Candidate 7 evidence

Does rock sizes affect the rate of permeability?

aim: The aim of this experiment is to find out if different particle sizes of rocks affect the rate of permeability.

underlying environmental science:

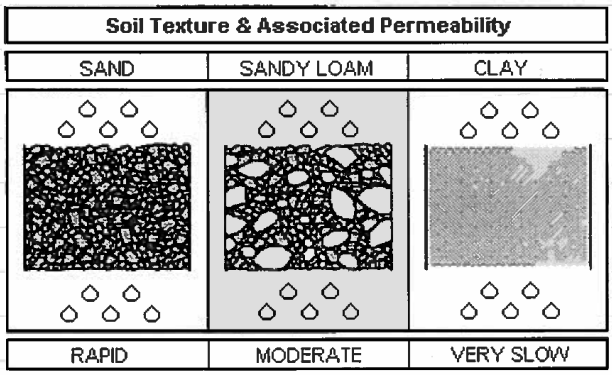
- Permeability is how long it would take for water to travel through rocks or gravel
- Porosity is how much space is between rocks for example if there is few spaces in the rocks. This will mean that not a lot of water will be able to get into that rock. And if there are loads of pore spaces in that rock, a lot more water will be allowed to get in
- Some ways flooding can happen is if a lot of people turn their front gardens into driveways. By doing this it will increase the chances of flooding happening since there is no where for the water to go. And it will just flow over it
- If you have a farm you might sometimes have to get rid of water on top of the farm due to the ground underneath not being permeable. If a farmer doesn't do this, this can cause the growth of the crops to drown since there is no oxygen getting to the roots

description of experiment: The way we did our experiment was that [redacted] I got 3 bottles filled with different sized gravel. I then pored 50ml of water into the top. [redacted] The second the water hit the gravel I started the stop watch and waited for it to reach the bottom at the test tube I Then recorded that data onto my table and repeated 5 times.

Table

	Time taken for 50ml of water to pass through gravel (secs)					
Particle size	Test 1	Test 2	Test 3	Test 4	Test 5	average
Small	18 2	16 66	16 33	16 20	15.26	17
Medium	5 40	5 33	5 65	6 02	5 86	6
large	3 42	3 53	3 26	3 26	3 43	3

internet source



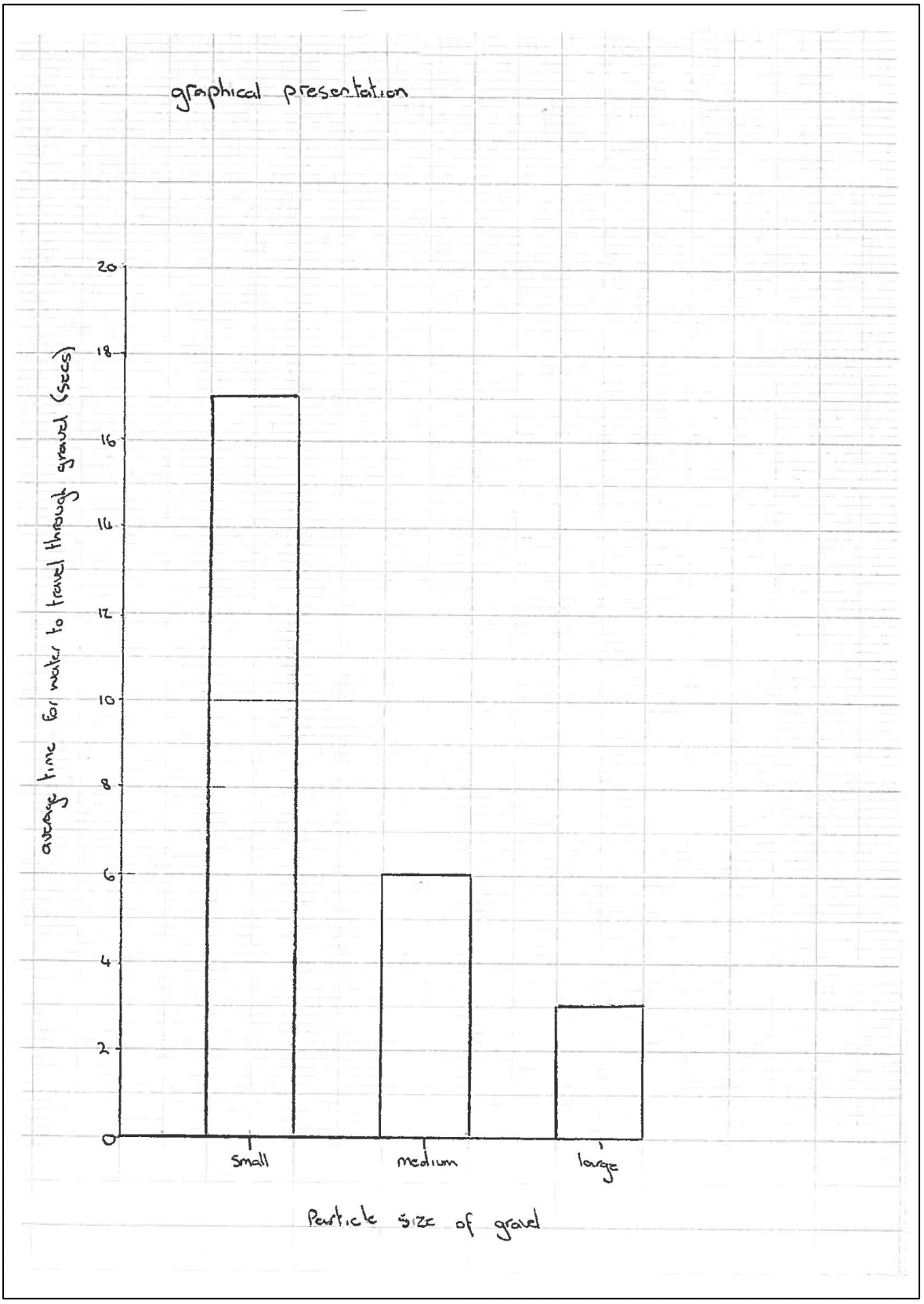
https://www.tes.com/lessons/zgbFURMtK2H5jA/soil-permeability-retention-and-porosity

analysis From my table and internet source I found that both compare to each other I know this because on my internet source picture you can see that the clay has very little spaces so this will be the same for the small gravel

Conclusion My conclusion for this experiment is that I found out that if the rock particle size is large it makes it easier for water to go through This experiment proves that if the particle size in rocks are different There will be a different outcome to each

Evaluation: What I could do to make my experiment more reliable is to repeat it more times. This way I could get more better data to improve my accuracy.

What made my experiment not work the first time round was that when I first put the water into the bottle I didn't make the holes big enough for any water to go through. So what I did was made the holes bigger. This made it easier for it to go through.


graphical presentation
average time for water to travel through gravel (secs)
20
18
16
14
12
10
8
6
4
2
0
small
medium
large
Particle size of gravel