

THE CHICKEN DILEMMA

Callum wanted to buy and raise day old chicks to use in his free range egg farm. He had various types of chicken feed left over from previous flocks of chickens he had raised and only wanted to use the feed that would be most suitable for his day old chicks, to ensure they developed early and put on weight quickly.

To help him with this dilemma, the class decided to purchase 18 day old, female, brown shaver chicks (laying chickens) and use the following commercial chicken foods Callum had at home to see if they could help him make a decision about what food would be best for him to use with his new batch of chicks.

The commercial feeds used were:

- Weston's Chick Choice *Trial 1*
- Reliance Starter Chick Mash *Trial 2*
- MainFeeds Barnyard Layer Pellets *Trial 3*

The Weston's Chick Choice and Reliance Starter Chick mash claim to provide the best start for baby chicks, however MainFeeds Barnyard Layer Pellets are 'the complete food for laying hens'.

The following equipment was also available:

- Purpose built wooden chick box
- Brinsea heating pads
- Chick feeders
- 1 litre capacity water drinkers
- Electronic balance
- Newspaper
- Chicken wire

YOUR TASK

Design and carry out a comprehensive practical investigation that will provide evidence to help Callum identify the best commercial feed choice for his day old chicks.

COLLECTING AND PROCESSING

Record and process your data so that a trend is able to be seen.

This could be in the form of a table and/or graph. (Remember to keep any raw data collected)

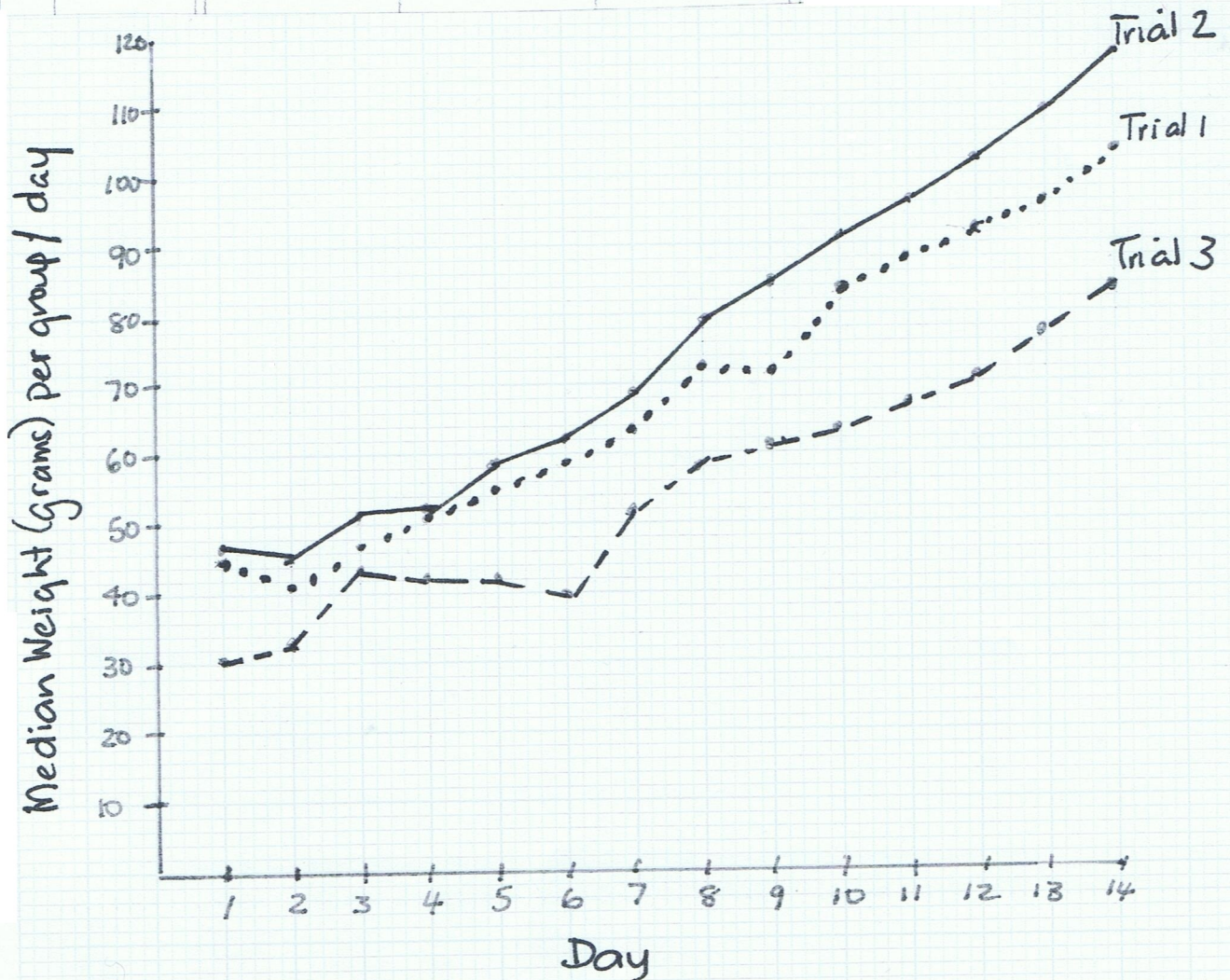
Average (Median) Weight per group/day

Day	Trial 1	Trial 2	Trial 3
1	45.83	46	30.66
2	41.83	45.33	33.56
3	47.8	51.2	44
4	51.6	51.83	42.5
5	55.5	59	42.33
6	59.17	62.66	40.5
7	64.5	69.16	52
8	73.3	79	58.16
9	72.16	84.6	61.6
10	84.5	91.66	64.66
11	88.16	96	67.16
12	92.33	102.33	71.83
13	96.5	109.16	78
14	103.83	117.33	84.16

How much 3 did they gain?

Trial 1	$103.83 - 45.83$ = 58g
Trial 2	$117.33 - 46$ = 71.33g
Trial 3	$84.16 - 30.66$ = 53.56

(Week 14 - Week 1 weights)



INTERPRETING AND REPORTING

Help Callum identify the best commercial feed choice for his day old chicks ①

Write a valid conclusion about your investigation that:

- Is based on your interpretation of your processed results
- Links to the purpose of your investigation

Callum should use 'Reliance Starter Mash' from Trial 2 because the chicks in Trial 2 gp gained the most weight. ② The weight gain for this group over 14 days was 71g compared to Trial 1 gp (58g) and Trial 3 (about 54g). ③

From the graph that shows the average weight gain over 14 days for each trial gp you can see that it is the Trial 2 gp that gained weight steadily from day 2 onwards. ④

The other trial groups didn't gain weight as steadily. Trial 3 group lost weight from day 3 to day 6. We increased the amount of feed from 100g to 150g from day 6 for all groups.