The tally chart, bar chart and pictogram below all represent the same set of data – the shoe sizes of a group of 90 children. Fill in the gaps in all three.

Shoe Size	Tally	Frequency
13	JHT JHT IIII	14
1		28
2		10
3		22
4		16



Shoe Size

Shoe Size	Frequency
13	
1	
2	
3	
4	

Key:

represents 8 children

The tally chart, bar chart and pictogram below all represent the same set of data – the shoe sizes of a group of 90 children. Fill in the gaps in all three.

Shoe Size	Tally	Frequency
13	JHT JHT IIII	
1		28
2		
3		
4		



Shoe Size

Shoe Size	Frequency
13	
1	
2	
3	
4	

represents \_\_\_\_ children

Key:



# Content Description Tally Charts, Bar Charts and Pictograms KS3 Resource Pack

This resource contains content based on the \_\_walkthrough worksheet and mastery worksheets on tally charts, bar charts and pictograms. It includes:

- A walkthrough worksheet with instructions and worked examples.
- A printable worksheet, with and without answer spaces.
- A mastery worksheet, to extend pupils understanding of the content.
- A powerpoint including all of the above, along with answers, in a presentable format.

# **Tally Charts, Bar Charts and Pictograms** Walkthrough Worksheet

#### **Prior Knowledge:**

- How to find fractions of amounts.
- This sheet is best used as revision of tally charts, bar charts and pictograms.

# Tally Charts

A tally chart uses marks to represent frequencies (frequency is the number of times something happens). They are 'bunched' in fives to make them easier to count.

Each | represents one. Each time your frequency goes up by 1, add another line to the right of the previous line. The fifth line goes across the previous 4 lines, to make a group. This means If represents five.

Tallying 6:	
	1
	2
	3
	4
1111	5
1441	6

### Example

A group of students were asked their favourite type of biscuit. The results are recorded in a tally chart. Complete the table and calculate the total number of students asked.

Biscuit	Tally	Frequency
Chocolate Digestive	LHT	5
Rich Tea	JHT	
Custard Cream		1
Chocolate Chip Cookie	LHT I	
Other		11
Total		

Tally for custard cream biscuits:

Frequency of rich tea biscuits:

1 is represented by a single line, |



11 is the same as 5 + 5 + 1, so it is represented by IIIT IIII I

By completing the table, we can see that **30** students were asked their favourite type of biscuit.

# **Bar Charts**

A bar chart uses the height of the bars to represent the frequency.

# Example

The bar chart gives information about the colour of cars in a car park. Complete the bar chart and the table to represent this information.



30.	- 21	=	9

Colour	Frequency
Blue	7
Red	9
Silver	8
Other	6
Total	30

3. Now, complete the rest of the bar chart.

The bar for blue cars should be level with 7 and the bar from red cars should be level with 9.

#### Tally Charts, Bar Charts and Pictograms Walkthrough Worksheet

#### Top Tips

- Draw any missing bars using a pencil and a ruler.
- All bars should have the **same width**.
- There should be **equal** gaps between all of the bars. Without the gaps, it is not a bar chart.



# Pictograms

A pictogram uses an icon, picture or symbol to represent a frequency. To make sense, a pictogram must always have a key, which tells you how much each picture is worth.

In a pictogram, it is important to make sure that each picture is the same size and equally spaced out.

## Example

A group of schools hold a year nine football tournament. The total goals scored in the competition are represented in the pictogram. Complete the table to see how many goals were scored in the tournament.

The key will help you work out how many goals each picture represents.

Key: )= 4 goals scored

If you see a part of a picture, you need to calculate its value. For example.

 $\int \frac{3}{4}$  of the value.  $\frac{3}{4}$  of 4 = 3 goals scored.

Team	Goals Scored	Frequency
St. George's		8
King Ethelbert		
ССНЅ		
Dane Court		5
Total		

#### Tally Charts, Bar Charts and Pictograms Walkthrough Worksheet



# Tally Charts, Bar Charts and Pictograms





# **Prior Knowledge:**

- How to find fractions of amounts.
- This sheet is best used as revision of tally charts, bar charts and pictograms.



# **Tally Charts**

A tally chart uses marks to represent frequencies (frequency is the number of times something happens). They are 'bunched' in fives to make them easier to count.

Each | represents one. Each time your frequency goes up by 1, add another line to the right of the previous line. The fifth line goes across the previous 4 lines, to make a group. This means ++++ represents five.

Tallying 6:	
	1
ÎL.	2
	3
	4
++++	5
++++	6

Example: A group of students were asked their favourite type of biscuit. The results are recorded in a tally chart. Complete the table and calculate the total number of students asked.



By completing the table, we can see that 30 students were asked their favourite type of biscuit.

# **Bar Charts**

# A bar chart uses the height of the bars to represent the frequency.

Example: The bar chart gives information about the colour of cars in a car park. Complete the bar chart and the table to represent this information.

Colour	Frequency
Blue	7
Red	9
Silver	8
Other	6
Total	30



Read across from the height of the bars to fill in the missing frequencies. Silver: 8 Other: 6

There isn't a bar for red cars, but we can calculate the total of all the other colours and take that from 30. 7 + 8 + 6 = 21 30 - 21 = 9 Example: The bar chart gives information about the colour of cars in a car park. Complete the bar chart and the table to represent this information.

Colour	Frequency	
Blue	7	
Red	9	
Silver	8	
Other	6	
Total	30	



Now, complete the rest of the bar chart.

The bar for blue cars should be level with 7 and the bar from red cars should be level with 9.

# **Top Tips**

- Draw any missing bars using a pencil and a ruler.
- All bars should have the same width.
- There should be equal gaps between all of the bars. Without the gaps, it is not a bar chart.

# Pictograms

A pictogram uses an icon, picture or symbol to represent a frequency. To make sense, a pictogram must always have a key, which tells you how much each picture is worth.

In a pictogram, it is important to make sure that each picture is the same size and equally spaced out.

Example: A group of schools hold a year nine football tournament. The total goals scored in the competition are represented in the pictogram. Complete the table to see how many goals were scored in the tournament.

	Frequency	goals are worth 2 footballs.
$\odot$	8	2 footballs are worth: 4 × 2 = 8 goals.
900	10 ←	Half a football is worth: 4 ÷ 2 = 2 goals. 8 + 2 = 10 goals.
	7	1 football is worth 4 goals. 3 is – of 4, so – of a football is worth 3 goals. 3 + 4 = 7
() (* ) <sup>*</sup>	5	goals.
30	<b>30</b>	You need to represent 5 goals. 4 goals is 1 football. 1 is a quarter of 4, so you need to draw one football and a
	Solution   Solution   Solution   Solution   Solution   Solution   8 + 10 + 7 + 5	$ \begin{array}{c c} 8 \\ 8 \\ 6 \\ 6 \\ 6 \\ 6 \\ 6 \\ 7 \\ 7 \\ 7 \\ 7 \\ 7 \\ 7 \\ 8 \\ 10 \\ 7 \\ 7 \\ 7 \\ 7 \\ 7 \\ 7 \\ 7 \\ 7 \\ 7 \\ 7$

The key will help you work out how many goals each picture represents.

Key: 🚺 4 goals scored

If you see a part of a picture, you need to calculate its value. For example.

= - of the value. - of 4 = 3 goals scored.



1. Complete the tally chart below to show the number of triangles, squares, circles and hexagons shown.

# 

	lally	Frequency
Triangle		
Square		
Circle		
Hexagon		
Total		

2. A school uses a tally chart to record how many pupils are late each day. Complete the tally chart.

Day	Tally	Frequency
Monday		
Tuesday		6
Wednesday	++++	
Thursday		10
Friday		12
Total	36	36

3. Blake rolls a dice 30 times and records the scores. Draw a tally chart to show their results.

4. Josh does a survey of favourite sports in his class. Complete the bar chart to represent his results.



5. Hasaan does a survey of the pets his friends have. Complete the bar chart to show his results.



6. A school records the number of merit points awarded to pupils in each year group. Complete the bar chart to show the results.



7. A zoo records information about the average number of visitors to certain animals each hour. Complete the bar chart and the table to represent this information



8. Shelley has drawn a bar 12 chart to show the 11 different fillings of sandwiches sold at a 10 café during lunchtime 9 Sandwich Frequency Filler 8 Cheese Frequency 7 and 8 **Tomato** 6 Tuna 5 12 and Tomato Mayonaise **Tuna Mayonaise** 4 Ham 10 Vegan Cheese 3 Egg 4 Chicken 2 Vegan 9 Cheese Cheese Ham E 89 1 Chicken 6 0 **Sandwich Filler** 

Explain three mistakes Shelley has made when drawing the bar chart.

9. Rosie is revising for an exam. The pictogram shows how many hours she spent revising over five days.



- a. How many hours did Rosie spend revising on Tuesday?
- b. On which day did Rosie spend 4 hours revising?
- c. How many hours did Rosie spend revising in total?

10. The pictogram shows some information about the money each year group raised in a recent cake sale.



Year 7	OOG
Year 8	$\bigcirc\bigcirc$
Year 9	$\bigcirc \bigcirc$
Year 10	OG
Year 11	

- a. How much money did year 10 raise?
- b. How much more money did year 8 raise compared to year 9?
- c. In total, £56.25 was raised between all the year groups. Use this information to complete the pictogram.

Challenge

The bar chart shows a group of students' favourite colour. Draw a pictogram to represent the information shown in the bar chart. The pictogram should not use a key of value 1.



1. Complete the tally chart below to show the number of triangles, squares, circles and hexagons shown.

# 

Shap	2	Tally Freque
Triangle	+	+++    7
Square		++++ 5
Circle		2
Hexagon	-	HHH   6
Total		20 20

2. A school uses a tally chart to record how many pupils are late each day. Complete the tally chart.

Day	Tally	Frequency
Monday		3
Tuesday	++++ 1	6
Wednesday	++++	5
Thursday	++++	10
Friday	++++ ++++	12
Total	36	36



3. Blake rolls a dice 30 times and records the scores. Draw a tally chart to show their results.

# 6, 4, 2, 1, 1, 3, 4, 5, 4, <mark>1</mark>, 1, 5, 4, 3, 2, 2, 6, 1, 3, 6, 5, 4, 3, 2, 1, 5, 3, 4, 6, 5

Number	Tally	Frequency
	++++ 1	6
	++++	4
	++++	5
	++++ 1	6
	++++	5
	++++	4
tal	30	30

4. Josh does a survey of favourite sports in his class. Complete the bar chart to represent his results.



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6. A school records the number of merit points awarded to pupils in each year group. Complete the bar chart to show the results.



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7. A zoo records information about the average number of visitors to certain animals each hour. Complete the bar chart and the table to represent this information





Explain three mistakes Shelley has made when drawing the bar chart.

- Incorrect bar heights for cheese and tomato.
- Not all bars have spaces between them.
- Bars do not have equal width.

9. Rosie is revising for an exam. The pictogram shows how many hours she spent revising over five days.



- a. How many hours did Rosie spend revising on Tuesday? 2
- b. On which day did Rosie spend 4 hours revising? Wednesday
- c. How many hours did Rosie spend revising in total? 12 hours

10. The pictogram shows some information about the money each year group raised in a recent cake sale.





- a. How much money did year 10 raise? 5 + 3.75 = £8.75
- b. How much more money did year 8 raise compared to year 9? 10 - 7.5 = £2.50
- In total, £56.25 was raised between all the year groups. Use this information to complete the pictogram.
   (5 + 5 + 3.75) + (5 + 5) + (5 + 2.50) + (5 + 3.75) = £40
   56.25 40 = £16.25

# Challenge

The bar chart shows a group of students' favourite colour. Draw a pictogram to represent the information shown in the bar chart. The pictogram should not use a key<sub>1</sub>9f value 1.





# Mastery Task:

The tally chart, bar chart and pictogram below all represent the same set of data – the shoe sizes of a group of 90 children. Fill in the gaps in all three.



The tally chart, bar chart and pictogram below all represent the same set of data – the shoe sizes of a group of 90 children. Fill in the gaps in all three.





1. Complete the tally chart below to show the number of triangles, squares, circles and hexagons shown.

# 

Shape	Tally	Frequency
Triangle	JHT II	7
Square		5
Circle		2
Hexagon	JHT I	6
Total	20	20

2. A school uses a tally chart to record how many pupils are late each day. Complete the tally chart.

Day	Tally	Frequency
Monday		3
Tuesday	JHT I	6
Wednesday	HH	5
Thursday	JHT JHT	10
Friday	JHT JHT II	12
Total	36	36

3. Blake rolls a dice 30 times and records the scores.

Draw a tally chart to show their results.

6, 4, 2, 1, 1, 3, 4, 5, 4, 1, 1, 5, 4, 3, 2, 2, 6, 1, 3, 6, 5, 4, 3, 2, 1, 5, 3, 4, 6, 5

Number	Tally	Frequency
1		6
2		4
3		5
4		6
5		5
6	<u> </u>	4
Total	30	30

4. Josh does a survey of favourite sports in his class. Complete the bar chart to represent his results.

Shape	Frequency
Football	10
Cricket	6
Rugby	8
Swimming	5
Other	4



5. Hasaan does a survey of the pets his friends have. Complete the bar chart to show his results.

Pet	Frequency
Cat	8
Dog	14
Fish	20
Hamster	4
Rabbit	5
Other	10



6. A school records the number of merit points awarded to pupils in each year group. Complete the bar chart to show the results.

Year Group	Students
Year 7	36
Year 8	34
Year 9	22
Year 10	27
Year 11	12



7. A zoo records information about the average number of visitors to certain animals each hour. Complete the bar chart and the table to represent this information.



8. Shelley has drawn a bar chart to show the different fillings of sandwiches sold at a café during lunchtime.

Sandwich Filler	Frequency
Cheese and	Q
Tomato	0
Tuna	12
Mayonaise	12
Ham	10
Egg	4
Vegan	0
Cheese	9
Chicken	6



Sandwich Filler

Explain **three** mistakes Shelley has made when drawing the bar chart.

- Incorrect bar heights for cheese and tomato.
- Not all bars have spaces between them.
- Bars do not have equal width.
- 9. Rosie is revising for an exam. The pictogram shows how many hours she spent revising over five days.

Kev:	$\bigcap$	represents 2 hours
itey.		represents 2 nours

Monday	$\bigcirc$
Tuesday	$\bigcirc$
Wednesday	$\bigcirc \bigcirc$
Thursday	$\bigcirc$ (
Friday	

a. How many hours did Rosie spend revising on Tuesday?

#### 2

b. On which day did Rosie spend 4 hours revising?

#### Wednesday

c. How many hours did Rosie spend revising in total?

#### 12 hours

10. The pictogram shows some information about the money each year group raised in a recent cake sale.

Key: ( ) represents £5

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c. In total, £56.25 was raised between all the year groups. Use this information to complete the pictogram.

(5 + 5 + 3.75) + (5 + 5) + (5 + 2.50) + (5 + 3.75) =£40

56.25 - 40 = £16.25

## Challenge

The bar chart shows a group of students' favourite colour. Draw a pictogram to represent the information shown in the bar chart. The pictogram should **not** use a key of value 1.



A suitable pictogram drawn which includes a key and the following values:

Red = 4

Pink = 6

Purple = 3

Blue = 10

Green = 8

Orange = 2

Yellow = 5

Other = 7

1. Complete the tally chart below to show the number of triangles, squares, circles and hexagons shown.

# 

Shape	Tally	Frequency
Triangle		
Square		
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Hexagon		
Total		

2. A school uses a tally chart to record how many pupils are late each day. Complete the tally chart.

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6, 4, 2, 1, 1, 3, 4, 5, 4, 1, 1, 5, 4, 3, 2, 2, 6, 1, 3, 6, 5, 4, 3, 2, 1, 5, 3, 4, 6, 5

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Tomato	0	
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Ham	10	
Egg	4	
Vegan	0	
Cheese	9	
Chicken	6	



Sandwich Filler

Explain <b>three</b> mistak	Tally Charts, Bar Charts and Pictograms <b>Worksheet</b> es Shelley has made when drawing the bar chart.
<ol> <li>9. Rosie is revising five days.</li> </ol>	for an exam. The pictogram shows how many hours she spent revising over
Monday	
Tuesday	$\bigcirc$
Wednesday	$\bigcirc \bigcirc$
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The bar chart shows a group of students' favourite colour. Draw a pictogram to represent the information shown in the bar chart. The pictogram should **not** use a key of value 1.

