

## Can a *MaxChill™* sports bottle really cool a drink to below ambient temperature without adding ice? – Technicians' Guide



Figure 1 Setup of *MaxChill™* sports bottle with *Vernier LabQuest* to investigate evaporative cooling

### Equipment required

Vernier *LabQuest* and associated power adaptor/charger  
Stainless steel temperature probe TMP-BTA  
*MaxChill™* sports bottle (First Choice Expedition Foods)  
fan  
shallow tray  
cylindrical spacer (see construction details)  
1 litre of water at ambient temperature in measuring jug

### Construction details

#### Equipment required

32mm Marley Wastepipe Ref WPP32WX (B&Q or other DIY)  
2X rubber bungs or corks size 29 to fit wastepipe ends



**Figure 2 MaxChill™ sports bottle shown with cylindrical spacer**

Make the cylindrical spacer from an 18.5cm length of 32mm Marley wastepipe and fit a bung or cork into each end. Drill a hole through the edge of the *MaxChill™* sports bottle cap to allow the temperature sensor to be inserted into the water surrounding the spacer.

### **Supplier**

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### **Key setup details**

Sensor: Stainless steel temperature probe in Channel 1  
Mode: Time based  
Rate: 1 sample/s  
Length: 2100s