



STEM for WATER

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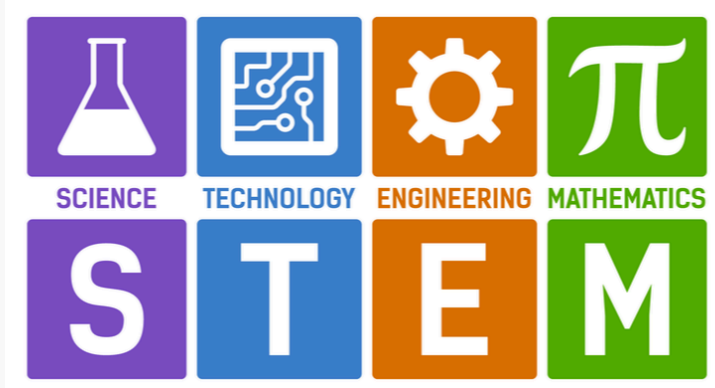




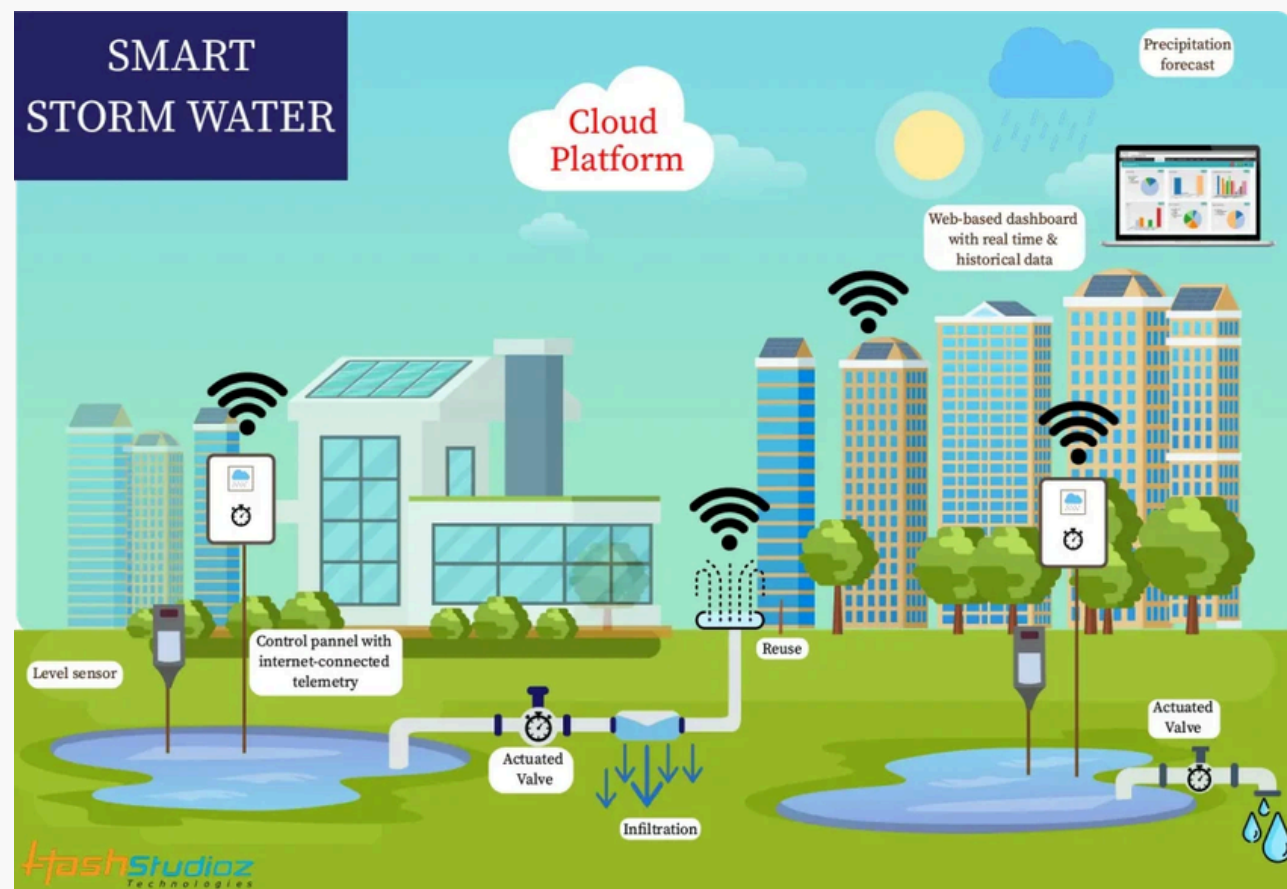
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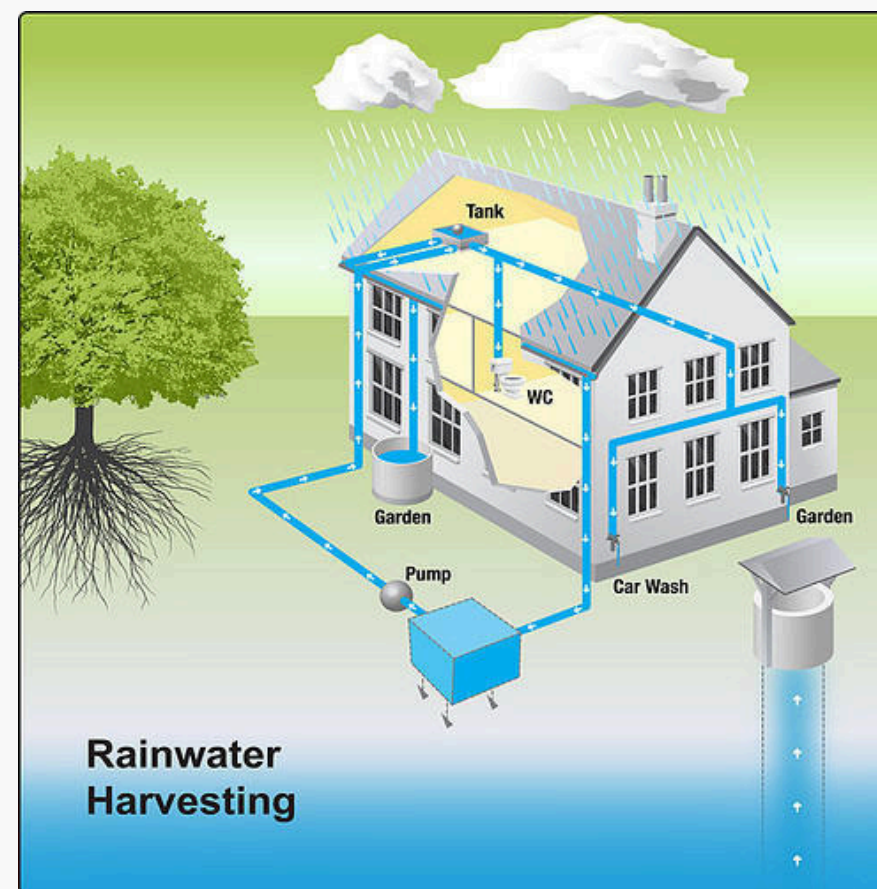
STEM solutions for saving water



STEM solutions for saving water is focus on engineering efficient filtration systems, using smart technology for usage monitoring, and designing agricultural tools to reduce waste.



Smart technology



Engineering solutions



Water management tools

Where do schools waste water?



Leaking taps and toilets



Old toilets waste more water than efficient models.



Taps left running while handwashing

BEFORE:



AFTER:



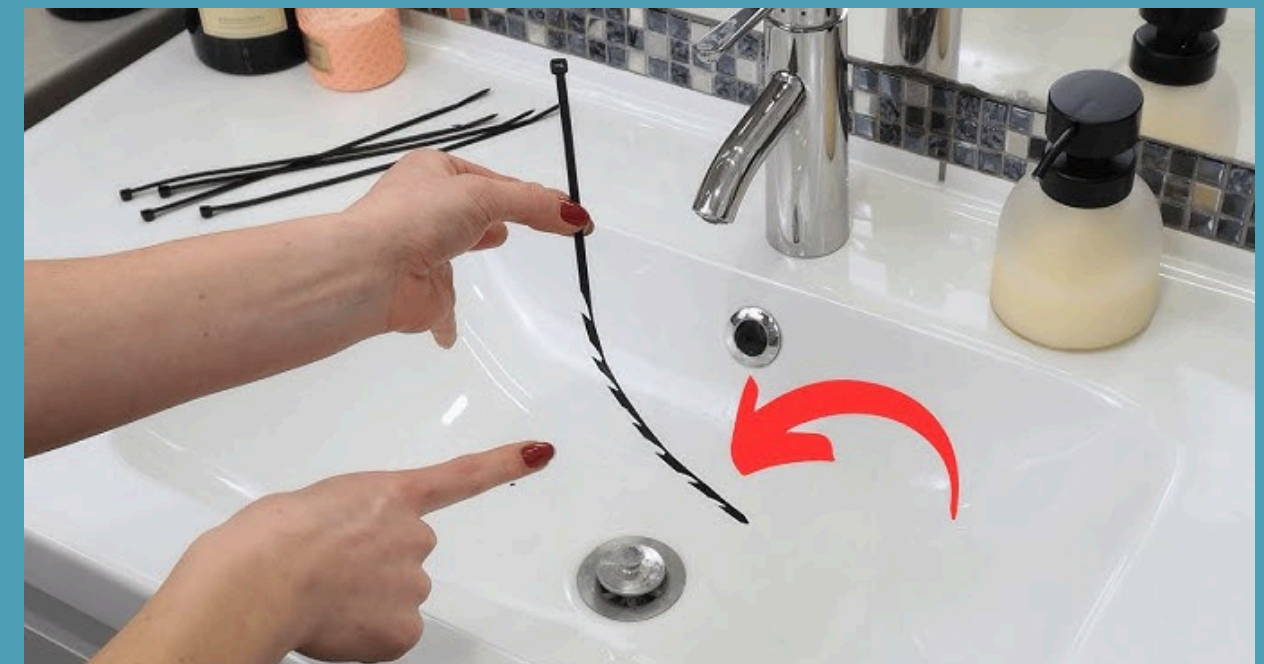
How can we save water in schools/house



Change the taps to automatic ones so that they stop by themselves.



Put a zip tie under the taps so they are not open longer than necessary (cheaper solution).



Experiment to save water:



We did a experiment with zip ties to save water in our school.

Activities World Water Day (22nd March)



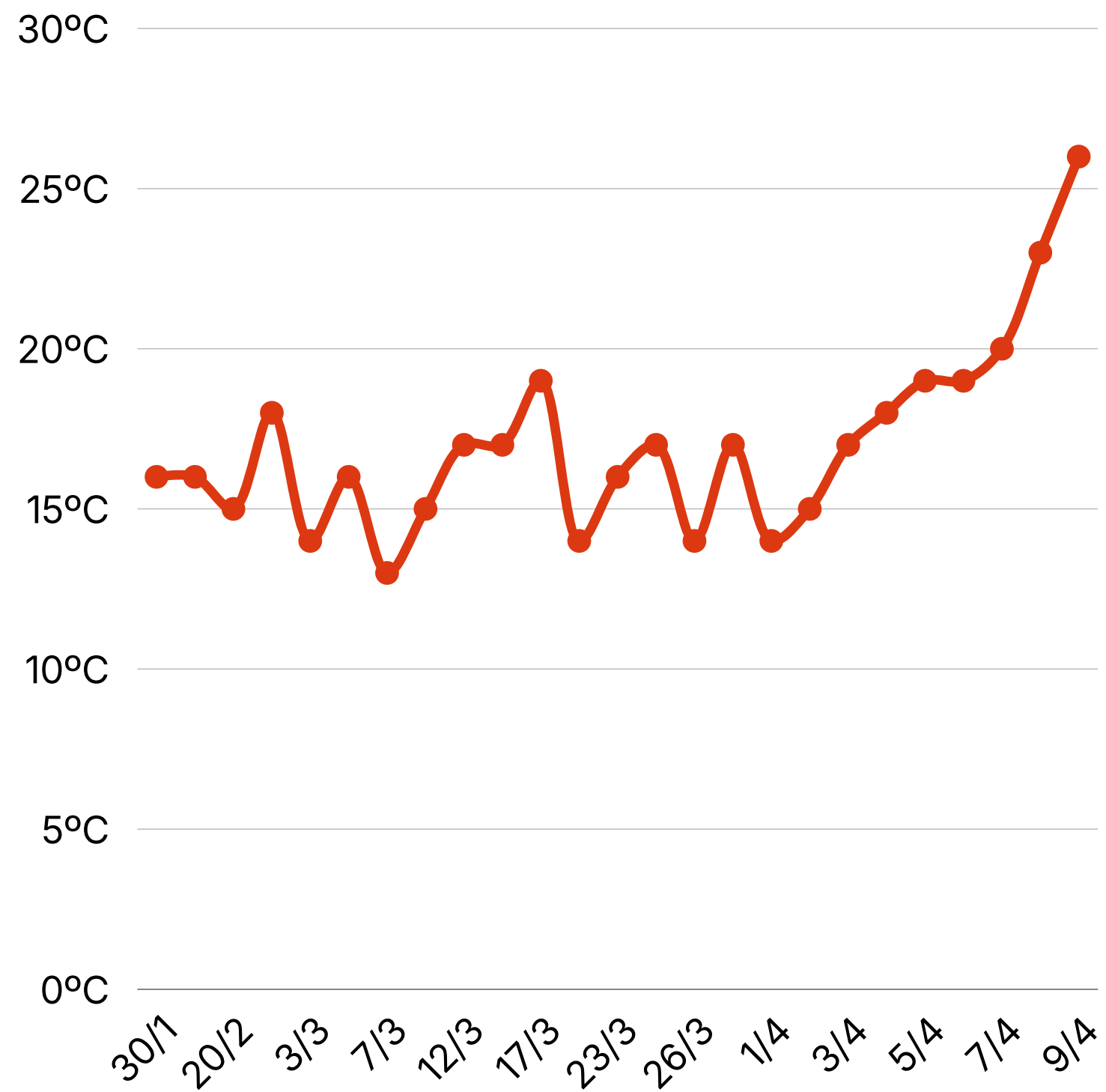
- **Construction of filters:** in different groups a filter is built, explained step by step, and then take samples of different wastewater (river, water with mud, etc.). Finally each filter is tested.



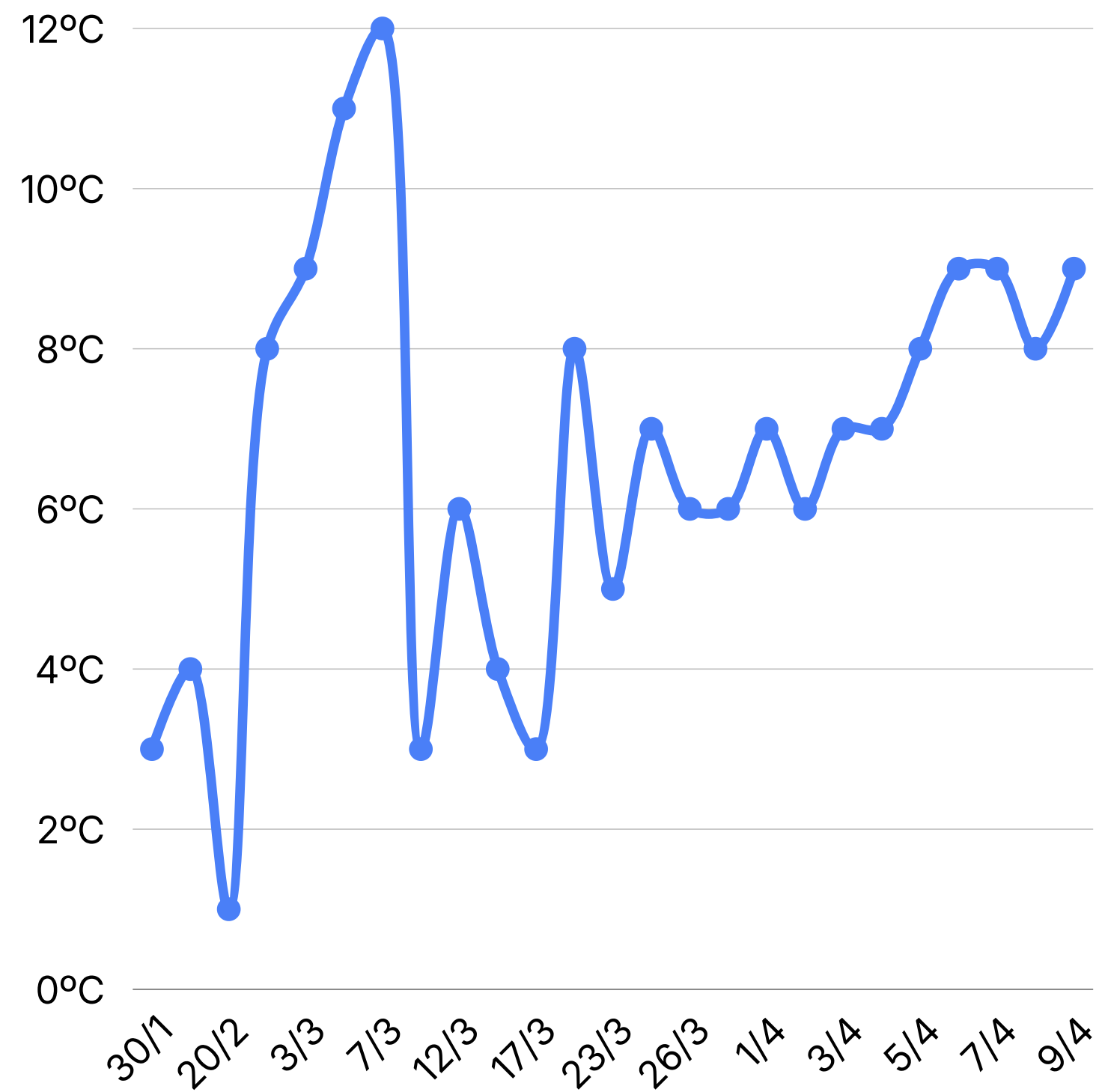
- **Trip to the treatment plant:** Organize talks where they explain how the treatment plant works and how they work there. Also an explanation of the water's journey from the wastewater to the treatment plant

Weather log

	Max. Temperature	Min. Temperature	Precipitation	Pressió Atmosfèrica	Humidity
30/1	16°C	3°C	-	1002 hPa	73% rh
5/2	16°C	4°C	0,1 m2/l		73% rh
20/2	15°C	1°C	-	1021 hPa	39% rh
26/2	18°C	8°C	-	1021hPa	55%rh
3/3	14°C	9°C	-	1015hPa	52%rh
4/3	16°C	11°C	-	1015hPa	61%rh
7/3	13°C	12°C	40 m2/l	1009hPa	59%rh
10/3	15°C	3°C	37 m2/l	1013hPa	54%rh
12/3	17°C	6°C	-	1017hPa	52%rh
13/3	17°C	4°C	1,5 m2/l	1011hPa	54%rh
17/3	19°C	3°C	-	1009hPa	43%rh
19/3	14°C	8°C	-	1019hPa	45%rh
23/3	16°C	5°C	-		
25/3	17°C	7°C	-		74%rh
26/3	14°C	6°C	-		73%rh
27/3	17°C	6°C	-		70%rh
1/4	14°C	7°C	-		72%rh
2/4	15°C	6°C	-		69%rh
3/4	17°C	7°C	-		67%rh
4/4	18°C	7°C	-		65%rh
5/4	19°C	8°C	-		63%rh
6/4	19°C	9°C	-		63%rh
7/4	20°C	9°C	-		60%rh
8/4	23°C	8°C	-		50%rh
9/4	26°C	9°C	-	1021Pa	44%rh

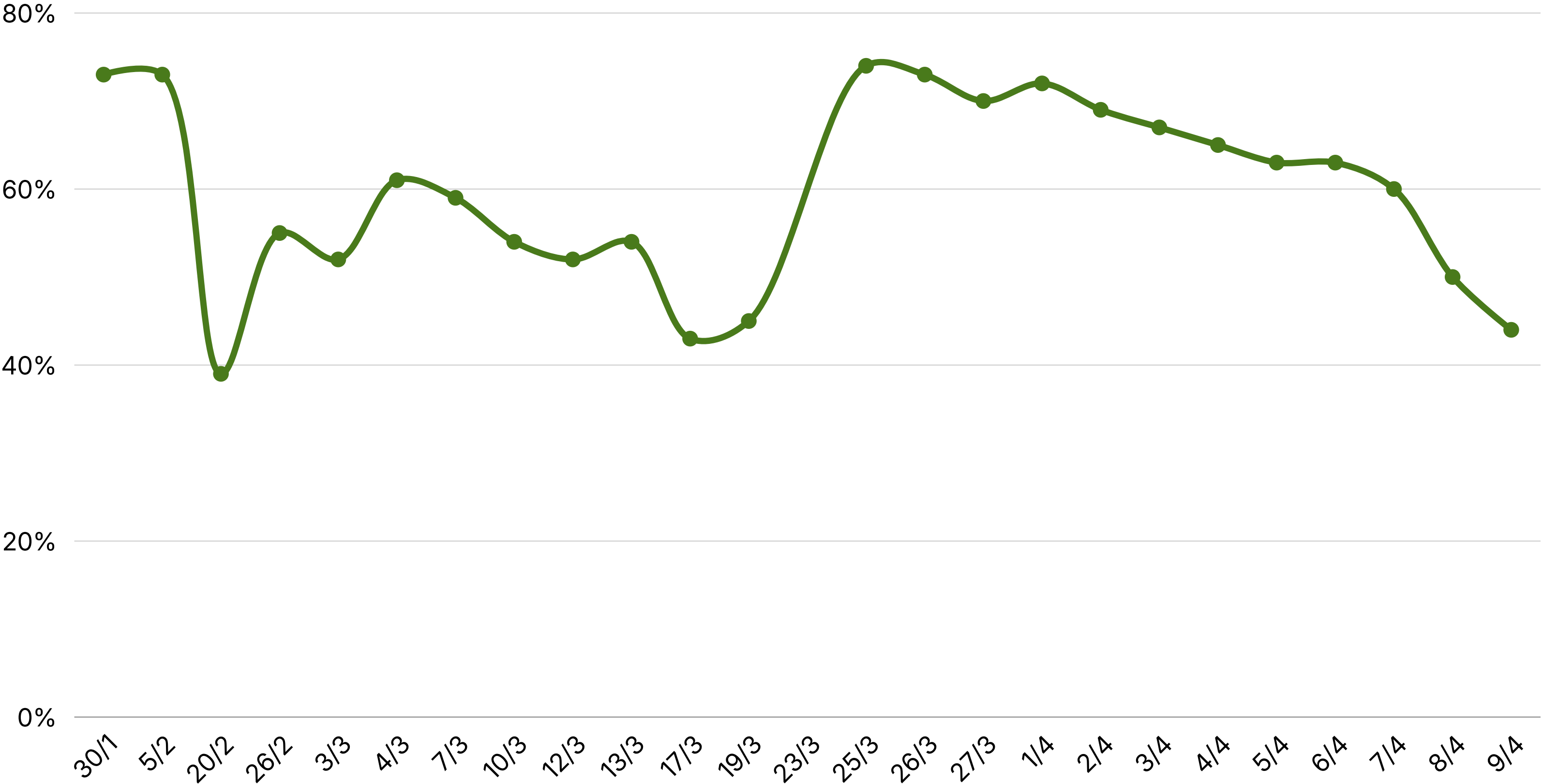


Maximum temperature graph in Girona



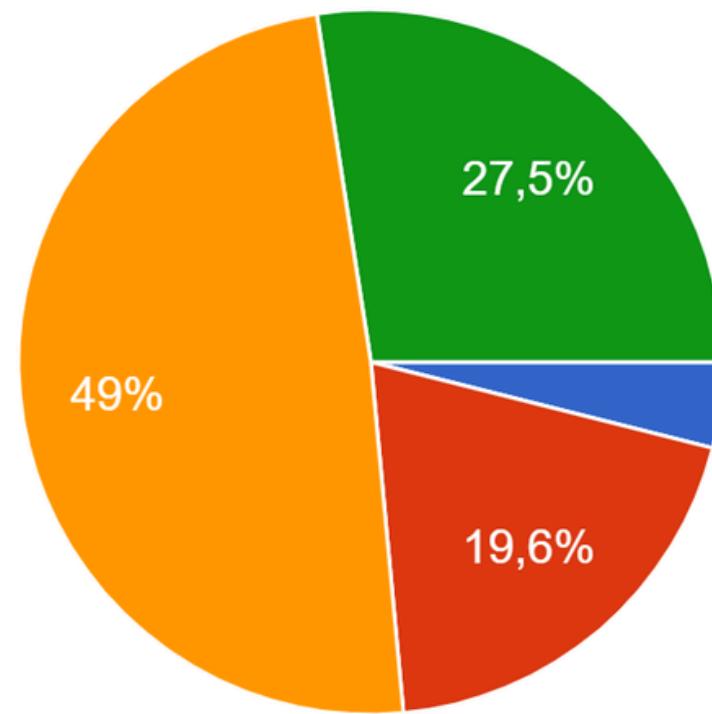
Minimum temperature graph in Girona

Humidity in Girona



Survey

(51 people responded)



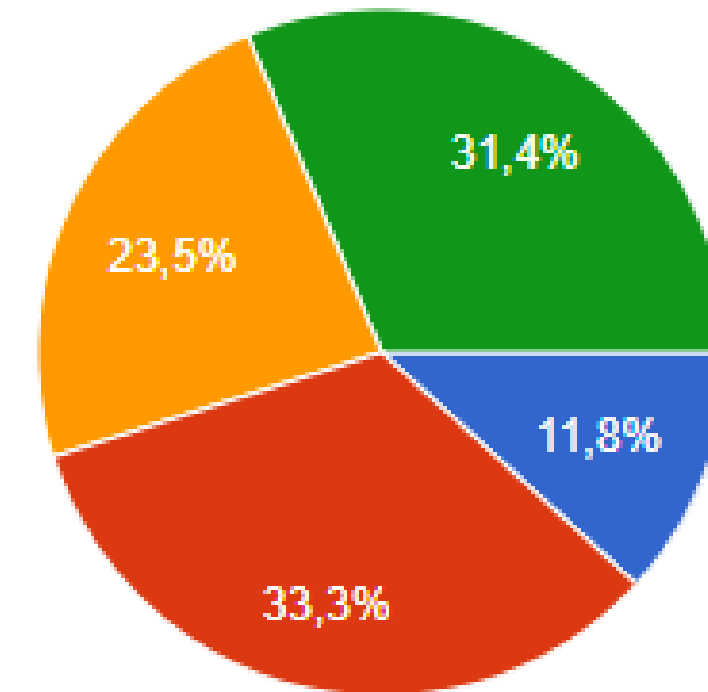
How many times do you shower in a week?

2 or less

between 3 and 4

between 5 and 6

7 or more



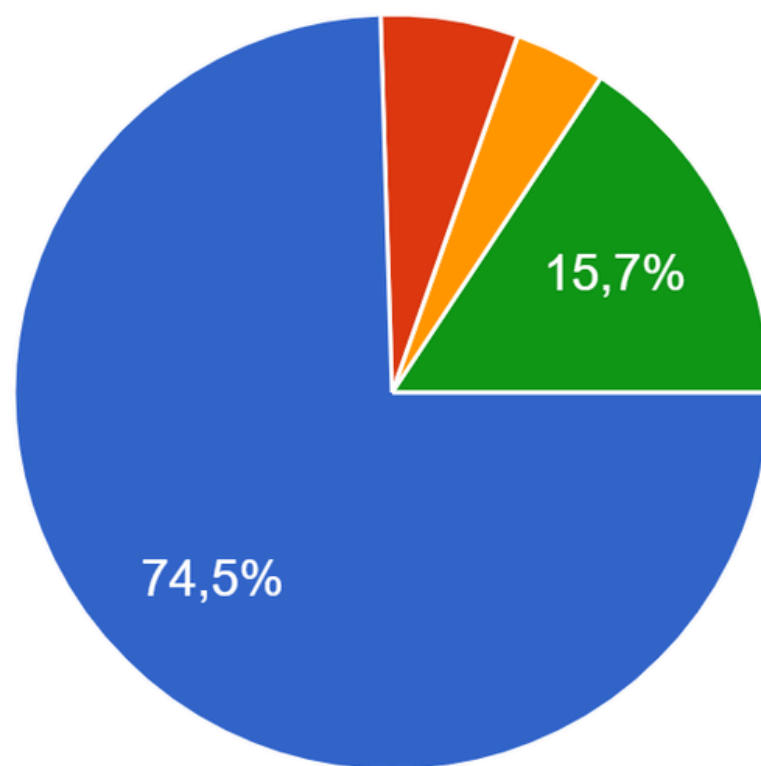
How much time do you spend in a shower?

5 minutes or less

Around 10 minutes

Around 15 minutes

More than 20 minutes



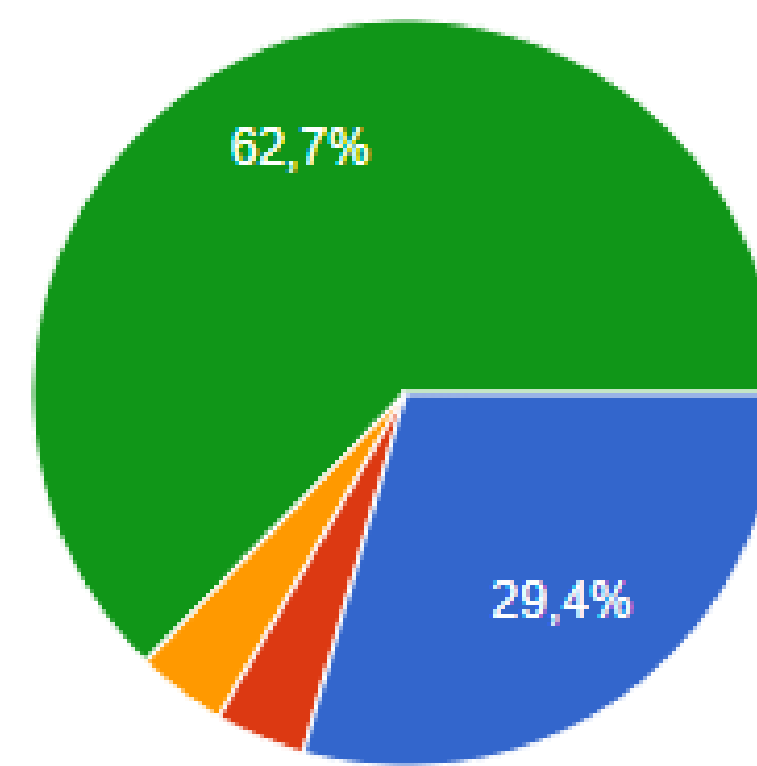
How many showers do you take at home each day?

Once a day

Twice a day

Three times or more

None of the above



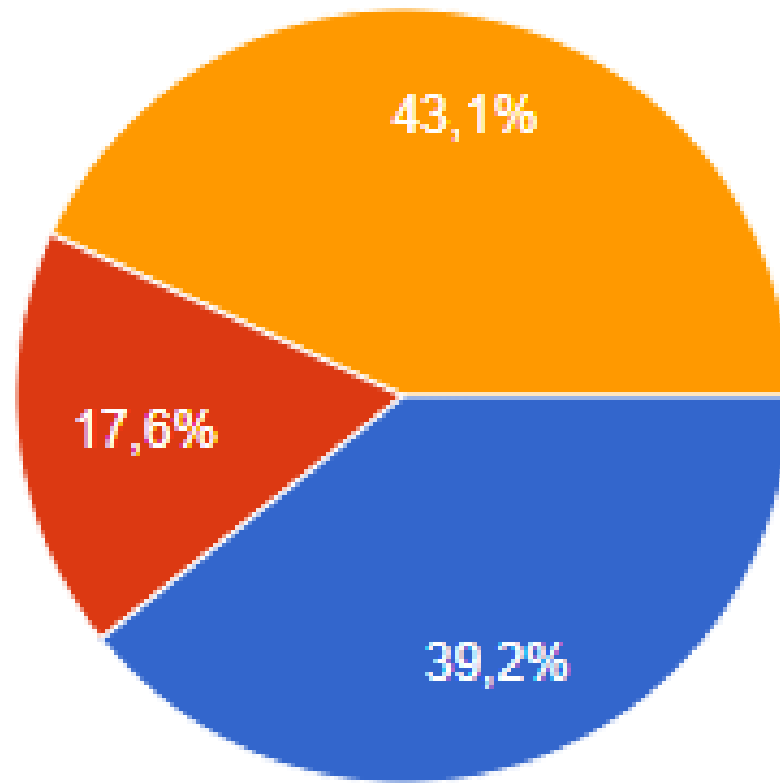
How often do you bathe?

1 or more times a week

1 every 2 weeks

1 per month

Never

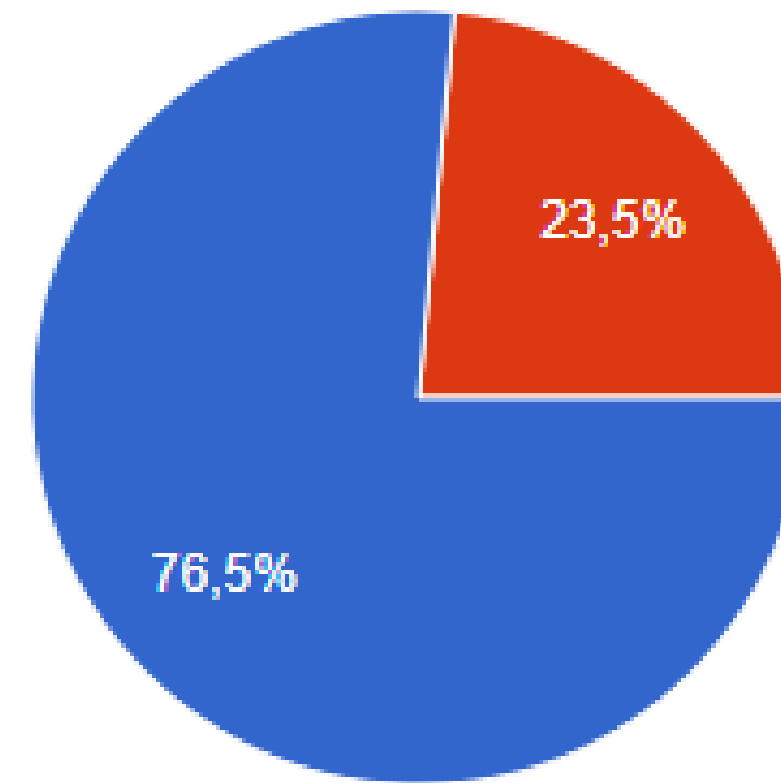


Do you drink bottled or tap water at home?

Always bottled

Sometime bottled

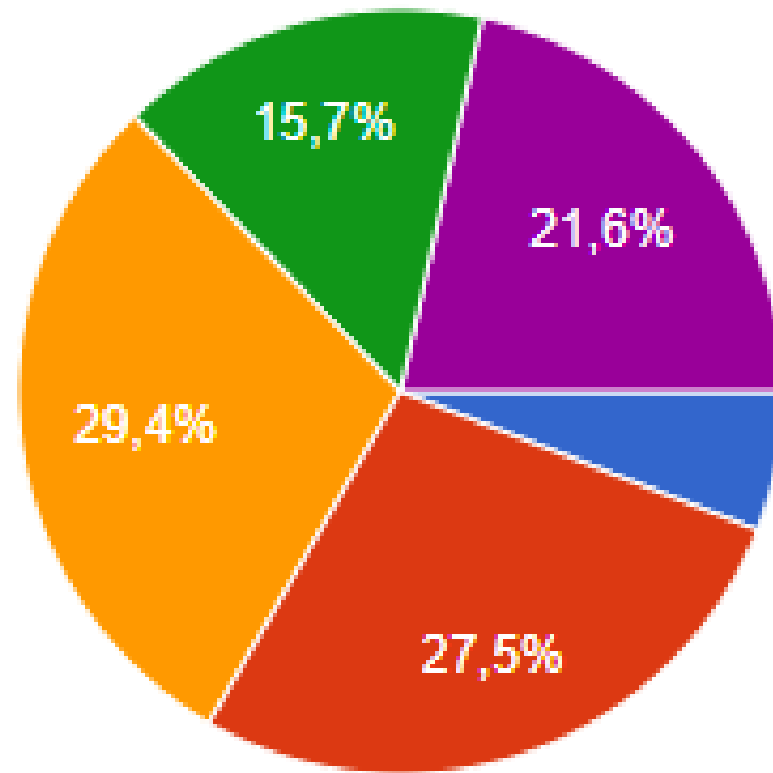
Always on tap



Do you use a dishwasher?

Yes

No



How many times do you use the dishwasher per week?

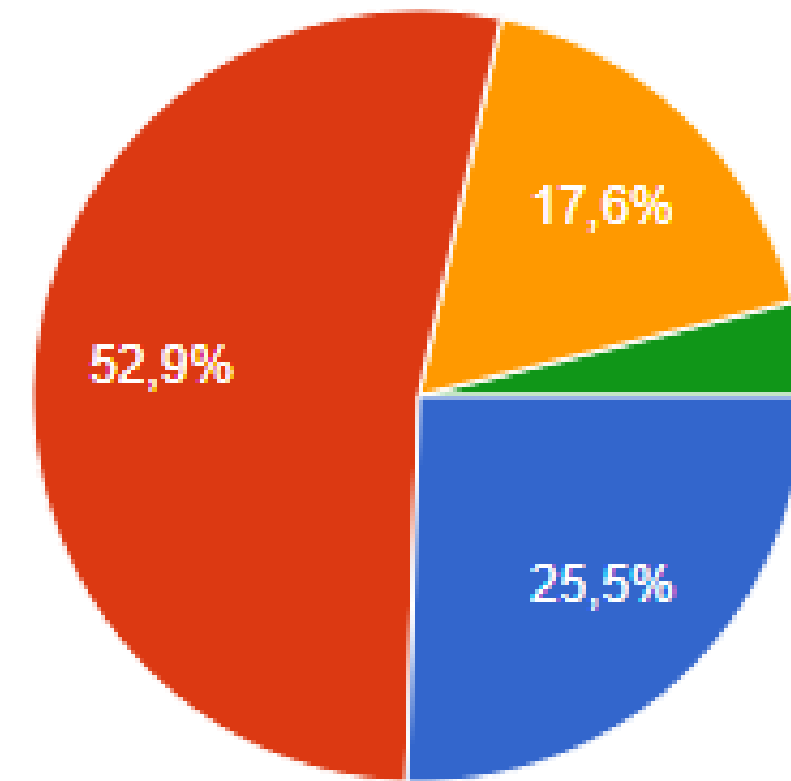
2 or less

3 - 4

5 - 6

7 - 8 or more

Never, I wash it by hand



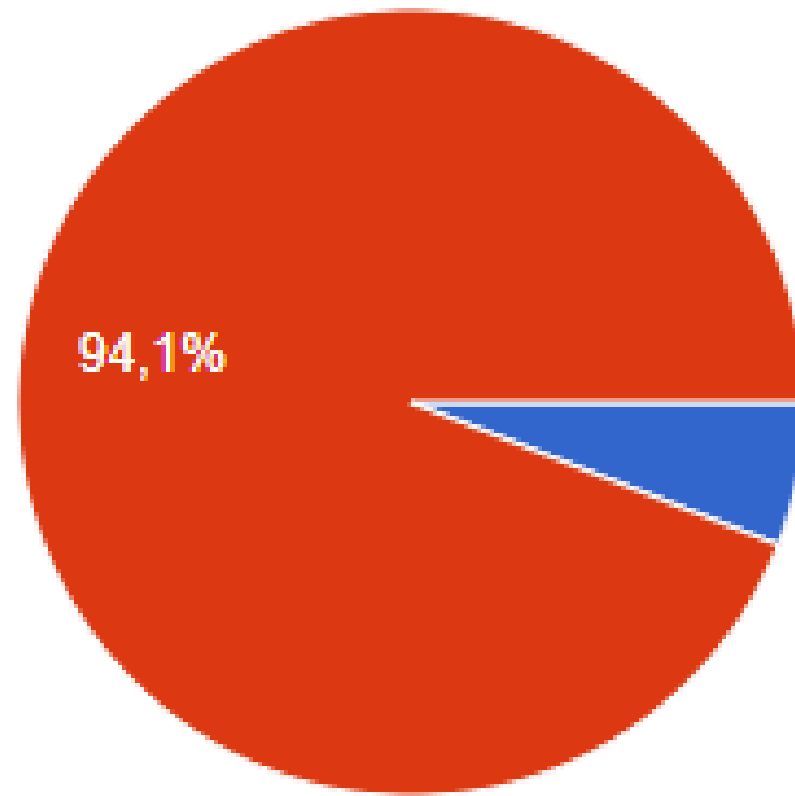
How often do you use the washing machine at home?

Once a day

Between 2 - 5

Between 6 - 8

9 or more



Do you leave the tap running while you brush your teeth?

Yes

No

Open question: do you do anything to save water?

- "I take the cold water from the shower to water the plants."
- "At home we have a dry toilet, without water, and we have a system for using gray water and also rainwater."
- "Always flush half a tank"
- "Not at the moment"

THANK YOU!

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