Trend Task:

Black Jelly Beans

NEMP Access Task

Approach:	One to one	**Year:**	8
Focus:	Understanding randomness and probability		
Resources:	2 graphs		

Questions / instructions:

Matt likes black jelly beans the best. But he thinks that there are always fewer black ones than the other colours. He wants to write to the makers asking them to put more black ones in. Matt's teacher told him he should have some data or information to support what he is saying.

	% response 2009 ('05) year 8

1. What do you think Matt should do to get some data or information to go with his letter?

   Data on frequency of jelly beans in packets:

   use several packets of jelly beans to tally/graph proportion of black ones — 35 (35)

   use single packet of jelly beans to tally/graph proportion of black ones — 24 (31)

   Data on proportion of people who particularly like black jelly beans:

   presented good ideas for a survey — 13 (10)

   mentioned issue without elaboration — 11 (10)

Show student graph 1.

Graph 1: Number of Jelly Beans in Matt's packet.
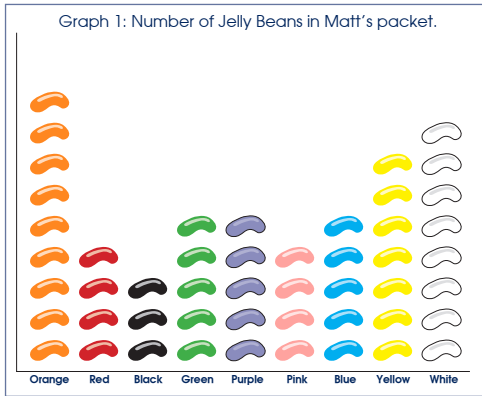
This graph shows the jelly beans in one packet.

2. Do you think that this would be enough information to convince the makers that there should be more black jelly beans in each packet? ✓ no — 48 (54)

   yes — 48 (39)
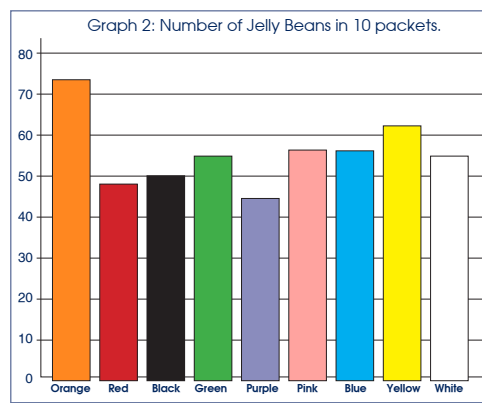
	% response 2009 ('05) year 8

3. Why do you think that?

   Support for "yes":

   black lowest on graph — 36 (32)

   Support for "no":

   only one fewer black than red or pink — 10 (9)

   should sample more than one packet to judge proportion of black — 27 (34)

   graph does not give information about people's preference for different colours — 7 (10)

Show student graph 2.

Graph 2: Number of Jelly Beans in 10 packets.

This graph shows the jelly beans in ten packets.

4. Do you think that Matt should write to the jelly bean makers? ✓ no — 71 (68)

   yes — 24 (23)

5. Why do you say that?

   Support for "no":

   black is not lowest on graph — 61 (59)

   Support for "yes":

   black is not high/highest on graph — 7 (4)

   lots of people have black as their favourite — 2 (2)

   Total Score: 6–7 — 15 (10)

   4–5 — 28 (34)

   2–3 — 37 (43)

   0–1 — 20 (13)

Subgroup Analyses:

Year 8

Score Range	Boys	Girls	Pakeha	Māori	Pasifika
6–7	14 %	15 %	18 %	9 %	4 %
4–5	27 %	30 %	32 %	22 %	8 %
2–3	39 %	35 %	37 %	33 %	48 %
0–1	20 %	20 %	13 %	36 %	40 %
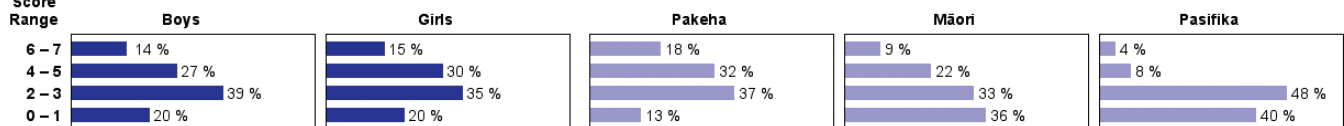
Commentary:

This task involved interpreting data, taking into account randomness and probability. Performance was not strong, with 57% scoring fewer than half marks. Pasifika students scored markedly lower than Pakeha and Māori students.