

Fractions & Percentages Codebreaker

Purpose

Find fractions of whole number quantities or measurements. Calculate percentages of quantities. Recognise and calculate equivalences between common fraction and percentages.

Preparation

Print enough copies of the codebreaker for each student. Don't print the answer grid double-sided as this will make it difficult for students to find the answers.

Group Size

Individual.

Task

Students answers each question and find the answer on the answer grid. They then write the letter next to the answer in the codebreaker. For example, the answer to question 1 is 1800. This matches to the letter W so they would put a W under the number 1 on the codebreaker.

Answers

There is an answer sheet on the last page.

Fractions & Percentages Codebreaker

Work out the answer to each question. Find the answer on the answer grid and then write the letter in the codebreaker. The codebreaker will reveal the title of a film.

1) 3000 people were asked whether they chose to use 'Soapysuds' or 'Greenclean' to do their washing up. 60% chose 'Greenclean'. How many people chose 'Greenclean'?

2) A concert ticket costs £30. The organisers donate $\frac{2}{5}$ of this to charity. What is the amount of money donated from each ticket sale to charity?

3) A health club's records show that two fifths of members are over 30 years of age. Two fifths is what percentage?

4) A nurse sees 24 patients. She weighs $\frac{3}{4}$ of these patients. How many patients does she weigh?

5) 25% of the people in a pub bought a raffle ticket. What percentage did not buy one?

6) A recipe weighing 240g in total contains flour, butter, sugar and eggs. $\frac{1}{6}$ of the weight is the butter. How much butter is in the recipe?

7) The table shows the number of people who go to different sittings in a bingo hall.

2.30pm	4.30pm	7.00pm	9.30pm
150	175	210	250

$\frac{2}{3}$ of those at the 2.30pm sitting are senior citizens. How many people are senior citizens?

8) At a theme park on Thursday, 750 people went on rides. On Friday, the total was 20% more. How many people went on rides on Friday?

9) A gardener opens her garden to raise money for charity. She takes £800 and gives $\frac{3}{4}$ to a local hospice and the rest to the RSPCA. How much did she give to the RSPCA?

10) The normal price of a rug is £200. There is a 20% off sale. What is the price of the rug in the sale?

11) The table shows the number of people who attended different film showings.

6.30pm	7.30pm	8.00pm	8.30pm
175	250	225	150

The cinema manager estimates that 40% of those at the 8.00pm showing will buy popcorn. How many bags would this be?

12) A manicure costs £15. There is a 20% reduction in the cost every Wednesday. How much does the manicure cost on Wednesdays?

13) As the result of a fall in profits in a company, 600 workers lose their jobs. Of these, 80% are over 50. How many people over 50 lose their jobs?

14) In a community survey of 303 people, approx. 66% of householders say that they want a children's playground. How many householders want a children's playground?

15) The table shows the number of people who attended different showings of a film.

6.30pm	7.30pm	8.00pm	8.30pm
175	250	225	150

$\frac{4}{9}$ of those at the 8.30pm showing were students. How many students were at the showing?

16) The table shows the number of people who go to different sittings in a bingo hall.

2.30pm	4.30pm	7.00pm	9.30pm
150	175	225	250

The bingo hall manager expects a third of people who attend the 7.00pm sitting to buy a cup of coffee. How many cups of coffee is this?

17) A shop had 45 people enter in the first hour of trading. Of these 40% were children. How many children were there?

18) Sara decides to spend a fifth of her savings on buying Christmas presents. She has saved £500. How much does she spend on presents?

19) At a theme park the most popular ride was the Devil's Drop. On Tuesday morning 600 people went on the ride. In the afternoon 50% more people went on the ride. How many people went on the ride in the afternoon?

20) There are 2000 people at a concert. A tenth of the attendees bought their tickets on a booking website. How many bought tickets through the booking site?

21) A holiday tour group of 48 people is made up of holiday makers from five different countries: Canada, New Zealand, Spain and France. A quarter of the people are from New Zealand. How many people are from New Zealand?

22) A music teacher takes out an advert on social media. They paid £200 for a one-month advert. The teacher has a voucher for 20% off. How much will the advert cost if the teacher uses the voucher?

23) An optician examines 800 patients during the summer. 75% of them could not read the smallest line on the eye test. How many people could read the smallest line?

24) A supermarket has 900 customers in one day. 60% of these buy milk. How many customers buy milk?

Answer Grid

A	12	J	20	S	540
B	5	K	780	T	100
C	600	L	90	U	607
D	85	M	54	V	360
E	200	N	480	W	1800
F	18	O	75	X	21
G	25	P	160	Y	1200
H	900	Q	10	Z	500
I	30	R	40		

Codebreaker

1	2	3		4	5
6		7	8	9	
10	11	12	13	14	15
	16	17		18	19
20		21	22	23	24

Teacher Answers

1	2	3		4	5
1800	12	40		18	75
W	A	R		F	O
6		7	8	9	
40		100	900	200	
R		T	H	E	
10	11	12	13	14	15
160	90	12	480	200	100
P	L	A	N	E	T
	16	17		18	19
	75	18		100	900
	O	F		T	H
20		21	22	23	24
200		12	160	200	540
E		A	P	E	S