

2

Fund raising

Coverage

This unit is about fractions and money. It covers dividing single items into halves and quarters. It should be emphasised that each part is exactly the same size. It also covers calculating a half or a quarter of a number of items. Three-quarters is introduced and limited practice is offered. Selection of coins, calculation of totals less than a pound and change from a pound are dealt with as 'counting on' in the learner materials but individuals may have their own efficient methods and should be encouraged to refine them. Revision of the addition or subtraction in unit 1 might also be required prior to exercises which require these skills.

Skills

N2/E2.1 read, write and compare halves and quarters of quantities

N2/E2.2 find halves and quarters of small numbers of items or shapes

MSS1/E2.1 make amounts of money up to £1 in different ways using 1p, 2p, 5p, 10p, 20p and 50p coins

MSS1/E2.2 calculate the cost of more than one item and the change from a transaction, in pence or in whole pounds.

Resources needed for effective teaching of this unit:

Demonstration	Group	Pair	Individual
Cakes or pizza Price cards		20 counters	Coins or cards with the values of coins

Reminder

In the Links, H means Help, E means Extension and M means Mini-project.

Remember

Ensure that you emphasise the incorrect rectangle is only two parts and not two equal halves.

Throughout the unit, be aware of the reading needs of learners.

You may need to read out parts of the text.

Words **highlighted** in **bold** will need particular clarification.

Context

- Discuss the scenario as a group.
- There may be an international disaster, e.g. famine, flood etc. or a local cause in the media which you could focus on.

Be sensitive to the fact that the learners may be emotionally involved with a 'cause' for which they feel strongly.

Stimulus questions

- Is there a community centre near where you live?
- What sorts of activities take place at a community centre?
- Have you ever been involved in fundraising?
- What charities do you think are worth supporting?
- What stalls would you expect at a 'fun day'?
- What type of food do you think would sell well?
- How do you think the food could be packed?
- What maths skills would be important for running a stall?

Keep the discussion general at this stage, so that learners can share knowledge and experience.

Pages 2 and 3 Cutting up

Introduction to activity 1

- Discuss why it might be necessary to cut up the cakes, pizzas etc.
- Explain that if a cake is cut into two **equal** pieces, each piece is a **half**. Using a real cake or pizza has advantages, but health and safety might preclude eating the cake.
- Introduce the sign $\frac{1}{2}$.
- On a flipchart look at different ways of cutting a square, a rectangle and a circle into halves or two equal parts.

Activity 1

- Learners individually divide each cake into two equal halves and check their answers with a partner.

Introduction to activity 2

- Introduce the idea that it might be necessary to cut the cake (etc.) into smaller pieces.
- Explain that if a cake is cut into four equal pieces each piece is a quarter. If possible cut up a real item.
- On a flipchart look at different ways of cutting a square, a rectangle and a circle into quarters or four equal pieces.

Activity 2

- Learners divide each pizza into four equal quarters then check their answers with another person.

Activity 3

- Learners complete the activity individually or in pairs.

LINKS: H1

Pages 4 and 5 Splitting up

Introduction to activity 4

- Discuss why some of the smaller items might be sold in multiples.
- Use 12 real items (even if not real food) to show and explain how to divide them into two equal groups to find a half of 12.
- Repeat with some other numbers. Make sure learners are competent using apparatus before asking them to work abstractly (without items).

Activity 4

- Learners should work in pairs.
- Use blocks or counters if appropriate.

Introduction to activity 5

- Use 12 real items and show and explain how to divide them into four equal groups to find a quarter of 12.
- Repeat with some other numbers.

Activity 5

- Learners should work in pairs.
- Use blocks or counters if appropriate.

LINKS: H2, E1, M1, M2

Pages 6 and 7 Handling the money

Introduction to activity 6

- Discuss coins up to £1 – their colour, shape, value and what you could buy with each coin.
- Use a flipchart/board/OHP and mark or draw up some coins with a total of less than £1. Ask learners what coins are needed to make £1. Ask if there are alternative coins that could have been used to make £1.
- Work through several more examples as a class.
- Start so that only a small number of coins need to be added and gradually increase the amount until learners understand how to make a £1, and that there are many different ways.

Activity 6

- Learners answer the questions in pairs.

Activity 7

- Hold up the 'Price card'. Learners have to choose the coins to pay this amount (prices up to £1 maximum). Use 1, price 25p; 2, price 85p; 3, price 89p; 4, price 42p.
- Have a few practice rounds to ensure that everyone understands what to do. Use the four cards.
- Learners can then repeat the activity in pairs and record their answers in their books.
- Discuss which coins were used the most.
- Discuss which amounts were easy or difficult to make.
- As an extension, learners could hold up the change from £1 or 50p.

LINKS: H3, E2

Pages 8 and 9 The price list

Introduction to activity 8

- Discuss why some small cakes/items might be sold individually.
- Work through the example of how to work out the cost of a small number of items and that repeated addition can be done as multiplication:

$$10p + 10p + 10p + 10p = 4 \times 10p = 40p \\ \text{(unit 1)}$$

- Work through some more examples of items less than 10p, e.g. liquorice sticks are 4p each, the cost of 5 sticks is:

$$4p + 4p + 4p + 4p + 4p = 5 \times 4p = 20p \\ \text{(unit 1)}$$

- Discuss different methods of working out the change from £1:
 - counting on, using number line to show jumps.
 - subtraction, using mental and the simple horizontal methods used in unit 1 (not vertical methods).
- Work through the example and other examples until learners are confident. Ensure learners go back to basic mental and written methods of calculation if formal methods are too challenging at this stage.

Activity 8

- Learners complete the activity individually or in pairs.

Introduction to activity 9

- Work through how the large cake has been cut up into slices.
- Discuss how many slices in $\frac{1}{4}$ and $\frac{1}{2}$ of a cake. How much is each slice? (25p)
- Work through some more difficult examples of working out change from £1.
- How much for 2, 3, 4 slices?

Activity 9

- Learners complete the activity individually or in pairs.

Introduction to activity 10

- Work through the example.
 - Discuss ways of adding the different amounts (see unit 1). Use a number line to add on, or the partitioning method.
 - Discuss ways of working out the change from £1 (see activity 8 and unit 1).
- Work through other examples until learners are confident.

Activity 10

- Learners complete the activity individually or in pairs.

LINKS: H4, H5, E3, M2

Pages 10 and 11 Selling the cakes

Introduction to activity 11

- Work through the examples.
- Remind learners that half means divide into two equal parts. Half a cake is half the price. So $\frac{1}{2}$ of the round cake is 40p; $\frac{1}{2}$ of the square cake is 50p.
- Remind learners how to add two-digit numbers (units to units, tens to tens).
- Remind learners how to work out the coins to use and that the solution is not unique.
- Work through further examples until learners are confident.

Activity 11

- Learners complete the activity individually or in pairs.

LINKS: H6, E2

Page 12 Half price

Introduction to activity 12

- Remind learners that a half is the same as dividing into two equal groups.
- Work through the example. Full price was £1. Half of £1 is 50p. So half price is 50p.
- Give some other examples and ask learners to work out 'half price', e.g. 80p, 60p, 70p, 18p etc.
- Remind learners how to work out the change from £1 (see activity 8 and unit 1).

Activity 12

- Learners complete the activity individually or in pairs.

LINKS: M3, M4

Pages 13 and 14 Help

H1

- Learners work individually or in pairs.
- Remind learners that:
 - a whole is divided into two equal halves
 - a half can be written as $\frac{1}{2}$
 - a whole is divided into four equal quarters
 - a quarter can be written as $\frac{1}{4}$.

H2

- Learners work individually or in pairs.
- Remind learners:
 - to divide items into two equal groups to find $\frac{1}{2}$
 - to divide items into four equal groups to find $\frac{1}{4}$.

H3

- Learners work individually or in pairs.
- Ask learners to check their answers by counting up the coins.

H4

- Learners work individually or in pairs.
- Ask learners to check their answers by adding the amounts in each row. The answer should be £1.

H5

- Learners work individually or in pairs.
- Remind learners:
 - to add units to units and tens to tens; watch for units flowing over into tens
 - that they can count on or subtract the total from £1 or use a method of their own.

H6

- Learners work individually or in pairs.
- Remind learners that:
 - they can count on or subtract the total from £1 or use a method of their own
 - they should check their 'change' by adding to make £1
 - they should count the coins to check their answers.

Page 15 Extension

↑ E1

- Learners work individually.
- Remind learners that:
 - to calculate $\frac{1}{2}$, divide into two equal groups
 - to calculate $\frac{1}{4}$, divide into four equal groups.

↑ E2

- Learners work individually or in pairs.
- Learners need to count on or subtract the totals from £5 or £10.

↑ E3

- Learners work individually or in pairs.
- Learners need to make up amounts of more than £1 and use mixed units: pounds and pence.

Page 16 Mini-projects

- Learners work individually or in groups in class or at home.
- These projects involve application of the skills learnt in this unit.
- Make sure that learners understand exactly what they are trying to achieve.

M1

- Discuss ways of finding a recipe and writing it down. Be aware that kilograms are in unit 4 (not grams).
- Discuss how to price the items, including food for cooking. Be aware that pounds and pence cannot be mixed together at this level.
- Use the cup measure to overcome difficulties.

M2

- Discuss which items have occurred in the unit.
- Again be aware that pounds and pence cannot be mixed together at this level.
- Discuss ways of collecting the information.

M3

- Discuss the details:
 - cause
 - the activity
 - where
 - when
 - permission required.

Pages 17 and 18 Check it

- Use these questions to assess how learners have coped with the skills in this unit. Ask learners to indicate the areas in which they would like more help.

How am I doing?

Learners should complete this individually, with teacher support where necessary.