



Investigation 5 iFlakes

A primary school parent group is planning to set up a breakfast club. They are looking for three nutritious cereals to serve.

Survey your class to find the cereals that students your age like to eat.

Investigate the nutritional value of at least seven cereals (including iFlakes) by examining the percentages of protein, fat, carbohydrate, sugar and fibre they contain.

Based on your findings, recommend three cereals that should be served at the breakfast club. Should iFlakes be included?



☒ Topics

Before you start the Investigation you need to know...

- ☐ **NA16** Place value to thousandths p62
- ☐ **NA22** Percentages..... p74
- ☐ **NA23** Percentages using a calculator..... p76
- ☐ **SP2** Interpreting datap122

- ☐ **SP3** Dot plots..... p124
- ☐ **SP4** Discrete data p126
- ☐ **SP5** Column graphs p128

Understanding the Investigation

I Read and plan.

Make sure you understand the meanings of: *breakfast club*, *nutritious*, *nutritional value*, *protein*, *fat*, *carbohydrate*, *sugar*, *fibre*, *recommendation*, *ingredient*, *interpret* and *analyse*.

Read and discuss the rubric.

Download your Investigation plan. This will help you with the organisation and understanding of the Investigation.

Teacher note

- Comprehensive lesson notes, suggestions and resources are available in *iMaths 5 Teacher Book*.
- The Data page and Investigation plan for this Investigation can be downloaded from www.imathsteachers.com.au.

Materials



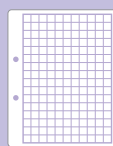
Internet access



Data page 1



Calculator



Graph paper



6 different cereal boxes per group

Using maths

2 Collect data and cereal boxes.

Survey the students in your class to collect data on their favourite breakfast cereals. Show the results of your survey on a dot plot.

In groups, select six different cereals to investigate and collect the boxes.

3 Study the nutritional information.

Look at the nutritional information on **Data page 1** *iFlakes nutritional values* (p163).

Locate the same nutritional information on each of the cereal boxes you collected. Look at the amounts per 100 g of each ingredient. How does this relate to percentages?

4 Record your information.

Construct a table to record information for each of the seven cereals, including iFlakes. Record the percentage per 100 g of protein, fat, carbohydrate, sugar and fibre for each cereal.

5 Graph your data.

Use the data from your table to construct five different column graphs. One column graph will show the percentages of protein for each cereal. The other four column graphs will show percentages of fat, carbohydrate, sugar and fibre.

6 Interpret your data.

Analyse the data and decide which cereal has the highest nutritional value.

Choose the best three cereals to be served at the breakfast club.

Reasoning and reporting

7 Display your tables and graphs.

Show the class your tables and graphs.

Justify your choice of cereals. You must be able to explain the reasons for your recommendation.

imathskids.com.au



Go to **imathskids.com.au** – the Investigation 5 area contains the Investigation plan, websites and Data page that you need to complete this Investigation.

Nutritional information (amounts per 100 g)					
Cereal	Protein	Fat	Carbohydrate	Sugar	Fibre

Inquiry

Look more closely at the information on one of your cereal boxes.

What other types of nutritional information are included?

Some ingredients occur in very small amounts.

Find out what each of these different symbols mean: mg, µg and kJ.



NA16 Place value to thousandths



The **place value** names of our decimal place value system have a symmetrical pattern. Look at the spelling of the names on either side of the ones place in the table below.

Can you see a pattern in the place value names?

M	HT	tT	T	H	t	O.	t ^{ths}	H ^{ths}	T ^{ths}
millions	hundred thousands	ten thousands	thousands	hundreds	tens	ones	tenths	hundredths	thousandths

To read the number 45.392

say forty-five and three hundred and ninety-two thousandths

or forty-five point three nine two

or forty-five decimal three nine two

never ~~forty-five point three hundred and ninety-two~~

Try this

1 81.675

a say

b or

c or

2 The place value of the **3** in 17.253 is thousandths (T^{ths}). Name the place value of the **bold** digit in these numbers.

a 29.574

b 8.027

c 64.143

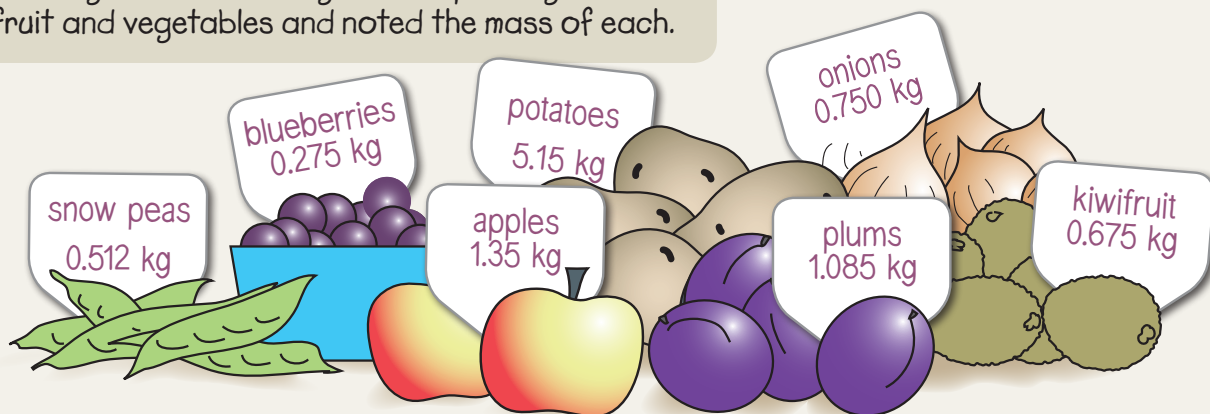
d 37.84

e 150.193

f 62.552

g 807.13

Sam went to the green grocer to buy some fruit and vegetables. He bought seven packages of fruit and vegetables and noted the mass of each.



3 What is the place value of the 5 in the mass of:

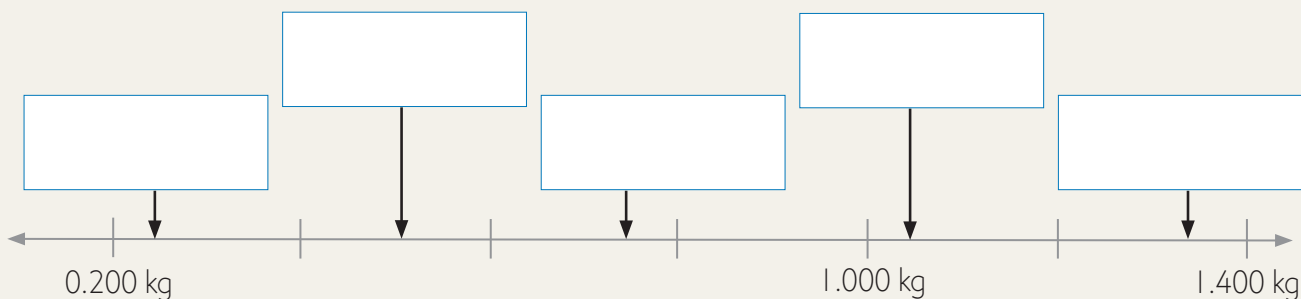
onions?

blueberries?

potatoes?

snow peas?

4 Write the fruit or vegetable and its mass in the correct box to show where its mass fits on the number line.



5 Which fruit or vegetable package is closest to 1 kilogram?

6 Which fruit or vegetable package is closest to half a kilogram?

7 Place the packages in order from greatest mass to least mass.

a

b

c

d

e

f

g



Challenge

Count in thousandths: Counting in hundredths, here are the numbers from 3.7 to 3.8 –

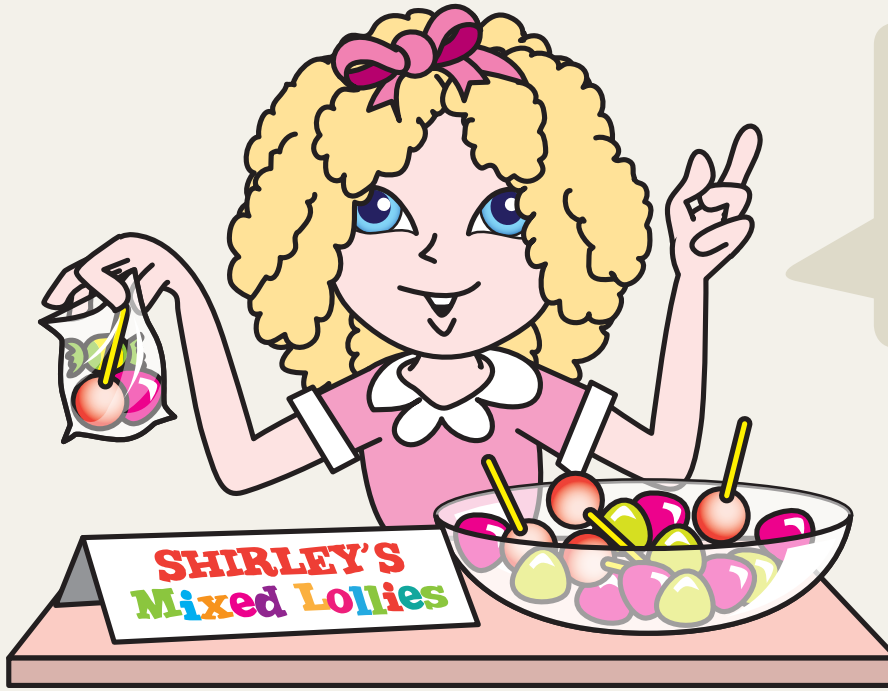
3.70 3.71 3.72 3.73 3.74 3.75 3.76 3.77 3.78 3.79 3.80

Counting in thousandths, write the numbers from 3.71 to 3.72.



Problem solving strategies

8 Make an organised list



The **make an organised list** strategy involves writing a careful list of every possible answer. You may need to work through the information slowly to make sure you don't miss any possible answers.

Share this problem

Shirley's Lolly Temple makes mixed bags of lollies containing any three of your favourites. Show the different mixes that can be made from this selection of five.

- 1 lollipops 2 bubblegum 3 sour 4 teeth 5 red raspberries

Discuss the solution

Pair lolly 1 with lolly 2, then add 3, 4 and 5 in turn.

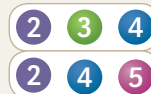
Pair lolly 1 with lolly 3, then add 4, and 5 in turn.

Pair lolly 1 with lolly 4, then add 5.

Pair lolly 2 with lolly 3, then add 4 and 5 in turn.

Pair lolly 2 with lolly 4, then add 5.

Pair lolly 3 with lolly 4, then add 5.



Shirley's Lolly Temple has the 10 mixed bags of three lollies listed above.

YOUR TURN

Emilio's Exotic Spice Bar sells delicious 3-spice mixes from this selection of five spices –

Anise **B**asil **C**innamon **D**ill **E**lder.

Show all the possible 3-spice mixes.

Use the **make an organised list** strategy to solve this problem.



1	Guess and check	6	Check for relevant or irrelevant information
2	Make a table or chart	7	Find smaller parts of a large problem
3	Draw a picture or diagram	8	Make an organised list
4	Act out the problem	9	Solve a simpler problem
5	Find a pattern or use a rule	10	Work backwards



Mental computation strategies

+ Addition strategies

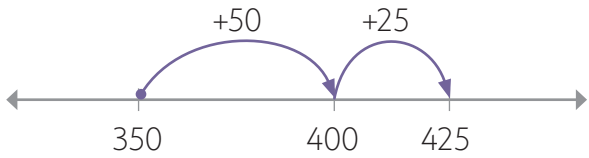
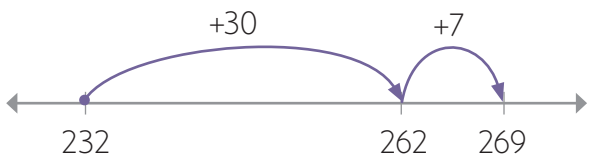
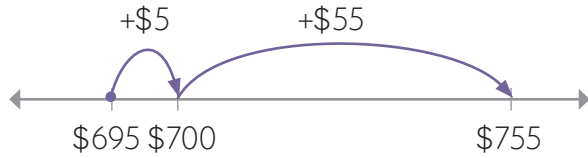
- A Friendly chunks
- B Friendly balance
- C Friendly and fix
- D Friendly pairs
- E Place value

A Friendly chunks

Question

Strategy: Count on in friendly chunks.

Answer



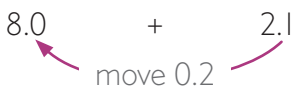
1 $350 + 75$		425
2 $232 + 37$		269
3 $\$695 + \60		\$755

B Friendly balance

Question

Strategy: Move amounts from one number to another to make easy additions.

Answer

1 $83 + 77$		160
2 $\$54 + \67		\$121
3 $7.8 + 2.3$		10.1



C Friendly and fix

Question	Strategy: Make numbers friendly then fix the change.	Answer
1 $76 + 19$	$76 + 20 = 96$, $- 1$ (friendly) (fix)	95
2 $330 + 95$	$330 + 100 = 430$, $- 5$ (friendly) (fix)	425
3 $437 + 398$	$437 + 400 = 837$, $- 2$ (friendly) (fix)	835

D Friendly pairs

Question	Strategy: Find compatible pairs of numbers that are easy to add.	Answer
1 $19 + 7 + 3 + 1$	$19 + 7 + 3 + 1$ 20 10	30
2 $58 + 45 + 5 + 2$	$58 + 45 + 5 + 2$ 60 50	110
3 $0.5 + 0.6 + 0.5 + 0.4$	$0.5 + 0.6 + 0.5 + 0.4$ 1.0 1.0	2

E Place value

Question	Strategy: Add each place in turn.	Answer
1 $252 + 141$	$(200 + 100) + (50 + 40) + (2 + 1)$	393
2 $5.6 + 3.2$	$(5 + 3) + (0.6 + 0.2)$	8.8
3 $10.7 + 50.1$	$(10 + 50) + (0.7 + 0.1)$	60.8