



## **Experiment 2 Instructions: How much water can soil absorb?**



## **Materials:**

Get various soil samples such as plant soil, sand, clay or clayey soil and loam or loamy soil (6 tablespoons of each sample).

For each soil sample you need:

- 1 paper cup
- 1 tablespoon
- 50ml measuring cup for water
- 1 clear glass / clear cup \*

You will also need:

- 2 toothpicks or wooden skewer to perforate cups
- 1 piece of paper towel
- 1 pen for labeling paper cup
- 1 pair of scissors
- 1 measuring cup with 250 ml water
- 1 worksheet "How much water can soil absorb?"

<sup>\*</sup> The glass should be chosen so that you can hang the paper cup in it like shown in the picture on the left. There should be enough space between the bottom of the cup and the bottom of the glass to catch the water running through.





## **Experiment setup and execution:**

(Before you start, read this page and both pages of the worsheet!)

- Carefully poke nine holes into the bottoms of the paper cups with the wooden skewer as follows: make a circle of eight holes and a hole in the middle.
- 2. Place the paper cups on the paper towel and trace the edge of the bottom of the cup.
- Cut out the marked circles, place them in the paper cups and moisten them with
   1-3 drops of water. Make sure that the paper towel sticks tightly to the bottom of the paper cup and that all the holes are covered.
- Place the paper cups into the glasses. Fill each paper cup with 6 tablespoons of a soil sample. Make sure that you distribute the soil evenly in the cups.
- 5. Label your samples (e.g. loam or loamy soil, sand, ...).
- 6. Pour 50 ml of water into each of the paper cups at the same time and compare \*:
  - How quickly does the water start to drip from the samples?
  - How quickly does drop follow drop?
  - How quickly does it stop dripping from the samples?
- 7. Note your observations on the worksheet.















			1			
	Worksheet	How mu	h water can s	oils absorb?		
. Write which sample is which	type of soil or soil comp	ceent into the	boxes under the gla	on.		
lample 1:	Sample 2:		Sample 3:		Sample 4:	
Questions: Which sample drips first, secon Which sample drips factors, wh Which sample stapped dripping	sich siewest? fact g fint, which liet?	et .			rh place	slewest slowest lest
. How much water has flowed	dout of the samples? On	ow the water le	vels into the glasses	above.		
waterfield of			AH.			
		Кн	Perlx.or			
4. Sort the samples according	to their water resertion	capability. Also	4	to "worst". Set place	43 plant	
100		capability. Also	ays cort from "best"	to "worst". Sed place	43 place	-
Questions: How well does the sample retai	in water?	capability. Also	ays cort from "best"	to "worst". Sed place	43 place	
Questions:  How well does the sample reta  Through which sample old the  EVALUATION:	fin water? most water poss?	capability. Also	ays eart from "beet" piece Ind piece	Sed place		-
downlone:  How well does the sample rets  Through which sample clid the  EVALUATION:  5. What do you think: Which  From cactuses so water likes,	in water? mait water pass?  soil properties influence different plants require	capability. Also best most have quickly the	ays out from "boot" place 2nd place awater passes through conditions.	Sed place		-
Questions: How well does the sample retai	in water? mail water pass?  soil properties influence  different plants require is suited for plants that ner	capability. Also to the control of t	wys east from "Bees" and place and p	Sed place		-
downine: How well does the sample role Through which sample dot the EVALUATION: S. What do you think: Which From cactuses so water Illies, S. What of your sails is best s. Thich of your sails is best s.	in water? mail water pass?  soil properties influence  different plants require is suited for plants that ner	capability. Also to the control of t	wys east from "Bees" and place and p	Sed place		-
Journal Court of the sample relations with does the sample relationship to the court of the EVALUATION:  S. What do you think: Which with the court of the court	in water mean water pain?  soil properties influence different plants require is suited for plants that file suited for plants that like	capability. Also In the control of t	wyc sart from "beer"  Jed place  Jed place  a wider passes through the conditions.	3rd place		-
downloss: How well does the sample rela Through which sample did the EVALUATION: 5. What do you think: Which From cactuses 50 water Illes, 6. Which of your sails is best	in water mean water pain?  soil properties influence different plants require is suited for plants that file suited for plants that like	capability. Also In the control of t	wyc sart from "beer"  Jed place  Jed place  a wider passes through the conditions.	3rd place		-
Journal Court of the sample relations with does the sample relationship to the court of the EVALUATION:  S. What do you think: Which with the court of the court	in metal? metal water peac?  soil properties influence different plants require suited for plants that ne- suited for plants that the about the experiment?	capability. Also  Is  Is  Ised  In order  In o	ye san from "beet" by since by	Yel place  agh the sample?  religate about roll  on www.halffelia.	s?	Need Need
Ownerforce  Through which sample refer  Through which sample odd the  TPMALUATION:  S. What do yes think: Which  From cuctases to water like,  6. Whath of your solds in best it  7. Which of your solds in best  8. Oxyce have any certifion  From overt, poet pour ideas a	in metal? metal water peac?  soil properties influence different plants require suited for plants that ne- suited for plants that the about the experiment?	capability. Also  Is  Is  Ised  In order  In o	ye san from "beet" by since by	Yel place  agh the sample?  religate about roll  on www.halffelia.	s?	Need Need

<sup>\*</sup> Before adding water, see what you should note on the double-sided worksheet and how? NO times need to be measured! Observe the results in comparison to each other! Decide which group members will pour the water and wo will watch in which glass the water drips fist and last.