

Candles

Teacher notes

Aim

To collect experimental data on candles burning in different sized jam jars.

Objective

To carry out experiments that record volume of jar and time a candle flame lasts inside the jar.
 To submit the results of the experiment to ExperimentsAtSchool.
 To obtain a random sample from a database of submitted results.
 To determine the relationship between jar volume and time candle remains lit.

Introducing the experiment

Pupils are likely to know or quickly suggest that a candle burning in a bigger jar will last longer than a smaller jar. They can quite easily explain this in terms of air/oxygen.

But how true is it to say that "double the volume means double the time the candle lasts"?

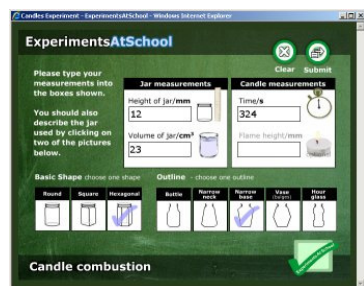
As the candle burns, the jar fills up with carbon dioxide (a gas which can extinguish flames). Could a candle go out before the oxygen is used up, because the shape of the jar directs carbon dioxide back onto the candle?

Fair testing

Ideally pupils should use tea light candles – these are usually 1½" across (38mm) and around ¾" (20mm) high – which can be easily purchased from a variety of outlets from supermarkets to bargain shops. Instructions are given as some do's and don'ts on the pupil sheet to ensure fair testing.

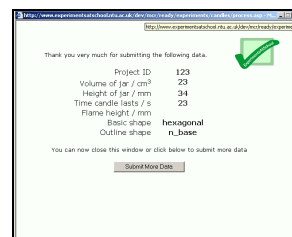
Recording their data

Schools that have (freely) registered with ExperimentsAtSchool, are given their own logon codes (LEA or region code and School specific code). These codes enable you submit and request your own school's data back – as well as obtain random samples from the whole database. To help access data for particular classes, teachers should give the class a **project code** eg Mrs Smith's Middle Yr 9 group at Nottingham High School could be "nhs_009".



Once the logon and project codes have been entered, pupils can quickly input their data by clicking on appropriate picture or entering numerical values.

The data entry screen has a submit button which, when pressed, shows a confirmation screen of the data successfully sent to our database. An option is available to send further data to us.



Obtaining data

A random sample of data from the Candles database can be obtained by using the Get Data link from our homepage.

If you want just the data for your school, please email the AtSchool team via the online form at www.experimentsatschool.org.uk - include the appropriate LEA/school codes and project codes.