

Planning for Task Type 4. Multi-domain investigations – The first step

The intention with multi-domain (interdisciplinary) investigations is that students explore learning in both mathematics and other domains, stimulated by a investigative context. It is assumed that there would be potential for a single report on such an investigation to be assessed from both a mathematical and at least one other disciplinary perspective. In this way, student mathematical understanding can be enhanced by the task.

The suggestion for the October Cluster meetings, based on our visitor from the Open University (UK) John Mason's suggestion, is that the teachers first explore students' orientation to asking questions and posing problems, and whether this can be stimulated. The assumption is that the first prerequisite to investigating practical situations is to have an orientation to formulating questions.

We are asking you to:

- choose one or more of the following prompts, and invite the students, perhaps after group discussion, to pose questions of interest to them (please record their questions);
- discuss with the students the mathematical focus of the questions the students ask (in part to check how difficult this is)
- plan how this class might conduct an investigation into their (mathematical) question;
- actually conduct one of these investigation;
- report on the questions that students pose, the mathematical focus you identify, the plans they develop, and any investigations that you actually undertake.

Reporting back will form part of our full-day meeting on December 3.

Some possible prompts

Mobile phone plan

There are different costs for the different types of services on a mobile phone plans.

Maximum allowances in lifts

Different lifts have different maximum allowances for number of persons and total kilograms.

Petrol prices

As Annabelle knows, the cost of fuel changes from time to time.

Electric light bulb

The Australian environment minister, Malcolm Turnbull, said in February 2007 that he would work with the states to get rid of incandescent bulbs by 2009 or 2010, and to replace them with energy-efficient compact fluorescent bulbs.

Different foods

Different foods contain different amounts of energy, and these are often shown on the packaging.

Clothes

Clothes are usually made by cutting out unusual shapes of material and stitching them together.

Student choice of clothes

Some young people have different taste in clothes from their parents.

Baby in the Car

Each summer, we read of babies suffering when left in cars on a hot day.

Mathematics Insert in the Telephone Book

Inserted in the White Pages for one Canadian city in British Columbia are two pages of "useful mathematical information" for the general public.

Other suggestions

The students can be invited to pose other situations about which questions could be posed.