitor centre to the entrance of the mule track to Lac Gelé is divided into five stages. **At each stage you will find a QR code**, which you can frame to get to know the place better and to hunt for signs of the old mining activities.

**Follow the indications you will find by framing the QR codes** and write down your observations and discoveries in this notebook, answering the questions associated with each stage.

You will recognise them because they are preceded by # and are in different colours.

It is **advisable to carry out the activities step by step**, as indicated by the QR code: sometimes you will have to observe first and then read, other times you will have to go the other way round.

# CODE OF CONDUCT

**Do not take anything away (leaves, fires, mushrooms, stones...).**

Observation and photography are the best ways to take with you an unforgettable experience

unforgettable experience and leave the environment intact for future visitors.

**Stay on marked trails.** By doing so, you will protect the fragile nature of the park by avoiding disturbing animals, damaging plants and create tracks that may facilitate landslides.

**Do not light fires in the open.** All it takes is carelessness to start a forest fire.

**Take your rubbish home.** You will allow others to enjoy nature as you did and you will be defending the animals in the park, for which some kinds of rubbish can be deadly traps.

**YOU CAN FIND ALL PARK RULES HERE**











# LET'S GO! HISTORICAL DOCUMENTS TELL US

Why is mining exploitation of Lac Gelé thought to have started in ancient times, around 1000 BC?

.....

.....

When did Bernardo and Aurelio Mutta request authorisation to mine Lac Gelé?

- A In 1693
- B In 1800
- C In the 1950's

Until when did the mine remained in continuous operation?

- A Until about the mid-1700
- B Until 1832
- C Until 1914

Where did Bernardo e Aurelio Mutta come from?

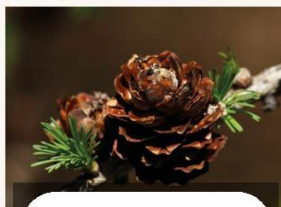
- A From Champdepraz
- B From Bergamo
- C From Cogne

# #STAGE 1

# THE FOREST

## 1.1 THE TREES

Do these photos belong to a fir, larch or pine tree?





## 1.2 HOW MINING CHANGED THE ECOSYSTEM

What was the wood from these forests used for?

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Why was coal used for smelting ore instead of wood?

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## 1.3 HOW NATURE HAS RETURNED TO COLONISE UNFORESTED AREAS

Put these trees in order from most present to least present, numbering them from 1 (most present) to 3 (least present)

[ ] Spruce

[ ] Larch

[ ] Pine

## #STAGE 2 CHARCOAL HEARTH

How do you recognise a charcoal hearth?

**A** It has a square shape, is always found at the bottom of the valley and is supported by a dry wall

**B** It has an elliptical shape, is located near a water source, is supported by a drystone wall

**C** It is rectangular in shape, is usually located above 2300 m asl and is reached by paths connecting it to other coal fields

**D** It has an elliptical shape, is always located far from the streams and is still totally devoid of vegetation



# CHARCOAL PILE

Central stake

Used to.....

.....

Pile opening

Chimney

Used to.....

.....

Layer of soil

Layer of leaves

Used to.....

.....

Logs

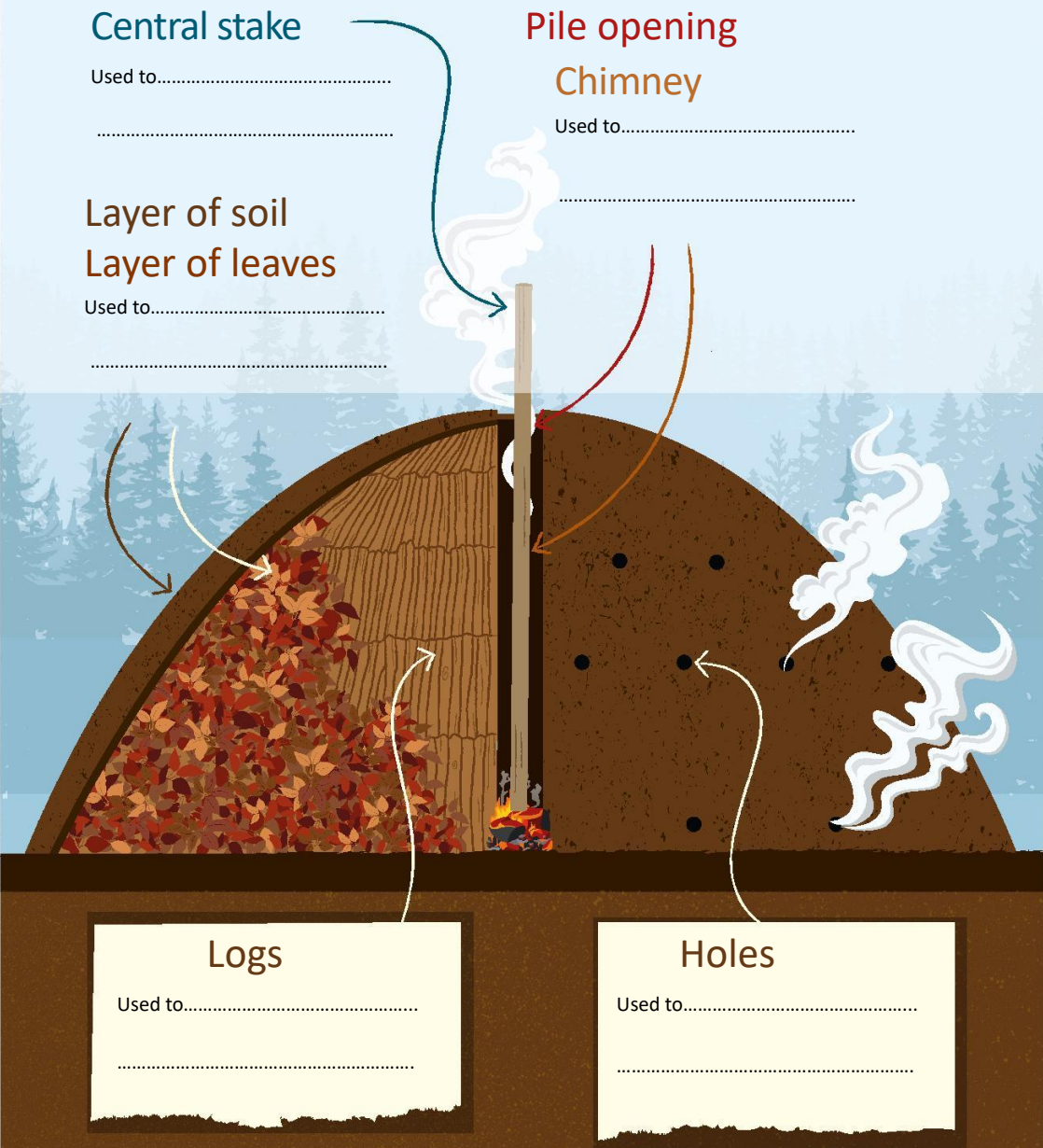
Used to.....

.....

Holes

Used to.....

.....



COUNT THE CHARCOAL HEARTHES YOU ENCOUNTER ON EACH STAGE AND  
MARK THEM IN YOUR NOTEBOOK.

## #STAGE 3 THE MULE TRACK AND THE LAC GELÉ MINE

Number of charcoal hearths found on the way to stage 3 :

.....

What are the characteristics of the mule track leading to the mine?

.....

.....

By what means was the ore transported?

- A It was transported on wagons
- B It was transported by cable car
- C It was transported on railway tracks
- D It was transported on sledges

Who was in charge of transporting the ore?

- A The hauliers from Bergamo
- B The mine technicians
- C Trasportatori della valle di Champdepraz
- D I minatori

Where did the miners live during the excavation campaign?

.....

.....

How did the search for veins take place?

.....

.....



What tools did miners use to excavate rock and cause explosions in the 1700s?

- A Dynamite, jackhammer
- B Mace, pickaxe, point, chisel, shovel, gunpowder
- C Gunpowder, shovel, pitchfork
- D Dynamite, chisel, shovel, shear

## #Stage 4

## THE CLIFF OF GREEN STONE

Number of charcoal hearths found on the way to stage 4: .....

Describe the rock of the cliff:

What colour is it? .....

Is it rough or smooth? .....

What does it look like? .....

.....

What happens when you bring the magnet close to the rock? .....

Why? .....

## #Stage 5

## THE SERVAZ FOUNDRY

Number of charcoal hearths found on the way to stage 5: .....

What was the purpose of the low shaft furnace?

- A It was used to smelt ore and obtain cast-iron
- B It was used to roast the ore in order to remove the harmful substances it contains
- C Used to heat the ore before smelting it
- D Used to make iron or steel from cast-iron

What was the blast furnace used for?

- A It was used to smelt ore and obtain cast-iron
- B It was used to roast the ore in order to remove the harmful substances it contains
- C Used to heat the ore before smelting it
- D Used to make iron or steel from cast-iron

What was the purpose of the reservoir?

- A It was used to have a reserve of water in case of fire
- B It was used to collect the water needed to drive the blast furnace's bustle pipes
- C Served the needs of the workers who lived near the blast furnace during the smelting campaign
- D None of the above

Describe the castings you found:

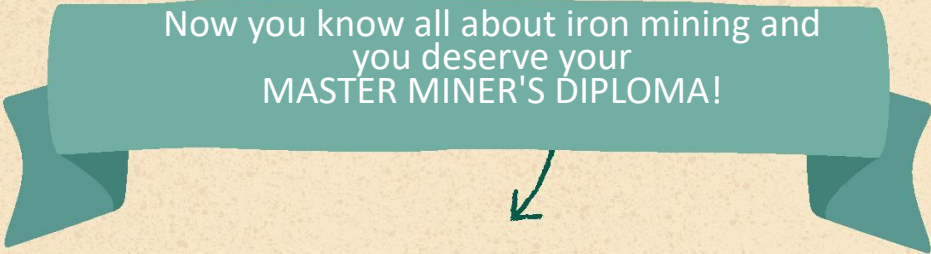
What colour are they?.....

How would you describe their surface?.....

Do they have any smell? .....

Bring your magnet close to the melting slag: What happens? .....

Why? .....



Show your completed notebook at the visitor centre in Covarey or Champorcher to collect your master miner diploma and a nice gadget.





## IS THE VISITOR CENTRE CLOSED?

request your diploma here,  
we will send it to you as a pdf file!



# Learn more about the geology and the mines of the Mont Avic Nature Park!

At the Covarey visitor centre, you will gain a better understanding of the processes that gave rise to the Alps and led to the concentration of iron in the rocks you encountered along the way.

At the Champorcher visitors' centre, on the other hand, you will find a new exhibition on the area's mining past and you can play the role of mine manager in an engaging interactive game.



CENTRO VISITATORI DI COVAREY



CHAMPORCHER VISITOR CENTRE

| COVAREY VISITOR CENTRE  | CHAMPORCHER VISITOR CENTRE  |
|---|---|
| Località Covarey 11020 CHAMPDEPRAZ (AO)   | Località Château 11020 CHAMPORCHER (AO)   |
| TELEFONO<br>(+39) 0125 960668<br>(+39) 0125 960643<br>E-MAIL <a href="mailto:info@montavic.it">info@montavic.it</a> | TELEFONO<br>(+39) 0125 37134<br>(+39) 0125 960643<br>(+39) 0125 804843<br>E-MAIL <a href="mailto:info@montavic.it">info@montavic.it</a> |

# Interreg

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ITALIA SVIZZERA - ITALIE SUISSE - ITALIEN SCHWEIZ



MINERALP



**WWW.MINERALP.NET**  
**WWW.MONTAVIC.IT**

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Stato Italiano, dalla Confederazione Elvetica  
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di Cooperazione Interreg V-A Italia-Svizzera*

#### **Consulenza scientifica**

Parco Naturale Mont Avic e team del progetto  
MINERALP in particolare geol. Paolo Castello  
e prof. Matteo Garbarino

#### **Ideazione e testi**

Marta Geri (Creativa srl)

#### **Grafica**

VisualGrafika