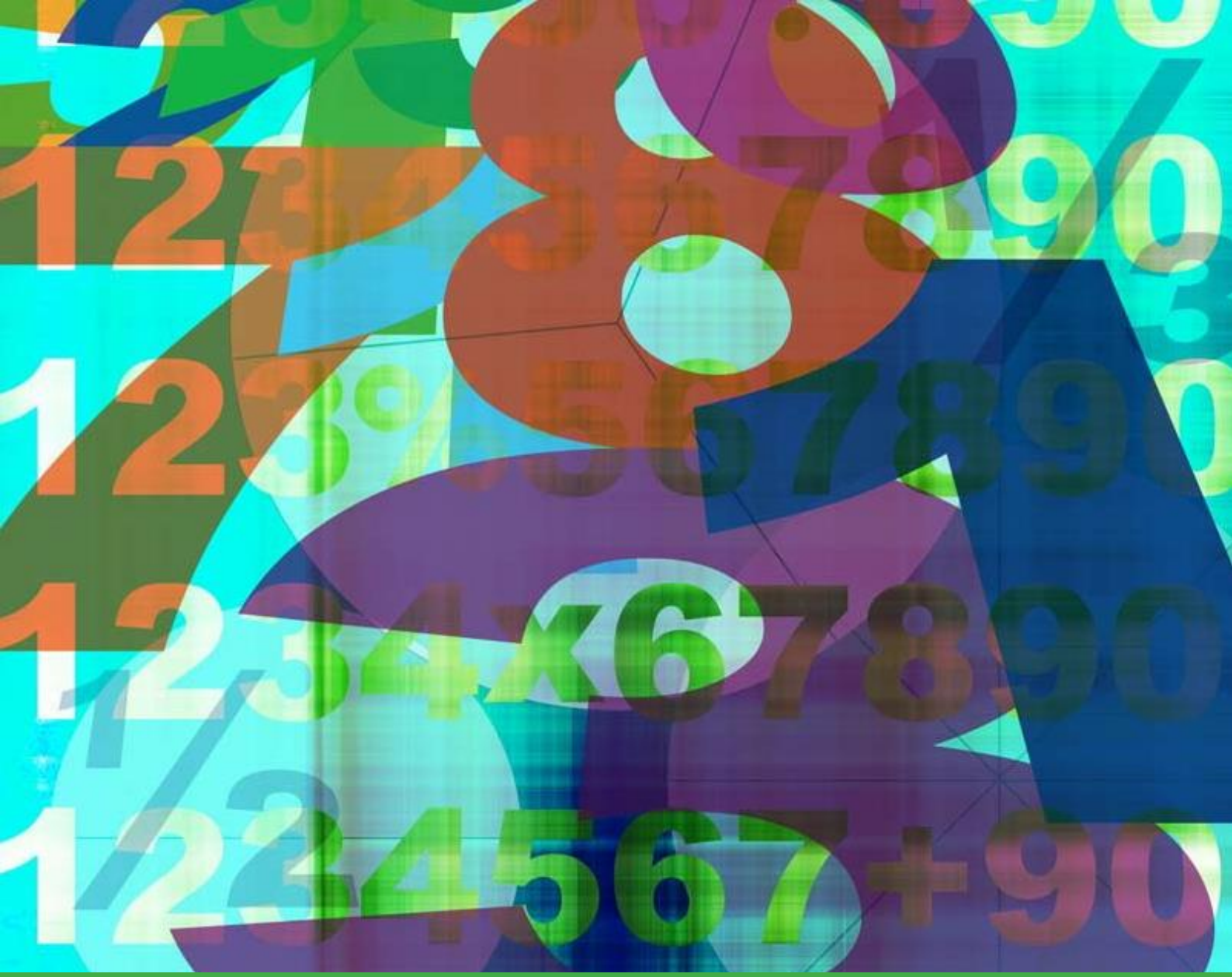


Level 3 Application of Number - Unit 1

Answers to tasks in the Learner Pack

Answers N1 Calculator

Task 1

(i) Michelle spends €1.26 + €1.89 + €4.99 in the shop. Use your calculator to add up those prices:

In your calculator press **1.26 + 1.89 + 4.99 =**

Tip: In most calculators the decimal point is on the bottom of the calculator.

This will give you an answer of 8.14. So Michelle spent €8.14 on the groceries.

(ii) Michelle has €10.00 and she just spent €8.14 of it so you need to know what is left of €10.00 if you take away €8.14:

In your calculator press **10.00 - 8.14.**

This will give you an answer of 1.86. So Michelle has **€1.86** left over.

(iii) Michelle now only has €1.86. The HEY magazine costs €2.15 so Michelle does not have enough money to buy the magazine.

Tip: You can clear your calculator screen by pressing the on\C button. You will want to clear your screen when you finish a calculation, or if you make a mistake and wish to start again.

Task 2:

(i) Each iPod is costing Harry €183.28; he wants to buy 37 of these iPods. In your calculator press **183.28 x 37 =**

This will give you an answer of 6,781.36. Harry will have to pay **€6,781.36** for the 37 iPods.

(ii) Harry has €8,500 to spend on the 8GB lPod touches each one costs €183.28. So Harry will have to divide his money by the cost of each iPod to find out how many he can buy:

In your calculator press **8500 ÷ 183.28 =**

This will give an answer of **46.377.**

Harry has enough money to buy 46.377 iPods. This means he does not have enough money to buy 47 iPods. Since he cannot buy 0.377 of an iPod, Harry can only buy **46** 8GB iPod Touches.

Task 3 and Task 4: Answers in Learner Pack.

Task 5: Use your calculator to work these out!

1. €515 x 4 = €2,062. So, Ian earns €2,062 for the month of February.
2. Ian's bills in February are:

   €78.60 + €67.80 + €155.69 + €78 = €380.09

   €2.062 - €380.09 = €1,681.91

After he pays his bills, Ian has €1,681.91 left over.

Answers N2 Playing Darts

Task 1:

Natural numbers are always positive numbers.
Natural numbers include zero.
Negative numbers do not include natural numbers.

Task 2: Answer is in the Learner Pack

Task 3: The learners have drawn pictures of darts board with numbers shown clearly.

Task 4:

Without using your calculator add the following natural numbers.

18	**191**	**1632**
20	**23**	**1101**
10	**247**	**137**
48	**461**	**2860**

Task 5: Adding Natural Numbers

Now try this!

1. If Phil had thrown an 18, a 3 and a 19 what would his score have been? 40

2. Phil's opponent Adrian Lewis threw his three darts next.
   He hit a 14, a 6 and a 20. What was Adrian Lewis's score? 40

3. From 1994 -1998 Phil Taylor played 35 darts matches
   From 1999-2004 he played 30 matches
   From 2004-2008 he played 20 matches

How many matches did he play altogether from 1994-2008? 85

Answers N3 Rugby Union

Task 1: Answer is in the Learner Pack

Task 2: Gaining Ground (2)

1. If Munster gained 21 metres and were forced back 7 metres, how many metres would they have gained ?

14 metres

2. During the game Leinster made a good run and gained 22 metres, but Munster defended well and forced Leinster back by 10 metres on the next play. How many metres did Leinster gain altogether?

12 metres

Task 3: Natural numbers

Look at the box below.
Put a circle around the numbers that are natural numbers.

15	23	-46	0	64.5	$91\frac{1}{2}$
75	-8	$76\frac{1}{4}$	196	-45	7465

Answers N4 Playing Darts 2

Task 1:

Answer is in the Learner Pack.

Task 2:

What is the remaining total?

1. If Phil had 196 remaining on his score and he threw a 20, 18 and 4, what is his remaining total? **154**

   20 + 18 + 4 = 42

   196 – 42 = 154

2. If Phil's opponent had 187 remaining and hit a 19, 15 and 2 on his next go, how much has he left to hit? **151**

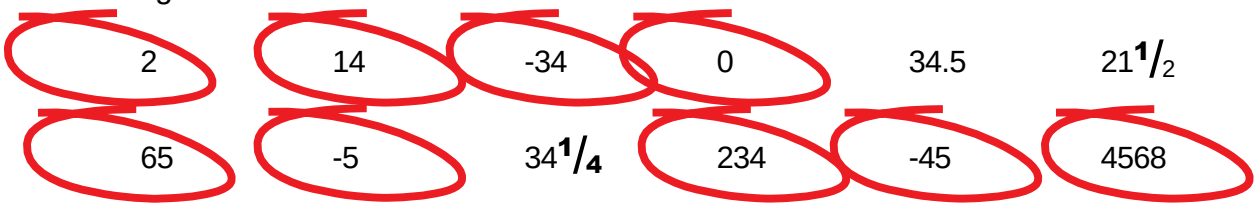
   19 + 15 + 2 = 36

   187 – 36 = 151

Answers N5 Temperature

Task 1: Recognising integers

The integers are:



Task 2: The number line

1. The negative numbers are -6, -5, -4, -3, -2 and -1.
2. Positive numbers are 0, 1, 2, 3, 4, 5 and 6.
3. -5 is less than -4.
4. Decide if the following are true or false:
   -3 is greater than -2 . **False.**
   2 is greater than -1. **True.**

Task 3: Temperature cards

Answers to questions 1 and 2 depend on the cards each group uses.

3. -18°C is **less than** -17°C

4. True or False: 4°C is six degrees hotter than -1°C? **True.**

Task 4: Temperature challenge

Answers depend on cards and questions chosen by group.

Answers N6 Climate

Task 1: Comparing temperatures

1. Where was the highest temperature recorded? Moscow
2. Where was the lowest temperature recorded? Moscow
3. When was the lowest temperature in Dublin? January
4. In which month was the temperature in Moscow 7°C (7 degrees) lower than in Dublin?

   January

Task 2: Finding the difference

1. 13°C
2. 7°C

Answers N7 Calories

Task 1: Doubles and trebles

Work out these darts scores by using multiplication. Fill in the gaps in the chart below to show how you did it and what the scores were.

Double 10 **10 × 2 = 20**

Treble 15 **15 × 3 = 45**

Task 2: Working out calorie intake

1. Fill in the gaps in the table.

Food Consumed	Calorie Intake	Total calorie intake
2 slices of wholegrain toast (no butter)	75 (per slice)	150
Banana	105	105
Bowl of vegetable soup	30	30
2 slices of brown bread	65 (per slice)	130
Yogurt	170	170
Chicken Breast	258	258
2 potatoes	58 (per potato)	116
Small tin of beans	82	82
Dairy Milk Bar	255	255

N7 Answers (continued)

2. Write out the multiplication that you did to fill the gaps in the table.

First check where we need to multiply the food that Elaine ate. For example, anywhere it says 'per slice' or 'per potato' means that the calorie intake is just for one of those. If Elaine has eaten more than one of those, we have to multiply. There were three such cases:

2 x 75 = 150 (2 slices of wholegrain toast)
2 x 65 = 130 (2 slices of brown bread)
2 x 58 = 116 (2 potatoes)

3. How many calories in total did Elaine consume?

We can now add these calories to the rest:
150 + 130 + 116 + 105 + 30 +170 + 258 + 82 + 255 = 1296.

Elaine had a total calorie intake of 1296.

Task 3: Recommended calorie intake

The recommended daily calorie intake for women varies depending on the person's height and weight. An estimate will do. For example, one website states that the recommended daily calorie intake for women is 1940 (www.weightlossresources.co.uk/logout/calorie_intake.htm).

Elaine had a total calorie intake of 1296 last Monday.

The recommended calorie intake for women is 1940.

What is the difference between Elaine's and the recommended intake?

Answer: Elaine has taken in 806 less calories then recommended (1940 – 1134 = 806).

Decide is Elaine's intake greater than or less than the recommended intake?

Answer:

Elaine's intake of calories is less than the recommended intake. OR:

Elaine's intake < recommended intake OR: 1296 < 1940.

N7 Answers (continued)

Task 4: At the gym

Elaine also attended the gym last Monday and ran for 3 lots of 10 minutes on the treadmill. She burned 54 calories every ten minutes she spent exercising on the treadmill.

How many calories did Elaine burn altogether in that time?

54 x 3 = 162 (3 tens in 30 minutes)

Elaine burned 162 during the 30 minutes she spent at the Gym.

Task 5: Multiplying to find scores

1. He threw a triple on the first throw to get 3 x 19 = 57

2. This was thrown three times. 3 x 57 = 171.
   His score for the throw (three darts) was 171.

Task 6: Multiplying numbers with the same signs

6 × 8 = 48

10 × 7 = 70

-5 × -3 = 15

-6 × -8 = 48

Answers N8 Working with money

Task 1: You and your money

Answer depends on learner allowance. Check answers with tutor.

Task 2: Answer in Learner Pack.

Task 3: Sharing the winnings!

5th prize is €8,000,

Each person will get €8,000 ÷ 4 = €2,000

Task 4: Sharing

James won €12,800 in a raffle. He kept €4,400. He divided the remainder equally between his 7 children.

€12,800 - €4,400 = €8,400

€8,400 ÷ 7 = €1,200

Each of the children received €1,200.

Task 5: Budgeting

The tutor will check that the learner has correctly completed a personal budget sheet.

For example of budget sheet visit www.mabs.ie

Answers N9 Construction

All answers are in the Learner Pack.

Answers N10 Recipes

Tasks 1 and 2: Answers are in the Learner Pack.

Other answers will vary according to the recipe chosen by the individual learners.

Answers N11 Introducing fractions: Circles 1

Task 1: Using parts to make a whole

Answer is in the Learner Pack.

Task 2: Fill in the table.

Colour of circle	How many parts make the whole circle?
Yellow	1
Green	2
Blue	3
Red	4
Purple	5
Orange	6
Pink	10
Pale blue	12
Light Green	15
Dark red	16

Tasks 3, 6 and 7:

The tutor will provide answers based on the selected group activities.

N11 Answers (continued)

Task 4: Fill in the table.

Colour of circle	**How many parts make the whole circle?**	Name the part	Symbol
Yellow	1	One	1
Green	2	One half	½
Blue	3	One third	$^1/_3$
Red	4	One quarter	¼
Purple	5	One fifth	$^1/_5$
Orange	6	One sixth	$^1/_6$

Task 5: Naming more than one part

Write the names of these fractions:

$^2/_3$ two thirds

$^4/_5$ four fifths

$^5/_6$ five sixths

Answers N12 Circles 2 and fraction snap

All tasks: The tutor will provide answers based on the specific group activities.

Answers N13 Come dine with me

Task 1: Numerator and denominator

Fraction	Numerator	Denominator
½	1	2
$^{2}/_{3}$	2	3
$^{4}/_{5}$	4	5
$^{3}/_{4}$	3	4

Task 2: Preparing a meal

Each person will eat half a cake.

How many cakes would you need if:

7 people were coming? **Answer: 4**

9 people were coming? **Answer: 5**

12 people were coming? **Answer: 6**

N13 Answers (continued)

Task 3: Quiche for lunch

You are serving quiche for lunch and you know that people usually have about a third of a quiche each.

If there are 7 people for lunch, how many quiches will you need?

Answer: 3

Task 4: Come dine with me

You have decided to serve cakes for dessert. You know that a person can only eat half of one of these cakes.

You have 5 cakes and there are 9 people for dinner. Will you be able to give them all cake?

Answer

To get the answer we need to work out how many halves we get from the 5 cakes.

In other words, we want to know the answer to 5 equals how many halves? We can write that question like this: $\mathbf{5} = {}^{?}/_{2}$.

We know that 5 equals ten halves: that is, $\mathbf{5} = {}^{10}/_{2}$

5 equals ten halves.

So, you can give all 9 people cake.

N13 Answers (continued)

Task 5: Try these!

1. Jack has three bars of chocolate to share among his friends. He breaks them into quarters.

How many pieces of chocolate does Jack have?

Answer: 12

2. Mary has made three cakes and she decides to cut each cake into six equal slices. Each slice is $^1/_6$ of the cake.

How many slices will Mary have from the three cakes?

How many sixths can we get from the three cakes? In other words, 3 = $\frac{?}{6}$'s

3 = $\frac{18}{6}$

Answer: Mary will have 18 slices from three cakes.

Answers N14 Pizza

Task 1: The pizzeria

The whole pizza was cut up into 8 equal slices. Each one of those slices is therefore an eighth. In maths symbols, each one of them is $^{1}/_{8}$. There were 8 of these slices: so there were 8 eighths, or $^{8}/_{8}$.

$^{8}/_{8}$ means 8 lots of $^{1}/_{8}$ and this makes up one whole unit.

We can write it like this: $^{8}/_{8} = 1$

The total fraction bought by the first customer was $\mathbf{^{3}/_{8}}$
The total fraction bought by the second customer was $\mathbf{^{2}/_{8}}$

We need to add those together to find out what fraction of the pizza is gone. Because **the denominators** (numbers on the bottom) **are the same** all we need to do is to add the **numerators** (numbers on the top) to get the total fraction that was bought.

The total fraction bought by the customers was $\mathbf{^{5}/_{8}}$**.**

$$\mathbf{^{3}/_{8} + ^{2}/_{8} = ^{5}/_{8}}$$

To find out how many slices are left, we have to remember that at the start of the day the pizzeria had a full pizza split into **eight** slices.

$\mathbf{^{8}/_{8}}$ **means 8 lots of** $\mathbf{^{1}/_{8}}$ and this makes up **one whole unit.**

We know that 5 of those 8 slices, that is $\mathbf{^{5}/_{8}}$ of the whole pizza, were sold and taken away. To work out what fraction of the pizza is left, we take the amount that was sold, $\mathbf{^{5}/_{8}}$ from the amount that we started with from the 8 slices, $\mathbf{^{8}/_{8}}$.

Because the denominator is the same, all we have to do is subtract the numerators (the numbers the top of the fractions).

$\mathbf{^{8}/_{8} + ^{5}/_{8} = ^{3}/_{8}}$ **of the pizza is remaining**.

N14 Answers (continued)

Task 2: More pizza please!

One customer buys one eighth, another buys two eights and the third customer buys one eighth.

$^1/_8 + {}^2/_8 + {}^1/_8 = {}^4/_8 =$ **½**

A half of the pizza remains.

Task 3 : Using fractions to help make decisions

There are three one sixths sold from one cake and four one sixths sold from another.

$^3/_6 + {}^4/_6 = 1{}^1/_6$

Joan will need to bake two sponge cakes. One will not be enough if sales are similar on the Wednesday.

Answers N15 Circles 3

Task 1: Adding fractions with different denominators

Using a fraction circle kit you can place a $^1/_6$ and $^1/_4$ together. Then see what other pieces from the kit you can use to cover the same piece.

Notice that 5 one twelfth pieces will cover the $^1/_6$ and $^1/_4$ together.

So $^1/_6$ and $^1/_4 = {}^1/_{12}$

Notice that $^1/_6$ is the same as $^2/_{12}$ and $^1/_4$ is the same as $^3/_{12}$

So in this case 12 is what we call in maths language the **common denominator.**

Task 2: Add and subtract fractions with different denominators.

$^1/_5 + {}^1/_3 = {}^8/_{15}$

$^2/_3 + {}^1/_4 = {}^{11}/_{12}$

$^1/_3 - {}^1/_6 = {}^1/_6$

$^1/_2 - {}^2/_5 = {}^1/_{10}$

N15 Answers (continued)

Task 3: Pizza

1. Big Pizza: $^3/_4$ of the slices are left.

   Small Pizza: $^5/_6$ of the slices are left.

2. How much overall pizza is left? $\mathbf{^{19}/_{12}}$ or $\mathbf{1\,^7/_{12}}$

   There are a number of ways to work this out including these examples:

   Example 1: $^3/_4 = {}^9/_{12}$ and $^5/_6 = {}^{10}/_{12}$ (equivalent fractions)

   $^9/_{12} + {}^{10}/_{12} = {}^{19}/_{12}$ or $1\,^7/_{12}$ is the amount of overall pizza remaining.

   Example 2: $^1/_4 = {}^3/_{12}$ and $^1/_6 = {}^2/_{12}$

   $^{12}/_{12} - {}^3/_{12} = \mathbf{^9/_{12}}$ and $^{12}/_{12} - {}^2/_{12} = \mathbf{^{10}/_{12}}$ (equivalent fractions)

   $^9/_{12} + {}^{10}/_{12} = \mathbf{^{19}/_{12}}$ or $\mathbf{1\,^7/_{12}}$ is the amount of overall pizza remaining.

   Example 3: You could add together the remaining amount from each pizza, by first getting common denominator:

   $^3/_4 + {}^5/_6 = {}^9/_{12} + {}^{10}/_{12}$ or $\mathbf{1\,^7/_{12}}$

Answers N16 A poll

Tasks 1 and 3: Answers are in the Learner Pack.

Task 2: Multiply fractions with the same numerator.

Answer:

$^1/_3$ **x** $^1/_6$ = $^1/_{18}$ $^1/_2$ **x** $^1/_6$ = $^1/_{12}$

Task 4: A Poll

One fifth of the $^3/_5$'s who said they were unhappy with the Government were from the Dublin area. So, how many Dubliners in the poll said they were unhappy with the Government?

Answer: We would have to find $^3/_5$ **of** 275. This is the same as saying $^3/_5 \times$ **275**.

But to multiply this we need to write it as two fractions. So we must write 275 as a fraction: $^{275}/_1$

So now we have: $^3/_5 \times {}^{275}/_1$

$^3/_5 \times {}^{275}/_1 = {}^{875}/_5 = 165$

So we see that **165** of the 275 people surveyed said they were unhappy with the Government.

The language of maths

We call a fraction such as $^{275}/_1$ an **improper** fraction.

N16 Answers (continued)

Task 5: January Sales

1. The clothes shop was having a sale with $^1/_3$ off the price. A dress cost €150 originally.

How much was it in the sale?

Answer: €100

Write out the steps you took:

You need to find $^1/_3$ of 150, so that is $^1/_3 \times 150$.

Write 150 as an improper fraction: $^{150}/_1$

$^1/_3 \times {}^{150}/_1 = {}^{150}/_3$

$^{150}/_3 = 50$ So the reduction is €50.

Take that away from the original cost of €150. 150 = 50 = 100.

So the dress cost €100.

N16 Answers (continued)

What fraction of the original cost did you save on the dress?

$^{2}/_{3}$

Write out the steps you took:

The whole cost of the coat before the sale is $^{3}/_{3}$.

The reduction is $^{1}/_{3}$.

$^{3}/_{3} - {}^{1}/_{3} = {}^{2}/_{3}$

So the cost in the sale is $^{2}/_{3}$ of the original cost.

2. In another shop, the January sales had $^{1}/_{3}$ off all coats. A coat cost €180 before the sale.

How much would you get off the cost of the coat in the sale?

Answer: €60

How much would you have to pay for the coat in the sale?

Answer: €120

Answers N17 At the salon

Task 1: Dividing whole numbers by fractions

$6 \div \frac{1}{3}$ How many thirds are there in 6?

There are 3 thirds in 1 whole.

6× 3 =18

So there are 18 thirds in 6.

$9 \div \frac{1}{3}$ How many thirds are there in 9?

There are 3 thirds in 1 whole.

9× 3 = 27

So there are 27 thirds in 9.

Task 2: Shortcut for dividing fractions

Divide fractions	Short cut	Answer
$\frac{1}{4} \div \frac{1}{2} =$	$\frac{1}{4} x \frac{2}{1} =$	$\frac{1}{2}$
$\frac{1}{3} \div \frac{1}{8} =$	$\frac{1}{3} x \frac{8}{1} =$	$\frac{8}{3}$
$\frac{3}{4} \div \frac{1}{3} =$	$\frac{3}{4} x \frac{3}{1} =$	$\frac{9}{4}$
$\frac{5}{8} \div \frac{2}{3} =$	$\frac{5}{8} x \frac{3}{2} =$	$\frac{15}{16}$

N17 Answers (continued)

Task 3: At the salon

Answer is in the Learner Pack.

Task 4: At the salon (2)

Answer: Three bottles of shampoo

Extension Activity: Dividing the wood

1. **Answer**: 10 strips

2. There are 6 metres of wood divided into $^{3}/_{5}$ strips. In other words, how many $^{3}/_{5}$'s in 6?

$$6 \div {}^{3}/_{5} = {}^{6}/_{1} \times {}^{5}/_{3} = {}^{30}/_{3} = 10$$

Answers N18 Breaking Olympic Records

Task 1: Answer is in the Learner Pack

Task 2: Olympic record in swimming

It took Phelps 51 seconds, 2 tenths and 5 hundredths of a second to complete the 100 metre butterfly in 2004.

Task 3: Answers will vary according to the sports the learners choose.

Task 4: Shopping for groceries

Mr O Brien got his change in the following coins: 8 Euro coins, 5 ten cent coins, 3 one cent coins.

If Mr O Brien paid with the exact change how many one cent coins would he have needed?

The exact cost was €111.47. If Mr O Brien paid in notes and in €1 coins, ten cent coins, five cent coins and 2 cent coins he would have needed no one cent coins.

If he paid in notes, €1 coins, ten cent coins and one cent coins, he would have needed 7 one cent coins.

The tutor and group can discuss other variations on this.

Answers N19 Touring the west of Ireland

Task 1: Touring the west of Ireland

Answer is in the Learner Pack.

Task 2: Adding decimals to calculate time

To calculate the Jamaican team's time during the first half of the race we must add the times of the first two runners. Their combined time is 9.24 + 9.46 = 18.7. The first half of the race was completed by the Jamaican team in 18.7 seconds.

In order to calculate the new World Record we must add the time for all four athletes.

New World Record = 9.24 + 9.46 + 8.8 + 9.6 = 37.1.

The new World Record in the 4 x 100 metre relay is 37.1 seconds.

Answers N20 Baking Cakes

Task 1: Baking cakes

Answer is in the Learner Pack

Task 2: Barney's Bakery supplies

1. On Friday the baker had 0.17 kg of flour remaining. On Saturday morning he purchased another 2.8 kg of flour. In total before starting work on Saturday the baker had 0.17 + 2.8 = 2.97 kg of flour.

Also on Friday evening the baker had 1.55 kg of sugar left over. He bought a further 1.4 kg on Saturday morning. In total when he returned to the bakery on Saturday morning he had 1.4 + 1.55 = 2.95 kg of sugar in stock.

2. How much of each ingredient was used on Saturday?

Flour: 0.44 + 1.72 + 0.6 = 2.76 kg

Caster sugar: 0.66 + 1.4 + 0.73 = 2.79 kg

How much flour and caster sugar was left over?

Flour: 2.97 – 2.76 = 0.21 kg

Caster sugar: 2.95 – 2.79 = 0.16 kg

Answers N21 Bathroom Design

Task 1 : Making decimal numbers bigger

1.

Number	Number 10 times bigger	How you did it
20	200	Move decimal point one place to the right.
50	500	Move decimal point one place to the right.

2.

Number	Number 10 times bigger	How you did it
2.5	25	Move decimal one place to the right.
3.5	35	Move decimal one place to the right.
7.5	75	Move decimal one place to the right.

3. Make the following numbers 10 times bigger. Do not use a calculator.

3.6 Ten times bigger: 36

12.8 Ten times bigger: 128

6.8 Ten times bigger: 68

11.5 Ten times bigger: 115

122.2 Ten times bigger: 1222

7.8 Ten times bigger: 78

N21 Answers (continued)

Task 2 : Bathroom design

1. The total cost of the items:

10(0.79) + 50(5.78) + 10(1.78) + 1(1078)

We must do these operations in the correct order. From BIDMAS we know we must do the multiplication first.

So the cost = 7.9 + 289 + 17.8 + 1078

Now we must add these four numbers

7.90
289.00
17.80
+ 1078.00

1392.70

The total cost of the supplies is €1392.70.

2. To calculate the profit Bathroom Mania made, here is what to do:

The customer paid €2000. First, find what is left after we take away the cost of supplies: 2000 - 1392.70

2000.00
- 1392.70

607.30

We know that half of this money will go towards labour costs. The other half will be the profit made by Bathroom Mania Ltd.

So the profit is: $^{1}/_{2}$ of 607.30 = × 607.30 = $^{106.30}/_{2}$ = 303.65

Profit = €303.65

N21 Answers (continued)

Task 3 : Tiling the floor

1. The cost of supplies needed to complete the job is as follows:

Small Tiles: 30 x 4.56 = 136.8

Large Tiles: 5 x 63.52 = 317.6

Tile Spacers: 1 x 5.96 = 5.96

Tile Adhesive: 5 x 8.29 = 41.45

Total cost = 136.8 + 317.6 + 5.96 + 41.45 = €501.81

2. The company wishes to make a profit €30.65 than the profit that they made on the first job. Therefore their new profit will be €303.65 + €30.65 = €334.30.

The total charge for the customer will be Cost of supplies + Labour costs + Profit

Total Cost = €501.81+ €334.30 + €456.78 = **€1,292.89**

Task 4 : Paying tax

1. By the end of 2011 Jack will have worked 10 months. As a result the total income tax which he will pay the Irish government during this time is:

650.80

2. Firstly we must calculate Jack's monthly wage after reductions:

Wage after reductions: 3,825.44 - 765.08 - 153.22 – 300 = €2,607.14.

Over ten months, therefore Jack will take home:

€2,607.14 x 10 = €26,071.40

Answers N22 Healthy Eating

Task 1 : Making decimal numbers smaller

1.

Number	Number 10 times smaller	How you did it
220	22	Move decimal point one place to the left.
520	52	Move decimal point one place to the left.

2.

Number	Number 10 times smaller	How you did it
12.5	1.25	Move decimal point one place to the left.
23.5	2.35	Move decimal point one place to the left.
7.5	0.75	Move decimal point one place to the left.

3.

43.6	4.36	12.8	1.28	6.8	0.68
11.5	1.15	122.2	12.22	7.8	0.78

N22 Answers (continued)

Task 2 : Answer in the Learner Pack

Task 3 : Healthy Eating (2)

Elaine ate this food	It had this much saturated fat
100g rice krispies	0.36
200 ml milk	4.308
2 slices of toast	0.4
100 g of cheese	9.3
lasagne	3.1
TOTAL	26.018

Elaine exceeded the recommended intake of saturated fat by 6.018 g

Task 4: Buying in Bulk

1. If a box of 50 bags of crisps cost €17.54 then one bag of crisps cost 17.50 ÷ 50. One bag of crisps costs 35 cent. If 48 cans of coke cost €31.20 then one can of coke will cost 31.20 ÷ 48. One can of coke costs 65 cent.

2. The manager of the local shop wishes to make an 11 cent profit on crisps so she must charge 35 + 11 = 46 cent. She also wishes to make a 26 cent profit on cans of coke and so she must charge 65 + 26 = 91 cent.

Answers N23 Bargain Hunting

Task 1 : Converting percentages, decimals and fractions

Fill in the gaps in the following table.
The first row is done for you.

% percentage	Fraction	Decimal
20%	$\frac{20}{100}$	0.2
30%	$\frac{30}{100}$	0.3
65%	$\frac{65}{100}$	0.65
75%	$\frac{75}{100}$	0.75
99%	$\frac{99}{100}$	0.99

Task 2

1. How much was the shop reducing the price by?

We know the price of the coat is €65 and that the shop is reducing that by 20%. So we must find 20% of €65.00.

To do this, write 20% as a fraction: 20% = $^{20}/_{100}$ = $^{1}/_{5}$

- We are therefore looking for $^{1}/_{5}$ of €65.00.

We know that $^{1}/_{5}$ of €65.00 = $^{1}/_{5}$ × €65.00.
= $^{65}/_{5}$
= €13.00

So the shop was reducing the price by €13.00.

2. What price were they selling the coat for in the sale?

The price before the sale was €65.00 and they are reducing that by 20%.

- 20% of €65.00 = €13.00.

So we know that the shop is taking €13.00 off the €65.00 retail price of the coat. We must subtract that €13.00 from the €65.00.

- 65 - 13 = 52 They are selling the coat for €52.00

Task 3 **Bargain hunting**

1. If you were to buy the items at the recommended retail price then the total cost would be
   €27 + €24 = €51
2. The hoody is reduced by 24%. 24% = $\frac{24}{100}$ and so we must calculate $\frac{24}{100}$ of €27
   $\frac{24}{100}$ x 27 = $\frac{648}{100}$ = €6.48. You would save €6.48 on the hoody.
3. The tracksuit bottoms are reduced by 19%. 19% = $\frac{19}{100}$ and so we must calculate
   $\frac{19}{100}$ of 24.00
   $\frac{19}{100}$ x 24 = $\frac{456}{100}$ = €4.56.
   You would save €4.56 on the tracksuit bottoms.
4. Cost of hoody in the sale = 27.00 – 6.48 = €20.52
   Cost of tracksuit bottoms in the sale = 24.00 – 4.56 = €19.44
   Combined cost in the sale is €20.52 + €19.44 = €39.96

Task 4 : Earthquake

4.6% was spent on fundraising expenses.

4.6 % = $\frac{4.6}{100}$

$\frac{4.6}{100}$ x 40 = $\frac{184}{100}$

⇒ €1.84 of the €40 went to fundraising expenses.

3% of the money received went on administrative expenses.

3% = $\frac{3}{100}$

$\frac{3}{100}$ x 40 = $\frac{120}{100}$

⇒ €1.20 of the €40 went to fundraising expenses.

To calculate the money that got to the affected area we must calculate

40 – 1.84 – 1.20

€36.96 of the €40 donated got to the people of Haiti.

Answers N24 Big Brother

Task 1: Big Brother Task

In order to complete this question we must first change the decimal and percentage into fractions. We can then apply our knowledge of fractions to solve the problem.

From Activity N23 we know that 25% = $^{25}/_{100}$ = $^{1}/_{4}$
0.35 = $^{25}/_{100}$ = $^{7}/_{20}$
We now know that $^{2}/_{5}$ of €75 was spent on dairy products, on carbohydrates and of €75 on red meat.
Dairy Products: $^{2}/_{5}$ × €75 = $^{150}/_{5}$ = **€30**

Carbohydrates: $^{1}/_{4}$ × €75 = $^{75}/_{4}$ = **€18.75**

Red Meat: $^{7}/_{20}$ × €75 = $^{525}/_{20}$ = **€26.25**

We can check our answer to make sure that all our sub totals add up to the money we were given to spend:

30 18.75 + 26.25 = €75.

Task 2: Big Brother Task (2)

The breakdown of expenditure is outlined below

Carbohydrates: $\frac{1}{5}$ x 80 = €16

Protein Enriched Foods: 20% = $\frac{1}{5}$ ⇒ $\frac{1}{5}$ x 80 = 16

Snacks: 0.3 = $\frac{3}{10}$ ⇒ $\frac{3}{10}$ x 80 = 24

Dairy Products: ⇒ $\frac{1}{10}$ x 80 = 8

Red Meat: 0.2 = $\frac{1}{5}$ ⇒ $\frac{1}{5}$ x 80 = 16

Task 4: Footballers' Wages

The weekly wages of each of these individual players is outlined below:

Fernando Torres: 45% = $\frac{9}{20} \Rightarrow \frac{9}{20}$ x 295,000 = €132,750

Steven Gerrard: 0.39 = $\frac{39}{100} \Rightarrow \frac{39}{100}$ x 295,000 = €115,050

Jay Spearing: $\frac{4}{25}$ x 295,000 = €47,200

Currently Gerrard's wages are 115,050

$\frac{1}{5}$ of 115,050 = $\frac{1}{5}$ x 115,050 = 23,010

Therefore if Gerrard's wages were to be reduced by $\frac{1}{5}$ his new weekly wage would amount to:

115,050 – 23,010 = €92,040.

Answers N25: Analysing Exam Results

Task 1: Analysing Exam Results

We know that 15% + 30% + 35% got an honour.

80% got an honour in higher level mathematics.

If 100% of students sat the exam then we can figure out what percentage didn't get an honour by taking 80% away from that 100%.

100% - 80 = 20%

So **20%** students did not get an honour in the Higher Level Mathematics exam.

Task 2: Exam results table

Percent	Fraction	Decimal
15%	$^{3}/_{20}$	0.15
30%	$^{3}/_{10}$	0.3
35%	$^{35}/_{100}$	0.35

Task 3: Exam results

1. In order to calculate the percentage of students who got an A we must first find out what percentage of students got each of the other marks:

   B Grade: $\frac{7}{25} = \frac{7}{25} \times \frac{100}{1}\% = 28\%$

   C Grade: $0.29 = \frac{29}{100} = \frac{29}{100} \times \frac{100}{1}\% = 29\%$

   D Grade: $0.22 = \frac{11}{50} = \frac{11}{50} \times \frac{100}{1}\% = 22\%$

   E/F Grade: $\frac{9}{100} = \frac{9}{100} \times \frac{100}{1}\% = 9\%$

   Now to calculate the percentage of students who got an A:

   100– 28 – 29 – 22 – 9 = 12%

2. 22% of students obtained a B grade in 2010 while 23% obtained a C grade. Therefore 1% more students achieved a C grade in 2010.

Answers N26: Rounding off

Task 1: Ladies Gaelic Football Association Finals 2010

Answers are in the learner pack

Task 2: Hurling Final 2010

1. If the newspaper rounded 81,765 to the nearest hundred then the figure they would use would be 81,800
2. The combined attendance at both the hurling and ladies football final was

   81,765 + 21,760 = 103,525. Therefore the combined total to the nearest thousand was 104,000

Task 3: Rounding Decimal Numbers

1. 5.9760 => 5.98
2. 1.2376 => 1.24
3. 1.5001 => 1.50
4. 1.7171 => 1.72
5. 4.6262 => 4.63

Task 4: Unemployment Figures

1. In January 2010 436,936 people were on the Live Register. This figure rounded to the nearest hundred is 436,900.

2. In September there were 442,417 on the Live Registrar. Therefore the January figure to the nearest thousand is 437,000 while the September figure to the nearest thousand is 442,000.

3. The difference to the nearest thousand was 442,000 – 437,000 = 5,000