

Fund raising



UNIT A6

The unit looks at four different ways of raising funds in school. Pupils are encouraged to think about why we want to raise funds and how we go about it.

Differentiation

Each activity stands alone and the teacher can select the activity most appropriate to the class or pupil. It would be possible to have sections of a class working on different worksheets.

Resources needed

All the activities require paper and a pen. Activities 2, 3 and 4 require graph paper and Activity 2 also requires a compass and protractor for the pie charts.

Mathematical content

Collections

Number and algebra (AT2)

- ◆ Using decimal notation in context of money (level 3)

Handling data (AT4)

- ◆ Understanding and using the mean of discrete data (level 5)

The cake sale

Number and algebra (AT2)

- ◆ Using decimal notation in context of money (level 3)
- ◆ Calculating, using ratios, in appropriate situations (level 6)

Handling data (AT4)

- ◆ Constructing pie charts (level 6)

Basketball shoot

Handling data (AT4)

- ◆ Constructing and interpreting simple line graphs (level 4)
- ◆ Understanding and using the median (level 5)

Activity 4: Name the teddy

Number and algebra (AT2)

- ◆ Using decimal notation in context of money (level 3)
- ◆ Adding and subtracting negative numbers in context (level 5)
- ◆ Constructing, expressing in symbolic form and using simple formulae (level 5)

Handling data (AT4)

- ◆ Constructing and interpreting simple line graphs (level 4)

Spiritual and moral development

The aim is to encourage pupils to look beyond their own needs and to consider raising money for charity in fair and effective ways.

Using the unit

The mathematics in each activity will take between 30 minutes and an hour. It may be helpful in Activity 2 to suggest creating a table to help work out the angles in the pie-chart. Setting up a spreadsheet may also be useful to work out quantities and costs for different numbers of cakes.

Activities 1, 2 and 4 have a section which could lead to class or small group discussion. Some suggestions for this are as follows:

Activity 1: Collections: Reasons for giving could be gratitude, guilt, sympathy, a sense of duty, to be seen as a good person, etc. (Jesus' words in Matthew chapter 6 verses 2 to 4 warn against ostentatious giving and may be relevant to some. The story of the widow's mite in Mark chapter 12 verses 41 to 43 could also be helpful.)

Activity 2: The cake sale: They get 'for free' parents' time and expertise, fuel for cooking, etc. Discussion could draw out the fact that money is not the only thing we can give. Our time and skills can be just as important.

Activity 4: Name the teddy: The aim here is to get pupils thinking about how they give. Should we give indiscriminately to anyone who asks or are some causes worthier than others? There could also be some discussion of whether giving should be done on impulse or be planned.

Activities 2, 3 and 4 conclude with suggestions and questions about raising money in the way suggested. These would be most effective if the pupils were intending to collect for a particular charity and if the teacher were prepared to assist them. Developing these ideas will obviously take further time.

Answers

Activity 1

1. £9.66 2. £10.00 3. £19.66 4. £5.34
5. a) 14 b) 12 c) 26
6. a) 71 pence (to the nearest penny)
b) 81 pence (to the nearest penny)
c) No, on average the girls gave more.
7. 96 pence (to the nearest penny)

- b) Costs approx 175 degrees, profit approx 185 degrees.

Activity 3

1. 1
3. £1.00
4. b) £2.20
5. For discussion

Activity 2

1.

Ingredient	Quantity	No of packets	Cost
Margarine	2000g	4	£1.96
Caster sugar	2000g	2	£1.50
Eggs	40	7	£5.04
Self raising flour	2000g	2	£0.74
Icing sugar	2000g	2	£1.70
Cherries	1000g	10	£6.60

Total cost: £17.54

2. £60.00 3. £42.46 4. £18.46 5. 88 cakes
6. a) Costs approx 105 degrees, profit approx 255 degrees.

Activity 4

1. 17
2. a) £1.50
b) £9.00
c) None, they have lost £3.50.
3. a) 27 tickets
b) 33 tickets
c) 37 tickets
5. a) £3.50
b) £6.50
6. a) 23 tickets
b) 32 tickets
7. $M = 0.5T - 8.5$ (in pounds) or $M = 50T - 850$ (in pence).

Fund raising



UNIT A6

Collections

1

Tamara and David want to raise £25 for a local hospital. They plan to make a collection in their class at school. Tamara asks the girls and David asks the boys. This is what they collect, including donations from themselves:

Tamara: £1.20, 12p, £2, £1.21, 6p, 18p, 70p, 50p, £2, 37p, 32p, £1

David: 75p, 19p, £1.02, 92p, £1, 88p, 29p, 77p, £1.08, £1.10, 60p, 90p, 15p, 35p

1. How much did Tamara collect?
2. How much did David collect?
3. How much did they collect all together?
4. Their teacher says she will make up the extra amount needed. How much will she need to give them?
5. If every pupil in the class gave something:
 - a) how many boys were in the class?
 - b) how many girls were in the class?
 - c) how many pupils were there in the class all together?
6. David claims that the boys were more generous because they collected more money than the girls.
 - a) Work out the average amount per person collected by David. Round your answer to the nearest penny.
 - b) Work out the average amount per person collected by Tamara. Round your answer to the nearest penny.
 - c) Is David right?
7. If every pupil in the class had given the same amount, how much would each person have had to give if the collection were to raise £25? Round your answer to the nearest penny.



Everyone in the class gave something to this collection. Do you think it is good for us to give to charity? If so, why? If not, why not?

Is organising a collection a good way of raising money for charity?
What other ways of raising money could you use?

The cake sale

2

Class 8B is planning to raise money by selling cakes at break time. They are first going to bake the cakes during their Food Technology lessons. They will have to pay for the ingredients afterwards out of the money that they make at the sale.

Ingredients for 15 cakes:

100g margarine;
100g caster sugar;
2 eggs;
100g self raising flour;
100g icing sugar;
50g cherries.

Costs of the ingredients:

500g of margarine costs 49p;
1kg of caster sugar costs 75p;
6 eggs cost 72p;
1500g of self raising flour costs 37p;
1kg of icing sugar costs 85p;
100g of cherries costs 66p.

(N.B. The ingredients cannot be bought in smaller quantities than these.)

- Copy and complete this table to work out the cost of each ingredient for 300 cakes. The first line has been done for you.

Ingredient	Quantity	Number of packets	Cost
Margarine	2000g	4	£1.96
Caster sugar			
Eggs			
Self raising flour			
Icing sugar			
Cherries			

Total cost: £

- Each cake is going to be sold for 20p. How much money will the class collect on the day of the cake sale if they sell all 300 cakes?
- How much money will the class actually have raised after they have paid for the ingredients?
- In fact, on the day, class 8B only sold 180 cakes. How much money did they raise after they had paid for the ingredients?
- What is the minimum number of cakes that they needed to sell in order to just cover their costs?
- Draw a pie chart to show how the money from the sale of 300 cakes is split up into costs and profit.
 - Draw a second pie chart with the same radius to show the costs and profit for the sale of the 180 cakes.

Organising a cake sale

If your class wants to organise a cake sale, you will need to think about these questions:

- Will you make the cakes at home or at school?
- Will you pay for the ingredients out of the money raised?
- How many cakes will you be able to sell? (If you make too many, you may waste some.)
- What price will you charge for each cake? (You need to cover all your costs and raise some money for your charity.)
- Where will you sell the cakes? (You will need to ask permission from a member of staff.)
- Where will you put the money for safe keeping once you have collected it?
- Who will clear up the mess at the end?



Another class also held a cake sale but they decided to get their parents to make the cakes at home. Their parents did not charge for the ingredients. What else did this class get 'for free'?

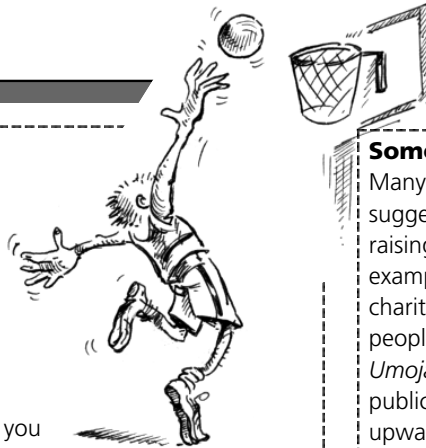
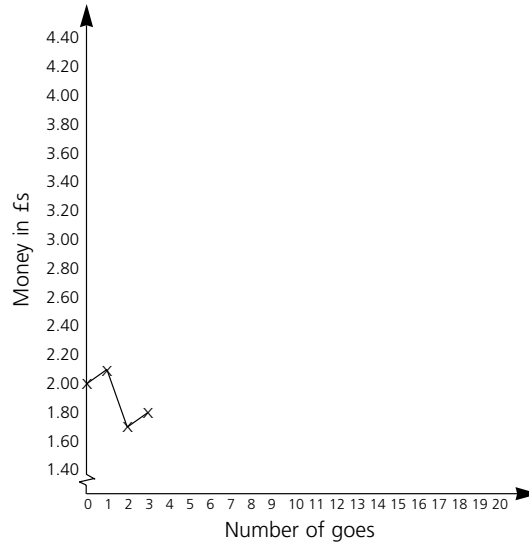
Basketball shoot

3

In Year 7 PE lessons, class 7C has organised a basketball shooting competition to raise money for flood victims in Bangladesh. Everyone entering has to pay 10 pence for 3 shots. If they score with all 3 shots, they win 50 pence. The organisers start off with a float of £2 in case someone wins straight away! Here are the scores of the first 20 people to have a go:

1, 3, 2, 0, 0, 0, 1, 2, 1, 1, 3, 2, 0, 1, 0, 1, 1, 1, 1, 2.

1. Work out the median number of baskets scored by these 20 people.
2. Copy and complete this graph to show how their money rose and fell after each person's go.
3. How much money have 7C made after 20 people have had a go? (Remember to subtract the float money.)
4. The class could have started with these rules:
 - 20 pence to enter
 - Money back if you get 2 baskets
 - 50 pence if you get 3 baskets
 - a) On the same axes as before, but using a different colour, draw a graph to show what would have happened with these rules over the first 20 goes. (They still start with a £2 float.)
 - b) How much money would have been raised with these rules? (Don't forget the float!)
5. Which set of rules do you think is better? Give a reason for your answer.



Organising a 'Basketball shoot'

You may need one of the PE staff to help you. Firstly decide on the rules. Get advice from your teacher. If you set too easy a target, you may end up having to pay out more money than you collect in! If the target is too hard, no one will want to enter.

Think about the following:

- Where will the event take place? Is the place you have chosen free on your chosen date?
- Who will run the event? (You will need a teacher to supervise it.)
- How will you organise the event? (Someone needs to watch each person shooting and someone else needs to look after the money.)
- Make sure you have an adequate float at the start. You will need some small change.
- How will you publicise the event so that plenty of people take part?
- Where will you put the money for safe keeping once you have collected it?

Something to do

Many charities can offer suggestions for fund raising. Tear Fund, for example, is a Christian charity which helps people across the world. *Umoja* is their free publication for ages 11 upwards and gives ideas for things you can do to help. Write to Tearfund, 100 Church Road, Teddington, Middlesex, TW11 8QE, or visit their website at <http://www.tearfund.org>

Name the teddy

4

7M are going to run a 'Name the teddy' competition. They buy a teddy. An 'independent expert' chooses a name for the teddy and it is sealed in an envelope. Each person who enters the competition pays 50 pence and chooses a name that has not already been selected for the teddy. The name each person chooses is written on a list along with their own name. At the end of the week, the envelope is opened. The person who has chosen the correct name wins the teddy.

- The cost of the teddy is £8.50. How many tickets must be bought before the teddy is paid for?
- How much money is made (after the teddy has been paid for) when the following number of tickets have been sold:
 - 20?
 - 35?
 - 10?
- How many tickets need to be sold to raise (after the teddy is paid for) at least:
 - £5?
 - £8?
 - £10?
- On graph paper, draw a graph to show the number of tickets sold and the amount of money raised after the teddy is paid for.

On the horizontal axis use 1 cm for 5 tickets from 0 to 50.

On the vertical axis use 1 cm for £2 from -£10 to +£20.

Use your answers to questions 2 and 3 as points for your graph, plot them and draw a line through the points.
- Use your graph to work out how much 7M would raise by selling:
 - 24 tickets;
 - 30 tickets.
- Use your graph to work out how many tickets must be sold in order to raise:
 - £3;
 - £7.50.
- Using T for the number of tickets and M for the amount of money raised (in £), write a formula connecting M and T. Start your formula

M =



People often enter competitions even when they do not think they will win because they know that the money is going to a good cause. Are all causes 'good causes'? What about 'money for the guy' or a person begging in the street? Would you give to people who come to your door, such as carol singers or children playing 'trick or treat'? Is it better to be generous to everyone that asks you or to plan your giving?

Organising a 'Name the teddy' competition

It is a good idea to buy a new teddy for the competition.

- Decide when you will announce the result so that people will know when they will find out who has won.
- Make a chart to fill in peoples' names, their addresses (or class number, if you are doing it at school) and the name they have chosen for the teddy.
- Think about when and where you will sell the tickets.
- How will you keep the money safe once you have collected it?