Citizenship in Maths

Using Percentages: Charitable Giving

Teachers' Notes

The KS3 citizenship programme of study states that all students should have opportunities to explore… the needs of the local community and how these are met through public services and the voluntary sector and … actions that individuals, groups and organisations can take to influence decisions affecting communities and the environment

Before these activities are undertaken, it may be necessary to revise the following:
- Calculating a percentage of a quantity
- Calculating one number as a percentage of another;
- Increasing (or decreasing) a number by a percentage.

Students in set 1 and 2 should also be taught how to solve reverse percentage problems.

Initial discussion:
Some initial questions for class discussion could be:
- What type of charity do you think people are most likely to donate money to – children's, oversess aid, religious, animal or medical research?
- Are men or women more likely to donate to charity?
- Are people more likely to give to charity as they get older?
- What do you think is the average monthly amount of money a person donates to charity per month?

Encourage girls to write down their own predictions.

Activity 1: What types of charities do people support?
In this activity students explore the types of charity people in the UK support. They work out what percentage of charity giving is given to different types of charities. Girls also look to see how the amount given to charities has changed over the past few years by finding a percentage increase.
Note: 2005/06 saw the famine in Darfur, Hurricane Katrina and the Pakistan earthquake. These disasters explain the relatively large increase in donations between 2004/05 and 2005/06.

Activity 2: Who gives to charities?
Students write a profile of the type of person who is most likely to donate to charities.

Activity 3: Case Study: Oxfam
A look at Oxfam's income and expenditure and how it spends its money,

Extension: How much of their income do charities spend on fundraising?
Students could collect their own data in order to compare the percentage of their annual income different charities spend on administration and fund-raising.

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Activity 1

How has the total amount donated to charities changed?

The following table shows the total amount of donations to charity over the past few years.

Year	2004/05	2005/06	2006/07
Total donations (£bn)	8.2	9.4	9.5

➤ Work out the percentage increase in charitable giving between 2004/05 and 2005/06. Discuss possible reasons for the increase.

➤ Work out the percentage increase in giving between 2005/06 and 2006/07.

What types of charities do people support?

The amount of money donated to different types of good cause is given below:

Type of charity	Total donations (£billion) 2006/07
Medical research	1.6
Religious causes	1.5
Children/ young people	1.1
Hospital/ hospices	1.0
Overseas	0.86
Education	0.57
Animal welfare	0.48
Disabled	0.38
Homeless	0.29
Environment	0.29
Other charities (including elderly, sports, arts, health)	1.4

- Work out the percentage of total donations that each type of charity received.
- In the year 2005/06, 13% of the total amount of money donated to charity was given to overseas causes. Work out the amount of money given to overseas charities in 2005/06. Can you think of any reasons why donations to overseas charities were lower in 2006/07?

Activity 2: Who gives to charities?

Each year a survey takes place in which members of the population are asked whether they had donated to charities in the previous 4 weeks.

	Proportion giving to charity, %		
Table 1: Changing giving patterns, by gender, age group, occupation and income.			
	2004/05	**2005/06**	**2006/07**
Gender			
Men	52	53	48
Women	62	60	59
Age group			
16-24	44	43	41
25-44	58	62	56
45-64	57	60	59
65+	51	53	52
Occupational classification			
Managerial & professional	64	67	66
Intermediate	56	58	55
Routine/ manual	49	50	47
Income quartile			
Lower quartile	51	51	52
Second quartile	55	57	51
Third quartile	56	62	58
Upper quartile	61	65	65

➢ Write a profile of the type of person who is most likely to give to charity.
➢ Describe any changes to the proportion of people donating to charity over the past few years.

Table 2: Average donations during last 4 weeks			
	2004/05	2005/06	2006/07
Median amount per donor	£10	£10	£10
Mean amount per donor	£25	£28	£29
Mean amount per person	£14	£16	£16

➢ Explain the big difference between the median donation per donor and the mean amount per donor.

Activity 3: Case Study: Oxfam

Oxfam is a charity that works to relieve poverty, distress and suffering across the world. It responds to emergency situations caused by famine, earthquake and war and also aims to educate the public concerning the nature, causes and effects of poverty.

Income

In the year 2005/06, Oxfam's total income was £310.5 million.
➢ 68% of this income came from fundraising.   Calculate the amount of income generated by fundraising.
➢ 24% of Oxfam's total income came from trading (for example, through it's shops). Calculate the amount of income generated by trading.

Expenditure

In the year 2005/06, Oxfam's charitable expenditure was £220.8 million. This was spent as follows:

Area of spending	Amount of spending
Life and security	£107.9 m
A sustainable livelihood	£38.1 m
Basic social services	£20 m
Right to be heard	£15.9 m
Right to equity	£14.6 m
Other (mainly support costs)	£24.3 m

- What percentage did Oxfam spend on each area?

Changes

➢ As stated above, Oxfam's income in 2005/06 was £310.5 m. Its income in 2006/07 was 6.4% lower. Calculate Oxfam's income in 2006/07.
➢ Oxfam's total charitable expenditure increased by 43% between 2004/05 and 2005/06. Work out its expenditure in 2004/05.

Figures obtained from Oxfam's annual reports, obtainable from their website.