The National Strategies
Secondary

Assessing pupils' progress in mathematics at Key Stage 3

Year 7 assessment package
Handling data

Examples of pupils' work

department for
children, schools and families

QCA Qualifications and Curriculum Authority

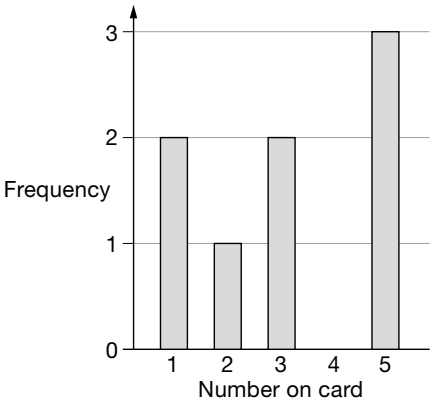
Year 7

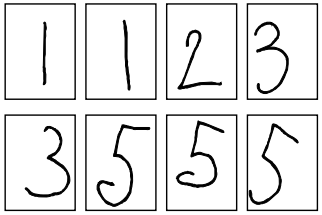
Handling data

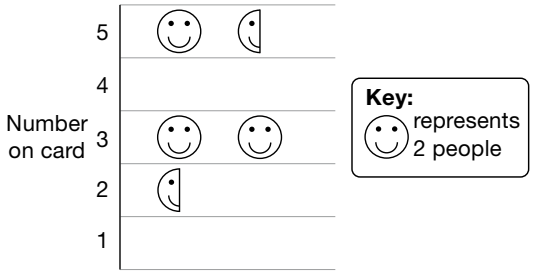
LESSON 1: *Controversial*

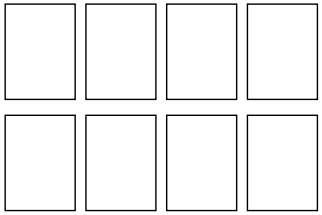
Data find sheet 1
Level 3

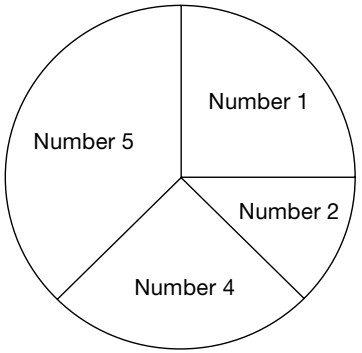
Each chart represents a data set of **8 people**.
For each chart, work out what numbers the 8 people had on their cards.

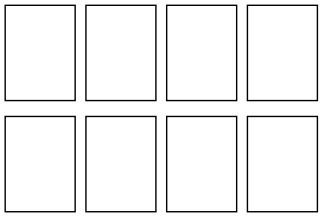












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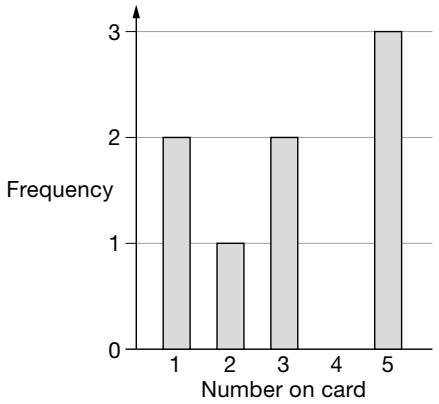
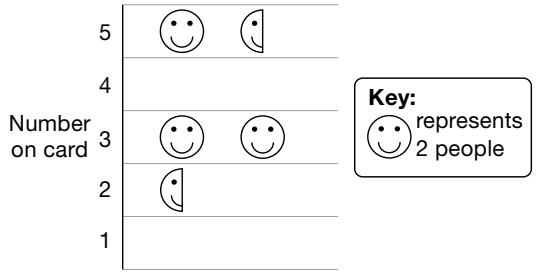
Data find sheet 1
Level 3

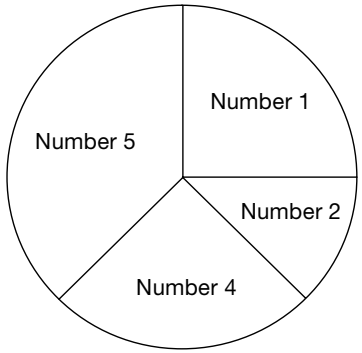
Each chart represents a data set of **8 people**.
For each chart, work out what numbers the 8 people had on their cards.



1	2	3	5
2	1	2	3

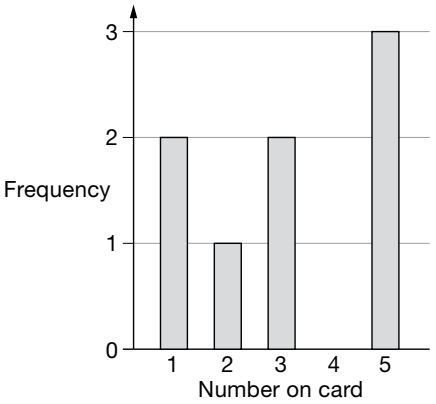


2	3	5	
1	4	3	

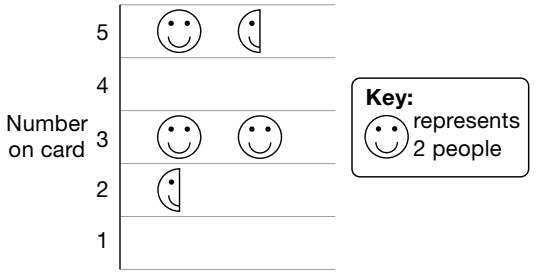


1	2	4	5
1/4	1/3	1/4	1/8

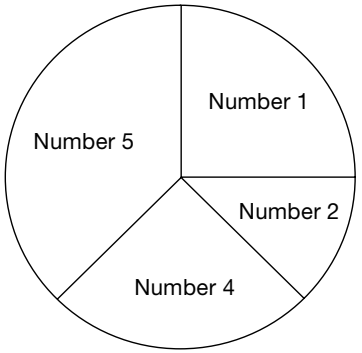
Each chart represents a data set of **8 people**.
For each chart, work out what numbers the 8 people had on their cards.



1	1	2	3
3	5	5	5



5	5	5	3
3	3	3	1



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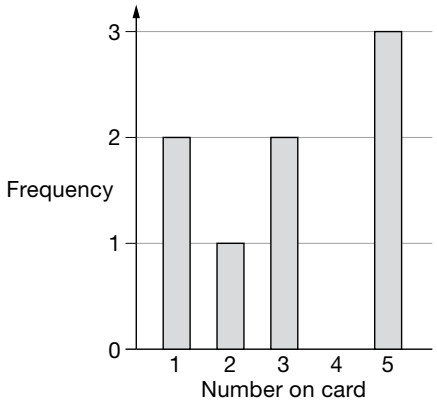
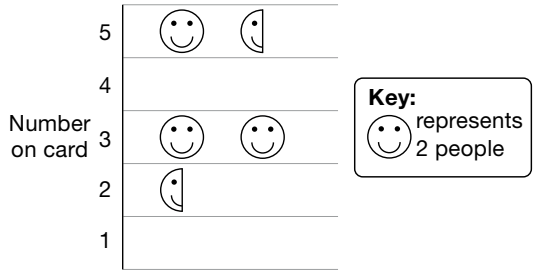
Data find sheet 1
Level 4

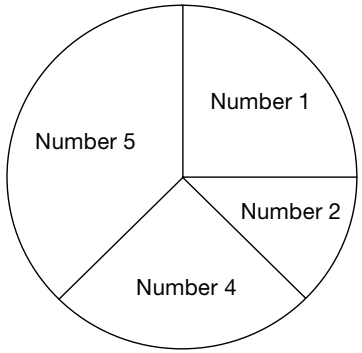
Each chart represents a data set of **8 people**.
For each chart, work out what numbers the 8 people had on their cards.



1	1	2	3
3	5	5	5

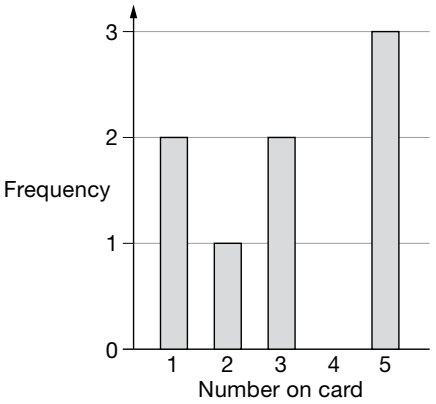


5	5	5	3
3	3	3	2

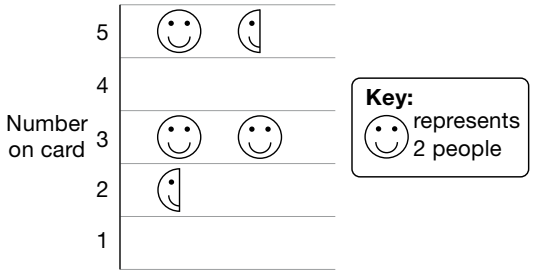


1	1		

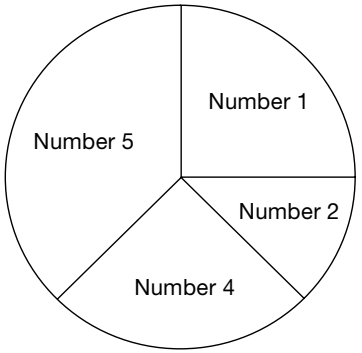
Each chart represents a data set of **8 people**.
For each chart, work out what numbers the 8 people had on their cards.



5	5	5	1
3	3	1	2



5	5	5	3
3	2	3	3



1	2	4	5
2	1	2	3

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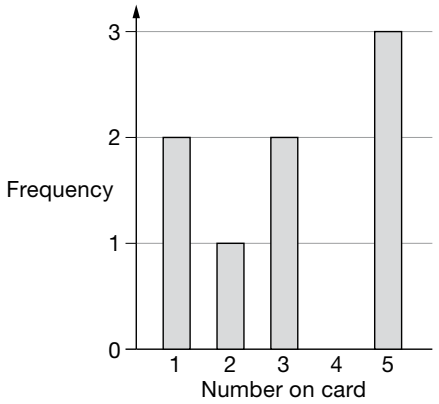
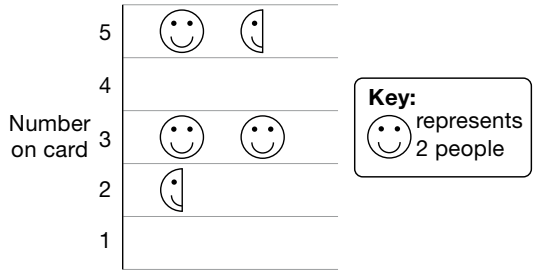
Data find sheet 1
Level 5

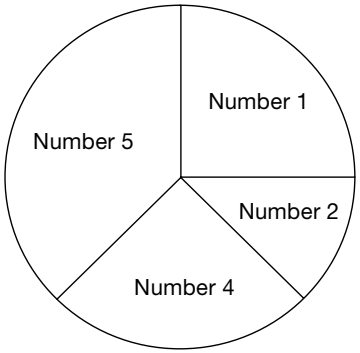
Each chart represents a data set of **8 people**.
For each chart, work out what numbers the 8 people had on their cards.



5	5	5	1
1	2	3	3

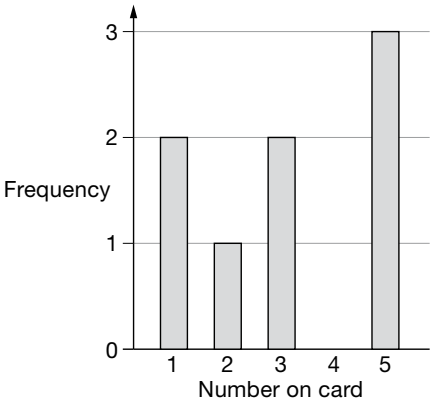


5	5	5	3
3	3	3	1

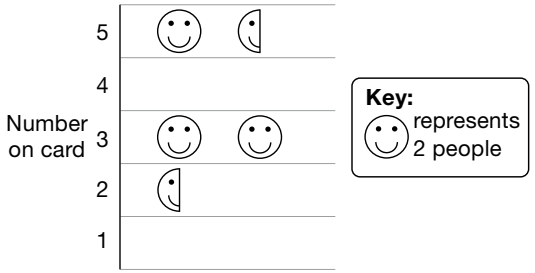


1	1	4	4
5	5	5	2

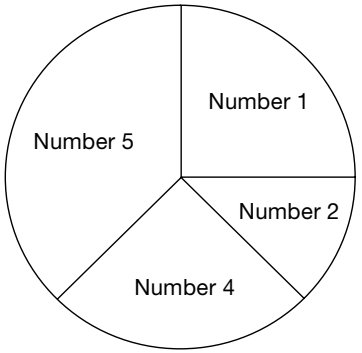
Each chart represents a data set of **8 people**.
For each chart, work out what numbers the 8 people had on their cards.



5	5	5	3
3	2	1	1



5	5	5	3
3	3	3	2



1	1	2	4
4	5	5	5

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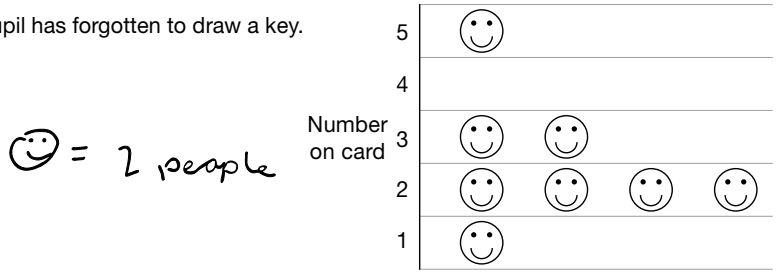
Data find sheet 2
Level 3

A pupil draws this pictogram.

The pupil has forgotten to draw a key.



(a) Could the pictogram represent a data set of **16 people**?
Explain your answer.
Yes because

2
2
2
2
2
2
2
16

(b) Could the pictogram represent a data set of **24 people**?
Explain your answer. No.

(c) Could the pictogram represent a data set of **20 people**?
Explain your answer. No

(d) A different pupil wants to draw a pictogram for these results.

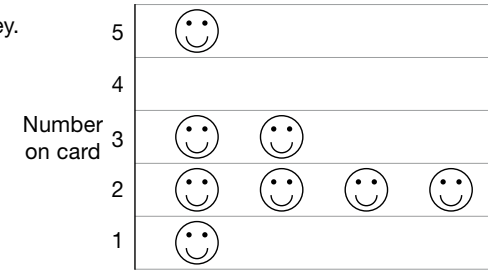
Number on card	1	2	3	4	5
Frequency	3	0	6	9	3

Fill in the box to show what key you think the pupil should use.

Key:
represents [2] people

A pupil draws this pictogram.

The pupil has forgotten to draw a key.



(a) Could the pictogram represent a data set of **16 people**? Yes
Explain your answer.
There's 8 smileys so you can just double it to 16

(b) Could the pictogram represent a data set of **24 people**? Yes
Explain your answer.
You times 8 by three and it = 24

(c) Could the pictogram represent a data set of **20 people**?
Explain your answer.

(d) A different pupil wants to draw a pictogram for these results.

Number on card	1	2	3	4	5
Frequency	3	0	6	9	3

Fill in the box to show what key you think the pupil should use.

Key:
represents [ ] people

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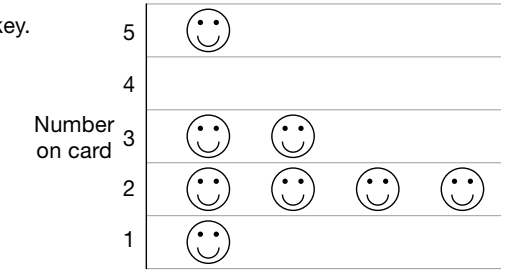
Data find sheet 2

Level 4

A pupil draws this pictogram.

The pupil has forgotten to draw a key.



(a) Could the pictogram represent a data set of **16 people**?
Explain your answer.

Yes. The key could be ☺ = 2

(b) Could the pictogram represent a data set of **24 people**?
Explain your answer.

The key could be ☺ = 3

(c) Could the pictogram represent a data set of **20 people**?
Explain your answer.

No. It can't be 2.5 people

(d) A different pupil wants to draw a pictogram for these results.

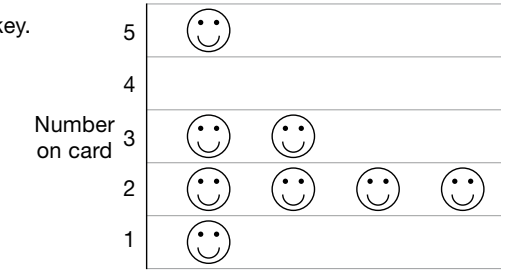
Number on card	1	2	3	4	5
Frequency	3	0	6	9	3

Fill in the box to show what key you think the pupil should use.

Key:
☺ represents [1] people

A pupil draws this pictogram.

The pupil has forgotten to draw a key.



(a) Could the pictogram represent a data set of **16 people**?
Explain your answer.

Yes because you can just double the ~~answers~~ number 2×8 = 16

(b) Could the pictogram represent a data set of **24 people**?
Explain your answer.

Yes, Just ~~3~~ times the number by 3

(c) Could the pictogram represent a data set of **20 people**?
Explain your answer.

Yes now its times 2½

(d) A different pupil wants to draw a pictogram for these results.

Number on card	1	2	3	4	5
Frequency	(3)	0	(6)	(9)	(3)

Fill in the box to show what key you think the pupil should use.

Key:
☺ represents [3] people

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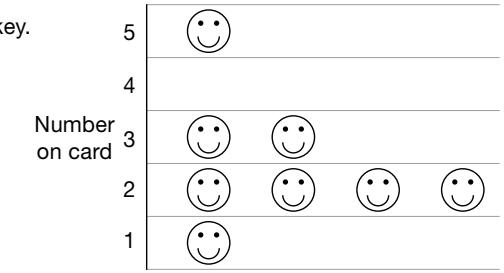
Data find sheet 2
Level 4

A pupil draws this pictogram.

The pupil has forgotten to draw a key.



(a) Could the pictogram represent a data set of **16 people**?
Explain your answer.

yes, you can have two 5s, four 3s, eight 2s, two 1s

(b) Could the pictogram represent a data set of **24 people**?
Explain your answer.

yes. three 5s, six 3s, twelve 2s and three 1s

(c) Could the pictogram represent a data set of **20 people**?
Explain your answer.

No, you would have half a card and thats impossible.

(d) A different pupil wants to draw a pictogram for these results.

Number on card	1	2	3	4	5
Frequency	3	0	6	9	3

Fill in the box to show what key you think the pupil should use.

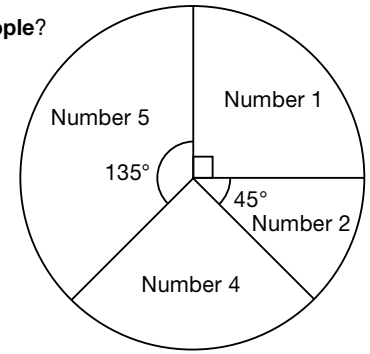
Key:
☺ represents 3 people

Data find sheet 3
Level 4

Here is the pie chart from sheet 1.
On sheet 1, the pie chart represented a data set of **8 people**.

Could the pie chart also represent a data set of **16 people**?
Explain your answer.

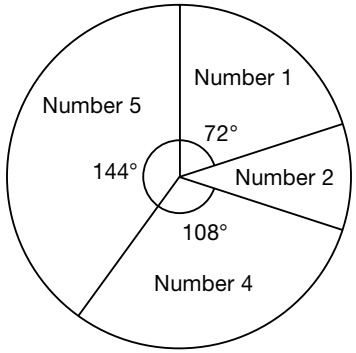
Yes because 16 is double of 8.



Could the pie chart represent a data set of **10 people**?
Explain your answer.

NO because it can not go.

Here is a different pie chart.
Could this pie chart represent a data set of **8 people**?
Explain your answer.



Could the pie chart represent a data set of **10 people**?
Explain your answer.

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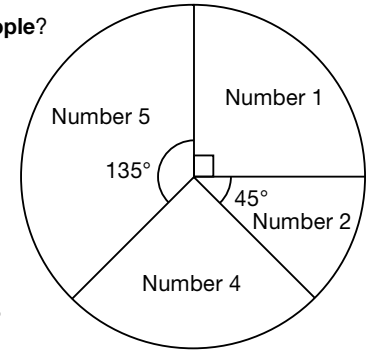
Data find sheet 3
Level 5

Here is the pie chart from sheet 1.
On sheet 1, the pie chart represented a data set of **8 people**.

Could the pie chart also represent a data set of **16 people**?
Explain your answer.

yes 16 is double of 8.



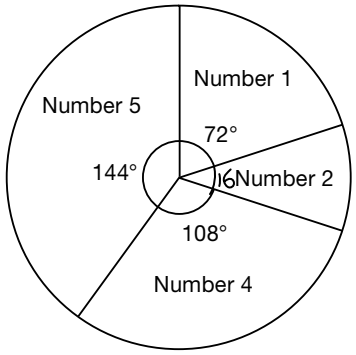
Could the pie chart represent a data set of **10 people**?
Explain your answer.

yes/No because 1/4 of 10 = 2.5

2.5
1.25
3.75
10.00

Here is a different pie chart.
Could this pie chart represent a data set of **8 people**?
Explain your answer.

Yes because ~~it~~ 8 goes into 360



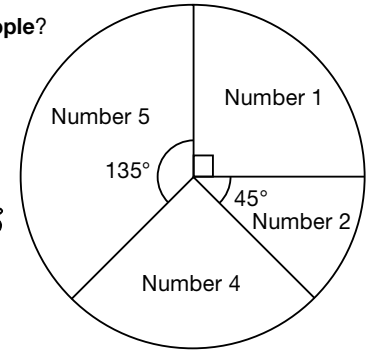
Could the pie chart represent a data set of **10 people**?
Explain your answer.

144 / 72 / 108 / 324 / 324 / 36

Here is the pie chart from sheet 1.
On sheet 1, the pie chart represented a data set of **8 people**.

Could the pie chart also represent a data set of **16 people**?
Explain your answer.

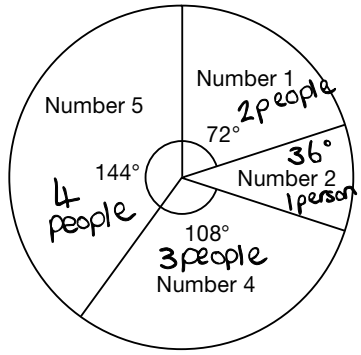
Yes because if it works for 8 it will work for 16 coz it is a multiple of 8



Could the pie chart represent a data set of **10 people**?
Explain your answer.

NO, because 10people cant fit into the chart because it isnt a multiple of 8.

Here is a different pie chart.
Could this pie chart represent a data set of **8 people**?
Explain your answer.



Could the pie chart represent a data set of **10 people**?
Explain your answer.

Yes, it could represent a data set of 10 people because, if you add it all up in the pie chart it does work out that 10 people work.

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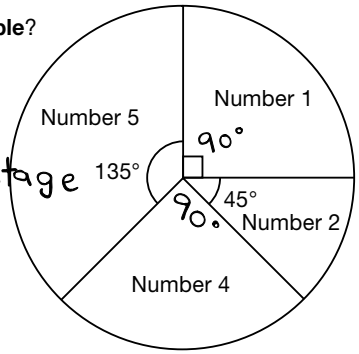
Data find sheet 3

Above level 5

Here is the pie chart from sheet 1.
On sheet 1, the pie chart represented a data set of **8 people**.

Could the pie chart also represent a data set of **16 people**?
Explain your answer.

Yes you can because all you have to do is double the number of people in each number and the percentage wont be different

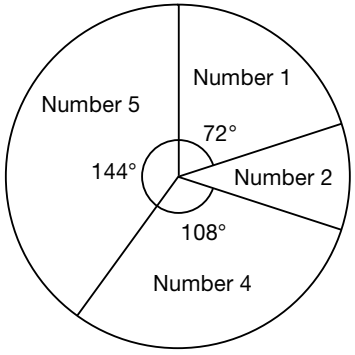


Could the pie chart represent a data set of **10 people**?
Explain your answer.

No you can not because it you look on number 1 you see it is a quarter and a quarter of 10 is not a whole number

Here is a different pie chart.
Could this pie chart represent a data set of **8 people**?
Explain your answer.

No because Number 2 is $\frac{1}{10}$ 8÷10= Not whole number



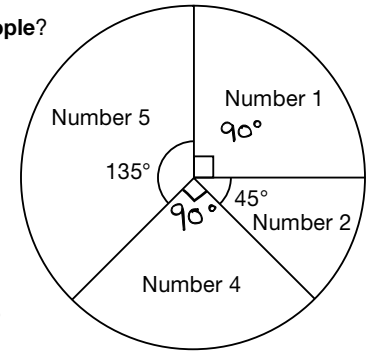
Could the pie chart represent a data set of **10 people**?
Explain your answer.

Yes because its $\frac{1}{10}$ for 2
$\frac{2}{10}$ for 1
$\frac{3}{10}$ for 4
$\frac{4}{10}$ for 5

Here is the pie chart from sheet 1.
On sheet 1, the pie chart represented a data set of **8 people**.

Could the pie chart also represent a data set of **16 people**?
Explain your answer.

Yes as 16 is a multiple of 8.
The numbers would just double up.

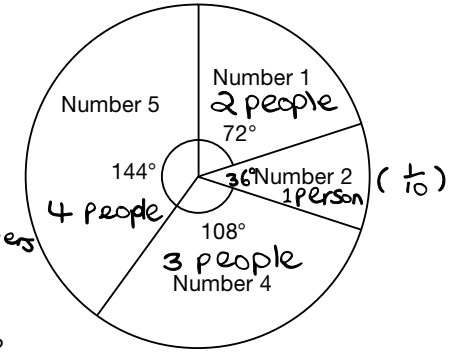


Could the pie chart represent a data set of **10 people**?
Explain your answer.

No as it is not a multiple of 8.
There would be people not counted
Proportionaly 10 would not work
as it is not a multiple of 8

Here is a different pie chart.
Could this pie chart represent a data set of **8 people**?
Explain your answer.

It can not represent 8 as all the number divide by 360 times 8 = not whole numbers



Could the pie chart represent a data set of **10 people**?
Explain your answer.

It can represent 10 as when you divide the angles by 360° and times it by 10 it gives you whole numbers of people. The total came up to 10.

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Year 7

Handling data

LESSON 2: *Feeling confident*

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How confident are we?
Level 3

Use the data that you have just collected to complete this frequency table:

Number on the card	Frequency
0	1
1	2
2	1
3	3
4	4
5	0
6	1
7	6
8	4
9	2

What is the **mode** of the data? 1

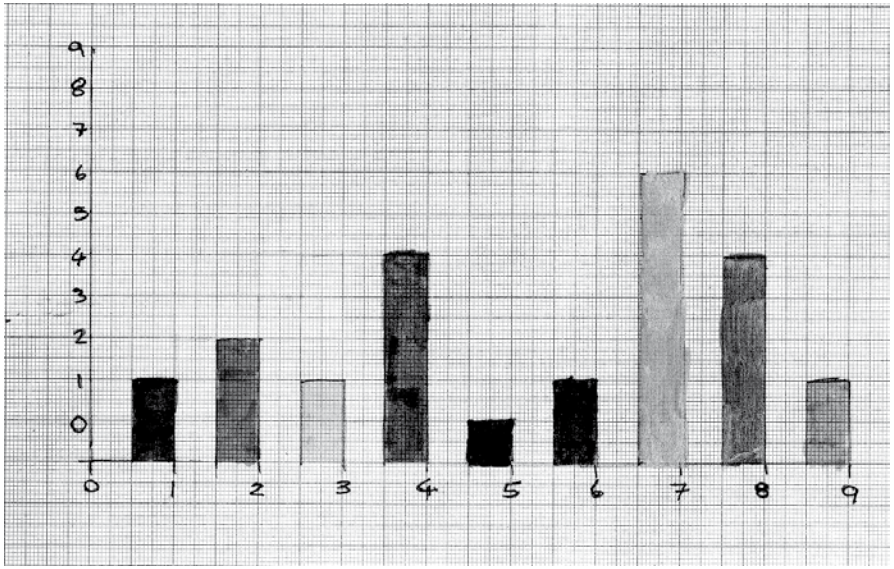
What is the **range** of the data? 6

On another piece of paper, write a short survey report to the headteacher.

Draw a chart or diagram to help explain what you have found out.

To Headteacher,

We found out that some off the pupils at your school are disliking the school uniform, a couple were unsure, and not many people are liking the uniform. So we found out that most children dont want school uniform.



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How confident are we?
Level 3

Use the data that you have just collected to complete this frequency table:

Number on the card	Frequency
0	1
1	2
2	1
3	3
4	4
5	0
6	1
7	0
8	4
9	2

What is the **mode** of the data? 1

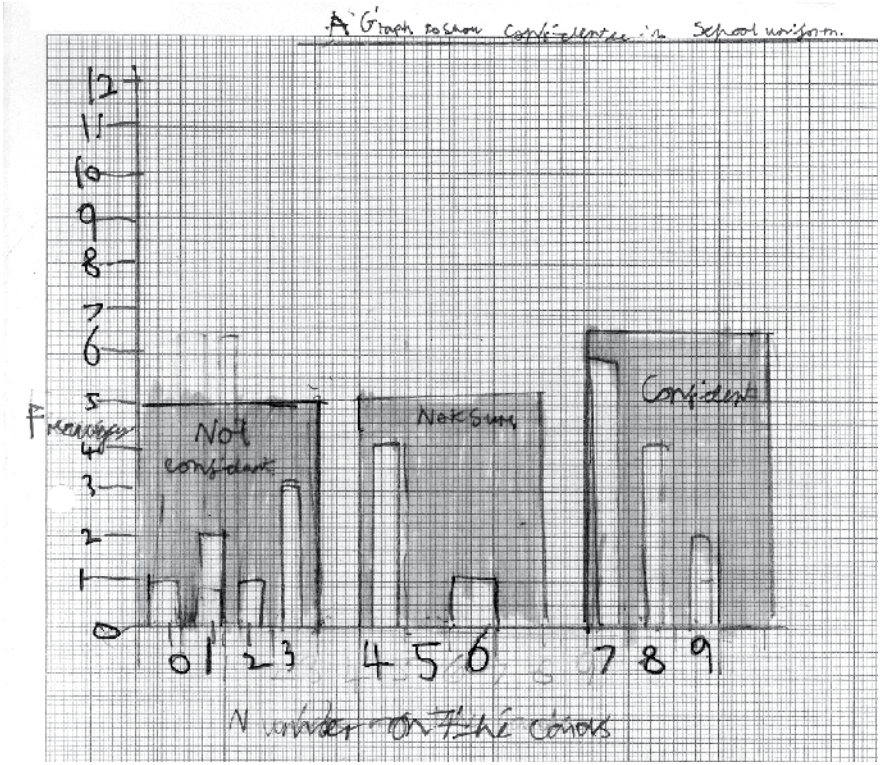
What is the **range** of the data? ~~0-4~~ 0-6

On another piece of paper, write a short survey report to the headteacher.

Draw a chart or diagram to help explain what you have found out.

To Mr Headteacher
From Y7 mathes set 4.

We have been finding out how school pupils felt on school unigorm. We found out that most of our class didn't agree with our this statement. This is shown on the graph



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How confident are we?
Level 4

Use the data that you have just collected to complete this frequency table:

Number on the card	Frequency
0	
1	
2	
3	1111 4
4	
5	111 3
6	11 2
7	11 2
8	11 2
9	~~1111~~ 5

What is the **mode** of the data?

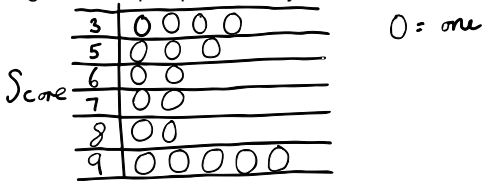
9 is the most common.

What is the **range** of the data?

9-3=6 the range is 6

On another piece of paper, write a short survey report to the headteacher.

Draw a chart or diagram to help explain what you have found out.



Dear

Mr D

We have been finding out how cofident new pupils are traveling around the school.
We found out that 4 were not confident there were 9 people who were very confident about going around the school. There were 5 people who were sort of confident

Yours sincerly

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How confident are we?
Level 4

Use the data that you have just collected to complete this frequency table:

Number on the card	Frequency
0	1
1	2
2	1
3	3
4	4
5	0
6	1
7	6
8	4
9	2

strongly agree

strongly disagree

What is the **mode** of the data?

7

What is the **range** of the data?

0-6

On another piece of paper, write a short survey report to the headteacher.

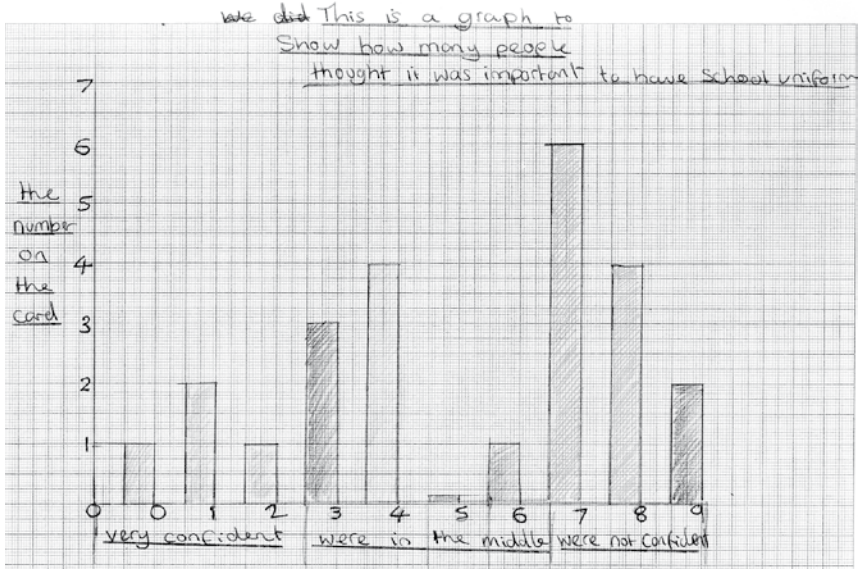
Draw a chart or diagram to help explain what you have found out.

important to have school uniform

To the Headmaster,

I found out that 0-2 ~~agree~~ which is agree and 4 people said then 3-6 which is in the middle and 8 people said and then 7-9 which is disagree and 12 people said. So that means more people disagree with having the school uniform.

we were asking fellow ~~peo~~ pupils in a survey about what they thought of the school uniform the results are below.



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How confident are we?
Level 5

Use the data that you have just collected to complete this frequency table:

How confident were you finding your way around School when you first arrived

Number on the card	Frequency
not confident 0	
1	1
2	2
3	2
4	5
Middle 5	3
6	2
confident 7	
8	1
9	

What is the **mode** of the data?

4 points

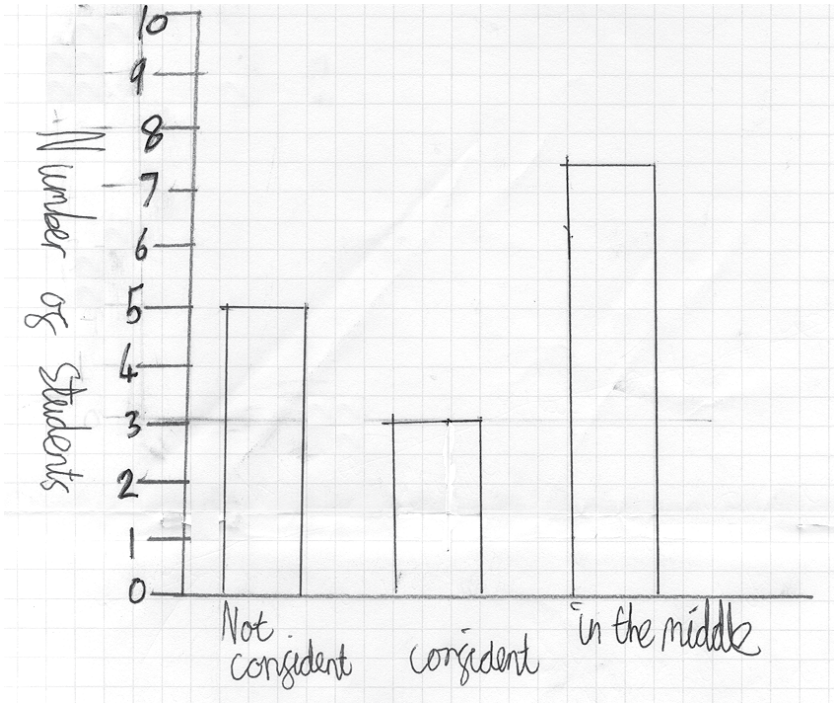
What is the **range** of the data?

8 − 1 = 7 points ~~4 points~~

On another piece of paper, write a short survey report to the headteacher.

Draw a chart or diagram to help explain what you have found out.

We have been finding out how confident year 7 pupils are going to their new ~~St~~ School we did a Survey about it.
We found out 5 people were not confident about this (5/16)
3 were confident about this (3/16)
and the other 8 were in the middle (half)



Of confident or not
perhaps something could could be done for Next year

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How confident are we?
Level 5

Use the data that you have just collected to complete this frequency table:

Number on the card	Frequency
0	5
1	4
2	3
3	5
4	7
5	3
6	2
7	0
8	1
9	0

low

high

What is the **mode** of the data?

4

What is the **range** of the data?

0 to 8 = 8

On another piece of paper, write a short survey report to the headteacher.

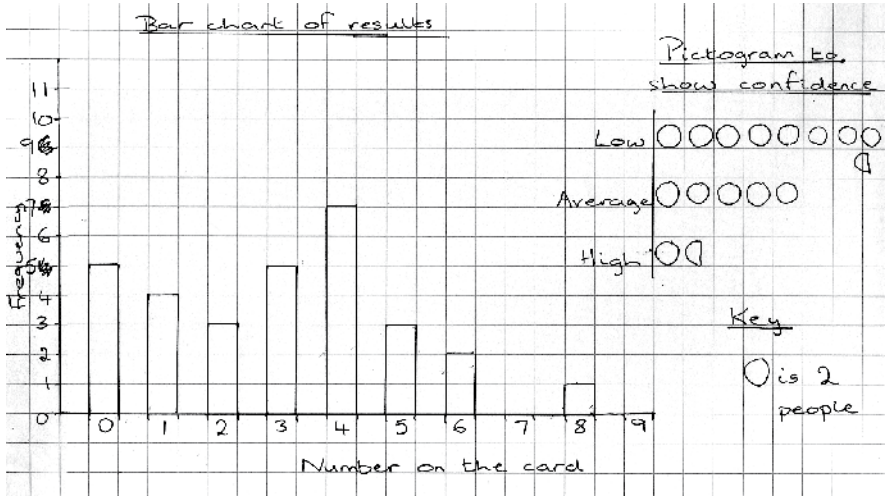
Draw a chart or diagram to help explain what you have found out.

How confident are we?
... when we had our diagnostic maths tests?

17 people were not confident
$= \frac{17}{30}$

10 people were average confident
$= \frac{10}{30} = \frac{5}{15} \frac{1}{3}$

Only 3 people were confident
$= \frac{3}{30} = \frac{1}{10}$



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How confident are we?
Above level 5

Use the data that you have just collected to complete this frequency table:

Number on the card	Frequency
0	5
1	4
2	3
3	5
4	7
5	3
6	2
7	0
8	1
9	0

low

high

What is the **mode** of the data?

4

What is the **range** of the data?

8 - 0 = 8

On another piece of paper, write a short survey report to the headteacher.

Draw a chart or diagram to help explain what you have found out.

We asked the class how confident they were when they had the diagnostic Maths tests.

17 people or 56.6% were not confident
10 people or 33.3% were in the middle
3 people or 10% were confident

This is not very good. It might be because its maths but next year the teacher could try to make them feel a bit better.
(But a third were not that worried.)

Pupil's diagram on next page

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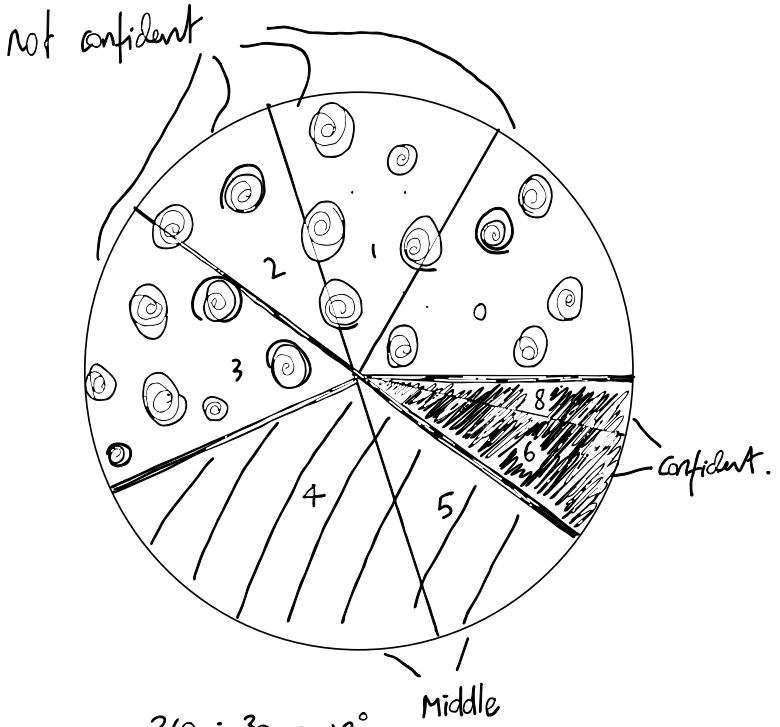
How confident are we?
Above level 5 (continued)



360 ÷ 30 = 12°

204
120
36

60
48
36
60
84
36
24
0
12
0

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