WHICH SUGARS CAN BE USED FOR FERMENTATION?

Introduction
In the process of fermentation, the following reaction takes place.
sugar → carbon dioxide + ethanol
In this experiment, we are going to see which sugars work in fermentation by measuring how quickly carbon dioxide gas is given off.

Apparatus for each student or pair of students
Option 1
- Comboplate
- silicone tubing connection (2 cm length)
- syringe
- micropipette
- yeast and sugar solution

Procedure for option 1
1. Add 5 cm$^3$ of the yeast and sugar solution to one of the large wells.
2. Place the lid on the well.
3. Attach the micropipette to the syringe using the silicone tubing.
4. Draw a small bead of water into the micropipette. Remove the syringe and then set up the apparatus as shown. The apparatus used is shown below and your teacher will show you what to do.

Carrying out the experiment
1. When you have set up your apparatus, adjust the level of the water bubble using the syringe so that it is at zero (or at some predetermined point).
2. Start your stopwatch and, every minute, record the volume of gas produced in the large well.
3. Do your experiment three times, using glucose, fructose and maltose.
4. Record your results in a suitable results table.

Analysis of results and conclusions
1. Plot a graph of time [x-axis] against volume of CO2 produced [y-axis].
2. On the same graph draw the lines for all three sugars.
3. Research: find out about the structures of all three sugars and explain your results.