**1** Tommy is using base 10 to represent decimals.
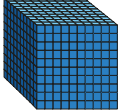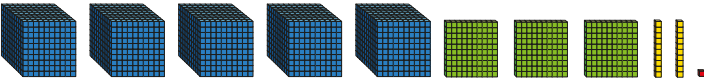
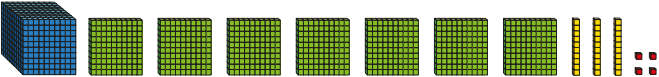He uses  to represent 1 whole.

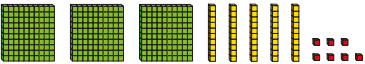He uses  to represent $\frac{1}{10}$ or 0.1

He uses  to represent $\frac{1}{100}$ or 0.01

He uses  to represent $\frac{1}{1000}$ or 0.001

What decimals are represented?

a) 

b) 

c) 

**2** a) Represent each number using base 10

0.512          1.352          2.003

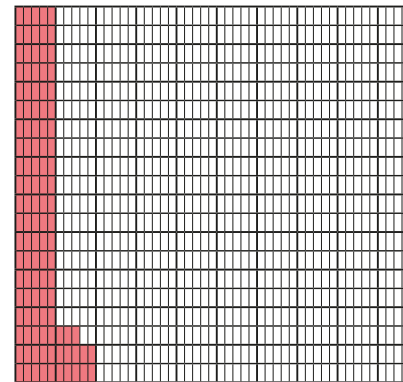b) Use your representations to help you complete the statements.

0.512 = 0.5 + 0.01 + ⬚

1.352 = 1 + ⬚ + ⬚ + ⬚

2.003 = _____

**3** Here is a thousand square.

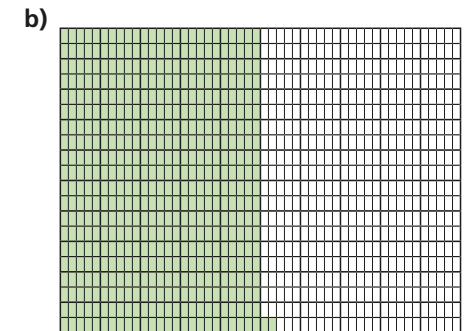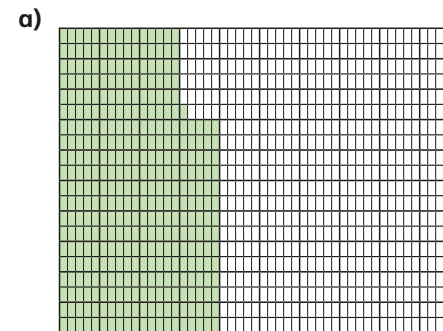Part of the square has been coloured.



a) Why do you think it is called a thousand square?

b) What fraction of the square has been coloured?

c) Write the fraction as a decimal.

**4** What fraction of each grid has been shaded?

Write each number as a fraction and as a decimal.

a) 

b)

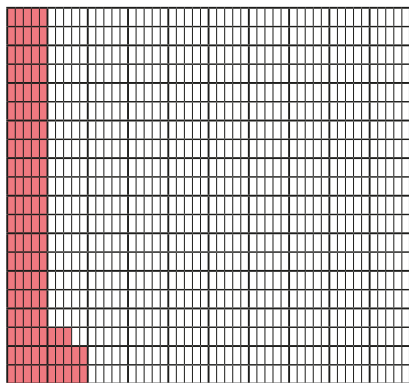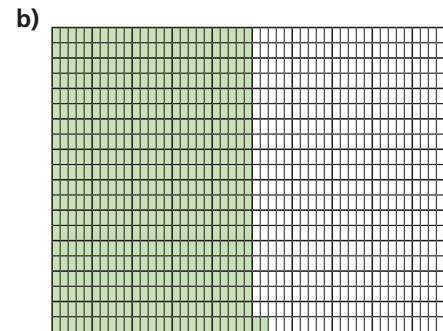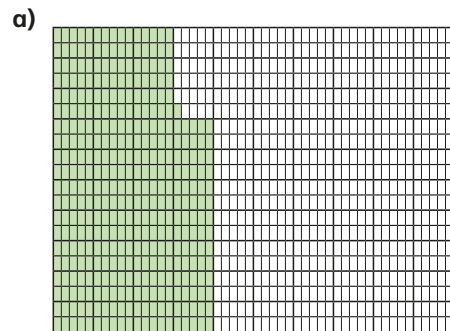**b)** Use your representations to help you complete the statements.

$0.512 = 0.5 + 0.01 + \boxed{\phantom{xxx}}$

$1.352 = 1 + \boxed{\phantom{xxx}} + \boxed{\phantom{xxx}} + \boxed{\phantom{xxx}}$

$2.003 = \underline{\phantom{xxxxxxxxx}}$

**3** Here is a thousand square.

Part of the square has been coloured.



**a)** Why do you think it is called a thousand square?

**b)** What fraction of the square has been coloured?

**c)** Write the fraction as a decimal.

**4** What fraction of each grid has been shaded?

Write each number as a fraction and as a decimal.

**a)**



**b)**



**5** Colour thousand grids to represent the fraction and decimal.

**a)** $\dfrac{73}{1000}$   **b)** 0.302

**6** Represent these numbers on a place value chart.

**a)** 1.372   **b)** 0.091   **c)** 3.542

**7** Show that $\dfrac{400}{1000}$ is the same as 0.4

**8** Write the numbers represented by the place value charts.

**a)**

| Ones | Tenths | Hundredths | Thousandths |
|---|---|---|---|
| 1  1  1 <br> 1 | 0.1  0.1 | 0.01  0.01  0.01  0.01 <br> 0.01  0.01  0.01 | 0.001  0.001  0.001 <br> 0.001  0.001  0.001 |

**b)**

| Ones | Tenths | Hundredths | Thousandths |
|---|---|---|---|
| | 0.1  0.1  0.1 <br> 0.1  0.1 | | 0.001  0.001 <br> 0.001  0.001 |