

# Maths Mastery

## Estimation

### Challenge Cards

#### Maths Mastery - Estimation

1. Nikita estimates the answers to these calculations to check the answers. Can you check them using the same method:

$$6702 + 35\,782 = 41\,484$$

$$1.59 - 0.82 = 0.77$$

$$23.2 + 56.8 = 80$$

$$92\,012 - 34\,988 = 56\,924$$

$$46 \times 6 = 296$$

$$234 \div 4 = 58.5$$

$$1.08 \times 14 = 15.12$$

$$4.17 \div 3 = 1.19$$



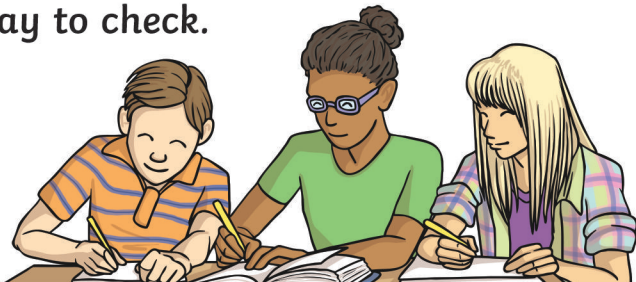
#### Maths Mastery - Estimation

2. George completes the calculation:

$$7019 \times 26 = 192\,494$$

Explain how you would check the answer using estimation.

Write your own question for a partner to explain a way to check.



#### Maths Mastery - Estimation

3. Pavel researches attendance in the 2015/16 Premier League season. The top 5 attendances for home games were:

Manchester United: 1 430 430

Arsenal FC: 1 138 934

Manchester City: 1 026 776

Newcastle United: 945 317

Liverpool FC : 834 285



A journalist says that the total attendance at these 5 clubs is  $5\frac{1}{2}$  million. Explain whether this is an accurate rounding of the totals.

4. Pavel writes calculations, but some of them are not correct. Can you find the incorrect calculations?

$$267 + 633 = 900$$

$$505 + 495 = 900$$

$$828 + 72 = 900$$

$$339 + 571 = 900$$

$$752 + 148 = 900$$

Explain to a partner how you spotted it.

Write some for a partner to solve.

Maths Mastery - Estimation

5. Nikita says, "Council tax for my house is £92 per month, which means it's £1200 per year."

Explain why Nikita could improve her estimate.

Maths Mastery - Estimation

6. George eats 40g of cereals each morning. Estimate how many kilograms of cereals he eats in a year.



Maths Mastery - Estimation

7. Nikita has a set of digit cards, 0-9. She chooses 4 cards.

Nikita tries to make 2 numbers with the cards with a total nearest to 100. What numbers can she make?

Use a set of cards yourself and take 4 cards. Work with a partner. Who can find the closest total to 100.

Try 6 cards to make a total nearest to 1000.

# Year 6 Maths Mastery Challenge Cards

## Estimation - Answers

1.  $6702 + 35\,782 = 41\,484$       Incorrect: 42 484  
 $1.59 - 0.82 = 0.77$       Correct  
 $23.2 + 56.8 = 80$       Correct  
 $92\,012 - 34\,988 = 56\,924$       Incorrect: 57 024  
 $46 \times 6 = 296$       Incorrect  
 $234 \div 4 = 58.5$       Correct  
 $1.08 \times 14 = 15.12$       Correct  
 $4.17 \div 3 = 1.19$       Incorrect: 1.39

2.  $\times 26$  is approximately  $\times 100 \div 4$  (half of half)

Or more accurately  $\times 100 \div 4 + 1$  more.

Using 7000 as a close approximation of 7019.

$7000 \times 100 = 700\,000$ ;  $700\,000 \div 2 = 350\,000$ ;  $350\,000 \div 2 = 175\,000$ ;

$175\,000 + 7000 = 182\,000$ . 192 494 is wrong.

3. 5 375 742

4.  $505 + 495 = 900$  **x 1000 5 hundreds and 4 hundreds means the answer is more than 900**

$339 + 571 = 900$  **x 910 3 tens and 7 tens gives 10 tens and the remaining ones so the answer is not a round hundred.**

5. £1100 is a better estimate.

£92 is £8 less than £100, so  $\pounds 100 \times 12 = \pounds 1200$  and  $\pounds 8 \times 12 = \pounds 96 \approx \pounds 100$ ,  $\pounds 1200 - \pounds 100 = \pounds 1100$

6.  $365 \times 4 \approx 1500$ ,  
 $40\text{g} = 0.04\text{kg}$   
 $365 \times 0.04\text{g} \approx 15\text{kg}$

7.  $79 + 34 = 113$