

EQUATIONS 1

MTH 4-15a

Having discussed the benefits of using mathematics to model real-life situations, I can construct and solve inequalities and an extended range of equations.

Pupils should be able to:

- Understand the "balance" model of an equation
- Use the balance method to solve equations e.g. $5x + 8 = 23$
- Use the balance method with harder equations e.g. $8x + 3 = 6x + 23$
- Gain more practice in using the balance method,
Aiming at clear and concise layout of working:

$$\begin{array}{rcl}
 \text{e.g. } 8x + 3 = 6x + 23 & & (-3) \\
 8x & = & 6x + 20 & (-6x) \\
 2x & = & 20 & (\div 2) \\
 x & = & 10
 \end{array}$$

- Solve inequalities by selecting appropriate values from a set of options.
- Solve simple inequalities algebraically (extension)

PUPILS SHOULD COMPLETE THE FOLLOWING EXERCISE AND ASSESS THEIR PROGRESS BY TICKING ONE OF THE OPTIONS FOR EACH TOPIC IN THE TABLE BELOW

	DEVELOPING	CONSOLIDATING	SECURE
BALANCING METHOD (QUESTION 1)			
SOLVING EQUATIONS (QUESTIONS 2 - 3)			
UNDERSTANDING INEQUALITIES (QUESTIONS 4)			
SOLVING INEQUALITIES (QUESTION 5 - 6)			

mymaths lessons: [library/algebra/equations - linear/ solving equations](#)
[library/algebra/equations - linear/equations with fractions](#)
[library/algebra/inequalities/inequations](#)
[library/algebra/inequalities/negative inequations](#)

SELF EVALUATION EXERCISE

Date Due_____

Q1. In words (do not carry out the calculations) describe how you would solve the following equations to find x in each case:

a) $3x + 4 = 31$

b) $4x - 3 = x + 6$

c) $ax - b = cx + d$

Q2. Solve the following equations, taking care to set working out neatly and clearly:

a) $4x - 5 = 2x + 7$

b) $7g - 18 = 2g + 7$

c) $3t + 5 = 9t - 31$

Q3. Solve the following equations, taking care to set working out neatly and clearly:

a) $3t + 12 = t - 4$

b) $12h - 13 = 2h + 4$

c) $5k + 8 = k - 2$

Q4. If x can be represented by the whole numbers from 1 to 10, show which values of x will satisfy the following inequalities:

a) $2x + 1 > 9$

b) $50 - 4x \leq 30$

c) $5x - 3 > 3x + 12$

Q5. Solve the following inequalities:

a) $3c + 4 > 19$

b) $4r - 9 \geq 18$

c) $3j + 8 < 20$

d) $15 - 2d \leq 9$

Q6. Solve the following inequalities:

a) $4z - 12 > 3z + 2$

b) $7y - 13 \leq 4y + 8$

c) $4t + 15 < t - 3$

d) $8t + 7 \geq 2t - 14$