

### Average Wages

#### Learning Objectives

- Calculating the mean, median and mode and deciding which is the most appropriate measure of average in a given context.
- Appreciating how different groups may use a different measure of average to suit their own interests.
- Target age range: 12-14 years.

#### Resources

You will need one copy of the 'Average Wages' resource sheet for each student or group of students. Job adverts in a newspaper or on the Internet (optional).

#### Description of Activity

Ensure students understand how to calculate the mean, median and mode. It may be worth writing the definitions on the board to avoid confusion.

A plenary discussion could focus on how different measures of average can be used to support different, and possibly contradictory, hypotheses. For example, the lowest paid workers at Chicken King might use the median wage to justify why they should have a pay rise. The manager at Chicken King might use the mean to argue that the workers are already better off than workers elsewhere. The mean tends to be distorted by one or two extreme values. In real life the World Bank and IMF use GNP or GDP per capita (the mean income) to compare the wealth of different countries. The TUC supports a minimum wage of half male median earnings. Many European countries have a minimum wage based on the Council of Europe's 'decency threshold' which is defined as two thirds of median earnings (male and female combined). Encourage students to consider which average is the fairest to use as a measure of the average wage.

#### Solutions

At the Red Herring the average wage could be any of the following:  
mean = £5.66, median = £5.20, mode = £5.20.

At Chicken King the average wage could be any of the following:  
mean = £5.71, median = £4.50, mode = £3.90.

The average wage is highest at the Red Herring if you use the median or mode.

The average wage is highest at Chicken King if you use the mean.

#### Variations

The pictogram on the resource sheet illustrates inequities in the wages of workers at each workplace. Explore other ways of measuring and representing these inequities, e.g. range, cumulative frequency graph, inter-quartile range.

Think up a similar problem of your own. You could use job adverts from a newspaper or the Internet to make your problem more realistic. Is it possible to have three workplaces where each workplace has the highest average wage using one of the measures of average?

### Average Wages

At the Red Herring health food café, the workers are paid at the following rates:

- The manager earns £8.30 per hour.
- There are 2 cooks who each earn £6.30 per hour.
- There are 4 assistants who each earn £5.20 per hour.
- There are 2 trainees who each earn £4.60 per hour.



At the Chicken King fast food outlet, the workers are paid at the following rates:

- The manager earns £11.20 per hour.
- The production manager earns £9.10 per hour.
- There are 2 supervisors who each earn £6.70 per hour.
- There are 3 senior assistants who each earn £4.50 per hour.
- There are 4 junior assistants who each earn £3.90 per hour.



The workers at the Red Herring claim that their average wage is higher than that of the workers at Chicken King. The manager of Chicken King claims that the average wage of workers there is higher than that of those at the Red Herring.

- Who do you agree with?
- Justify your answer.