Lesson Plan

Teacher	[AA]	**Date**	00/00/00	**Period**	0	**Class**	9AA
No. pupils	00	**SEN**	0	**G&T**	0		

Project title Cryptography

Context of project During this unit, pupils will learn about the use and purpose of cryptography and encryption of data. They will learn about the purpose and use of cryptography in everyday society and understand how the use of computers has enabled ever more secure and sophisticated methods of cryptography to be developed.

Lesson No. Lesson 4

Learning Objectives Understand the term, 'ecommerce'

Be able to explain how personal information is securely transmitted over the internet by using encryption methods

Understand how public and private keys are used as part of the encryption and decryption process

Learning Outcomes *All pupils will:* be able to explain the term ecommerce

Most pupils will: be able to explain the difference between public and private keys

Some pupls will: be able to explain the role and purpose of the SSL

Key Terms Ecommerce, Secure Socket Layer (SSL), encryption, public key, private key

Starter	What am I thinking.ppt	7.5 mins
Main activity	<u>Individual activity</u> Hand round a copy of 'what do I know.doc' to each pupil and ask them to fill in the section for the start of the lesson. <u>Teacher led discussion</u> Show slide 1 from ecommerce.ppt. Ask pupils to explain what they think the term 'ecommerce' means. Show slide 2 and correct any misonceptions. <u>Paired task</u> Show slide 3 – pupils should work in pairs and think of at least five different things which are sold online. Take feedback from pupils and then show slide 4 <u>Group task</u> Pupils should work in small groups. Give each group a prepared set of 'sequencing ecommerce.doc'. Ask pupils to sort the statements into the correct order to show the sequence of events when a customer decides to	5 mins 2.5 mins 2.5 mins 7.5 mins

	shop online. Go over the correct sequence. Pupils might decide that a customer logs onto the site before they start shopping. This would also be correct. <u>Teacher led discussion</u> Slow slide 5 from ecommerce.ppt and ask pupils to answer the question. (answer is on slide 6) Show slide 7-10 to pupils. <u>Teacher instructions</u> Explain to pupils that there are many small steps in the process of encrypting a customer's data in order to send it safely over the internet. They are going to work in pairs to decrypt information about each stage. Hand out a copy of 'ssl_cryptography_task.doc' <u>Paired task</u> Pupils should work in pairs and decrypt their message. They should blu-tac their completed message onto a wall/board/desk in order to reassemble all of the stages into the correct order. They can help other pupils decode their messages until everyone has finished. <u>Individual task</u> Hand out a copy of 'ssl questions.doc' to each pupil. Explain that all of the steps have been reproduced on the first page for them. Pupils should work individually and try to answer the questions on the second page. Go through the answers with the class.	10 mins 3 mins 7 mins 10 mins
Plenary	Pupils should go back to the 'what do I know' document they filled out at the beginning of the lesson and update the 'end of the lesson' section. If time, they should explain the terms,'SSL', 'public key' and 'private key' to a partner	5 mins
Extension	Investigate other methods of encrypting data to securely send it over the internet.	
Homework	Homework4.doc	30 mins

Materials required	What am I thinking.ppt (starter) What do I know.doc Ecommerce.ppt Sequencing ecommerce.doc SSL cryptography task.doc SSL cryptography task answers.doc SSL questions.doc Homework4.doc