



1) $3 + 2 + 5 + 6 = 16$

$16 \div 4 = 4$

The mean number of goals scored was 4.

2) $85 + 60 + 65 + 70 + 65 = 345$

$345 \div 5 = 69$

The mean rainfall for the 5 months was 69mm.

3) Jacob: $90 \div 6 = 15$

Emily: $108 \div 6 = 18$

Adil: $96 \div 6 = 16$

	Jacob	Emily	Adil
Week 1	13	18	19
Week 2	20	20	18
Week 3	16	17	20
Week 4	17	18	15
Week 5	10	15	7
Week 6	14	20	17
Mean Score	15	18	16

1) a) False – group A contains the tallest child (140cm) but the group's mean height of 130cm is the shortest.

b) False – group C has the most children but the tallest mean height of 132cm.

c) True – group A would now have a mean height of 133cm, which is 1cm taller than group C's and 2cm taller than group B's.

2) a) True – Ola's mean lap time was 65 seconds and Jessica's was 61 seconds. This means that Ola's time was 4 seconds slower.

b) False – Usman's mean lap time was 58 seconds, which is less than one minute.

c) False – when added together, Henry and Usman had a mean lap time of 65 seconds whereas Jessica and Ola had a mean lap time of 63 seconds. Jessica and Ola's mean time was therefore 2 seconds faster than Henry and Usman's.





1) Missing values are given in the table.

	Ava	Brody	Chen
Throw 1	8.4	8	11.2
Throw 2	7.9	7.1	9.4
Throw 3	10.4	6.2	8.3
Throw 4	8.6	7	6.1
Throw 5	6.6	8.8	9.6
Throw 6	9.1	b) 7.9	c) 9.4
Mean Average Distance Thrown	a) 8.5	7.5	9

2) There are two possibilities:

Morgan, Aleena and Oscar;

Olivia, Felix and Aleena.

3) There are various possibilities. Accept sets of four numbers which have a total of 40, for example:

9, 11, 7 and 13;

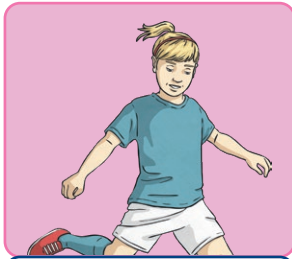
12, 8, 15 and 5;

6, 14, 10 and 10.

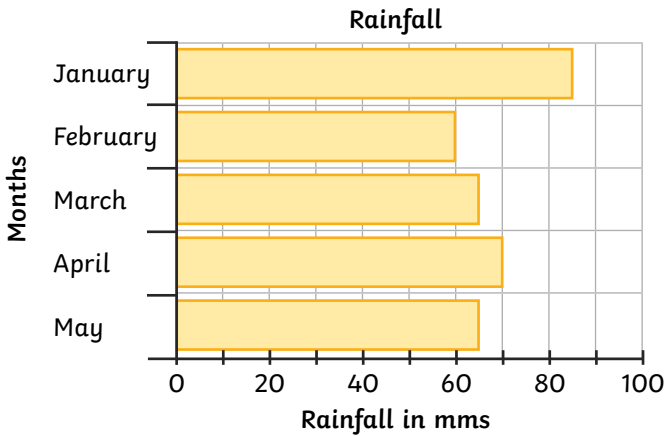
- 1) These pictures show the number of goals each child scored in a football tournament.

Find the mean number of goals scored.

$$\text{mean} = \frac{\text{sum of numbers in the set}}{\text{the number of values that make up the set}}$$



- 2) A year 6 class measured the average monthly rainfall outside their school for the first 5 months of the year.



Calculate the mean rainfall for the 5 months.

- 3) Each week, Jacob, Emily and Adil record their scores in their spelling test of 20 words.

Find the mean score for each child over the 6 weeks.

	Jacob	Emily	Adil
Week 1	13	18	19
Week 2	20	20	18
Week 3	16	17	20
Week 4	17	18	15
Week 5	10	15	7
Week 6	14	20	17
Mean Score			

Jacob: _____

Emily: _____

Adil: _____

- 1) Three groups of children decide to measure their heights.

mean = $\frac{\text{sum of numbers in the set}}{\text{the number of values that make up the set}}$



Name	Height
Evie	124cm
Tarj	140cm
Heather	126cm

Group A

Name	Height
Marvin	129cm
Alisha	128cm
Aisha	133cm
Rupinder	134cm

Group B

Name	Height
Jack	130cm
Maisie	134cm
Sami	132cm
Alicia	128cm
Harvey	136cm

Group C

Explain whether each of the statements below is true or false, giving reasons.

- a) The group containing the tallest child has the shortest mean height.

- b) The group with the most children has the shortest mean height.

- c) If a child measuring 142cm joined group A, this group would now have the tallest mean height.

- 2) This table shows the time taken, in seconds, to run each lap of a running race.

Decide if you agree or disagree with each of the following statements, giving reasons.

- a) Ola's mean lap time was 4 seconds slower than Jessica's.

	Lap 1	Lap 2	Lap 3
Ola	64	62	69
Henry	69	74	73
Usman	61	59	54
Jessica	63	58	62

- b) All of the runners had a mean lap time that was greater than a minute.

- c) When added together, Henry and Usman had a faster mean lap time than Jessica and Ola.

mean = sum of numbers in the set ÷
the number of values that make up the set

sum of the numbers in the set = mean ×
the number of values that make up the set

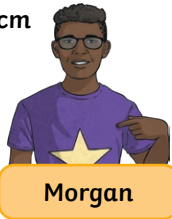


- 1) This table shows the distances thrown, in metres, during the discus event at an athletics competition. Complete the table by finding the missing values.

	Ava	Brody	Chen
Throw 1	8.4	8	11.2
Throw 2	7.9	7.1	9.4
Throw 3	10.4	6.2	8.3
Throw 4	8.6	7	6.1
Throw 5	6.6	8.8	9.6
Throw 6	9.1	b) _____	c) _____
Mean Average Distance Thrown	a) _____	7.5	9

- 2) Three children decide to measure their heights and find the mean.

139cm



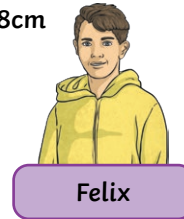
142cm



141cm



138cm



143cm



If the mean height is 141cm, which three of the children could have been measuring themselves? Find all the possibilities.

- 3) These children all take a spelling test of 15 words every week for four weeks. They score one point for every correct answer. They each have the same mean score.

What possible scores could each child have had in order to get a mean score of 10? Can you find more than one solution for each child?



Angus



Clara



Yaman

Diving into Mastery



The Mean

Diving into Mastery Guidance for Educators

Each activity sheet is split into three sections, diving, deeper and deepest, which are represented by the following icons:



Diving



Deeper



Deepest

These carefully designed activities take your children through a learning journey, initially ensuring they are fluent with the key concept being taught; then applying this to a range of reasoning and problem-solving activities.

These sheets might not necessarily be used in a linear way. Some children might begin at the 'Deeper' section and in fact, others may 'dive straight in' to the 'Deepest' section if they have already mastered the skill and are applying this to show their depth of understanding.

Aim

- Calculate and interpret the mean as an average.

The Mean

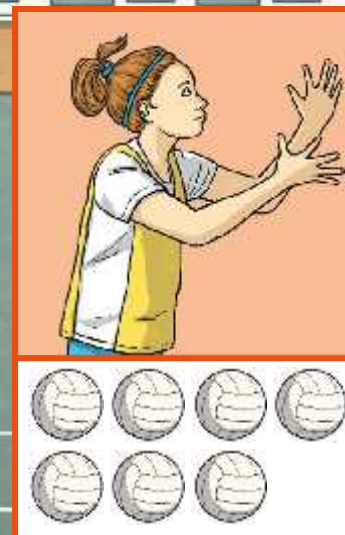
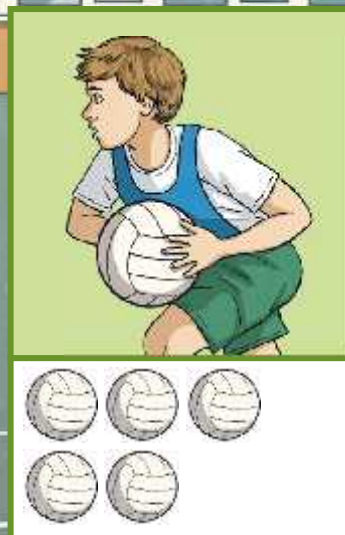
Diving

The mean is the size of each part when a quantity is shared equally.



mean = sum of numbers in the set \div the number of values that make up the set.

These pictures show the number of goals each child scored in a netball tournament.



Find the mean number of goals scored.

$2 + 5 + 7 + 6 = 20$ $20 \div 4 = 5$
The mean number of goals scored was 5.

The Mean

Deeper

mean = $\frac{\text{sum of numbers in the set}}{\text{the number of values that make up the set}}$.



Explain whether each of the statements is true or false.

Group A

Name	Height
Ruth	117cm
Hamza	122cm
Rudi	121cm

Group B

Name	Height
Hannah	122cm
Josef	124cm
Faris	125cm
Danni	115cm
Tarjinder	124cm

Group C

Name	Height
Marlon	124cm
Kasturi	118cm
Seb	122cm
Ellie	132cm

If a child measuring 140cm joined group A, this group would now have the tallest mean average height.

This is true. If a child measuring 140cm joined group A, then the new mean height of the group would be 125cm. This is 1cm taller than group C's mean height of 124cm.

The Mean

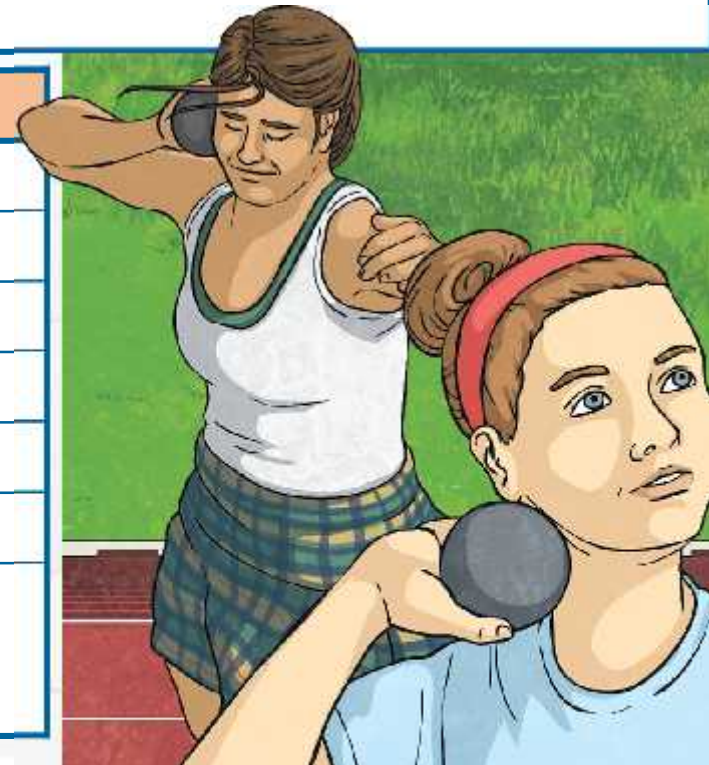
Deepest

mean = sum of numbers in the set ÷
the number of values that make up the set.



This table shows the distances thrown, in metres, during the shot putt event at an athletics competition.

	Malik	Lily	Amir
Throw 1	8.8	7.4	11.7
Throw 2	10	7.8	11
Throw 3	9.2	6.5	9.3
Throw 4	9	8.6	9.6
Throw 5	10.2	9.5	10.3
Throw 6	9.8	8.2	11.1
Mean Average Distance Thrown	9.5	8	10.5

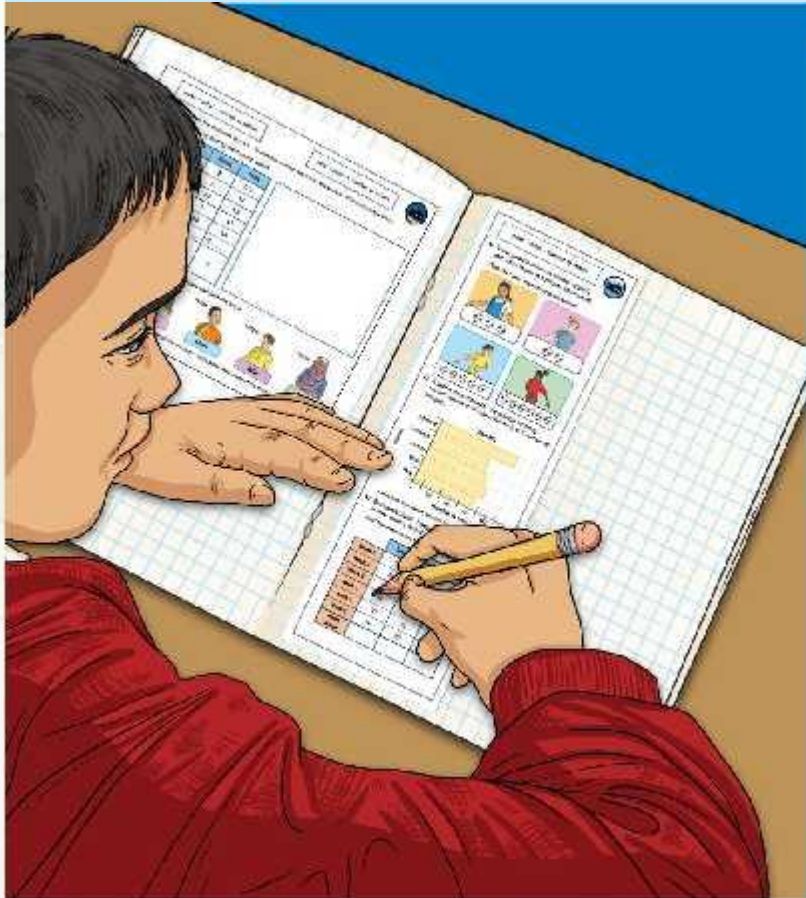


Complete the table by finding the missing values.

sum of the numbers in the set = mean ×
the number of values that make up the set.


The Mean

Dive in by completing your own activity!

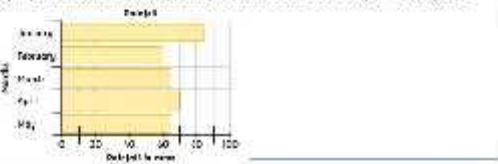


2) These pictures show the number of goals each child scored in a game. Write down the mean number of goals scored.

mean = total number of goals / number of children



3) Fill in a column of the average in the grid below. Use the grid to find the average of the numbers.



4) Each year, Jacob, Emily and Ali record their scores in their spelling test out of 20 marks.

mean = total number of marks / number of children

	Jacob	Emily	Ali
Year 1	11	10	10
Year 2	20	20	10
Year 3	16	14	20
Year 4	17	15	14
Year 5	18	16	17
Year 6	14	20	14
Mean			

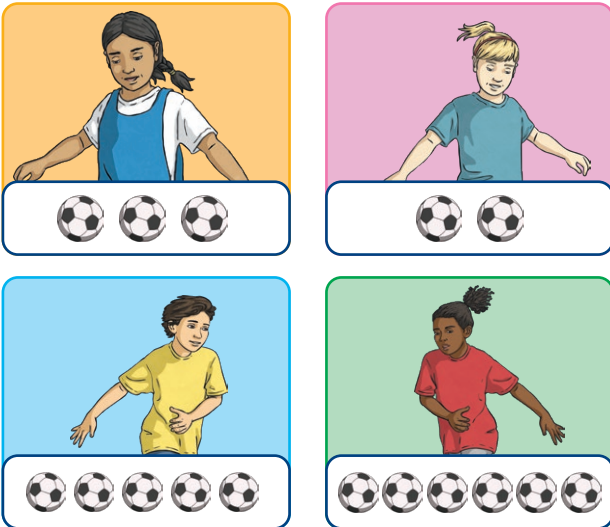


mean = $\frac{\text{sum of numbers in the set}}{\text{the number of values that make up the set}}$



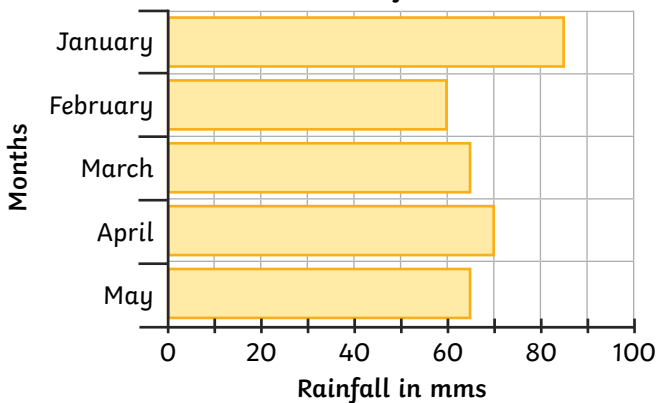
- 1) These pictures show the number of goals each child scored in a football tournament.

Find the mean number of goals scored.



- 2) A year 6 class measured the average monthly rainfall outside their school for the first 5 months of the year.

Rainfall



Calculate the mean rainfall for the 5 months.

- 3) Each week, Jacob, Emily and Adil record their scores in their spelling test of 20 words.

Find the mean score for each child over the 6 weeks.

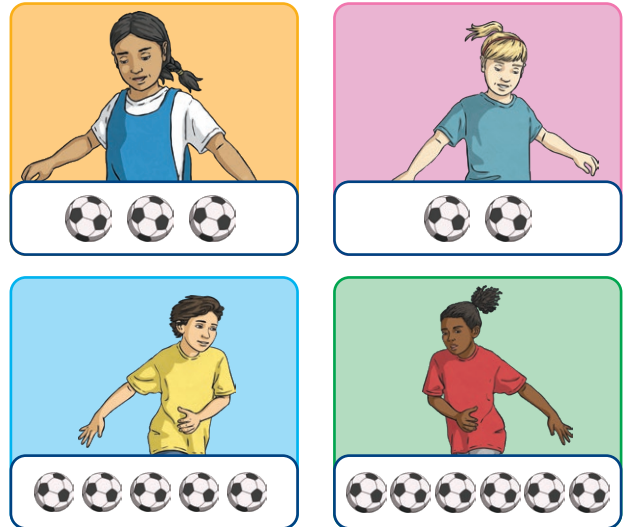
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Mean Score			

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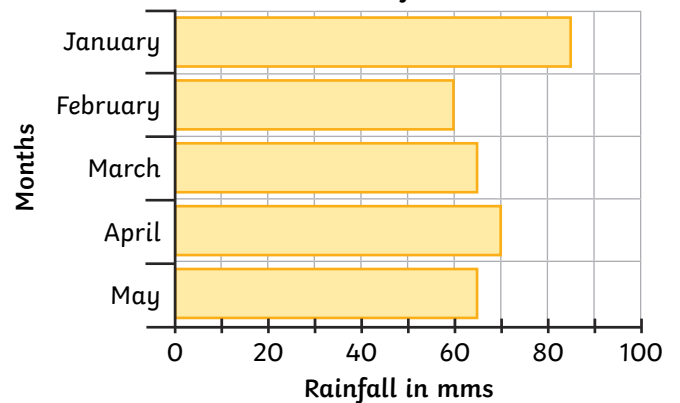
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mean = sum of numbers in the set ÷ the number of values that make up the set



- 1) Three groups of children decide to measure their heights.

Name	Height
Evie	124cm
Tarj	140cm
Heather	126cm

Group A

Name	Height
Jack	130cm
Maisie	134cm
Sami	132cm
Alicia	128cm
Harvey	136cm

Group C

Name	Height
Marvin	129cm
Alisha	128cm
Aisha	133cm
Rupinder	134cm

Group B

Explain whether each of the statements below is true or false, giving reasons.

- The group containing the tallest child has the shortest mean height.
 - The group with the most children has the shortest mean height.
 - If a child measuring 142cm joined group A, this group would now have the tallest mean height.
- 2) This table shows the time taken, in seconds, to run each lap of a running race.

Decide if you agree or disagree with each of the following statements, giving reasons.

- Ola's mean lap time was 4 seconds slower than Jessica's.
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sum of the numbers in the set = mean × the number of values that make up the set

- 1) This table shows the distances thrown, in metres, during the discus event at an athletics competition.

Complete the table by finding the missing values.

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Throw 3	10.4	6.2	8.3
Throw 4	8.6	7	6.1
Throw 5	6.6	8.8	9.6
Throw 6	9.1	b) _____	c) _____
Mean Average Distance Thrown	a) _____	7.5	9

- 2) Three children decide to measure their heights and find the mean.

139cm



Morgan

142cm



Olivia

141cm



Oscar

138cm



Felix

143cm



Aleena

If the mean height is 141cm, which three of the children could have been measuring themselves? Find all the possibilities.

- 3) These children all take a spelling test of 15 words every week for four weeks. They score one point for every correct answer. They each have the same mean score.



Angus



Clara



Yaman

What possible scores could each child have had in order to get a mean score of 10? Can you find more than one solution for each child?

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sum of the numbers in the set = mean × the number of values that make up the set

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