Week 8, Day 4  
Finding the mean (2)

Each day covers one maths topic. It should take you about 1 hour or just a little more.

1. Start by reading through the Learning Reminders. They come from our PowerPoint slides.

2. Tackle the questions on the Practice Sheet. There might be a choice of either Mild (easier) or Hot (harder)! Check the answers.

3. Finding it tricky? That’s OK… have a go with a grown-up at A Bit Stuck?

4. Have I mastered the topic? A few questions to Check your understanding. Fold the page to hide the answers!
Learning Reminders

**Calculate and interpret the mean as an average.**

This table shows the numbers of texts sent on one typical day by ten children in Y7.

<table>
<thead>
<tr>
<th>Children</th>
<th>Tom</th>
<th>Sira</th>
<th>Zoe</th>
<th>Amit</th>
<th>Ben</th>
<th>Elia</th>
<th>Jim</th>
<th>Erin</th>
<th>Sam</th>
<th>Bella</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of texts sent per day</td>
<td>10</td>
<td>18</td>
<td>24</td>
<td>6</td>
<td>0</td>
<td>10</td>
<td>8</td>
<td>16</td>
<td>2</td>
<td>20</td>
</tr>
</tbody>
</table>

**How can we find the mean number of texts children sent on this typical day?**

**Add up the number of texts and divide by the number of children.**

**Total number of texts = 114**

**The mean (average) number of texts is 11.4 (114 ÷ 10). Does this look about right?**
Learning Reminders

**Calculate and interpret the mean as an average.**

These tables show the numbers of texts sent on one typical day by ten children in Y7 and ten children in Y10.

### Table of numbers of texts sent by children in Year 7

<table>
<thead>
<tr>
<th>Children</th>
<th>Tom</th>
<th>Sira</th>
<th>Zoe</th>
<th>Amit</th>
<th>Ben</th>
<th>Ella</th>
<th>Jim</th>
<th>Erin</th>
<th>Sam</th>
<th>Bella</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of texts sent per day</td>
<td>10</td>
<td>18</td>
<td>24</td>
<td>6</td>
<td>0</td>
<td>10</td>
<td>8</td>
<td>16</td>
<td>2</td>
<td>20</td>
</tr>
</tbody>
</table>

**Do you think the average number of texts is higher or lower for children in Year 10?**

### Table of numbers of texts sent by children in Year 10

<table>
<thead>
<tr>
<th>Children</th>
<th>Ann</th>
<th>Ahmed</th>
<th>Sean</th>
<th>Jill</th>
<th>Sian</th>
<th>Anjel</th>
<th>Finn</th>
<th>Bob</th>
<th>Will</th>
<th>Kate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of texts sent per day</td>
<td>16</td>
<td>14</td>
<td>12</td>
<td>26</td>
<td>30</td>
<td>24</td>
<td>19</td>
<td>14</td>
<td>29</td>
<td>34</td>
</tr>
</tbody>
</table>

A Year 10 student has calculated the mean as 32. Does this seem correct?

32 seems a bit high, only one pupil (Kate) sent more than that. Work out the correct mean.

The correct mean is 21.8.

Total number of texts = 218

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Finding the mean

Lengths completed in the swimming lesson

<table>
<thead>
<tr>
<th></th>
<th>Livvy</th>
<th>Malik</th>
<th>Sam</th>
<th>Izzy</th>
<th>Jacob</th>
<th>Daisy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of lengths</td>
<td>10</td>
<td>6</td>
<td>8</td>
<td>14</td>
<td>20</td>
<td>17</td>
</tr>
</tbody>
</table>

1. Find the average (mean) number of lengths completed by the six friends, accurate to one decimal place.

Number of words correctly spelt in the sponsored spell.

<table>
<thead>
<tr>
<th></th>
<th>Livvy</th>
<th>Malik</th>
<th>Sam</th>
<th>Izzy</th>
<th>Jacob</th>
<th>Daisy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of words</td>
<td>15</td>
<td>19</td>
<td>18</td>
<td>12</td>
<td>14</td>
<td>17</td>
</tr>
</tbody>
</table>

2. Children were given 20 words to learn for the sponsored spell. Work out the average number of words the friends spelt correctly, accurate to one decimal place.

Hours spent per week on electronic devices
(including tablets, computers and mobile phones)

3. Draw a bar to show the average time spent by these children per week on electronic devices.

<table>
<thead>
<tr>
<th></th>
<th>Livvy</th>
<th>Malik</th>
<th>Sam</th>
<th>Izzy</th>
<th>Jacob</th>
<th>Daisy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of hours</td>
<td>10</td>
<td>10</td>
<td>8</td>
<td>12</td>
<td>14</td>
<td>17</td>
</tr>
</tbody>
</table>

Number of pages Izzy read each day.

4. Predict, then calculate the average number of pages Izzy read each day.

<table>
<thead>
<tr>
<th></th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday</th>
<th>Sunday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of pages</td>
<td>4</td>
<td>6</td>
<td>8</td>
<td>10</td>
<td>12</td>
<td>14</td>
<td>16</td>
</tr>
</tbody>
</table>
Challenge

Hot: Tackle this Challenge!

1. Write four numbers to make these five numbers have an average of 6.
   
   □ □ 7 □ □

2. Write ten numbers with a mean of 4.5.
Practice Sheet Answer

Finding the mean

1. Average number of lengths swam = 12.5
2. Average number of words spelt correctly = 15.8
3. Average time spent on electronic devices = 8 hours
4. Average number of pages Izzy read each day = 9

Challenge

1. Any four numbers with a total of 23 so that the total will be 30, to give a mean score of 6 \((30 \div 5)\).
2. Any 10 numbers with a total of 45.
This dice has numbers 1 to 6 on its faces.

If each number was rolled once, the average (mean) would be 3.5.

\[ 1 + 2 + 3 + 4 + 5 + 6 = 21 \quad 21 ÷ 6 = 3.5 \]

If we change 6 to a 12, this would increase the average (mean):

\[ 1 + 2 + 3 + 4 + 5 + 12 = 27 \quad 27 ÷ 6 = 4.5 \]

Calculate the average if we instead change the 1 to a 7.

\[ 7 + 2 + 3 + 4 + 5 + 6 = \square \quad \square ÷ 6 = \square \]

Now, find another way to increase the average to 4.5.

These six dice are rolled, with the results: 3, 2, 4, 5, 6, 4.
Calculate the average score.

The next six dice produce these scores:

\[ 8 \quad 3 \quad 8 \quad 7 \quad 4 \quad 6 \]

And the last six dice produce these scores:

\[ 5 \quad 3 \quad 5 \quad 7 \quad 8 \quad 2 \]

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Check your understanding

Questions

The friends have these amounts of money in their purses.

Jo: £5.50  Tim: £12  Sam: £4.60
Jill: £6.40  Fred: £8  Ann: £5.50

What is the average (mean) amount that they have?
Which children have less than this?

These are three children’s spelling test scores. Calculate the average score for each child.

<table>
<thead>
<tr>
<th></th>
<th>Week 1</th>
<th>Week 2</th>
<th>Week 3</th>
<th>Week 4</th>
<th>Week 5</th>
<th>Week 6</th>
<th>Week 7</th>
<th>Week 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nadiya</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>8</td>
<td>9</td>
<td>10</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>Dean</td>
<td>9</td>
<td>10</td>
<td>9</td>
<td>10</td>
<td>7</td>
<td>10</td>
<td>9</td>
<td>8</td>
</tr>
<tr>
<td>Emma</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>

Fold here to hide answers

Check your understanding

Answers

The friends have these amounts of money in their purses.

Jo: £5.50  Tim: £12  Sam: £4.60
Jill: £6.40  Fred: £8  Ann: £5.50

What is the average amount that they have?  £7  The total £42 divided by 6.
Which children have less than this?  Jo, Sam, Jill and Ann.

These are three children’s spelling test scores. Calculate the average score for each child.

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<td>8</td>
<td>9</td>
<td>10</td>
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<td>9</td>
</tr>
<tr>
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<td>9</td>
<td>10</td>
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<td>7</td>
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<td>8</td>
</tr>
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<td>Emma</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>

Nadiya = 8½ or 8.5  Dean = 9  Emma = 7½ or 7.25