

1

Outside catering

Coverage

This unit is about the practical use of numbers to perform everyday tasks. The context can be adapted to relate to catering in the home as the skills are the same. In estimating and approximating, the emphasis is on working things out quickly using mental maths where possible. This approach is emphasised throughout.

A number of activities involve approximating and rounding. Learners at this level sometimes have difficulty with the idea of coming up with a 'rough' answer as they are used to coming up with the 'right' answer rather than an answer whose degree of accuracy is appropriate to the context. Calculations using negative numbers are not required, although some basic calculations are included.

Skills

N1/L1.2 recognise negative numbers in practical contexts (e.g. temperatures)

N1/L1.4 multiply and divide whole numbers by 10 and 100

N1/L1.7 work out simple ratio and direct proportion

N1/L1.8 approximate by rounding

N1/L1.9 estimate answers to calculations

N2/L1.2 find parts of whole numbers or quantities or measurements (e.g. $\frac{2}{3}$ or $\frac{3}{4}$)

MSS1/L1.4 read, estimate measure and compare weight, capacity and temperature using common units

MSS1/L1.7 convert units of measure in the same system

Resources needed for effective teaching of this unit:

Demonstration	Small group	Pair	Individual
Large number line	Number lines	Number lines	Number lines
Large number line showing negative numbers	Number lines showing negative numbers	Number lines showing negative numbers	Number lines showing negative numbers
Measuring jug and containers for holding liquids	Calculators	Calculators	Calculator
Scales	Coins, notes		
Atlas			
Large (OHT) frozen food labels			
Coins, notes			

Reminder

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

Remember

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 as a group the times when people have large gatherings where food is served.
- Be aware of cultural differences and the sorts of occasions when gatherings take place.

Stimulus questions

- Have you ever held or organised a party?
- How did you decide how many people to invite?
- What kind of things might they like to eat and drink?
- How do you work out how much food and drink you might need?
- How do you work out how much it might cost?

Pages 2–5

Working it out quickly

Introduction to activity 1

- Discuss with the group the idea of getting a **rough** or **approximate** answer to a problem quickly.
- Explain the idea of rounding numbers to the nearest 10, 100, 1000 etc. and to 5, 50 etc.
- Use a large number line to illustrate where a number lies in relation to two other numbers.
- Work through the examples.
- Complete the other questions as a group.

Activity 1

- Work in pairs to answer the questions.
- Learners should use a number line with some of the examples to reinforce the concept of rounding to the nearest ..., rounding up or down.
- Work out one or more of the examples as a group if necessary to ensure understanding.

Introduction to activity 2

- Discuss levels of accuracy achieved with rounding to 5, 10, 100, 1000 etc.
- Discuss when different levels of accuracy might be needed.

Talk about it

- Discuss when it would be appropriate to round to different levels of accuracy.
- Use other examples similar to those in activity 2 as the basis of the discussion.

Activity 2

- Learners work individually or in pairs.

Introduction to activity 3

- This section is about rounding numbers but takes into account the fact that sometimes it is necessary to round numbers up even if the number is not to the nearest 10, 100 etc.
- Work through the example.
- Use real boxes if necessary to illustrate the example.

Activity 3

- Learners work in pairs.
- Use something to represent the boxes or bags etc. if it helps to start with.

Introduction to activity 4

- Explain the 'Remember' box on decimal notation for money to the group and check understanding.
- Explain rounding to the nearest pound and to the nearest £5, £10 etc.
- Illustrate with a number line or real money if necessary.
- Work through the example.
- Discuss why it is sometimes necessary to round money up when estimating to make sure you have enough to pay or to make sure you charge enough to cover costs, and the dangers of rounding down.

Activity 4

- Pay particular attention to where zeroes are used to set place value.
- Pay particular attention to answers produced by calculators and the zero, which may be missing at the end e.g. 5.5 is £5.50.

LINKS: H1

Pages 6–7 A rough idea!

Activity 5

- Discuss the different ways of rounding with the group.
- Other examples might include carpeting a room, wallpapering, grass seed for lawn.

Introduction to activity 6

- Reinforce the previous discussion on working out **approximate** answers and when they can be useful.
- Discuss the worked example in activity 5 and the different ways of working out the estimate.
- Discuss the importance of producing an estimate that gives an answer that is useful, i.e. one that covers costs or makes sure that there is enough material for the job.

⬆ Activity 6

- The examples illustrate the problems that may occur if numbers are rounded to the nearest ... rather than rounded up to ensure that the answer is useful as an estimate.
- Use the examples to discuss the concepts and processes involved.

Introduction to activity 7

- This section is about using estimates and rounding to check answers.
- Talk through the example and encourage learners to identify where the error was made.
- Discuss the relevance of phrases like 'It should be about ...' and 'That doesn't make sense'.

Activity 7

- You may need to work through some or all of these examples with learners.
- If learners work through the questions on their own or with others, get them to talk through how they worked them out.

LINKS: H2, E1, M1

Pages 8–11 How much do I need?

Introduction to activity 8

- This section is about multiplying and dividing numbers by 10 and 100, and converting metric weights between grams and kilograms, and between pence and pounds.
- Use dried peas or chickpeas. Get learners to serve out, without weighing, the amount they might serve for a meal, and then to weigh the portion. Weigh out a catering portion of the same item and compare the two.
- If there is a difference, discuss it and how it may affect the amount needed for 10 and then 100 if appropriate.
- Discuss how to multiply by 10: units become tens, tens become hundreds etc. Fill in the gaps with a zero – all the digits move one place to the left.
- Discuss how to multiply by 100: units become hundreds, tens become thousands. Fill in the gaps with zeros and the digits move two places to the left.
- If you have access to IT, set up a spreadsheet showing the amounts and use the formula function to multiply or divide by 10 and 100.
- Discuss the 'Remember' box to check understanding of metric weights.

Activity 8

- This activity is about multiplying amounts by 10 and 100.
- Learners will need to convert between grams and kilograms.

Activity 9

- Discuss the 'Remember' box to check understanding of metric weights. Work through some simple examples to reinforce this.
- This activity involves dividing amounts by 10 or 100 in practical situations.
- Relate this exercise to activity 3 (page 4) where we talked about having enough **whole boxes** etc.
- You will need to refer to the catering chart on page 8 of the learner materials. Some learners will benefit from having a separate copy of the chart.

Activity 10

- This activity involves multiplying and dividing by 10 and 100 in practical situations.
- It may be helpful to work through some of the examples; ask learners to explain how they would tackle them.

Activity 11

- This activity involves multiplying amounts by 10 and 100, and includes converting grams to kilograms.
- Remind learners how to multiply whole numbers and decimals by 10 and 100.

LINKS: H3, H4, H5, E2

Pages 12–13 Mixing the drinks

Introduction to activity 12

- **Method of unity**
2 drinks cost 50p
 $1 \text{ drink costs } 50\text{p} \div 2 = 25\text{p}$
 $3 \text{ drinks cost } 25\text{p} \times 3 = 75\text{p}$
- This section is about working out ratios and direct proportion in everyday situations.
- Ask if anyone has accidentally drunk some cordial that has not been diluted enough. What did it taste like?
- What should have happened?

- Get the learners to estimate how much of the cordial should have been mixed with how much water.
- Do the exercise with cordial. Ask the learners to taste.
- Read the label: most cordials suggest a ratio of 1 parts cordial to 4 parts water.
- Discuss what this means.
- Mix some drinks to the right proportion. Compare them.
- Talk about catering and how using the wrong amounts can be costly.
- Talk about other occasions when proportions are used. Use the examples provided. Get learners to give examples.
- Work through the examples.
- At this level it is not necessary to use the 1:4 format to express proportion. Expressing it as one part cordial to four parts of water is sufficient.

Activity 12

- Explain that the terms ratio and direct proportion are used in everyday life. Learners may not have come across the terms in this context before.
- Learners complete the exercise individually or in pairs.

LINKS: H5, E2, M1

Pages 14–15 Working out the parts

Introduction to activity 13

- Discuss with learners occasions when they may have said things like, 'I don't need all that, I only need half of it.' Examples could come from shopping or other everyday activities.
- At this level learners should be able to recognise and use equivalent fractions. It may be useful to revise and check understanding by working through some simple examples to start with.
- Talk about **numerators** and **denominators**.
- Work through the example and get learners to talk through their methods.

- A spreadsheet could be used, using the formula function to do multiple calculations.

⬆ **Activity 13**

- This activity uses $\frac{3}{4}$ and $\frac{2}{3}$ of quantities.
- Learners work individually or in pairs.

Activity 14

- This activity involves scaling quantities.
- Find out which method learners prefer.
- Work through the activities as a group.

LINKS: H5, E2

Pages 16–18 **Thinking negatively!**

Introduction to activity 15

- This section deals with negative numbers in everyday life.
- Learners do not need to do calculations with negative numbers at this level but they do need to recognise negative numbers in everyday life. The activities mainly involve ordering numbers.

Activity 15

- Talk about the idea of negative numbers. Learners will probably recognise their use in telling the temperature. Suggest other uses such as on bank statements, where a negative number shows an overdraft. Graphs showing a fall in things like house prices could also be used to illustrate the idea.
- Use a number line with negative and positive numbers to illustrate the concept.
- A thermometer showing temperatures below freezing could be used to make the concept real.

Activity 16

- Work through the examples.
- Discuss this activity using number lines.

Introduction to activity 17

- This section is about the use of negative numbers when talking about temperatures.

Activity 17

- Talk about temperatures on weather charts.
- What do different temperatures feel like?
- What do freezing, warm, cool, hot etc. feel like?
- What does today's temperature feel like?
- Use a thermometer to order the temperatures.

Activity 18

- Give examples of frozen food packaging and discuss them where possible.
- Can you feel the difference between the fridge and the freezer temperature? (Some learners may not have a fridge or freezer.)

LINKS: H6, E3, M2

Page 19 **How much of each, and is it worth it?**

⬆ **Activity 19**

- This is an integrated group activity to practise the skills learned.
- Learners will need to refer to the catering quantities chart on page 8 of the learner materials. Some learners will benefit from having a separate copy of the chart.
- Assume a ratio of 1:4 for the cordial.
- If appropriate, part of the group could work out the quantities and the others work out the money.
- Using a spreadsheet would add to the relevance of this activity. It could be used to introduce the 'What if' scenario.

LINKS: M1

Pages 20–21

Help

H1

- Remind learners how to round to the nearest 10, 100, 1000.

H2

- Remind learners that they should round each number first.
- When learners have completed the activity, talk about how accurate their estimates were.

H3

- Remind learners how to multiply and divide by 10, 100 and 1000.

H4

- Remind learners how to multiply and divide by 10, 100 and 1000.

H5

- Discuss methods before and after the activity.
- What method did the learners use, particularly for the recipe for 15?

H6

- You may have to explain that a fall in temperature means a move to a smaller number (to the left on the number line) and vice versa.

Page 22

Extension

↑ E1

- Remind learners that they will need **whole** boxes, buses etc.

↑ E2

- Discuss methods used for scaling recipes. Ask learners to explain if necessary.

↑ E3

- This activity requires an understanding of higher and lower numbers. Learners might like to use a number line, or you could use a spreadsheet formula function.

Page 23

Mini-projects

M1

- Practises the skills of rounding, estimating, appreciating the idea of needing whole packets of things and finding parts of quantities.
- Ensure learners understand what to do.

M2

- This is a group activity using negative numbers. It could be extended into a data handling activity.
- Ensure learners understand what to do.

Page 24

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?

To be completed by learners individually, with teacher support.