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Does Media Matter? Worksheet

1. **Vocabulary and Definitions**

Term	Definition	Sketch a model
permeability		
capillary action		
porosity		
percolation		
media		
storage capacity		
field capacity		

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2. **What do we call the movement of water <u>INTO</u> media layers?**
3. **How does the size of media affect the infiltration rate?**
4. **What media would best maximize below-ground storage?**
5. **What media would assure healthy plants and bacteria community?**
6. **Field Capacity and Observations Data** (complete as a class)

Media type in bucket	Media volume (l)	Storage capacity (ml)	Drained volume (ml)	Field capacity (l)	Observations
Bucket 1					
Bucket 2					
Bucket 3					
Bucket 4					

7. **Infiltration Rate of Selected Media** (complete as a class)

Media type in bucket	Fully saturate media	Water volume added (ml)	Time to drain (s)	Drained volume (ml)	Infiltration rate (ml/s)	Observations
Bucket 1						
Bucket 2						
Bucket 3						
Bucket 4						

8. ***Media Mix Challenge*: Create your own media mix combination based on previous test results and observations, so that it meets the design requirements. Make 2-3 liters of this mix and place in planter. Record the type of media, volumes or ratio of each material added. Test to determine the infiltration rate for your mix. Run each experiment (at three different water volumes) three times.**

   Design requirements: Create a media layer that promotes infiltration, maximizes below-ground water storage and provides an environment for healthy plants and microbial communities.

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Material 1	Material 2	Material 3	Material 4
Volume/ratio of Material 1	Volume/ratio of Material 2	Volume/ratio of Material 3	Volume/ratio of Material 4

EXP #1	Volume of water (ml)	Time (sec)	Infiltration rate (ml/sec)
Trial 1			
Trial 2			
Trial 3			
		Average:	

EXP #2	Volume of water (ml)	Time (sec)	Infiltration rate (ml/sec)
Trial 1			
Trial 2			
Trial 3			
		Average:	
EXP #3	Volume of water (ml)	Time (sec)	Infiltration rate (ml/sec)
Trial 1			
Trial 2			
Trial 3			
		Average:	

9. **Plot volume of water vs. time and calculate the slope of the line. (Slope of the line is the average infiltration rate.)**

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