



Random or not: Teacher notes

<http://topdrawer.aamt.edu.au/Statistics/Good-teaching/Data-collection/Sample-size-and-variation/Random-or-not>

Demonstration and discussion are essential otherwise students can navigate the object without engaging in the learning.

Later, students can explore other objects in the series or undertake open investigations.

Given that 'they come out of the machine in random order', ask students to predict a possible packet of 12 jubes.

- Will there always be 4 of each type?
- Could there be 10 penguins?

Choose students to control the object.

Note that as well as the maximum number of any type in each packet, it is not always the same animal, with approximately one third of each type amongst the total number of jubes in the 9 packets.

For the graphs drawn, discuss why the type was appropriate, highlighting details such as titles and labels.

Ask students for any information they can read from the graph.

Discuss how predictions changed with results from larger samples. Predictions based on 9 samples were not 'wrong' but appropriate for the data available. Larger samples are likely to be more representative of the entire distribution and predictions can be made with greater certainty.

Use the table of percentages provided to compare your results with the theoretical probabilities (e.g. 10 of any one type will only occur 3 times in 2000 packets).

The features of the concluding statement provide a model for students reporting their informal inferences based on experiment (e.g. not always the expected result [4 in 12], a range is given rather than an exact value [less than 10%]).

