Solve a system by elimination	Season	01
	Episode	AP11
	Time frame	1 period

Objectives :
- Discover the elimination method for solving a system.

Materials :
- *Task sheets.*
- *10 cut-out coloured card sheets.*
- *Slideshow.*

1 – Example

5 mins

There are three type of coloured cards : green, yellow and blue.
Each blue card has a value of 1, but the values of the green and yellow cards are unknown.
The following system has to be solved to find out the values of the green and yellow cards.

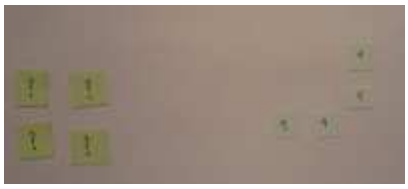
$$\begin{cases} \text{Two green cards and two yellow cards make four.} \\ \text{Three green cards and one yellow card make four.} \end{cases}$$

The steps of the method are shown below.

1. Set up the two equations.

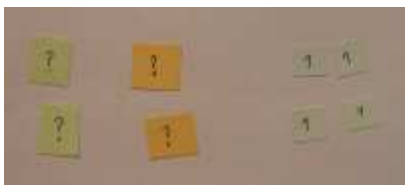
2. Multiply one equation so that the number of yellow (or green) cards are equal.

3. Take from each equation the number of green, yellow and blue cards there are in one of the equations.

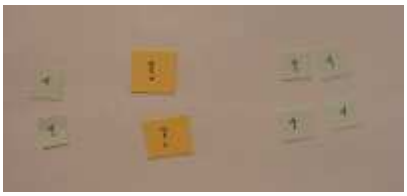


4. Deduce the value of the green card.

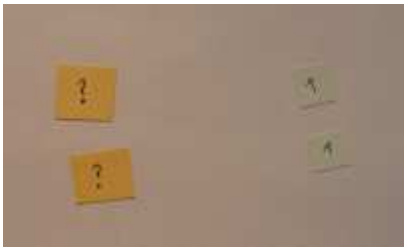
5. Go back to the first equation.



6. Replace each green card by the appropriate number of blue cards.



7. Subtract the same number of blue cards from both sides.



8. Deduce the value of the yellow card.

9. Conclude : the values of the green and yellow cards are both equal to 1.

2 – Solve systems with tokens

Remaining time

Students work in pairs. Each pair has to solve 10 systems with this method (the teacher should check that no other method is used). Every good answer earns two points to the team.

Solve a system by elimination

Season	01
Episode	AP11
Document	Task sheet

There are three type of coloured cards : green, yellow and blue.
Each blue card has a value of 1, but the values of the green and yellow cards are unknown.
Use the cards to find out the values of the green and yellow cards in the following situations.

1. $\begin{cases}$ One green card and two yellow cards make eight.
Three green cards and three yellow cards make fifteen.
2. $\begin{cases}$ Four green cards and three yellow cards make fifteen.
Three green cards and two yellow cards make eleven.
3. $\begin{cases}$ Three green cards and two yellow cards make two.
Six green cards and four yellow cards make two.
4. $\begin{cases}$ Two green cards and three yellow cards make seven.
Four green cards and two yellow cards make six.
5. $\begin{cases}$ Three green cards and three yellow cards make seven.
Four green cards and six yellow cards make ten.
6. $\begin{cases}$ Two green cards and three yellow cards make one.
Four green cards and six yellow cards make two.
7. $\begin{cases}$ Three green cards and eight yellow cards make four.
Six green cards and four yellow cards make five.
8. $\begin{cases}$ Three green cards and two yellow cards make one.
Two green cards and three yellow cards make minus one.
9. $\begin{cases}$ Two green cards and one yellow card make zero.
Three green cards and two yellow cards make one.
10. $\begin{cases}$ Three green cards and four yellow cards make minus one.
Four green cards and five yellow cards make minus two.

Document 1 Cut-out coloured card sheets

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1	1	1	1	1	1
1	1	1	1	1	1
-1	-1	-1	-1	-1	-1
-1	-1	-1	-1	-1	-1