1. Reducing Cognitive Load
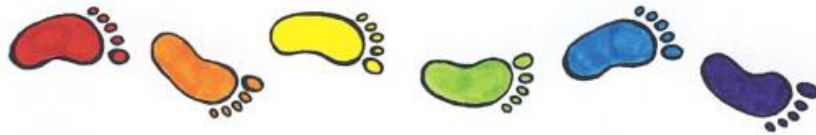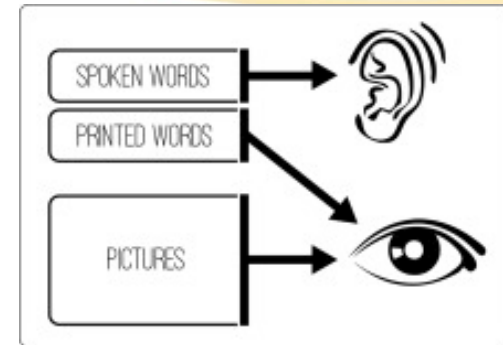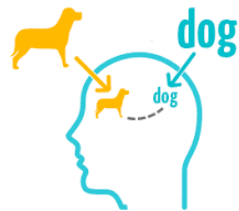
SJB

Strategies include:

Small Steps

Multimedia Learning

Dual
Coding

Use of Icons

a.Small Steps

Lesson 1	Set 1		Set 7
	Identify questions that require you to solve simultaneous equations	Lesson 1	Be able to work out the value of shapes or images when presented in a pair of equations Work out the value of shape or images when presented as a group of equations Understand what is meant by a simultaneous equation
	Solve simultaneous equations through elimination (addition and subtraction)	Lesson 2	Be able to use bar models to identify the difference between two equations
			Be able to identify the difference between two equations algebraically
			Solve a pair of simultaneous equations by calculating the difference between the two
			Be able to find the value of both unknowns in the equations by substituting and solving
	Solve simultaneous equations that require manipulation first	Lesson 3	Recall how to identify the difference between two equations algebraically and be able to determine the unknown values
			Be able to solve simultaneous equations where the signs are both negative of the same coefficient
			Be able to solve simultaneous equations where the signs are different of the same coefficient

Task 1

Work out the value of the circle and the square

Challenge:

1. $4a + b = 11$
   $a + b = 5$

2. $3a + b = 5$
   $4a - b = 2$

3. $6a + 2b = 8$
   $4a + 2b = 6$

4. $9a + 3b = 19$
   $6a - 3b = 11$

5. $3a + b = 6$
   $4b + 3a = 15$

6. $6a + 2b = 5$
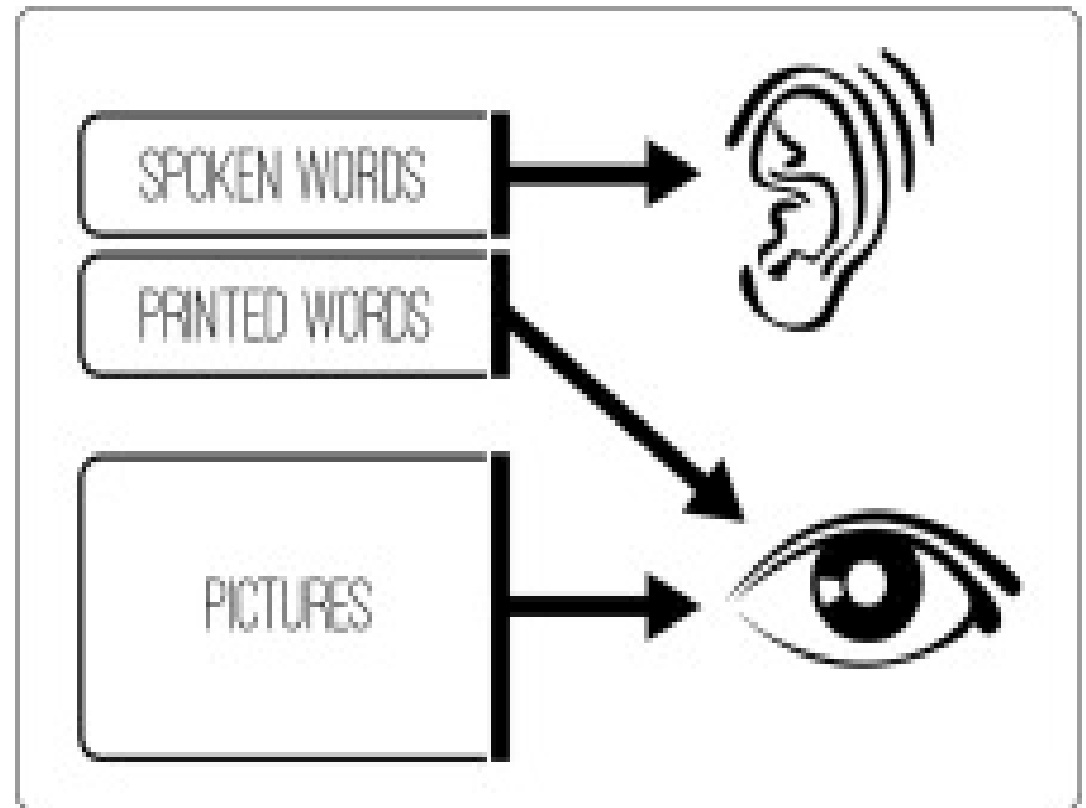 $-6a + 3b = 15$

7. $5a + 3b = -4$
   $9a + 3b = 0$

8. $11a + 2b = 7$
   $7a - 2b = 11$

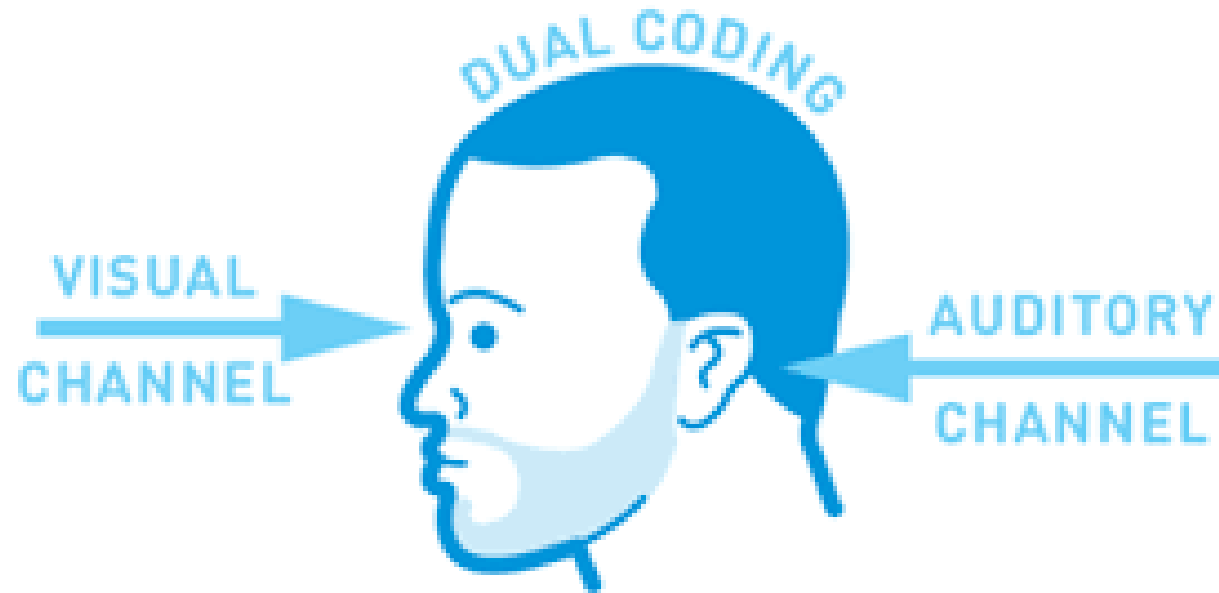9. $8x + 6y = 36$
   $2x + 6y = 27$

10. $7x + 6r = 124$
    $-7x + 6r = -16$

b. Multimedia Learning

- Remove anything <u>unnecessary</u>

- Add information as you <u>explain</u> it

- Optimise learning with <u>pictures and spoken words</u>

c. Dual Coding

(Paivio, 1971)

- Combining words with images

- Helps to leverage greater working memory capacity

Same image to represent an idea

Porphyria's Lover

As we read the poem and watch the video, think about:

1. Who is the speaker?
2. What relationshi[p is] presented in the [poem?]
3. How does the sp[eaker feel] towards the wo[man? What] do they focus o[n?]
4. What shocking e[vent] happens in the p[oem?]

https://www.youtube.com/watch

Porphyria's Lover

Where are the errors? Are there any?

1. The speaker is an insane man.
2. The relationship is a jealous familial love that now distant.
3. The speaker admires the woman's looks and is bo[th] obsessive and possessive[.]
4. The speaker "strangled her" with his proposal.

https://www.youtube.com/watch?v=dSIm1KYZ

How would you summarise the relationship in this poem?

Cartoon strips/timelines

Cartoon strip to aid comprehension

SJB

Describe the four types of seed described in the parable of the sower

TASK: I am going to read Mark 4:1-9 to you.

As I am reading, you need to draw what you hear. Try to include the following:
1. The location
2. The faces of those listening to the parable
3. The four types of ground that the seed falls on

THINK

How do seeds link to our faith

The parable of the sower

The parable of the sower describes a man who sows seeds in a field. The seeds fall in four different places: path, rocky land, thorns and good soil
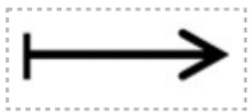
I think this parable was so impactful to the people listening to Jesus because it was teaching them that they also need to be in the right state of mind and thinking positively about there faith so that they can grow in there faith

Labelling diagrams

pulmonary
artery
vena
cava
aorta
right
atrium
pulmonary
vein
left
atrium
left
ventricle
right
ventricle
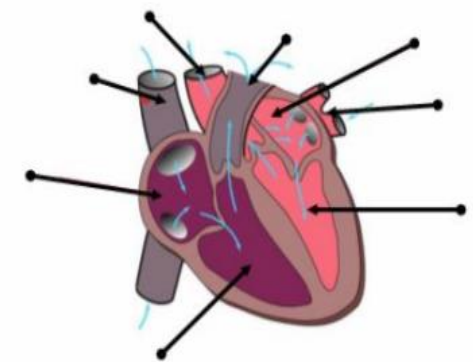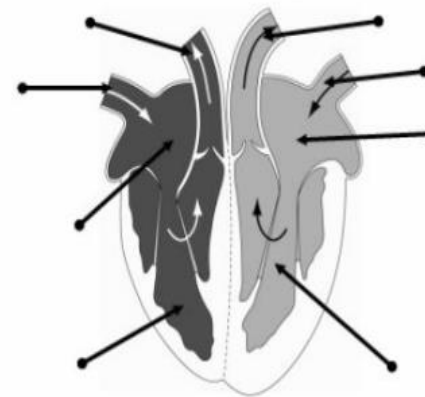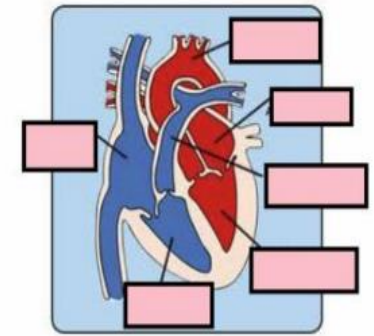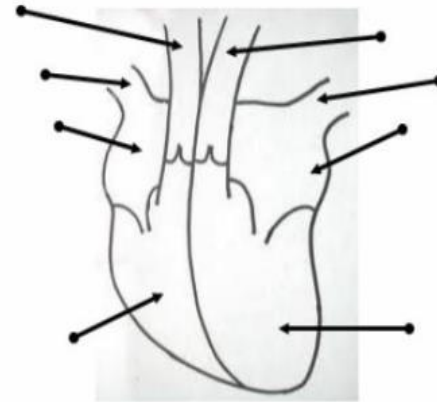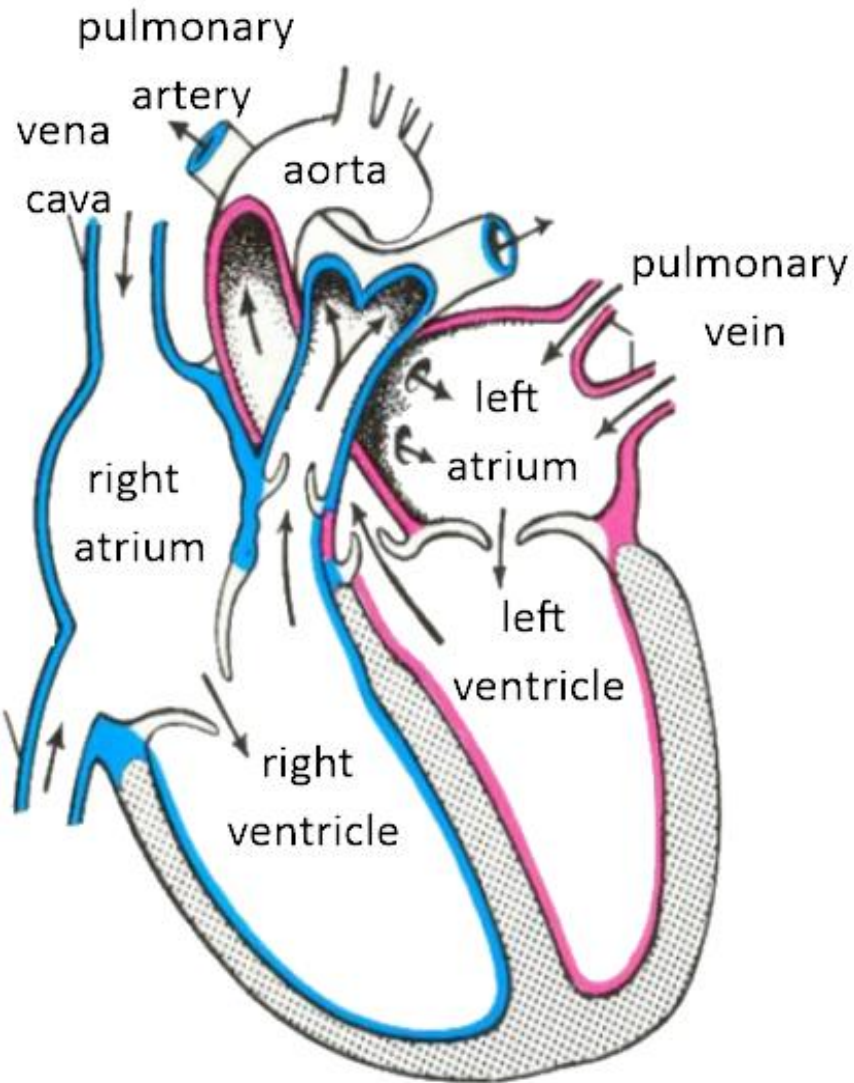
Using images to aid problem solving

SJB

Displacement, s, is shown as an arrow with an open arrowhead. The perpendicular line indicates the zero of the measurement.

Initial and final velocities, u and v, are shown as arrows with solid arrowheads. The length indicates the magnitude of the velocity.

Acceleration, a

Tim

Zero veloc

+ve   The (arbitrary) positiv

Problem: a motorcycle accelerates from rest at 0.8 m/s² for a time of 6.0 seconds. Calculate (a) the distance travelled; and (b) the final velocity.

0.0   +ve   6.0

X 0.0   v

→→ 0.8

⊢—————————————→ s

(a)

$$s = ut + \frac{1}{2}at^2$$

$$s = 0 \times 6.0 + \frac{1}{2} \times 0.8 \times 6.0^2 = 14.4 \text{ m}$$

(b)

$$v = u + at$$

$$s = 0 + 0.8 \times 6.0 = 4.8 \text{ m s}^{-1}$$

d. Use of Icons