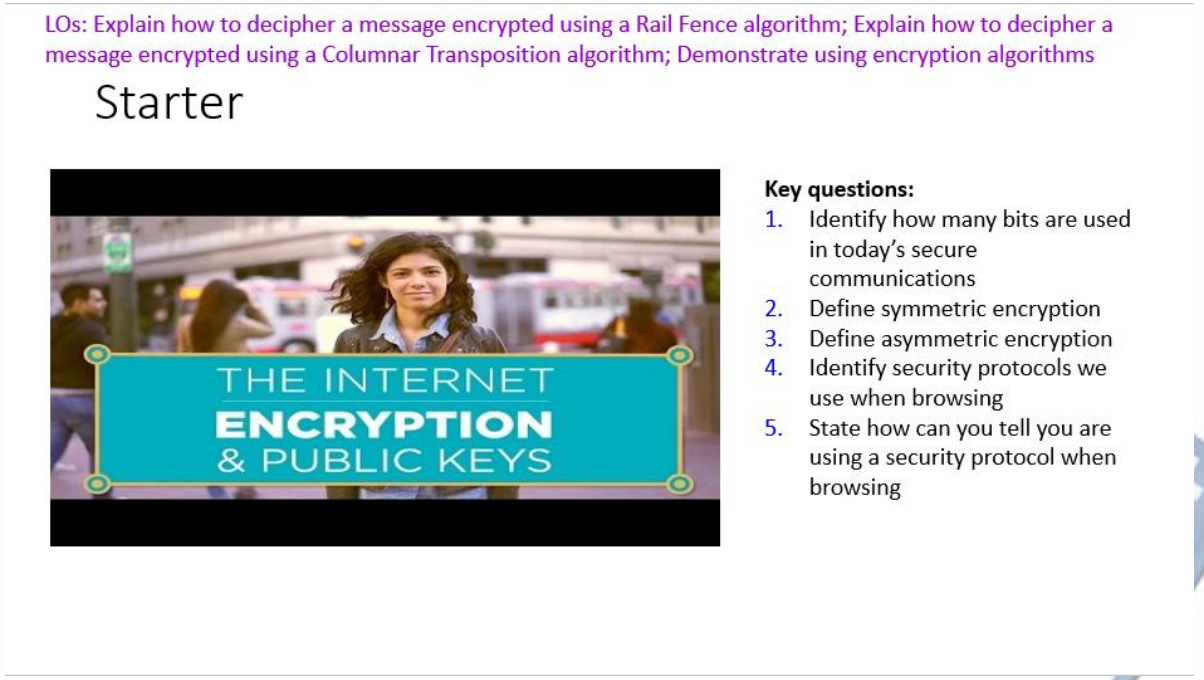
Scaffolds

- One example was students watched a video clip and had to make notes on the questions posed.
- Questions are in the order the info appears in the video to reduce cognitive load.
- Pausing a video regularly to avoid split-attention effect, or watch-re-watch



Key Information

Read the information and highlight any key biological terms.

Arteries carry blood away from the heart towards an organ, while veins carry blood from an organ towards the heart.

The human circulatory system is a double circulatory system. It has two separate circuits and blood passes through the heart twice:
- the pulmonary circuit is between the heart and lungs
- the systemic circuit is between the heart and the other organs.

The pulmonary circuit transports blood to the lungs. The blood is oxygenated there and then carried back to the heart. Gaseous exchange happens in the lungs:
carbon dioxide diffuses from the blood into the air in the alveoli
oxygen diffuses from the air in the alveoli into the blood, and is absorbed by haemoglobin in the red blood cells
Unlike other arteries and veins, the pulmonary artery carries deoxygenated blood and the pulmonary vein carries oxygenated blood.

The systemic circuit transports blood around the body. It transports oxygen and nutrients to the body tissues, and carries away deoxygenated blood containing carbon dioxide and other waste materials.

Arteries
Carry blood away from the heart (always oxygenated apart from the pulmonary artery which goes from the heart to the lungs). Have thick muscular walls.
Have small passageways for blood (internal lumen). Contain blood under high pressure.

Veins
Carry blood to the heart (always deoxygenated apart from the pulmonary vein which goes from the lungs to the heart).
Have thin walls.
Have larger passageways for blood (internal lumen).
Contain blood under low pressure.
Have valves to prevent blood flowing backwards.

Capillaries
Found in the muscles and lungs.
Microscopic – one cell thick.
Very low blood pressure.
Where gas exchange takes place - oxygen passes through the capillary wall and into the tissues, while carbon dioxide passes from the tissues into the blood.

Recalling Key Concepts:

1. Name the two circuits in our circulatory systems.

2. Which blood vessels allow transport in and out of their walls?

3. Which two substances are transported in gas exchange?
   Where are they transported from and to?

4. In which parts of the blood are Oxygen and CO2 carried?

Explain how the human circulatory system is adapted to:

- supply oxygen to the tissues
- remove waste products from tissues.

(Total 6 marks)

Science Example

Scaffolds designed to draw out the key information that students need to answer questions – reducing the cognitive load for lower attaining students.

Split-attention effect overcome

- I do, we do, you do example sheet used with Year 10 and Year 11 in the past week.
- I do prepared and a student friendly mark scheme above.
- Live modelling with We do.
- They then mark alone and peer assess.
- Peer assessment are scaffolded with a slide on the board of what a 'good' WWW looks like.
- Students can also use the student friendly success criteria from Step 1.

Crime and Punishment – Policing since 1900 [I Do, We Do, You Do]

2) Explain why policing has improved since 1900 [12 marks]

Step 1: I Do – Read through the following example and highlight the following:

1. Identified a factor/reason that caused improvement in policing □
2. Provided evidence of this improvement e.g. stated a type of crime □
3. Explained how the factor/reason caused the improvement (what existed before?) □
4. Made a judgement about important this factor was for improving policing [This links back to the question clearly] □

One reason for the improvement in policing since 1900 is increased camera technology. In most towns and cities, popular areas are covered by cameras. CCTV allows police to see footage of crimes and also track criminal movements. ANPR allows police to track criminals in vehicles or identify potential suspects/witnesses. Previously, the police would be reliant on witness statements or police officers responding to incidents and catching criminals. This has allowed policing to improve as it means the police can use this technology to prove a criminal was at a scene or show footage of a crime taking place. It has increased their chances of solving particular crimes e.g. car theft. This has been absolutely crucial to improvements in policing as without it, police would find it very difficult to follow up crimes in busy areas, especially cities, because it is unlikely they would be able to track witnesses or criminal movements

WWW:
1.
2.

EBI:
1.
2.

Step 2: We Do – Joint construction. Let's write a paragraph together.

Step 3: You Do – Independent paragraph.

Step 4 – Feedback on 'You Do' section

WWW:
1.
2.
3.

EBI - Has anything been missed? e.g. Does the last line clearly link back to the question and explain in detail how this feature caused change? Is all evidence provided precise? (Specific dates, reasons why something happened or why it was important.)
1.