



## Problem Posing Pro-Forma: use of videos

### Assumption

A numerical or maths problem has multiple solutions or none, it is framed as an open-ended question. There is no clear path to the answer – students cannot easily use a formula. Within the problem students are often given too much information or not enough

### [How much water is in half litre of snow?](#)

1. Activity Name: How much water is in half litre of snow? Estimate the volume of the water.
2. Expected duration of activity: 10 min
3. What EQF level is the activity (approximately)? EQF 1
4. What is the topic? Estimation, volume, units, chemistry.
5. What are the Learning Outcomes? State of water, reading the scale in the measuring class and estimation.
6. Prerequisite/prior knowledge assumed? Units of volume
7. In what ways does the problem, or the way the problem is delivered to the students:
  - encourage critical way of investigating and thinking? Makes you think what happens to snow when it melts.
  - encourage analysis? After the solution, there could be a discussion why that happens.
  - allow students to be creative? This task could be delivered to higher level. If its winter and snow students could collect snow on their own and try what happens. The mean value of the volume of the water could also be calculated after melting it.
  - allow independent learning? Allows independent thinking.
  - allow for co-operative learning? Could also be done in a group.
  - allow students time to think?
  - have a relevant or interesting context? Building general knowledge about snow and water.

[Type here]

- allow for multiple ways of solving or investigating the challenge? Can be done with estimation and/or testing.
8. Resources or materials required? If students wants to test it, you need measuring glass and snow.
  9. What technology is required in the delivery of the problem? Nothing special
  10. What technology might potentially be required in the solving of the problem?
  11. Suggestions for delivery: This video is useful in studying mathematics and natural sciences.
  12. You might decide to start with posing the question How much water is in half a litre of snow? Or How much water do you think there is in half a litre of water? (maybe encouraging prediction) followed by video of snow melt
  13. You might lengthen the music clip so it fits to video without a break
  14. As an extension you could pose the question what happens when the water is frozen? What volume of ice can be made from half litre of snow?