Multiplication Prior Learning Assessment Question 9 and 10:

Objective: I can solve problems involving multiplication.

I can solve word problems.

NC NMD 5 solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected

Assessment Questions:

Prior Learning:

Multiplication + Division	**Question 9:** I can solve multiplication missing number sums.	I feel

Fill in the boxes to make each sum correct.

a) ☐ x 7 = 56

b) 22 x ☐ = 66

Prior Learning:

Multiplication + Division	**Question 10 :** I can solve word problems.	I feel:

Chocolate bars come in packs of 6. Each pack has 2 extra free bars. A shop orders 15 packs of chocolate bars. How many chocolate bars are there in total?

☐

Mastery tasks 2 and 3 may need a whole lesson to provide opportunities for the children to apply problem solving skills and group discussions about strategies they have used.

Problem Solving Tasks:

Mastery 1: **Most suited for children who made errors in Question 9 or will benefit from exploring missing box type questions further.**

For this activity the children are presented with multiplication sums already laid out. The children are presented with the answer and need to use their knowledge of multiplication facts to help them to work out the missing amounts.

At the end of the task the children are also presented with sums worked out using the expanded multiplication method. The children are to work out the missing boxes in the calculation using the information they have.

Key Questions:

- What strategies can we use? How are we going to find out the missing boxes?
- What information do we have? How can this help us?
- What has this amount been x by to get the answer?
- Are you happy with all of the boxes you have filled in? Can you suggest a way of checking your answers?

Mastery 2: **Most suited for children who are ready to apply multiplication facts and explore an open ended investigation.**

The children are presented with an open ended investigation about jam tarts grouped in packs of 4, 5 and 6.

The children are presented with different amounts of jam tarts that people would like to buy. The children need to explore how many different ways the amounts can be bought.

For example buying 30 jam tarts:

The children can use their times table facts to explore, such as 5 x 6 packs or 6 x 5 packs.

The children should suggest exploring other combinations such as:

3 x 4 packs (12) and 3 x 6 packs(18)

2 x 4 (8) and 2 x 5 (10) and 2 x 6 (12)

5 x 4 packs (20) and 2 x 5 packs (10)

The children should explore different combinations for each person provided on the task sheet . Some of the amounts are not multiples of 4, 5 and 6 such as 43. So how will they be able to make 43 jam tarts?

Additionally some children may want to explore how their working out can be recorded so that they can find as many different ways as possible. Some children may benefit from using the additional resources provided (packs of jam tarts ready to cut up) so that they can practically explore different combinations of packs.

As a further challenge, the jam tarts can be given prices so that the children can work out the cheapest way to buy jam tarts.

For example:

4 jam tarts cost 60p

5 jam tarts cost 80p

6 jam tarts cost £1.00

I want to buy 24 jam tarts. Which packs shall I buy for the best value of money.

Example of possible combinations

4 packs of 5 jam tarts = 320 pence or £3.20

and 1 pack of 4 = 60p **so in total £3.80 or 380 pence**

Or 4 packs of 6 = 400 pence or **£4.00**

Or 6 packs of 4 = 360 pence or **£3.60**

Or 2 packs of 5 jam tarts = 160 pence or £1.60

1 pack of 6 jam tarts = 100 pence or £1.00

2 packs of 4 jam tarts = £1.20 or 120 pence **so in total £3.80**

Children may want to use coins to help to calculate the totals.

Mastery 3: Most suited for children who demonstrate misconceptions in Question 10 of the prior learning assessment or will benefit from applying calculation methods to multistep word problems.

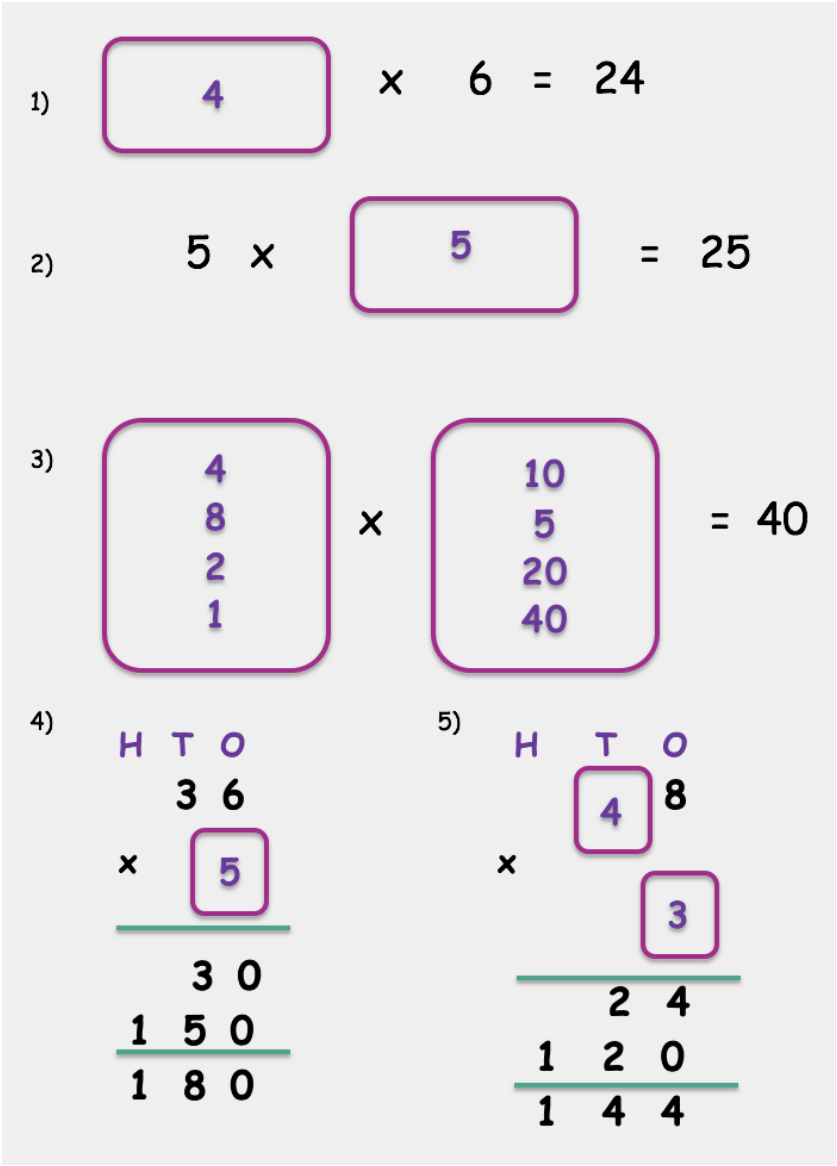
The children are presented with a selection of word problems. Question 1 encourages the children to apply solely multiplication methods. The remaining questions require the children to use subtraction skills and multiplication skills. Encourage the children to pick out what they are required to do. Encourage the children to decide if they need to use mental or written calculations to work out the answers.

Key Questions:

- Which parts of the text give you this information?
- Which parts should I underline or highlight as these are the most important?
- What amounts have I got that will help me? What do I need to do with these amounts?
- Can you explain the methods/ strategies are you are using to multiply? Why? Is there a more efficient strategy you can use?
- How can you check that you are correct?

Answers:

Mastery 1



Mastery 3

1) 96children

2)£45

3)132children

4)£68

BRICKWORK Mathematics

Mastery 1

Problem Solving

Find the answer to each missing box:

1) ☐ x 6 = 24

2) 5 x ☐ = 25

3) ☐ x ☐ = 40

4)

H	T	O
	3	6
x	☐	
	3	0
1	5	0
1	8	0

5)

H	T	O
	☐	8
x		☐
	2	4
1	2	0
1	4	4

Mastery 2

Larger Problem Solving

A bakery sells jam tarts in packs of:

4 jam tarts

5 jam tarts

6 jam tarts

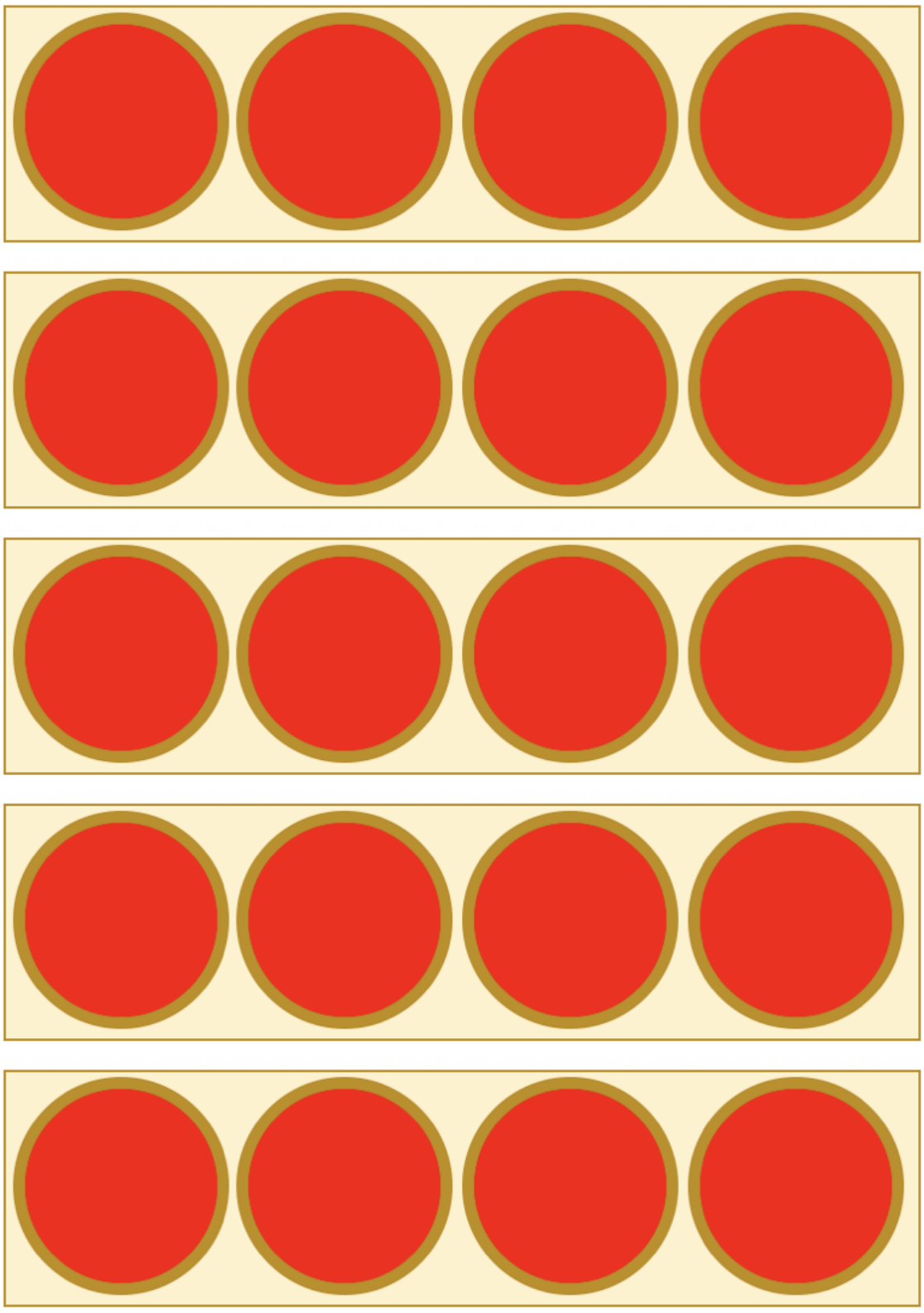
Sophie needs 30 jam tarts . Which packs of jam tarts can she buy and how many does she need?

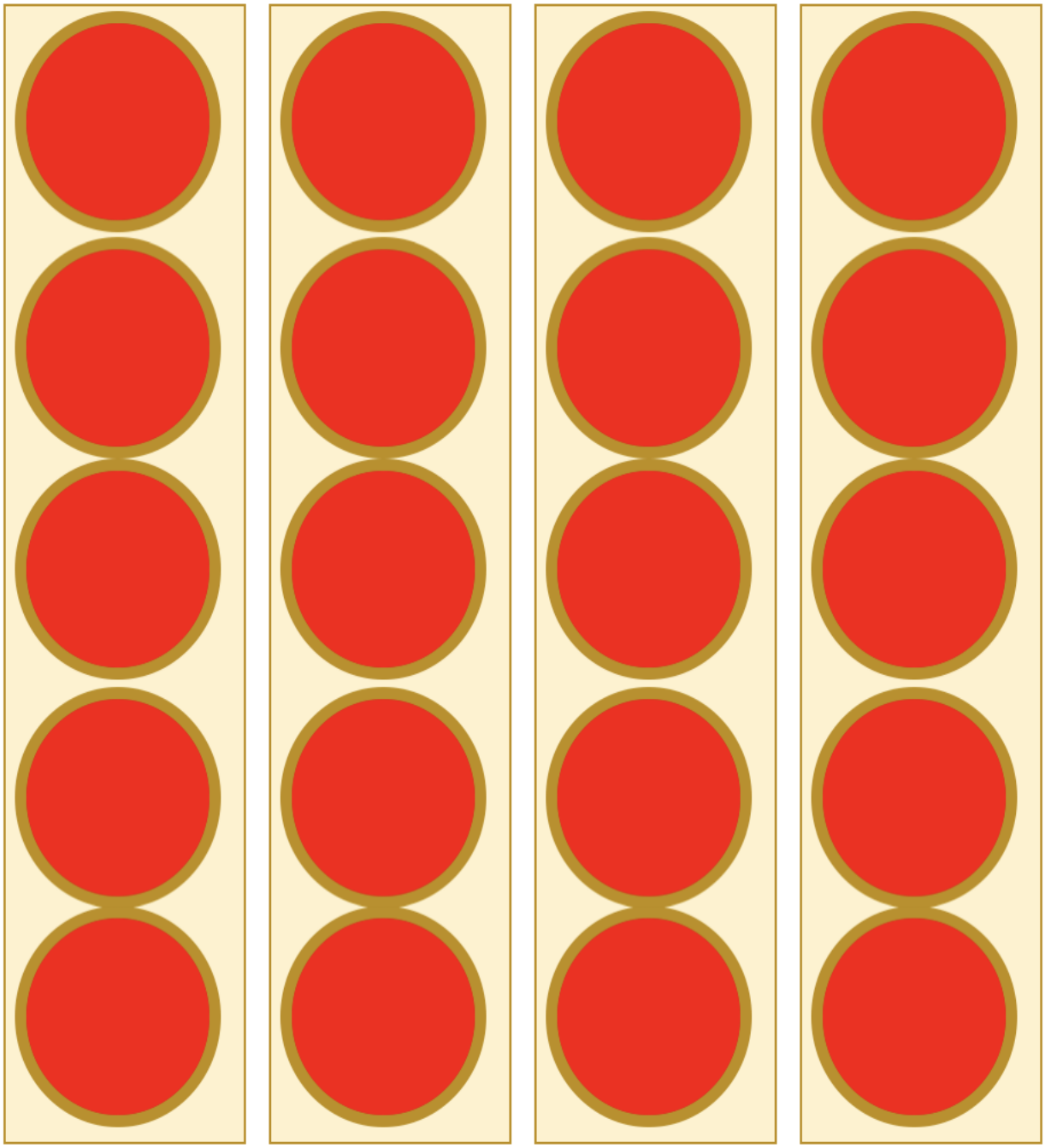
Sam needs to buy 48 jam tarts for a party. Which packs of jam tarts can he buy?

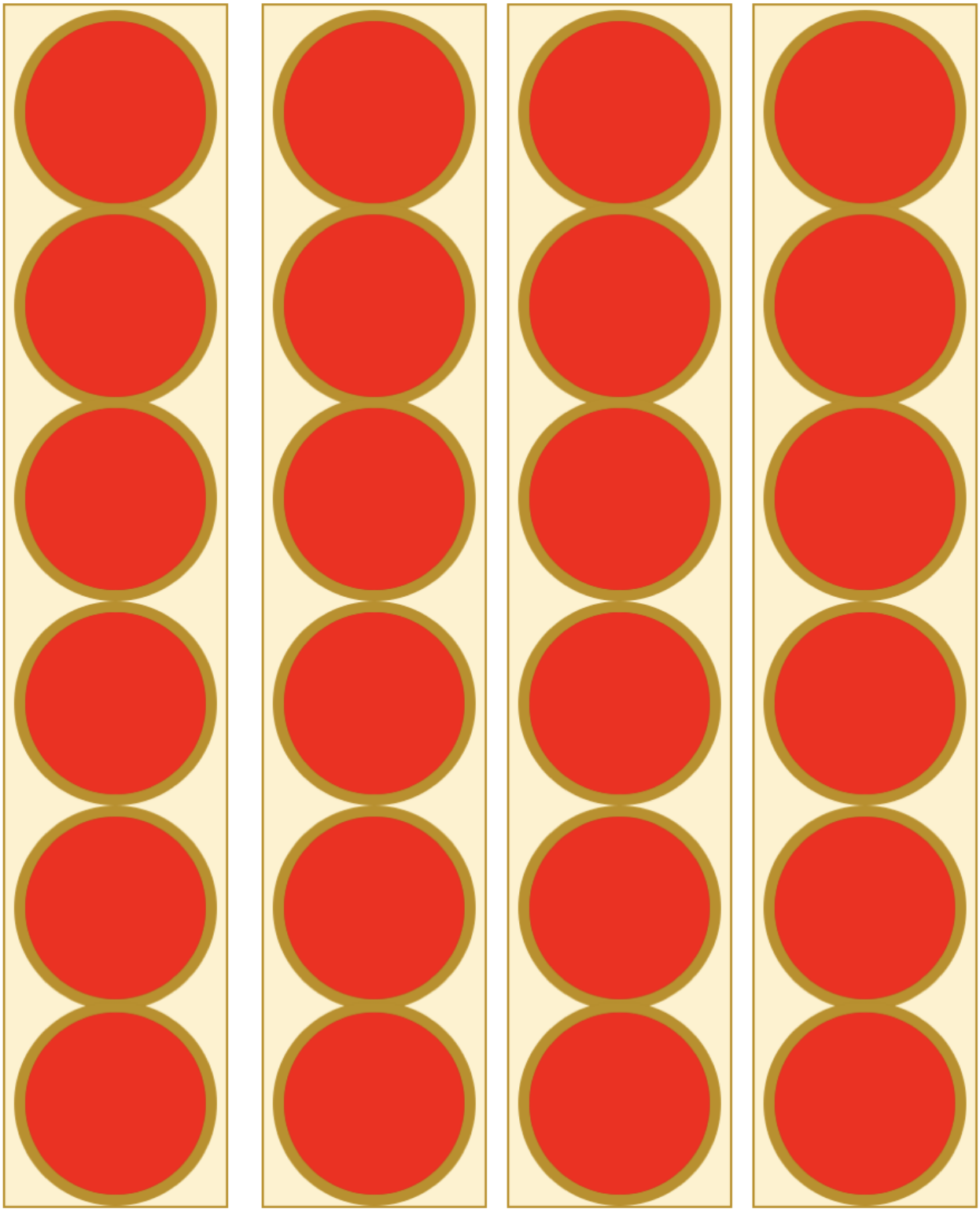
Challenge:

Harry needs 34 jam tarts:

Sheena needs 23 jam tarts:







Mastery 3

Word Problems

1) Holywell Primary school has a running club. There are 12 children from each class in the club. There are 8 classes in the school. How many children are there altogether in the running club?

2) The Roberts family are planning a day out to London. They have £180 to spend. They buy 5 train tickets for £27 each. How much money do they have left to spend?

3)There are 6 classes in Key stage 2 at Holywell Primary school.
There are 32 children in each class. 10 children from each class have packed lunches. How many children have hot school dinners in key stage 2?

4) Tom pays £25 for a T- shirt and a computer game. The T- shirt cost £8. Tom wants to buy 4 more computer games. How much will that cost him?