Y7

Arithmetic: Decimals, **UNIT 17 Fractions and** Lesson Plan 1 **Percentages**

Conversion of Decimals and Fractions 1

Activity

1A

Place value and conversion of decimals to fractions

T: Can you remember the place value table? Can you tell me the headings we use?

Ps: ... hundreds, tens, units, tenths, hundredths, thousandths, ...

T: Right. Now, I'll say some decimals, and you have to write them on the table. Then someone can volunteer to put them in order, smallest first.

T says, volunteer Ps write into table:

9 thousandths

7 tenths

3 hundredths

Hundreds	Tens	Units	tenths	hundredths	thousandths
0	0	0	0	0	9
0	0	0	7	0	0
0	0	0	0	3	0

P: 0.009 < 0.03 < 0.7

1**B**

Converting fractions to decimals

T: What other way can you write 7 tenths?

(As a fraction)

T: So, can you write it in this form?

P (writes on BB): $\frac{7}{10}$

T: And the other two numbers?

 $(\frac{9}{1000}, \frac{3}{100})$

T: How do we write these numbers as decimals?

(0.7, 0.009, 0.03)

T: Can you think of yet another way to say 7 tenths?

(e.g. 700 thousandths, since
$$\frac{7}{10} = \frac{700}{1000}$$
)

T: And what about (T writes on BB): 0.27

Ps dictate, T writes on BB:

2 tenths 7 hundredths =
$$\frac{2}{10} + \frac{7}{100} = \frac{20}{100} + \frac{7}{100} = \frac{27}{100}$$

= 27 hundredths

T: Let's do the same with 0.306.

Ps dictate, T writes on BB:

3 tenths 6 thousandths
$$=\frac{3}{10}+\frac{6}{1000}=\frac{300}{1000}+\frac{6}{1000}=\frac{306}{1000}$$

T: If the decimal is larger than 1, will that give us any problems? Ps dictate, T writes on BB:

2 units 3 tenths =
$$2\frac{3}{10} = \frac{20}{10} + \frac{3}{10} = \frac{23}{10} = 23$$
 tenths

10 mins

Notes

Whole class activity.

T makes Ps recall their knowledge of decimals, and find the connection with fractions.

T sketches a table on BB; Ps say the numbers aloud and volunteer Ps write them on the table.

Another volunteer P writes these numbers on BB in order of size.

Ps write in Ex.Bs. Agreement. Praising.

T and Ps revisit the concept of improper fractions and mixed numbers. Praising.

Y7	Arithmetic: Deci UNIT 17 Fractions and Percentages	Lesson Plan 1 Conversion of Decimals and Fractions 1
Activity		Notes
2	Practice converting decimals to fractions T: Did you realise how easy it was to convert of Now you can try some for yourselves, like the Someone comes to the front and writes a decimal of the process.	his:
	They call another person to read it out and we then this person will write a decimal on the person, and so on. Are you ready? Let's start with decimals so like to write the first one? e.g. P_1 writes on BB: 0.41 and choose P_2 (says): 41 hundredths (writes): $\frac{2}{10}$	P who wrote the number on BB decides if answer is correct, T and other Ps agree or not. Correct solution is written in Ex.Bs. After about 10 decimals have been converted, T asks Ps to
	20 m	than 1. When all Ps have had a turn, T
3	Converting fractions to decimals	
	Can you do this in reverse? We'll see.	
	OS 17.2, $Q1 \frac{9}{10} = 0.9$	Brief whole class activity; Ps should find this straightforward after the previous work.
	$Q5 \qquad \frac{691}{1000} = \qquad 0.691$ $Q8 \qquad \frac{162}{100} = \qquad 1.62$	Problems appear on OHP. For the first few fractions, volunteer Ps come to front, explain and write solutions on OS; other Ps
	$Q2 \frac{5}{100} = 0.05$	write in Ex.Bs. The remaining problems are worked on individually in
	$Q3 \qquad \frac{3}{1000} = \qquad 0.003$	Ex.Bs, monitored, helped. Checking at OHP; T points to P, P answers. Agreement,
	$Q4 \qquad \frac{21}{100} = 0.21$	feedback, T writes solution on $OS \rightarrow self$ -correction.
	$Q6 \frac{37}{1000} = 0.037$	Praising.
	$Q7 \qquad \frac{107}{100} = \qquad 1.07$	
	T: But what about $\frac{3}{20}$? We'll look at this one	
4	Decimals to fractions OS 17.1 T: Look at question 1. Why do you think the s fraction line are there? (Because the fractions can be written)	econd equals sign and Whole class activity.
(continued)	T: For example? $ (\frac{8}{10} = \frac{80}{100} = \frac{16}{20} $	$= \frac{4}{5} = \frac{800}{1000}, \text{ etc.})$ T encourages more and more Ps to give examples, writes them on BB, then makes Ps recall the rule using correct mathematical

Y7	Arithmetic: Decimals, UNIT 17 Fractions and Lesson Plan 1 Percentages	Conversion of Decimals and Fractions 1
Activity 4 (continued)	T: Which form do you prefer to work with?	Notes They agree that $\frac{4}{5}$ is the simplest form of $\frac{8}{10}$, so T writes it after
	T: Why aren't we given another fraction line in question 2? $(0.07 = \frac{7}{100}, and this is its simplest form)$ T: Right. Now, write the other decimals as fractions and find their simplest forms.	the equals sign on OS. Note that it could be written in other ways, e.g. $\frac{14}{200}$, $\frac{70}{1000}$.
	Ps at OHP: $Q3 0.005 = \frac{5}{1000} = \frac{1}{200}$ $Q4 0.62 = \frac{62}{100} = \frac{31}{50}$ $Q5 1.25 = \frac{125}{100} = \frac{5}{4}$ $Q6 0.034 = \frac{34}{1000} = \frac{17}{500}$	Volunteer Ps come to OHP, explain and write solutions on OS. Other Ps and T agree or not. T praises.
5	Decimals to fractions - practice PB 17.1, Q3 (b), (g) $(b) \frac{9}{10}$, $(g) \frac{1}{20}$) PB 17.1, Q4 (a), (e), (j), (l) $((a) \frac{2}{5}, (e) \frac{3}{250}, (j) \frac{7}{500}, (l) \frac{27}{250})$ PB 17.1, Q5 (a), (c) $(a) 3$, (c) 9) 45 mins	Individual work, monitored, helped. Checking at BB: volunteer Ps come to BB and write solution, other Ps agree or not that this is the simplest form. Self-correction. Praising.
	Set homework PB 17.1, Q3 (c), (i), (k) PB 17.2, Q1 (b), (d), (f) PB 17.2, Q4 (a), (b), (f) PB 17.1, Q4 (b), (d), (i) PB 17.1, Q6 (b), (e)	

Y7	Arithmetic: Decimals, UNIT 17 Fractions and Lesson Plan 2 Percentages	Conversion of Decimals and Fractions 2
Activity		Notes
1 1A	Checking homework PB 17.1, Q3 (c) $\frac{3}{10}$ (i) $\frac{17}{1000}$ (k) $\frac{87}{100}$ PB 17.2, Q1 (b) 0.07 (d) 0.13 (f) 0.047	Verbal checking: T reads out question, points to a P, P answers, T agrees/disagrees → correction. Praising/self-correction.
1В	PB 17.2, Q4 (a) 1.2 (b) 2.12 (f) 41.8 PB 17.1, Q4 (b) 0.08 = $\frac{8}{100} = \frac{2}{25}$ (d) 0.006 = $\frac{6}{1000} = \frac{3}{500}$ (i) 0.328 = $\frac{328}{1000} = \frac{41}{125}$	Checking at BB: T points to P, P dictates, T writes answer on BB, other Ps agree or not (e.g. at 0.328) suggest a simpler form.
	PB 17.1, Q6 (b) $3.02 = \frac{302}{100}$ (e) $4.008 = \frac{4008}{1000}$	Self-correction. Praising.
2	Warm-up practice T: Some parts of the homework were not straightforward. Let's do some easier ones in our heads. T (asks and writes on BB): $0.5 = (\frac{5}{10} = \frac{1}{2})$ $0.35 = (\frac{35}{100} = \frac{7}{20})$ $0.004 = (\frac{4}{1000} = \frac{1}{250})$ $0.75 = (\frac{75}{100} = \frac{3}{4})$ $1.4 = (\frac{14}{10} = \frac{7}{5})$ $0.125 = (\frac{125}{1000} = \frac{1}{8})$	Mental work to warm up and prepare for the topic to come. T writes decimals on BB. Ps volunteer, T waits for slower Ps' to reach answer and then points to P. P answers in two steps; other Ps agree/disagree → correct answer. T writes solution on BB; praises.
3A	Looking at denominators T: On the BB you can see some decimals converted into fractions, written in their simplest forms.	Work remains on BB from homework and Activity 2, and now Ps examine the
(continued)	What do you notice about the denominators of the simplest form fractions? What kind of numbers can or cannot be denominators of fractions written in their simplest forms? Why? Ps dictate, T writes on BB (Ps in Ex.Bs): $2 \times 5 = 10$ $2 \times 50 = 100$ $2 \times 500 = 1000$ $4 \times 25 = 100$ $4 \times 250 = 1000$ $5 \times 200 = 1000$ $8 \times 125 = 1000$	denominators in the answers. T questions Ps and arrives at reasons why numbers such as sevenths and thirds cannot be denominators after simplification of fractions derived from converting decimals. Finally Ps give the pairs of multipliers that give 10, 100 or 1000 as a product.

Y7	Arithmetic: Decimals, UNIT 17 Fractions and Lesson Plan 2 Percentages	Conversion of Decimals and Fractions 2
Activity		Notes
3A (continued)	T: So, can we write $\frac{3}{5}$ as a decimal? (Yes, we can convert it into tenths)	
	T: How do we do that? $(\frac{3}{5} = \frac{6}{10} = 0.6)$	
	T: And what about $\frac{4}{25}$? (We can convert it into hundredths)	
	T: Will we have any problem with improper fractions, for	
	example, $\frac{10}{4}$? $(No, \frac{10}{4} = \frac{250}{100} = 2.5)$	
3B	Further practice	
	 T: Good. Now with the next fractions, determine the equivalent fractions with denominators as either 10, 100 or 1000, and then write them as decimals. OS 17.3, extended with Q9	Whole class activity. Problems appear on OHP. Ps volunteer; especially for easier questions, T encourages slower Ps to come to OHP and do a conversion, with help if
	Q10 $\frac{43}{20} = =$	necessary. If Ps do not understand, T must explain again, with patience! Praising.
	24 mins	
4	Individual work with denominators PB 17.2, Q3 (c), (d), (g), (j), (k) ((c) 0.18 (d) 0.12 (g) 0.004 (j) 0.72 (k) 0.072) PB 17.2, Q5 (a), (b), (e), (f) ((a) 3.5 (b) 1.05 (e) 3.2 (f) 2.002)	Individual work, monitored, helped. Checking at BB with detailed discussion about getting 10, 100 or 1000 as denominators. Volunteer Ps come out, write and explain solutions. Agreement, feedback, self-correction. Praising.
	32 mins	
5	Revision - adding and subtracting decimals	
	T: Can you remember how to add and subtract decimals? Let's do some easy calculations mentally.	Mental work with most Ps contributing.
	0.5 + 0.3 = (0.8) $1.2 + 0.7 = (1.9)$ $2.4 + 3.12 = (5.52)$	T asks, chooses volunteer Ps, but waits for slower ones especially
	10.41 + 3 = (13.41) 0.9 + 0.6 = (1.5) 3.5 + 4.8 = (8.3)	for the easier questions.
	0.7 - 0.4 = (0.3) $0.89 - 0.1 = (0.79)$ $0.65 - 0.43 = (0.22)$	Agreement. Praising.
	1 - 0.2 = (0.8) $1.1 - 0.6 = (0.5)$ $2.3 - 1.12 = (1.18)$	
	36 mins	
6	Adding fractions and decimals T: What do we do if we are given this problem (writes on BB): $0.3 + \frac{2}{5} = ?$ Ps: We have to add them!	Whole class activity.
	T: That's right - but how? What have we learnt earlier in this lesson?	
(continued)	P_1 : We have to convert $\frac{2}{5}$ into a decimal.	

Y7	Arithmetic: Decimals, UNIT 17 Fractions and Lesson Plan 2 Percentages	Conversion of Decimals and Fractions 2
Activity		Notes
6	T: So, what do we do?	
(continued)	P_2 : $\frac{2}{5} = \frac{4}{10}$ and $0.3 + 0.4 = 0.7$	
	T: Good. Who would like to write it on BB?	
	P ₃ (writes on BB):	Agreement. Praising.
	$0.3 + \frac{2}{5} = 0.3 + \frac{4}{10} = 0.3 + 0.4 = 0.7$	
	T: Let's look at some other ones (writes on BB):	
	$\frac{1}{20} + 1.3$ $(=\frac{5}{100} + 1.3 = 0.05 + 1.3 = 1.35)$	Probably only stronger Ps will volunteer to solve these problems, but T can encourage slower ones.
	T (writes on BB):	
	$0.046 - \frac{7}{200} (= 0.046 - \frac{35}{1000} = 0.046 - 0.035 = 0.011)$	
	T: Now try some on your own.	
	(a) $\frac{4}{5} + 1.1$	Individual work.
	(b) $\frac{3}{2} - 1.3$	T writes problems on BB, then monitors and helps Ps as they work.
	(c) $2.3 + \frac{6}{25}$	Checking at BB with discussion, self-correction and much
	Solutions (a) $\frac{4}{5} + 1.1 = \frac{8}{10} + 1.1 = 0.8 + 1.1 = 1.9$	praising.
	(b) $\frac{3}{2} - 1.3 = \frac{15}{10} - 1.3 = 1.5 - 1.3 = 0.2$	
	(c) $2.3 + \frac{6}{25} = 2.3 + \frac{24}{100} = 2.3 + 0.24 = 2.54$	
	Set homework	
	(1) PB 17.2, Q3 (f), (h), (i), (l)	
	(2) PB 17.2, Q5 (c), (d)	
	(3) (a) $\frac{3}{4} + 0.14$	Agreement. Praising.
	(b) $2.7 - \frac{6}{5}$	

Y7	Arithmetic: Decimals, UNIT 17 Fractions and Lesson Plan 3 Percentages	Conversion of Decimals and Fractions 3
Activity		Notes
1	Checking homework (1) PB 17.2, Q3 (f) 0.006 (h) 0.35 (i) 0.305 (l) 0.25 (2) PB 17.2, Q5 (c) 1.65 (d) 1.24	T has asked one of Ps to write solutions on BB as soon as P arrives.
	(3) (a) $\frac{3}{4} + 0.14 = 0.75 + 0.14 = 0.89$ (b) $2.7 - \frac{6}{5} = 2.7 - 1.2 = 1.5$	Agreement, feedback, self-correction. Praising.
	5 4 mins	
2A	Division and multiplication of decimals	Mental work.
	T: You've shown you can do addition and subtraction with decimals. But what about division and multiplication? First, let's do some mental calculations:	T asks, points to P, helps slower Ps, P answers.
	$2.6 \div 2 \ (= 1.3)$ $6.6 \div 6 \ (= 1.1)$ $0.8 \div 4 \ (= 0.2)$	Agreement. Praising.
	$1.2 \div 3 \ (= 0.4)$ $1.5 \times 3 \ (= 4.5)$ $6.9 \div 3 \ (= 2.3)$	Practice with multiplication
	$3.2 \times 4 \ (= 12.8)$ $0.48 \div 4 \ (0.12)$	included here for practice.
2B	Written practice	
	T: Now write these calculations and their solutions in your Ex.Bs:	Whole class activity.
	(a) $1.23 \div 3 = (0.41)$	
	(b) $26.4 \div 12 = (2.2)$	T writes problems on BB and then calls Ps (encouraging slower
	(c) $3.6 \div 8 = (0.45)$	ones) to give answers and
	(d) $6 \div 5$ (1.2)	explanations.
	(e) $3 \div 4$ (0.75)	Agreement. Praising.
2 C	Revision of Unit 10: Fractions	
	T: Have you seen the decimals in the last two answers anywhere else during this lesson?	Solutions to homework remain on BB, so Ps look for 1.2 and 0.75
	T: Why were these the answers to these questions?	among the numbers.
	$(\frac{6}{5} \rightarrow 1.2 \text{ and } \frac{3}{4} \rightarrow 0.75)$	
	T: And how did we get these answers? $(6 \div 5 = 1.2)$ $3 \div 4 = 0.75)$	
	T: Why are these the answers? What is meant by $\frac{3}{4}$?	T makes Ps remember what they
	(The unit is divided into 4 equal parts, and we have 3 of the 4)	learnt in Unit 10.
	T: Is there another way of describing this?	
	$(\frac{3}{4}$ also means that we divided 3 units into	
	4 equal parts, and are referring to three of them)	
	T: So, what is $\frac{1}{4}$ of 3? $(\frac{3}{4})$	
	T: What is $\frac{1}{7}$ of 6? $(\frac{6}{7})$	
	T: So, what is $\frac{1}{4}$ of 3? $(\frac{3}{4})$ T: What is $\frac{1}{7}$ of 6? $(\frac{6}{7})$ T: What is $6 \div 5$? $(\frac{6}{5})$ T: What is $2 \div 3$? $(\frac{2}{3})$	
	T: What is $2 \div 3$? $ (\frac{2}{3}) $	Praising.

	Mathematics Enhancement Programme			
Y7	Arithmetic: Decimals, UNIT 17 Fractions and Lesson Plan Percentages	Conversion of Decimals and Fractions 3		
Activity		Notes		
3	Whole class practice OS 17.4 1. (a) (b) $\frac{34}{5}$ = (6.8)	Whole class activity. Task appears on OHP. T makes Ps dictate division 1; T writes on OS, Ps in Ex.Bs. Praising and then discussion.		
	T: Wouldn't it have been easier to convert this fraction into a decin in the usual way? So why didn't we do that? Never mind, we can usual way what we have learnt in this unit to check the answer. Volunteer P at BB: $\frac{34}{5} = \frac{68}{10} = 6.8$			
	T: This method is much quicker. Which method will you choose to convert the next fraction? Ps: We'll divide.	О		
	T: OK, it's up to you. P at OHP: 2. (a)	T calls a P to work through the division at OHP.		
	(b) $\frac{13}{8} =$ (1.625)			
	T: Who'd like to show the other method? Ps: ? T (encouraging): Can you get 10, 100 or 1000 by multiplying 8 by whole number? Look at the last lesson's work in your Ex.Bs. (8 × 125 = 1000)	a		
	T: So? $\left(\frac{13}{8} = \frac{13 \times 125}{1000}\right)$			
	T: Do the multiplication in your Ex.Bs! T (after a short pause): Have you got the same answer? (Yes, $13 \times 125 = 1625$, so $\frac{13}{8} = 1.625$)			
	T: Which was the quicker method? (The calculation of $13 \div 8$)			
	T: That's how it goes, sometimes one way is better, sometimes the other.			
	26 mins			
4	Practice writing fractions as decimals T: Write the following fractions as decimals by using division, the check your solutions by determining the equivalent fractions with the denominators as either 10, 100 or 1000.	th helped. Checking at BB with self-		
	PB 17.2, Q6 (a), (b), (c) $ ((a) \ 3 \div 5 = \frac{3}{5} = \frac{6}{10} = 0.6 $ (b) $3 \div 8 = \frac{3}{8} = \frac{375}{1000} = 0.375 $	checking. Agreement, feedback, self- correction. Praising.		
	0 1000			

33 mins

Y7	Arithmetic: Decimals, UNIT 17 Fractions and Lesson Plan 3 Percentages	Conversion of Decimals and Fractions 3
Activity		Notes
5	Using equivalent fractions T: Now we'll use the reverse process for the following fractions. Write them as decimals by determining the equivalent fractions with the denominators as either 10, 100 or 1000, then check using division.	Whole class activity.
	Ps: These fractions cannot be written as tenths, hundredths or thousandths. T: So they don't have decimal forms? Ps: No!	T writes the fractions on BB, and lets Ps find out that they cannot do as asked.
	T: So, why don't you try it the other way; write them as decimals by using long division. P ₁ (at BB):	T calls volunteer Ps to BB to do the divisions; other Ps write them in Ex.Bs. They all discuss what they have discovered about these fractions, that they have decimal forms, but without an end. Ps realise that, after some decimal places, the digits are repeated. When calculating $4 \div 7$, P_3 must be encouraged to continue until the repetitions are obvious. Finally T tells Ps that they will deal with this problem later, and, until then, it will be enough to determine the first 2 or 3 non-zero digits after the decimal point, depending on the requirements of the task.
6	Individual practice T: Write the following fractions as decimals, using division to determine each number to the third non-zero digit. (a) $\frac{5}{6}$ (b) $\frac{1}{22}$	Individual work, monitored, helped. Checking at BB: T writes
	Solutions (a) $5 \div 6 = 0.833$ (b) $1 \div 22 = 0.0454$	solutions on BB. Feedback, self-correction. Praising.
	Set homework (1) PB 17.2, Q6 (d), (e), (f), using both methods. (2) Write the following fractions as decimals using division to determine each number to the third non-zero digit: (a) $\frac{40}{11}$ (b) $\frac{2}{70}$	

Y7	Arithmetic: UNIT 17 Fractions a Percentage	and Lesson Plan 4	Percentages 1
Activity			Notes
1	Checking homework (1) PB 17.2, Q6 (d) $16 \div 5 = 3.2$		Detailed checking of Q6 questions at BB. Agreement, feedback, self-
	$\frac{16}{5} = \frac{32}{10} = 3.$	2	correction. Praising.
	PB 17.2, Q6 (e) $26 \div 4 = 6.5$		
	$\frac{26}{4} = \frac{650}{100} = 0$	6.5	
	PB 17.2, Q6 (f) $30 \div 8 = 3.75$	5	
	$\frac{30}{8} = \frac{3750}{1000} =$	3.75	
	(2) (a) $\frac{40}{11} = 40 \div 11 = 3.636$		Only solutions needed for (2). Feedback, self-correction.
	(b) $\frac{2}{70} = \frac{2}{70} = 2 \div 70 = 0.0$	285	Praising.
2	Preparing for percentages	5 mins	
	T: Now that we can convert fractions fractions, we'll make things a little there is a country where the units a need to deal with them, we have to hundredths. Let's see how it might	e more difficult. Imagine that are our hundredths. When we convert all our numbers into	
	T: 0.38 Ps:	$=\frac{38}{100}$	
	0.07	$=\frac{7}{100}$	
	0.99	$=\frac{99}{100}$	
	1	$=\frac{100}{100}$	
	1.42	$=\frac{142}{100}$	
	$\frac{7}{10}$	$=\frac{70}{100}$	
	$1\frac{2}{10}$	$=\frac{12}{10}=\frac{120}{100}$	
	$\frac{4}{5}$	$=\frac{8}{10}=\frac{80}{100}$	
	0.6	$=\frac{6}{10}=\frac{60}{100}$	
	1.1	$=\frac{11}{10}=\frac{110}{100}$	
	etc.	12 mins	

Y7	Arithmetic: Decimals, UNIT 17 Fractions and Lesson Plan 4 Percentages	Percentages 1
Activity		Notes
3	Introducing percentages	****
	T: Do you think there is such a country? Ps: No!	Whole class activity.
	T: But there is! And not only one country. In today's society, most countries think in hundredths when speaking about changes. What other name do we give to these hundredths? Some Ps: Percentages.	
	T: Yes, we call them percentages. The word comes from two Latin words, <i>per</i> meaning 'through' and <i>centum</i> meaning 'hundred'. What is the symbol we use for 'percent'?	
	Volunteer P at BB: (%)	
	T: Good. What fraction do we mean if we say:	
	T: 49% Ps: $=\frac{49}{100}$	T writes on BB, Ps answer, T agrees, praises, writes Ps answe
	$= \frac{13}{100}$	on BB, Ps in Ex.Bs. T asks for the fractions in their simplest form and helps Ps understand what is meant by th 3.1% and 2.5%.
	$= \frac{30}{100} = \frac{3}{10}$	
	$50\% = \frac{50}{100} = \frac{1}{2}$	
	$3.1\% = \frac{3.1}{100} = \frac{31}{1000}$	
	$= \frac{2.5}{100} = \frac{25}{1000} = \frac{1}{40}$	
	T: Can you say where you have seen the word 'percentage' or the % symbol used? (Change in wages, price reductions, etc.) 20 mins	T illustrates the relevance of percentages.
4	Practical work with percentages	
-	T: Let's look at some examples of percentages.	Work in pairs <i>or</i> whole class
	OS 17.6	activity. Problems appear on OHP, and
	8 8	each pair of Ps has a copy.
	$(1) \frac{8}{100} = 8\%$	T allows time for discussion
	(2) $100 - 10 = 90 \rightarrow \frac{90}{100} = 90\%$	between each pair on the first shape, then T chooses a volunte P to show answer, explain and write the fraction and percentag under the shape on OS. Other pairs agree/disagree → praising
	(3) $100 - 12 = 88 \rightarrow \frac{88}{100} = 88\%$	
	$(4) \frac{23}{50} = \frac{46}{100} = 46\%$	self-correction. Continue in this way for other shapes.
	$(5) \frac{1}{5} = \frac{20}{100} = 20\%$	
	$(6) \frac{6}{50} = \frac{12}{100} = 12\%$	
(continued)		

Y7	Arithmetic: Decimals, UNIT 17 Fractions and Lesson Plan 4 Percentages	Percentages 1
Activity		Notes
4 (continued)	(7) $\frac{1}{2} = \frac{50}{100} = 50\%$ (8) $\frac{1}{4} = \frac{25}{100} = 25\%$ (9) $\frac{3}{4} = \frac{75}{100} = 75\%$	
	4 100 7376	
	30 mins	
5	Finding percentages PB 17.3, Q1 and 2 (a), (d), (f) Q1. (a) 47% (d) 30% (f) 75% Q2. (a) 53% (d) 70% (f) 25%	Individual work, monitored, helped. T divides class into two parts, according to seating. Half the Ps have to write down the percentage of shapes (a), (c) and (f) that is shaded; the other half have to write down what percentage is <i>not</i> shaded. For checking, T calls out one P from each group to write solution on BB at the same time. After agreement, T makes Ps compare the percentages (→ 100%) Self-correction. Praising.
	36 mins	
6	Converting percentages to fractions OS 17.5 1. $39\% = \frac{39}{100}$ 2. $40\% = \frac{40}{100} = \frac{2}{5}$ $(\rightarrow \frac{2}{5} \text{ or } \frac{4}{10} \text{ for shading})$ 3. $15\% = \frac{15}{100} = \frac{3}{20}$ $(\rightarrow \frac{15}{100} \text{ for shading})$	Whole class activity. Problem appears on OHP. Volunteer Ps come to BB to convert percentages into fractions, giving the simplest forms, and the easiest form for shading.
	100 20 100	
7	Individual work with fractions PB 17.3, Q5 (a), (b), (d) (a) 25% (d) (b) (b) (b) 5% 30%	Individual work. T gives Ps 3 minutes to copy and shade a suitable number of the squares; T helps slower Ps. Checking: T sketches solution on BB → feedback, self-correction, praising.
	Set homowork	
	Set homework PB 17.3, Q1 and Q2 (b), (c), (e) PB 17.3, Q4 (a), (b) PB 17.3, Q5 (c), (e) PB 17.3, Q6 (b), (c), (f)	

Arithmetic: Decimals, **UNIT 17** Fractions and Lesson Plan 5 Percentages 2 **Percentages** Activity **Notes** 1 **Checking homework** Solutions to questions 4 and 5 PB 17.3, Q1 (b) 36% (c) 28% (e) 80% appear on OHP T has prepared. PB 17.3, Q2 (b) 64% (c) 72% (e) 20% Solutions to other questions are checked in words, with detailed PB 17.3, Q4 (a) for example: (b) for example: discussion following. 23% shaded 50% shaded PB 17.3, Q5 (c) for example: (e) for example: 90% shaded **PB 17.3, Q6** (b) 70% (c) 55% (f) 60% 15% shaded 5 mins 2 Mental work with fractions and percentages T: Can you remember how we found fractions of quantities? For Mental work to prepare for the example, $\frac{1}{7}$ of 21? lesson's topic. Ps answer, T writes on BB: $\frac{1}{7}$ of $21 = 21 \div 7 = \frac{21}{7} = 3$ T: What about $\frac{2}{5}$ of 20 ? Ps answer, T writes on BB: $\frac{2}{5}$ of $20 = (20 \div 5) \times 2 = \frac{20}{5} \times 2 = 8$ T: $\frac{2}{3}$ of 9 Ps: $\frac{9}{3} \times 2 = 6$ After writing down the answers to the first two questions in detail, T asks questions, points to $\frac{14}{7} \times 3 = 6$ $\frac{3}{7}$ of 14 volunteer Ps to answer. $\frac{11}{11} \times 6 = 6$ $\frac{6}{11}$ of 11

(continued)

T: T writes again on BB (Ps answer):

 $\frac{3}{100}$ of 200

$$\frac{40}{100}$$
 of 15 =

 $\frac{200}{100} \times 3 = 6$

Y7	Arithmetic: Decimals, UNIT 17 Fractions and Lesson Plan 5 Percentages	Percentages 2
Activity		Notes
2 (continued)	e.g. $=\frac{2}{5}$ of $15 = \frac{15}{5} \times 2 = 6$ or $=\frac{15}{100} \times 40 = 0.15 \times 40 = 6$ $\frac{17}{100}$ of $11 = \frac{11}{100} \times 17 = 0.11 \times 17 = 1.87$ T: What kind of fractions have we been working with here? Ps: Hundredths.	T leads Ps to find different ways (with or without simplifying) to the solution. T asks, Ps answer, T writes on BB, Ps in Ex.Bs.
	T: How else can we describe them? Ps: Percentages.	
	T: Right; let's carry on.	Praising.
3	Calculating percentages OS 17.7 1. 5% of 200 kg = $\frac{5}{100}$ of 200 kg e.g. = $\frac{1}{20}$ of 200 kg = $\frac{200}{20}$ kg = 10 kg or = $\left(\frac{200}{100} \times 5\right)$ kg = 10 kg 2. 20% of 50 m = $\frac{20}{100}$ of 50 m e.g. = $\frac{1}{5}$ of 50 m = $\frac{50}{5}$ m = 10 m or = $\left(\frac{50}{100} \times 20\right)$ m = (0.5×20) m = 10 m 3. 25% of £900 = $\frac{25}{100}$ of £900 e.g. = $\frac{1}{4}$ of £900 = £ $\frac{900}{4}$ = £225 or = £ $\left(\frac{900}{100} \times 25\right)$ = £ (9×25) = £225	Whole class activity. Problems appear on OHP. Having prepared for this topic in Activity 2, volunteer Ps come to OHP to write and explain solutions. For the first question, T suggests that Ps think carefully which method is the quicker and whether it helps to simplify the fraction. When P has given all the method (1) solutions, T calls another P to give solutions by method (2), at BB. Agreement. Praising.
	4. 30% of £80 = $\frac{30}{100}$ of £80 e.g. = $\frac{3}{10}$ of £80 = $\left(\frac{80}{10} \times 3\right)$ = £(8 × 3) = £24 or = £ $\left(\frac{80}{100} \times 30\right)$ = £(0.8 × 30) = £24	Finally, after discussion T and Ps decide that as a general rule, the % of a quantity can be calculated by dividing the quantity by 100 and then multiplying the quotient by <i>x</i> .
4	Finding the quickest method PB 17.3, Q9 (b), (c), (f), (h) Solutions: (b) 30% of 50 kg = $\frac{30}{100}$ of 500 kg = $\left(\frac{500}{100} \times 30\right)$ kg = 150 kg	Individual work, monitored, helped. Checking: T and Ps agree the shortest way; these solutions are
(continued)	(c) 60% of 50 p = $\frac{60}{100}$ of 50 p = $\frac{3}{5}$ of 50 p = $\left(\frac{50}{5} \times 3\right)$ = 30 p	written on BB by Ps.

(h) 26% of £2 = £ $\left(\frac{2}{100} \times 26\right)$ = £ (0.2×26) = £ (0.2×26) = £ (0.52) 30 mins See Activity 17.2 T: This activity deals with exchange rates for various currencies. T: Why won't many of the conversions listed be relevant today? Ps: The Euro is now the currency of most countries in the EC. T: That's right; it was introduced in 2002, but we can still use the exchange rates given here to practice our calculations. Simple currency exchange Activity 17.2, Q1 (a), (d) Q2 (a), (b) P (Q1(a)): $1.60 \times 10 = 16 \times 8$ P (Q1(d)): $2712 \times 2.50 = 6780 \times 10$ P (Q2(a)): $24 + 9.20 = (£)2.61$ (to 2 d.p.) P (Q2(b)): $47 \times 2.73 = (£)17.22$ (to 2 d.p.) SB Charging commission Activity 17.2, Q3 P (Q3(b)): $2.73 \times 100 \times 200 = 546 \times 100 \times $	Y7	UNIT 1	Arithmetic: Decimals, 7 Fractions and Lesson Plan 5 Percentages	Percentages 2
(h) 26% of $£2 = £\left(\frac{2}{100} \times 26\right) = £(0.2 \times 26) = £0.52$ 30 mins 5 Real-life examples with percentages Activity 17.2 T: This activity deals with exchange rates for various currencies. T: Why won't many of the conversions listed be relevant today? Ps: The Euro is now the currency of most countries in the EC. T: That's right, it was introduced in 2002, but we can still use the exchange rates given here to practice our calculations. 5A Simple currency exchange Activity 17.2, Q1 (a), (d) Q2 (a), (b) P (Q1(a)): $27121 \times 2.50 = 67801$. P (Q2(a)): $24 + 9.20 = (E).2.61$ (to $2 \cdot d.p.$) P (Q2(b)): $47 + 2.73 = (£)17.22$ (to $2 \cdot d.p.$) 5B Charging commission Activity 17.2, Q3 P (Q3(b)): 2.73 DM $\times 200 = 546$ DM $\frac{546}{100} \times 1.5 = 5.46 \times 1.5 = 8.19$ $546 - 8.19 = 537.81$ (DM) P (Q3(a)): $1.60 \times 200 = 320 \times $ $\frac{320}{100} \times 2 = 3.2 \times 2 = 6.4$ $320 - 6.4 = 313.6$ (\$) P (Q3(c)): 9.20 F Fr \times (200 - 2.50) = 9.20 F Fr \times 197.50 $= 1817$ F Fr Mental calculation: $9.2 \times 2 = 18.4 \rightarrow 9.2 \times 200 = 1840$ and $9.2 \times 0.5 = 4.6$ so $9.2 \times 2.5 = 23$ and	Activity			Notes
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5Real-life examples with percentages Activity 17.2 T: This activity deals with exchange rates for various currencies. T: Why won't many of the conversions listed be relevant today? Ps: The Euro is now the currency of most countries in the EC. T: That's right; it was introduced in 2002, but we can still use the exchange rates given here to practice our calculations.Activity 17.2 appears on OHP and each P has a copy. T works through the example in three steps.5ASimple currency exchange Activity 17.2, Q1 (a), (d) Q2 (a), (b) P (Q1(a)): $1.60 \$ \times 10 = 16 \$$ P (Q2(a)): $24 + 9.20 = (£)2.61$ (to 2 d.p.) P (Q2(a)): $24 + 9.20 = (£)2.61$ (to 2 d.p.)Whole class activity. T and Ps discuss the The £ Abroad table - what is meant by 'exchange rate how to convert pounds to foreign currencies, etc. Volunteer Ps are called to do conversion at BB; other Ps in Ex. By (recalling and practising multiplication and division, to 2 decimal places, of decimals). Praising.5BCharging commission Activity 17.2, appears on OHP and each P has a copy. T works through the example in three steps.5BCharging commission Activity 17.2, Q1 Activity 17.2, appears on OHP and each P has a copy. T works through the example in three steps.5ASimple currency exchange I want is meant by 'exchange rate in P (Q2(a)): $24 + 9.20 = (£)2.61$ (to 2 d.p.)5BCharging commission Activity 17.2, Q1 Activity 17.2, Q1 Act		(h) 26% of	£2 = £ $\left(\frac{2}{100} \times 26\right)$ = £ $\left(0.2 \times 26\right)$ = £ 0.52	Agreement. Praising.
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Activity 17.2, Q1 (a), (d) Q2 (a), (b) P (Q1(a)): $1.60 \$ \times 10 = 16 \$$ P (Q1(d)): $2712 \text{ L} \times 2.50 = 6780 \text{ L}$ P (Q2(a)): $24 \div 9.20 = (\pounds) 2.61 \text{ (to 2 d.p.)}$ P (Q2(b)): $47 \div 2.73 = (\pounds) 17.22 \text{ (to 2 d.p.)}$ T and Ps discuss the The £ Abroad' table - what is meant by 'exchange rare - how to convert pounds to foreign currencies, etc. Volunteer Ps are called to do conversion at BB; other Ps in Ex.Bs (recalling and practising multiplication and division, to 2 decimal places, of decimals). Praising. Tan Ps discuss the The £ Abroad' table - what is meant by 'exchange rare - how to convert pounds to foreign currencies, etc. Volunteer Ps are called to do conversion at BB; other Ps in Ex.Bs (recalling and practising multiplication and division, to 2 decimal places, of decimals). Praising. After discussing commission charges, T calls a stronger P for Q3 (b) to calculate at BB the amount obtained. Then T makes a slower P repeat the procedure with the 'easier' numbers in Q3 (a), at BB. Encouraging, helping, agreemer praising. All Ps write in Ex.Bs. (Discussion as to whether it is quicker to calculate 98% instead of 2% and a subtraction.) P (Q3(c)): $9.20 \text{ F Fr} \times (200 - 2.50) = 9.20 \text{ F Fr} \times 197.50$ $= 1817 \text{ F Fr}$ Mental calculation: $9.2 \times 2 = 18.4 \rightarrow 9.2 \times 200 = 1840$ and $9.2 \times 0.5 = 4.6$ so $9.2 \times 2.5 = 23$ and				
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For eight currencies, etc. Volunteer Ps are called to do conversion at BB; other Ps in Ex.Bs. (recalling and practising multiplication and division, to 2 decimal places, of decimals). Praising. The foreign currencies, etc. Volunteer Ps are called to do conversion at BB; other Ps in Ex.Bs. (recalling and practising multiplication and division, to 2 decimal places, of decimals). Praising. The foreign currencies, etc. Volunteer Ps are called to do conversion at BB; other Ps in Ex.Bs. (recalling and practising multiplication and division, to 2 decimal places, of decimals). Praising. After discussing commission charges, T calls a stronger P for Q3 (b) to calculate at BB the amount obtained. Then T makes a slower P repeat the procedure with the 'easier' numbers in Q3 (a), at BB. Encouraging, helping, agreement praising. All Ps write in Ex.Bs. (Discussion as to whether it is quicker to calculate 98% instead of 2% and a subtraction.) P (Q3(c)): 9.20 F Fr × (200 – 2.50) = 9.20 F Fr × 197.50 = 1817 F Fr Mental calculation: 9.2 × 2 = 18.4 \rightarrow 9.2 × 200 = 1840 and 9.2 × 0.5 = 4.6 so 9.2 × 2.5 = 23 and			$2712 \text{ L} \times 2.50 = 6780 \text{ L}$	·
Volunteer Ps are called to do conversion at BB; other Ps in Ex.Bs (recalling and practising multiplication and division, to 2 decimal places, of decimals). Praising. Shape (Page 1): $24 + 9.20 = (£)17.22$ (to 2 d.p.) The example of the example				<u>*</u>
Ex.Bs (recalling and practising multiplication and division, to 2 decimal places, of decimals). Praising. State of the procedure with the 'easier' numbers in Q3 (a), at BB. Encouraging, helping, agreement praising. All Ps write in Ex.Bs. (Discussion as to whether it is quicker to calculate one of 2% and a subtraction.) P (Q3(c)): $9.20 \text{ F Fr} \times (200 - 2.50) = 9.20 \text{ F Fr} \times 197.50$ $= 1817 \text{ F Fr}$ Mental calculation: $9.2 \times 2 = 18.4 \rightarrow 9.2 \times 200 = 1840$ and $9.2 \times 0.5 = 4.6$ so $9.2 \times 2.5 = 23$ and		P (Q2(a)):	$24 \div 9.20 = (£)2.61 \text{ (to 2 d.p.)}$	_
Charging commission Activity 17.2, Q3 $P (Q3(b)): 2.73 \text{ DM} \times 200 = 546 \text{ DM}$ $\frac{546}{100} \times 1.5 = 5.46 \times 1.5 = 8.19$ $546 - 8.19 = 537.81 \text{ (DM)}$ $P (Q3(a)): 1.60 \$ \times 200 = 320 \$$ $\frac{320}{100} \times 2 = 3.2 \times 2 = 6.4$ $320 - 6.4 = 313.6 (\$)$ $P (Q3(c)): 9.20 \text{ F Fr} \times (200 - 2.50) = 9.20 \text{ F Fr} \times 197.50$ $= 1817 \text{ F Fr}$ Mental calculation: $9.2 \times 2 = 18.4 \rightarrow 9.2 \times 200 = 1840$ and $9.2 \times 0.5 = 4.6$ so $9.2 \times 2.5 = 23$ and		P (Q2(b)):	$47 \div 2.73 = (£)17.22 \text{ (to 2 d.p.)}$	Ex.Bs (recalling and practising multiplication and division, to decimal places, of decimals).
P (Q3(b)): $2.73 \text{ DM} \times 200 = 546 \text{ DM}$ $\frac{546}{100} \times 1.5 = 5.46 \times 1.5 = 8.19$ $546 - 8.19 = 537.81 \text{ (DM)}$ P (Q3(a)): $1.60 \text{ $\times 200 = 320 $}$ $\frac{320}{100} \times 2 = 3.2 \times 2 = 6.4$ $320 - 6.4 = 313.6 \text{ ($\$)}$ P (Q3(c)): $9.20 \text{ F Fr} \times (200 - 2.50) = 9.20 \text{ F Fr} \times 197.50$ $= 1817 \text{ F Fr}$ Mental calculation: $9.2 \times 2 = 18.4 \rightarrow 9.2 \times 200 = 1840$ and $9.2 \times 0.5 = 4.6$ so $9.2 \times 2.5 = 23$ and	5B	Charging co	ommission	Tuising.
P (Q3(b)): $2.73 \text{ DM} \times 200 = 546 \text{ DM}$ $\frac{546}{100} \times 1.5 = 5.46 \times 1.5 = 8.19$ $546 - 8.19 = 537.81 \text{ (DM)}$ P (Q3(a)): $1.60 \$ \times 200 = 320 \$$ $\frac{320}{100} \times 2 = 3.2 \times 2 = 6.4$ $320 - 6.4 = 313.6 (\$)$ P (Q3(c)): $9.20 \text{ F Fr} \times (200 - 2.50) = 9.20 \text{ F Fr} \times 197.50$ $= 1817 \text{ F Fr}$ Mental calculation: $9.2 \times 2 = 18.4 \rightarrow 9.2 \times 200 = 1840$ and $9.2 \times 0.5 = 4.6$ so $9.2 \times 2.5 = 23$ and		Activity 17.	2, Q3	<u> </u>
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p (Q3(a)): $1.60 \$ \times 200 = 320 \$$ numbers in Q3 (a), at BB. Encouraging, helping, agreement praising. All Ps write in Ex.Bs. (Discussion as to whether it is quicker to calculate 98% instead of 2% and a subtraction.) P (Q3(c)): $9.20 \text{ F Fr} \times (200 - 2.50) = 9.20 \text{ F Fr} \times 197.50$ $= 1817 \text{ F Fr}$ Mental calculation: $9.2 \times 2 = 18.4 \rightarrow 9.2 \times 200 = 1840$ and $9.2 \times 0.5 = 4.6$ so $9.2 \times 2.5 = 23$ and				Then T makes a slower P repea
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$\frac{320}{100} \times 2 = 3.2 \times 2 = 6.4$ $320 - 6.4 = 313.6 \text{ (\$)}$ $P (Q3(c)): 9.20 \text{ F Fr} \times (200 - 2.50) = 9.20 \text{ F Fr} \times 197.50$ $= 1817 \text{ F Fr}$ $Mental calculation: 9.2 \times 2 = 18.4 \rightarrow 9.2 \times 200 = 1840$ and $9.2 \times 0.5 = 4.6$ so $9.2 \times 2.5 = 23$ and (Discussion as to whether it is quicker to calculate 98% instead of 2% and a subtraction.) $Q3 (c) \text{ can be given as individua work. Checking in detail at BB then T asks if anyone has a way of doing this in their head. If no one volunteers, T shows Ps the method.}$		$\frac{320}{100} \times 2 = 3.2$	1.60 \$ ×200 = 320 \$	praising. All Ps write in Ex.Bs. (Discussion as to whether it is quicker to calculate 98% instead
$320 - 6.4 = 313.6 \text{ (\$)}$ $P (Q3(c)): 9.20 \text{ F Fr} \times (200 - 2.50) = 9.20 \text{ F Fr} \times 197.50$ $= 1817 \text{ F Fr}$ $\text{Mental calculation:}$ $9.2 \times 2 = 18.4 \rightarrow 9.2 \times 200 = 1840$ and $9.2 \times 0.5 = 4.6$ so $9.2 \times 2.5 = 23$ and			$\frac{320}{100} \times 2 = 3.2 \times 2 = 6.4$	
$= 1817 F Fr$ Mental calculation: $9.2 \times 2 = 18.4 \rightarrow 9.2 \times 200 = 1840$ and $9.2 \times 0.5 = 4.6$ so $9.2 \times 2.5 = 23$ and			320 - 6.4 = 313.6 (\$)	
Mental calculation: 9.2 \times 2 = 18.4 \rightarrow 9.2 \times 200 = 1840 and 9.2 \times 0.5 = 4.6 so 9.2 \times 2.5 = 23 and		P (Q3(c)):	$9.20 \text{ F Fr} \times (200 - 2.50) = 9.20 \text{ F Fr} \times 197.50$	Q3 (c) can be given as individua work. Checking in detail at BB.
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and $9.2 \times 0.5 = 4.6$ so $9.2 \times 2.5 = 23$ and		Mental calcu	ulation:	of doing this in their head. If no one volunteers, T shows Ps the
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$9.2 \times 2.5 = 23$ and			5 = 4.6	
and			5 = 23	
1840 - 23 = 1817		_		
		1840 – 2	23 = 1817	

Y7	Arithmetic: Decimals, UNIT 17 Fractions and Lesson Plan 5 Percentages	Percentages 2
Activity		Notes
5C	Different rates for buying and selling (analysing the 'MEP Bank' table)	There will not be enough time to go into this in depth; interested Ps can investigate further in their homework (Activity 17.2). Two Ps can show and explain solutions at the beginning of the next lesson.
	45 mins	
	Set homework (1) Activity 17.1 - for all Ps (each P has a copy).	
	(2) Activity 17.2, Q4 and Q5 - for stronger and enthusiastic Ps.	

Y7	Arithmetic: Decimals, UNIT 17 Fractions and Lesson Plan 6 Percentages	Decimals, Fractions and Percentages
Activity		Notes
1 1A	Checking homework (2) Looking at the extra homework exercises: Activity 17.2, Q4 P (writes and explains at BB): $2.73 \text{ DM} \times 1000 = 2730 \text{ DM}$ $\frac{2730}{100} \times 2 = 27.3 \times 2 = 54.6$ $2730 - 54.6 = 2675.4 \text{ (DM)}$	T asks who would like to work out the exchange problem if the bank has different rates for buying and selling foreign currency and also charges commission (maybe with different percentages for buying and for selling).
1B	Activity 17.2, Q5 P: (a) $2675.4 \div 2.9 \approx 922.55$ (to 2 d.p.) $\pounds \frac{922.55}{100} \times 3 \approx £27.68$ (to 2 d.p.) $\pounds 922.55 - £27.68 = £894.87$ (b) You have lost £1000 - £894.87 = £105.13.	Then Q4 and Q5 are explained and solved by successful Ps at BB. T agrees, praises; other Ps write in Ex.Bs.
2	Checking homework (1) Activity 17.1 10 mins	Activity 17.1 sheet appears on OHP and T asks which route was chosen. Answering. Agreement, step by step. Self-correction. Praising.
3	Mental work - familiarisation with percentages Activity 17.4 (B)	Mental work/game. This activity is a good start to this lesson. Ps must learn to automatically interchange decimals, fractions and percentages in their heads, e.g. when they see $\frac{1}{4}$ they should automatically think 25%. This activity helps to develop this ability. Praise from T whenever possible.
4	Conversions: decimals, fractions, percentages OS 17.8 P ₁ (writes and explains at BB): $12\% = 0.12 = \frac{12}{100} = \frac{3}{25}$ P ₂ : $\frac{3}{20} = \frac{15}{100} = 15\% = 0.15$ P ₃ : $0.92 = 92\% = \frac{92}{100} = \frac{23}{25}$	Whole class activity. After the 'warm-up game', T and Ps need to discuss in detail how to do these conversions. Table appears on OHP. T chooses a row and a P comes to front of class to say the alternative forms. After agreement and praising, T makes these Ps fill in the gaps in their row on OS. Slower Ps should be encouraged to repeat the procedures with the other
(continued)		numbers. T and Ps can help

Y7	Arithmetic: Decimals, UNIT 17 Fractions and Lesson Plan 6 Percentages			Decimals, Fractions and Percentages
Activity		Notes		
4 (continued)		26 mins		them, or, if they have real problems, T must explain the conversions again. Meanwhile, other Ps can proceed with PB 17.4, Q10, which can be checked at the end of the lesson.
5	Practice with conversions			
	PB 17.4, Q5	$\frac{1}{25}$ 0.04 $\frac{1}{10}$ 0.1	10%	Individual work. T monitors and helps Ps' work. Checking: T puts complete
			50%	table on OHP (prepared in advance) or sketches it on BB.
		$\frac{1}{2}$ 0.5 $\frac{9}{20}$ 0.45	45%	Self-correction, each P should note their mistakes and learn
		$\frac{7}{50}$ 0.14	14%	from them. Praising.
		$\begin{array}{c c} \underline{21} & 0.84 \\ \phantom{00000000000000000000000000000000000$	84%	
6	Self-marked test M 17.2			
	1. $\frac{60}{100} = 60\%$ (2 marks)		(2 marks)	Individual work. Ps have the opportunity to test themselves. Each P has a copy
	$2. \frac{35}{100} = \frac{7}{20}$		(2 marks)	of the test and 9-10 minutes to complete it. After this time, T puts answers,
	3. 0. 17 4. 4%		(1 mark) (1 mark)	with marks), on OHP (prepared in advance). Ps can correct and
	$5. \frac{48}{100} = \frac{12}{25}$		(2 marks)	mark their tests, noting their weak areas. Praising and encouraging.
	$6. \frac{16}{1000} = \frac{2}{125}$		(2 marks)	
	7. 100% - 82% = 18%		(2 marks)	
	$8. \frac{11}{20} = \frac{55}{100} = 55\%$		(2 marks)	
	9. $\frac{30}{100}$ of £20 = $\frac{3}{10}$ of £20 = £	,10 /	(3 marks)	
	10. $\frac{12}{100}$ of 50 kg = $\frac{6}{20}$ of 50 kg = $\left(\frac{50}{50} \times 6\right)$ kg = 6 kg (3 marks)			
		f possible 20:		
	18-20 14-17	Excellent Good		
	8-13	Fair		
	less than 8	Poor 45 mins		
	Set homework M 17.3 PB 17.4, Q9			