Reasoning and Problem Solving
Step 3: Tables

National Curriculum Objectives:

Mathematics Year 3: (3S1) Interpret and present data using bar charts, pictograms and tables
Mathematics Year 3: (3S2) Solve one-step and two-step questions [for example, 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables

Differentiation:

Questions 1, 4 and 7 (Problem Solving)
Developing Answer questions by finding information from a partially completed table which has up to two headings. Involves one-step problems only.
Expected Answer questions by finding information from a partially completed table which has multiple headings. Involves one and two-step problems.
Greater Depth Answer questions by finding information from a partially completed table which has multiple headings. Involves multi-step problems. Some data is omitted from tables.

Questions 2, 5 and 8 (Problem Solving)
Developing Use clues to complete a table which has up to two headings and involves one-step problems.
Expected Use clues to complete a table which has multiple headings and involves one and two-step problems.
Greater Depth Use clues to complete a table which has multiple headings and involves multi-step problems. Some data is omitted from tables.

Questions 3, 6 and 9 (Reasoning)
Developing Identify which question cannot be answered from a table which has up to two headings and involves one-step problems.
Expected Identify which question cannot be answered from a table which has multiple headings and involves one and two-step problems.
Greater Depth Identify which question cannot be answered from a table which has multiple headings and involves multi-step problems. Some data is omitted from tables.

More Year 3 Statistics resources.

Did you like this resource? Don't forget to review it on our website.

Tables

1a. The table shows how many sweets are shared into party bags for different age groups. The sweet numbers increase for each age group by 5 each time.

Age	Number of sweets
4	8
5	13
6	
7	23
8	

Complete the table and answer the questions.

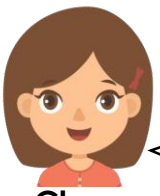
A. Which age will receive 18 sweets in their party bags?

B. How many sweets will be in the party bags for 8 year olds?

C. Which age received 13 sweets in their party bags?

D PS

2a. Use Clara's clues to find out how many children at Breakfast Club own pets.



Clara

- 5 children in total had no pets.
- 4 children had two pets in total
- There were no even numbers in the boys' results.
- 20 children were surveyed altogether.

	Boys	Girls
No pets	1	
One pet		6
Two pets		1

D PS

3a. Freya creates some questions using the table below.

A. How many people want to visit Malta?

B. How many people didn't choose Turkey, Cyprus or Malta?

C. How many people want a two-week trip?

	Number of people
Cyprus	8
Malta	14
Turkey	5
Other	11

Which of Freya's questions can't be answered using the table above? Explain why not.

D R

Tables

1b. The table shows the weekly points score for a local rugby team. The score increases each match by 2 each time. There are 6 matches in total.

Match	Final score
1st	6
2nd	
3rd	10
4th	
5th	
6th	16

Complete the table and answer the questions.

A. How many points were scored at the 1st match?

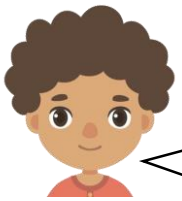
B. At which match was the score 12?

C. How many points were scored at the 5th match?

D

PS

2b. Use Roy's clues to find out how many trains run between London and Edinburgh.



Roy

- The Magnificent Line runs 5 more trains to London than Edinburgh.
- The Greatest Railway runs an odd number of trains to Edinburgh.
- 40 trains run each day in total.

	London	Edinburgh	Total
Greatest Railway	10		
Magnificent Line		8	21

D

PS

3b. Wilf creates some questions using the table below.

A. How many children like building bricks?

B. How many adults enjoy reading?

C. Which activity was voted for the least by adults?

	Number of children	Number of adults
Jigsaws	7	6
Painting	8	4
Building bricks	15	12

Which of Wilf's questions can't be answered using the table above? Explain why not.

D

R

Tables

4a. The table below shows how many pupils got on the school bus at the first two stops. The number of pupils increases at each stop by 4 each time. There are six stops in total.

Bus stop	1st	2nd	3rd	4th	5th	6th
Number of pupils	3	7				

Complete the table and answer the questions below.

A. How many pupils will get on the bus at the sixth bus stop?

B. How many pupils were on the bus altogether after the fifth bus stop?

C. If three boys and one girl missed the bus, how many pupils were dropped off at school that morning?

E

PS

5a. Use Lola's clues to find out how many pupils could attend Sundial Primary School.

Lola

- There are eight more boys in Key Stage 2 than Reception.
- In Key Stage Two, there are double the amount of pupils than in Key Stage 1.
- There are two less girls in Key Stage 1 than Reception.
- There are 29 children in Reception.

	Reception	Key Stage 1	Key Stage 2
Boys	16		
Girls			18
Total			

E

PS

6a. Sally creates some questions using the table below.

A. How many children chose juice?

B. How many parents drink strawberry milk?

C. Did more children or grandparents like crisps?

D. How many more parents chose a drink than children?

	Crisps	Juice	Milk	Chocolate biscuits
Children	19	7	28	30
Parents	20	45	32	54
Grandparents	12	38	51	42

Which of Sally's questions can't be answered using the table above? Explain why not.

E

R

Tables

4b. The table below shows how many bins are emptied on the first two streets. The number of full bins increases on each street by 3 each time. There are seven streets in total.

Street	1st	2nd	3rd	4th	5th	6th	7th
Number of bins	4	7					

Complete the table and answer the questions below.

A. How many bins will be emptied in the seventh street?

B. How many bins will have been emptied altogether by the time they have been to six streets?

C. What is the difference between how many bins were emptied on the third and seventh street?

E

PS

5b. Use Danny's clues to find out the nationalities of guests that are staying at two hotels.

Danny

- There are 76 guests staying in the Hotel Argan and half as many in Hotel Fleur.
- There are 70 French guests staying in total.
- Five more German guests are staying at the Hotel Argan than the Hotel Fleur.
- There are nine more French guests than German at the Hotel Fleur.

	French	German	Chinese
Argan			
Fleur		7	
Total			25

E

PS

6b. Ryan creates some questions using the table below.

A. How many children walk to school in total?

B. Are there more children in Key Stage One or Two?

C. Did more children catch the bus or walk to school?

D. How many boys go to school by car in Key Stage One?

				
Reception	29	4	2	0
Key Stage 1	37	48	12	0
Key Stage 2	23	56	3	2

Which of Ryan's questions can't be answered using the table above? Explain why not.

E

R

Tables

7a. The table below shows some children's favourite ice cream flavours. The number of boys' votes decreases by 6 each time whilst the number of girls' votes increases by 4 each time.

	Vanilla	Strawberry	Mint	Chocolate	Pistachio	Rocky road
Number of boys		47				
Number of girls			32			
Total						

Complete the table and answer the questions.

A. How many more children voted for vanilla than pistachio?

B. How many children like strawberry and chocolate altogether?

C. Which three flavours, when combined, have a total that is larger than 210 but less than 220?

GD

PS

8a. Use Wallace's clues to find out how many languages are spoken by people over the age of 35.

Wallace

- The total number of people who could speak 3 languages was one greater than the number of women who could speak 2 languages.
- The number of women who could speak 5+ languages was 3 times greater than the number of men who could speak 4 languages.
- The difference between the total of men and women who were surveyed is an odd number between 30 and 40.

	Speaks 2 languages	Speaks 3 languages	Speaks 4 languages	Speaks 5+ languages	Total
Women over 35		43	29		145
Men over 35	88		4	1	

GD

PS

9a. Billy creates some questions using the table below.

A. How many people use aeroplanes to go on holiday?

B. Do more or less people travel by car in the south?

C. How many people use more than one type of transport?

D. How many more people from the south voted?

	Aeroplane	Ferry	Car	Train
North of England	19		28	30
South of England	20	45		54
Total		57	80	

Which of Billy's questions cannot be answered using the table? Explain why not.

GD

R

Tables

7b. The table below shows how many customers visit the shop over a week. The number of customers wearing glasses decreases by 8 each day. The number of customers without glasses increases by 3 each time.

	Sat	Sun	Mon	Tues	Wed	Thurs	Fri
Wearing glasses			38				
Without glasses						45	
Total							

Complete the table and answer the questions.

A. How many customers visited the shop altogether on Thursday and Friday?

B. What was the difference between the total number of customers who didn't wear glasses on Sunday and Monday and the total number of customers who did wear glasses on Wednesday and Friday?

GD C. How many customers wore glasses on Saturday and Tuesday combined?

PS

8b. Use Sian's clues to find out how many brothers and sisters the children in the choir have.

Sian

- The number of boys who have one sister is three times greater than the total number of children who have three or more sisters.
- The number of boys who have one brother is one less than the difference between the number of girls who have one sister and girls who have one brother.
- The difference between the total number of girls and boys who voted is a multiple of 10.

	Has one sister	Has one brother	Has two brothers	Has 3+ sisters	Total
Girls	49	27	31		111
Boys			16	8	

GD

PS

9b. Kamil creates some questions using the table below.

A. Which supermarket offers better value for money?

B. Which supermarket is used the most overall?

C. In which country are Ladi and Dasa visited more altogether?

D. How many fewer people shop at Foodgiant in Wales than in England?

	Ladi	Desco	Foodgiant	Dasa
England		48	30	9
Wales	13	52		18
Total	37		44	27

Which of Kamil's questions cannot be answered using the table? Explain why not.

GD

R

Reasoning and Problem Solving Tables

Developing

1a.

Age	Number of sweets
4	8
5	13
6	18
7	23
8	28

A. 6 year olds; B. 28; C. 5 year olds

2a. The table should be completed like this:

	Boys	Girls
No pets	1	4
One pet	5	6
Two pets	3	1

3a. C can't be answered as there is no information included in the table to explain this.

Expected

4a.

Bus stop	1st	2nd	3rd	4th	5th	6th
Number of pupils	3	7	11	15	19	23

A. 23; B. 55; C. 74

5a. The completed table should look like this:

	Reception	Key Stage 1	Key Stage 2
Boys	16	10	24
Girls	13	11	18
Total	29	21	42

6a. B can't be answered as this information is not provided in the table.

Greater Depth

7a.

	Vanilla	Strawberry	Mint	Chocolate	Pistachio	Rocky road
Number of boys	53	47	41	35	29	23
Number of girls	24	28	32	36	40	44
Total	77	75	73	71	69	67

A. 8; B. 146; C. Various answers, for example: Vanilla, chocolate and rocky road (215 in total)

8a. The completed table should look like this:

	Speaks 2 languages	Speaks 3 languages	Speaks 4 languages	Speaks 5+ languages	Total
Women over 35	61	43	29	12	145
Men over 35	88	19	4	1	112

9a. C can't be answered as this information is not provided in the table.

Reasoning and Problem Solving Tables

Developing

1b.

Match	Final score
1	6
2	8
3	10
4	12
5	14
6	16

A. 6; B. 4th match; C. 14

2b. The table should be completed like this:

	London	Edinburgh	Total
Greatest Railway	10	9	19
Magnificent Line	13	8	21

3b. B can't be answered as this hobby is not shown in the table.

Expected

4b.

Street	1st	2nd	3rd	4th	5th	6th	7th
Number of bins	4	7	10	13	16	19	22

A. 22; B. 69; C. 12

5b. The completed table should look like this:

	French	German	Chinese
Argan	54	12	10
Fleur	16	7	15
Total	70	19	25

6b. D can't be answered as the table does not show specific data for boys and girls.

Greater Depth

7b.

	Sat	Sun	Mon	Tues	Wed	Thurs	Fri
Wearing glasses	54	46	38	30	22	14	6
Without glasses	30	33	36	39	42	45	48
Total	84	79	74	69	64	59	54

A.113; B. 41; C. 84

8b. The completed table should look like this:

	Has a little sister	Has an older brother	Has two brothers	Has 3+ sisters	Total
Girls	49	27	31	4	111
Boys	36	21	16	8	81

9b. A can't be answered as the table only states popularity of the shops and not price.