

# Lesson 6 Overview

## Frequency charts and averages

Activity	Time (min)	Description/Prompt	Materials
Introduction	5	<p>Introduce the context of exercising to keep healthy. Give students a sticky note each and ask them to write down the number of days out of the last five days that they did something physically active for at least 10 minutes.</p> <p>Use the sticky notes to produce a frequency chart showing the class' results. Ask students to comment on the chart. Encourage all students to contribute their comments to promote a collaborative culture.</p>	<p>Mini sticky notes, flip chart paper or 'Class results' handout</p> <p>Slides 2 and 3</p>
Explore 1	10	<p>Tell students that Yaima runs two fitness classes. She surveys the attendees of the first class and uses the results to construct a frequency chart.</p> <p>Use the statements provided to explore the mode, median and mean as measures of average. The statements are given to offer a starting point and help to expose common misconceptions so that students' existing knowledge can be identified and built upon.</p>	<p>Mini whiteboards</p> <p>Calculators</p> <p>Slides 4–13</p>
Explore 2	5	<p>Tell students that Yaima surveys her second fitness class and represents the results in a frequency table. Give students a couple of minutes to engage with the data.</p>	<p>Mini whiteboards</p> <p>Slide 14</p>
Discuss 1	15	<p>Tell students that Yaima's colleagues Abi, Baz and Chloe discuss the data and make some incorrect statements about the survey results. Discuss the statements, asking students to identify why the statements are not true. Highlight the distinction between averages and the range, which is a measure of spread.</p>	<p>Slides 15–18</p>

Explore 3	25	<p>Model the process of matching charts to summary statistics tables.</p> <p>Introduce the main task and ask students to work in pairs to match the frequency charts and tables to the corresponding alternative data representation. During the task students are required to perform repeated average calculations, providing an opportunity for them to develop both their fluency and a deeper understanding whilst making connections between different representations of the data.</p>	<p>'Representing data' handout, 'Cards' and scissors</p> <p>Calculators</p> <p>Slides 19 and 20</p>
Review	15	<p>Check that students have matched the cards correctly. Focus too on some specific features of the data, checking students' understanding.</p> <p>Bring students' thinking together by summarising the three averages. It is important that students recognise the distinction between measures of average and range as a measure of spread, and how using the range and average values together can provide a more reliable summary of the data.</p>	<p>Mini whiteboards</p> <p>Calculators</p> <p>Slides 21–27</p>
Practice questions/ Discuss 2	15	<p>Ask students to work individually to answer some practice exam questions.</p> <p>When students have had sufficient time to complete the questions, discuss their work.</p> <p>Emphasise the importance of ordering the data and how putting data into a frequency table helps with this.</p> <p>Discuss how adding an additional column to a frequency table containing the sum of each type of data value may help with finding the total number of points scored. Establish why working out the total number of points scored is a useful thing to do (because we can use it to calculate the mean).</p>	<p>'Practice questions' handout</p> <p>Calculators</p> <p>Slides 28 and 29</p>