Teaching –learning module compiled by the PARSEL consortium
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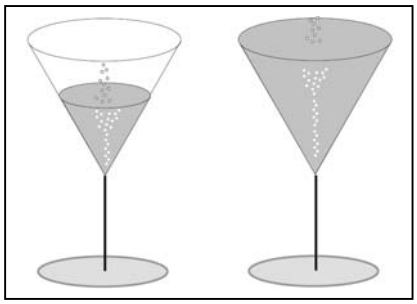
Popularity and Relevance of Science Education for scientific Literacy

How much Champaigne could you afford? Student materials

A grade 8-9 mathmatics module on
getting scientific information



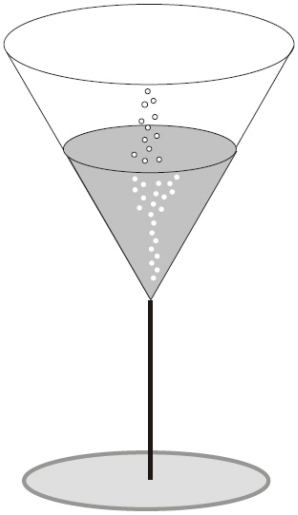
Abstract:

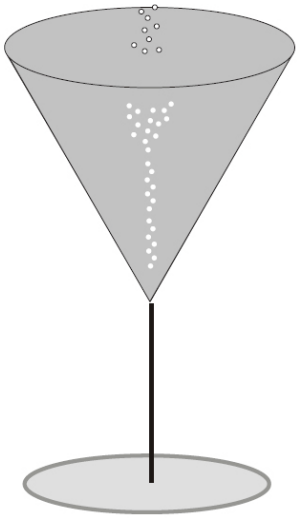
This task needs calculation on the capacity of a champaigne-glass to calculate the price and on the risk to go over the limit of the alcohol-content in the blood.
On first sight a glass which is half full should cost only the half of a full one. But if you calculate the capacity of a cone, the complete filled glass containes 8 times more.

It is possible to addto the task is a calculation, how much half full champaigne glases you can drink before you overgo the alcohol-limit of traffic drivers.

Advice: if you want to calculate while you are drinking, you should prefer cylindrical glasses.

Developer: **Martin Lindner (adapted fromSinus)**
Institution: IPN - Leibniz-Institute of Science Education
Country: Gemany





Task

A bottle of champaigne is sufficient to fill seven glasses. How many glasses can you fill, if you pour only up to half of the hight of the glass?

- Before starting to calculate: share your ideas and try to find a nice reason for your ideas.
- If a half full glas costs 1 Euro, how much should a fully filled glass cost?

Variations

- Make a hands-on activity in the classroom: distribute a bottle of champaigne (filled with water)
- How many half-full glasses are necessary to fill one glas completely?
- How high rises the level in a glass when you add one half full glas to another?
- Try to use other forms of drinking glasses

Calculation

Before starting to calculate, try to find out how the difference coud be calculated. If you find no answer, ask your teacher for help.

Additional Task:

How many glasses of champaign can you drink before driving?

Which amounts do you have to take into account when you want to determine the blood level of alcohol? A hint: the drunken alcohol is distributed to the whole body. As most of the body is water, you can take the weight of the person as the basis for calculation. Estimately 70 % of the alcohol is distributed to the body.

Compare your result with the levels which are given by law in different countries.

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