



EXPLORATION
RATONNETTE
MUSEUM
OF THE SEWER



ExplORATion notebook of the Sewer Museum

First Name

Hello !

I'm your guide for exploring the
underground world of Brussels.

Ready for the adventure?

Then follow me. We're off to discover
the Brussels Sewer Museum. There
isn't always one single answer to the
questions I will ask you, but I'm happy
that you will try to answer them. There
are various activities you can try which
you can either do by yourself or with the
help of an adult.

WHAT'S A SEWER ?

**Underground pipes which receive
rainwater, household and industrial
water from the city, flushing them
to a treatment plant.**

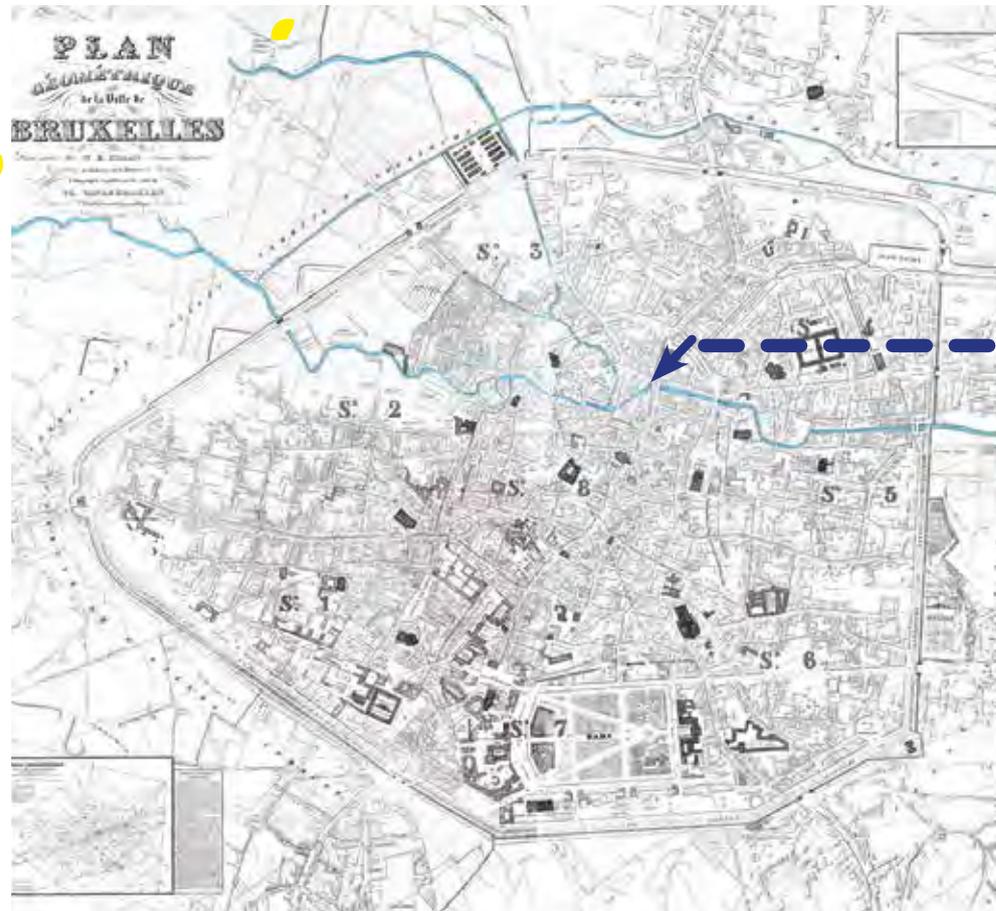




Brussels developed in the Middle Ages. In the beginning, it was just a village along a river. Gradually, Brussels became a major city and the water from this river was used to drive mills, produce beer, and dye fabrics. For a very long time, the river was also used to get rid of waste water.

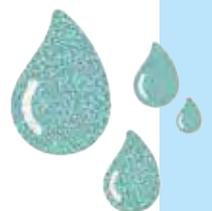


Find the name of this river on the old map



To find your bearings in the city, look firstly at the model of the Brussels topography to understand what a "valley" is, and how it is carved out by a watercourse.

If we pour some water onto the model, where do you think it will go?



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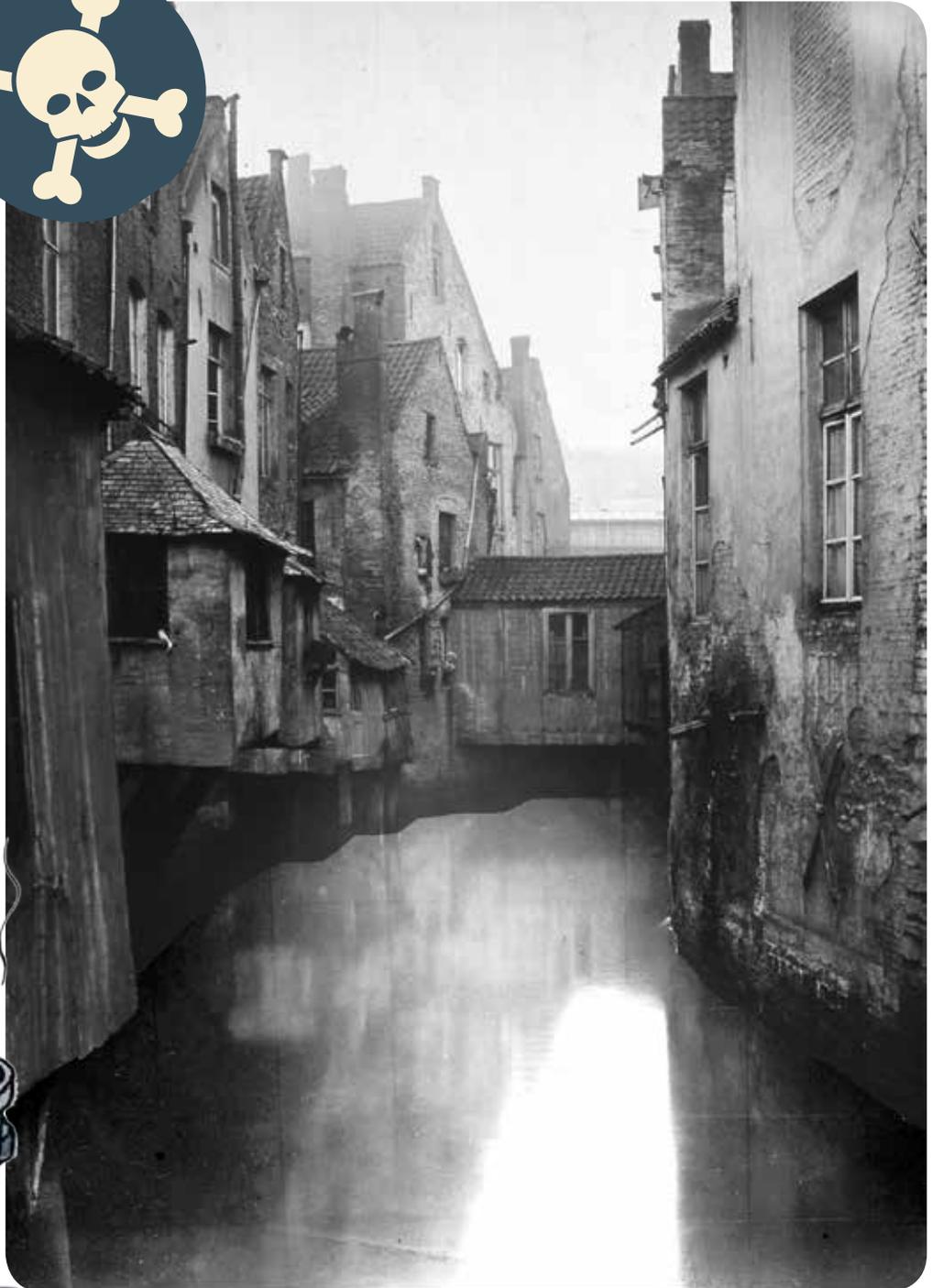
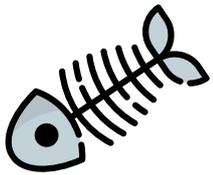
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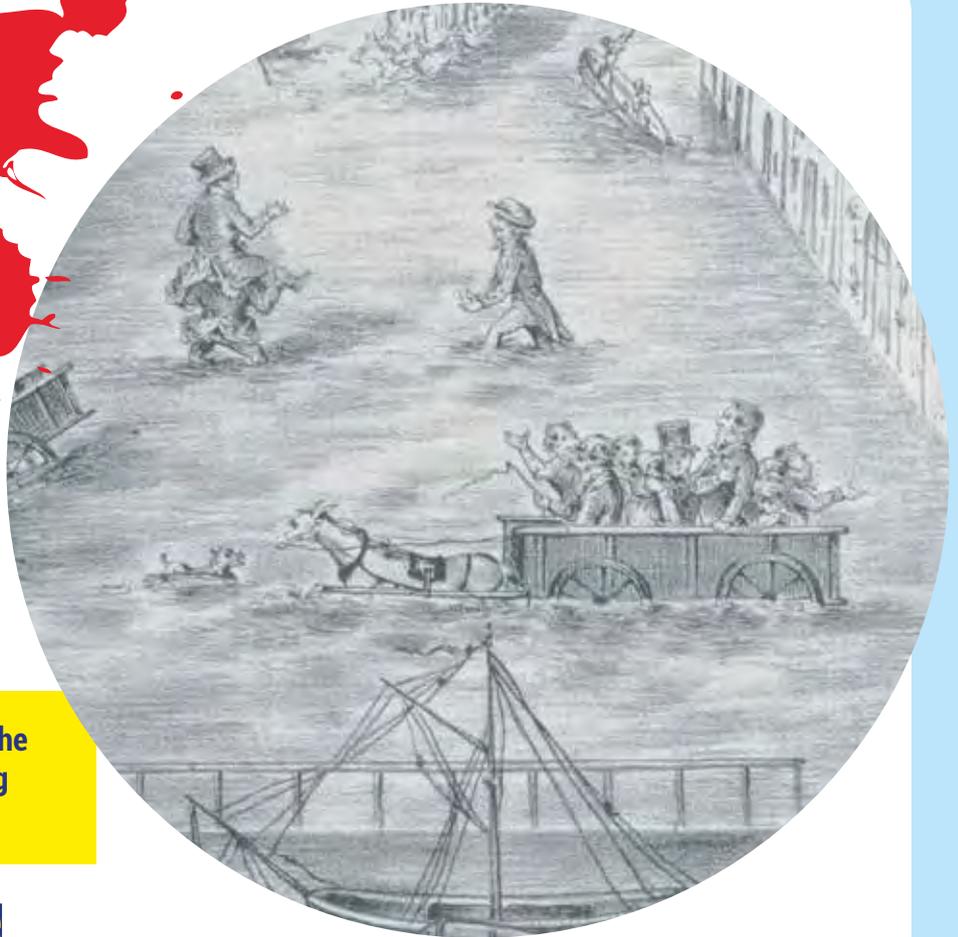


Black and white photos show you this Brussels of the past, which has completely disappeared today.

The Senne flowed right past houses, and people threw all their filth and excrement into it from their windows.

Draw the worst waste you can imagine onto the water...



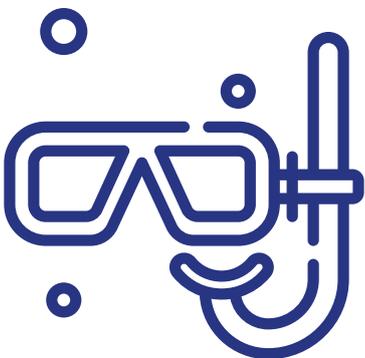


Apart from being an open sewer, the Senne often burst its banks during heavy rain.

Can you find the picture this detail is taken from?

Why have the Brussels residents shown here got their feet in the water?

Circle the right answer.



They are practising water sports

They liked foot baths



They suffered from flooding very often

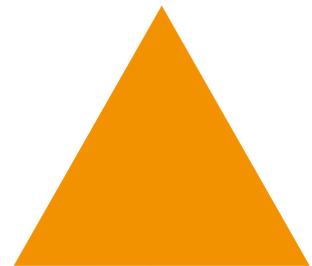
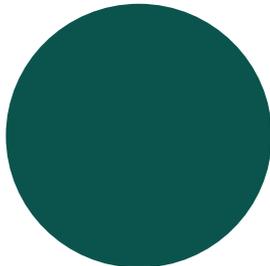


Jules Anspach, the Mayor of Brussels (1863 to 1879), decided on an extreme solution to tame the river and make the city less stinky: he approved a plan which made the Senne disappear underground, bricked up along with the sewers!



Look at the big underground "cage" which was built.. What shape does it remind you of?

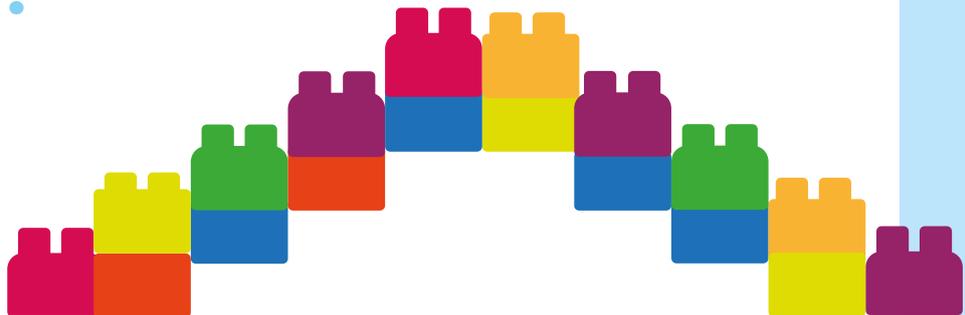
Circle the right answer.



How many bricks were needed to cover one metre?



Can you imagine how many were needed for the 6.2 km-long covering of the city centre? It's enormous!





To find out the year the work started on covering the Senne, decipher the date written in Roman numerals on the large stone which is in the room. This stone once used to contain a treasure trove of gold and silver pieces...



Use the table to help you.

The Roman numerals (I, II, III,...) are converted to Arabic numerals (1, 2, 3,...)

I = 1

II = 2

III = 3

IV = 4

V = 5

VI = 6

VII = 7

VIII = 8

IX = 9

X = 10

L = 50

C = 100

D = 500

M = 1000

In what year did the covering of the Senne take place?

Write your date of birth.

..... / / Roman numerals / /
 / / Arabic numerals / /

Here's mine:
 I/VII/MMXVII
 =
 01/07/2017

60 years after these works, some districts still suffered from major flooding. So the Senne was diverted. There is a good reason why I just told you that, it's because it flows beneath where we are standing. Be patient, you'll see it soon! To continue the tour, go down the steps.

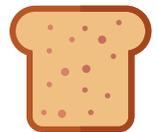


Circle the activity in a house which flushes the most waste water into the sewers:

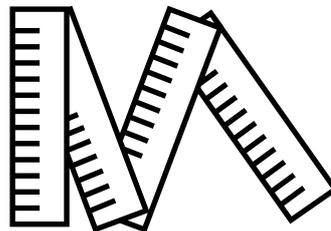


“Waste water” is water which has been used (in showers, toilets, etc.), and which is flushed into the sewers through pipes. Find the entrance to the reconstruction of the sewer, to your right. Go in and sit down... Take your time and have a good look at your surroundings: underground, there are pipes in different shapes and sizes which connect houses to the sewers.

Does the shape of this sewer remind you of one of the food items below? If so, which one?

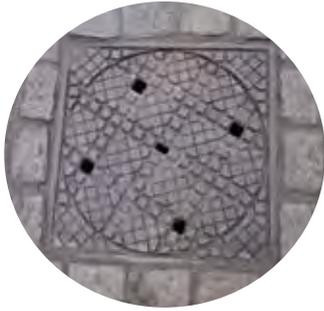


Is the head of the adult accompanying you touching the ceiling?

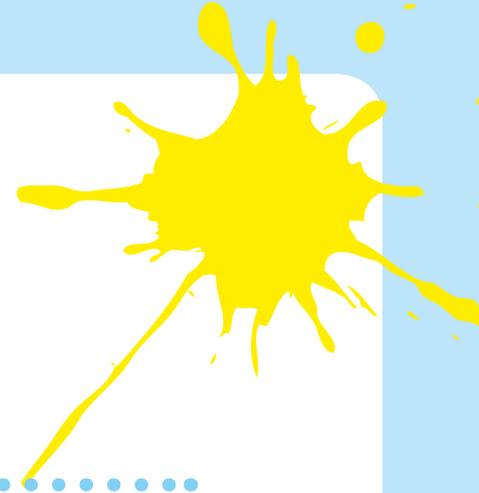


Is the head of the adult accompanying you touching the ceiling?

Come out of the sewer and look at the model. You are familiar with the city above ground with its streets and houses. But down below, there are the sewers, the Senne, the metro, the electricity and gas networks, etc.



Find this plate.
What is its exact name?



If you lifted it up from the street (and good luck with that, it weighs 90kg!), you would descend directly into the sewers. It's the way to work for the sewer workers. They descend via a ladder to check the sewers and carry out any necessary repairs.



A heavy downpour has mixed up the order of the letters of this object which collects rainwater.

A₁

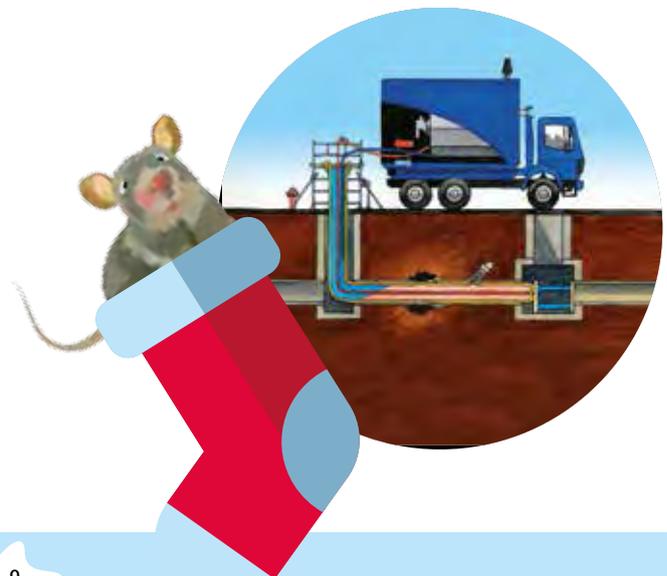
R₁

N₁

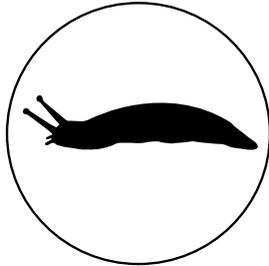
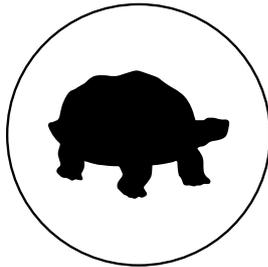
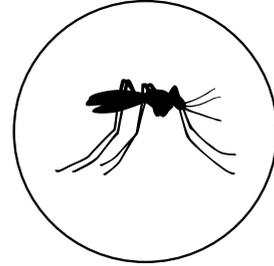
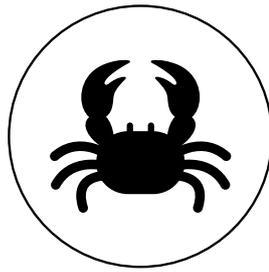
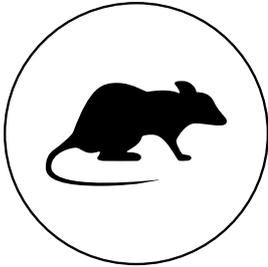
D₂

I₁

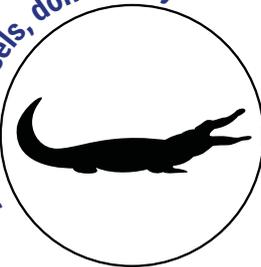
There are various techniques for repairing the sewers. Find the one which is called the "sock method"



There are many inhabitants in the sewers...



Not in Brussels, don't worry

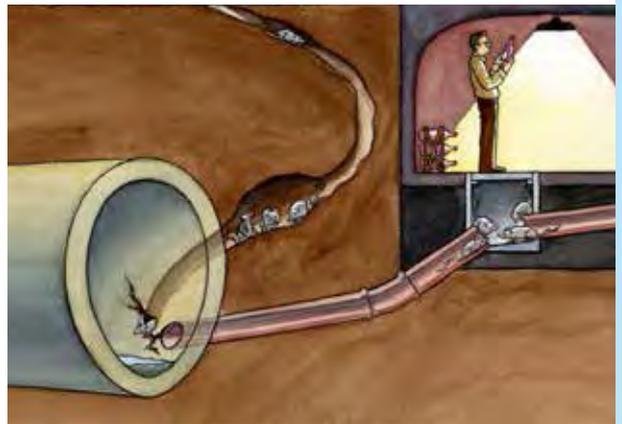


Some of them are "exotic", how did they get there?

.....

.....

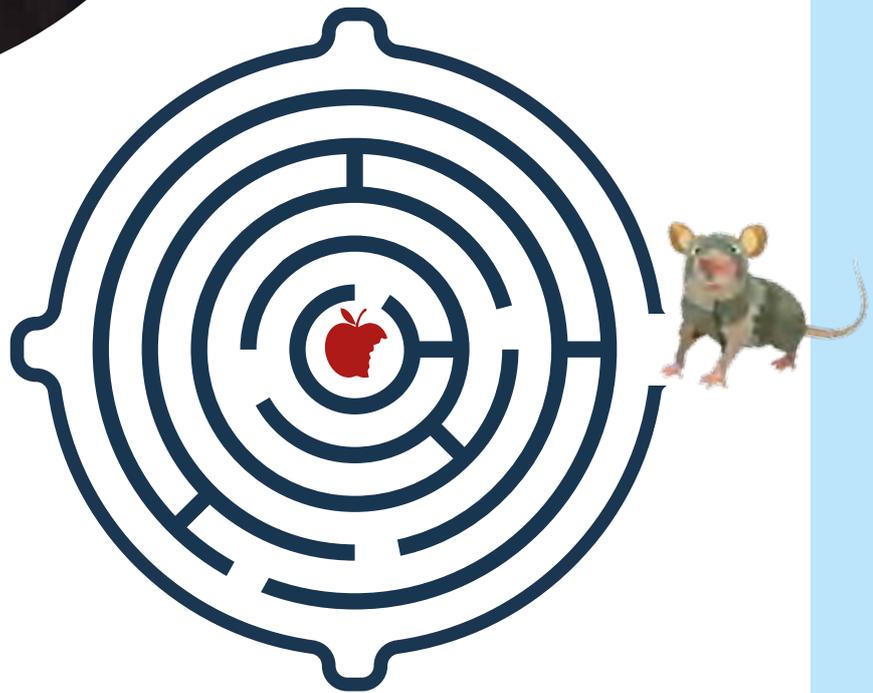
OUPS !



Scholars call us *rattus norvegicus*. It is estimated that our current population is more than 2 rats for every 1 inhabitant in Brussels! My Mum, like all the females in our family, can have up to 20 baby rats in each litter. And her pregnancy only lasts 22 days! So you can see why there are so many of us... We are useful in the sewers because we devour your waste, but the sewer workers try to control our numbers anyway, because we sometimes damage pipes...

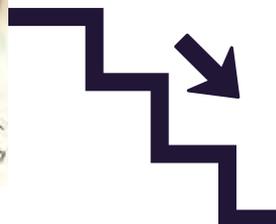


Have a good look at the model in the centre, you'll see this funny machine, in real life, at the bottom!



You've been very patient!
We are now finally going to go down to see the Senne and the sewers...
Be careful, make sure you follow the safety instructions!

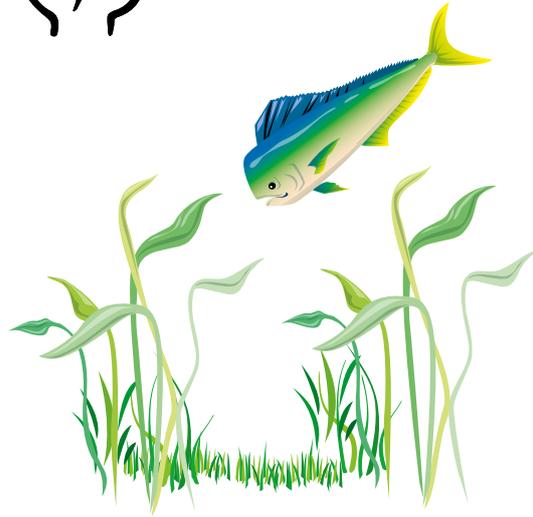
Help me find the way to this appetising little morsel of waste!



Keep your wits about you!



Well, here it is at last.. the Senne. You see we weren't kidding, it has been kind of "enclosed". It doesn't look much like a river any more, but it's no longer a sewer either!



Can you see fish or vegetation?

Look at the plates attached to the walls and the flow of the water, which way is it flowing?

Name the municipality where it is flowing to.



You can also **hear** noises, the flowing of the water, but sometimes less expected noises! It's the cars passing above our heads.

Look over there, there is a plate with the name of a street, above a smaller sewer (egg-shaped at its tip).

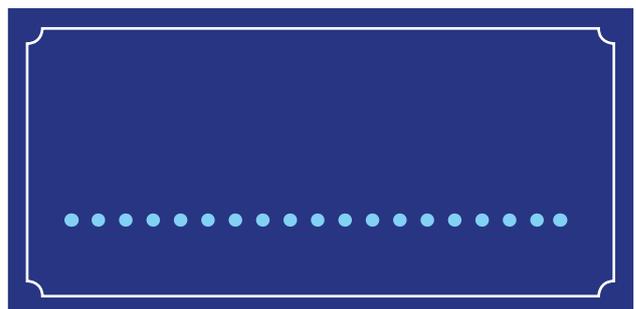
What does it say?



At the end of this passage, on the left, you will be in the real sewers.

As incredible as that seems, you are already walking in a big sewer, called a collector, which is still in operation. Waste water flows under the plates.

Do you recognise the **smells**?



Go on, be brave, go right to the end, and if you see them, say hello to my rat buddies, but watch out for the greedy ones who might nibble on the leather of your shoes!!!

See this big machine? It's a roller-type sluice, shown in the model and video above, it is used to clean the collectors and remove dirt and sludge which blocks the passage.



The entry and exit gate of the sewer workers is at the end of the little corridor on your left.

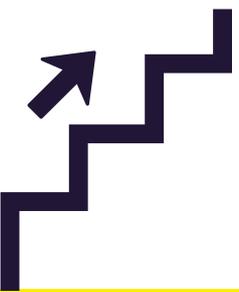


Retrace your steps and go up the stairs, wash your hands in the sink. I'll wait for you in the sewer workers' room for the rest of the tour...



Being a sewer worker is a dangerous job! Underground, the sewer workers risk catching diseases, getting poisoned from toxic products or gas, and also drowning. To protect themselves, they need good equipment.

Out of the illustrations below, which are useless for modern-day sewer workers? Cross them out.



Go up the stairs to discover the final room of the museum. Has this tour made you thirsty? Imagine if you had to drink the water you've just seen... Eugh!!! Although, after a long treatment cycle, you will actually drink this water at some point!

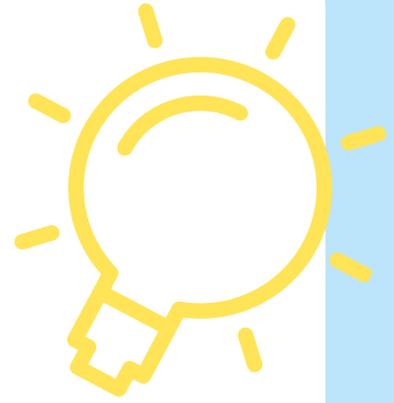
But for the water to be drinkable again, it needs to be cleaned. In Brussels, two treatment plants do this job, one in the north, and the other in the south of the city. This requires a lot of time and energy. 24 hours are necessary to purify the water and discharge it, a little cleaner, into the river.



© S.E.S.

Water is our "blue gold" since it is very precious: without it, we wouldn't be able to survive, so we shouldn't waste it!

There are smart tips to save tap water. Do you know them already? What do you think of the following actions?



Draw a smiley to indicate the smart actions and those which should be avoided.



I take a shower instead of a bath.



I use a cup when brushing my teeth.



I wash the dishes with the tap running, without plugging the sink.



I use the small flush button for quick trips to the toilet.



I water the garden every day.



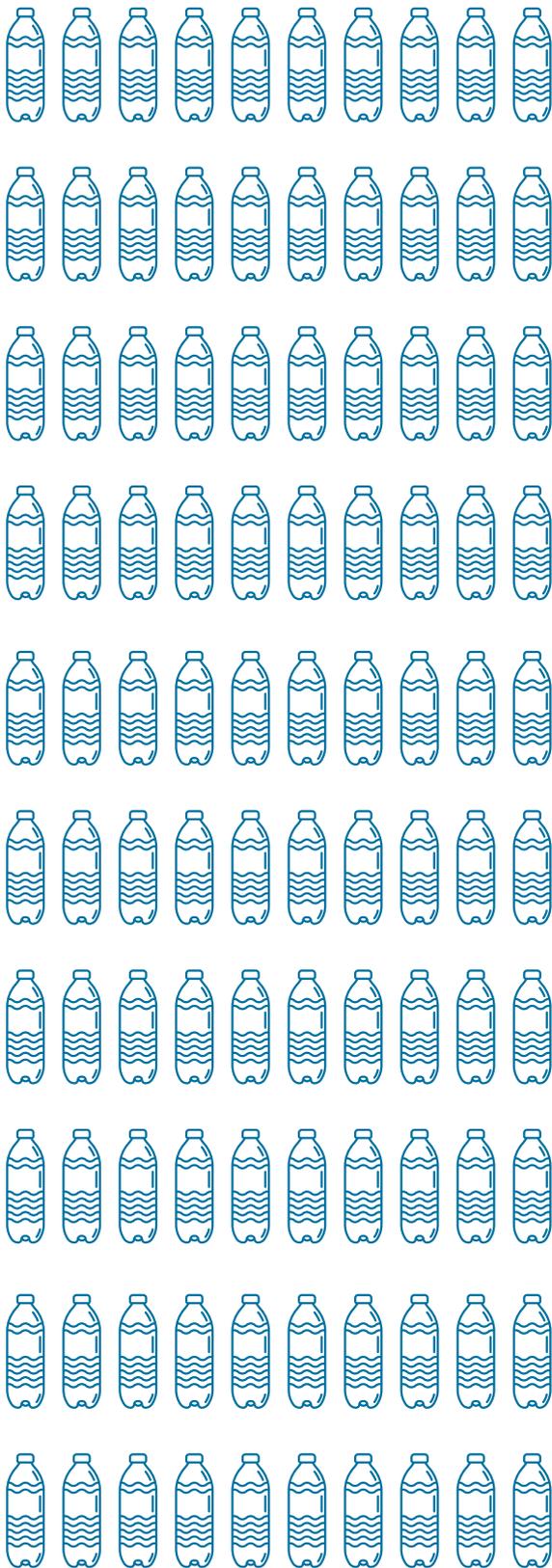
I wash the car with water from the tap.



I collect rainwater to water the plants at home or in school.

Water is essential for life on Earth. But it is not unlimited! Our drinking water resources are threatened because of pollution, wastage and increased consumption.

How many litres of water (on average, each day) does each person consume to get washed, drink, flush the toilet, etc.? To find out, count the number of 1-litre bottles drawn below.



..... litres
per inhabitant and per day in
Brussels. Do you think that's a
lot or not much?



What about compared with
other countries?



What does virtual water or "H₂O footprint" mean?

All of our consumer products contain water, even if we can't see it in the finished product. We call "virtual water" or "hidden water" the water which is necessary for industrial production. In effect, companies consume a lot of water to make products or food. They also need to clean and maintain machines, tools and premises. That all adds up to many litres of water!

Link the amount of water necessary for the production of:



• 4 100 litres



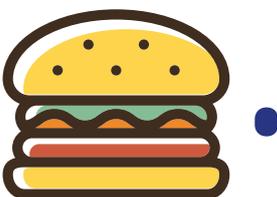
• 2 400 litres



• 8 000 litres



• 1 350 litres



• 120 000 litres



Thanks for your visit! This museum is unusual, right?

**I hope you will be careful with your water consumption,
and that you don't throw just anything down the drain**

**Here's a little souvenir of your visit here, stick my face on
your schoolbooks or on the mirror in your bathroom.**

**If you want to find out more, don't hesitate to ask
questions to the attendants, some of them are former
sewer workers.**

Conception of the notebook Martin Angenot, Aude Hendrick, Carine Van Kelst
and all the team of the Museums of the City of Brussels

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D 2017/3285/18

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