Codes and Ciphers	**UNIT 15** *Vehicle Registration Marks* Lesson Plan 1	
Activity		***Notes*** T: Teacher P: Pupil Ex.B: Exercise Book
1	**Introduction** T: What information can you get from the number plate of a car? *(Age, ...)* T: Is there any other information in the registration marks on the number plate? *(?)* T: You can tell the region where the vehicle was first registered and even the local office where the registration was made. Here is an example (T writes on board or shows OS): AB51 DVL T: The registration mark has three parts to it: *local memory tag* *age identifier* *random letters* We'll look at each of these parts in turn. *5 mins*	Interactive discussion building on Ps' knowledge, etc. **OS 15.1** can be shown, or T can write a real registration mark on board perhaps asking Ps for an actual example, but it must be a recent (since September 2001) registration. T may list the three parts on board.
2A	**Local memory tag** T: The first of these letters represents the region and the second the local office. For our AB51 DVL number plate, the 'AB' tells us it was registered in the Anglia region, at the Peterborough Vehicle Registration Office. T: How many possible local memory tags are possible with this system? *(26 × 26)* T: The letters I and Z are not used and Q is for temporary imports, so how many local memory tags are possible if we exclude these 3 letters? *(23 × 23)* T: This gives 529, although in practice, not all the possibilities are used. *10 mins*	It is best to use the local situation so, if possible, T should choose the local region (see Appendix 1 for full list). A map showing the regions is available at http://www.dvla.gov.uk/vehicles/regmarks/LMTags-identifier-map.htm T asks volunteer Ps for answers. Praise given when deserved.
2B *(continued)*	**Age identifier** T: The age identifier is the two numbers in the registration mark; in our example, 51. T: There are two series of numbers: those issued from March to August begin with '0' and those issued from September to February begin with '5'. The system started in September 2001 with the number '51'. T: What is the age identifier from March to August 2002? *(02)* T: When was the vehicle in our example registered? *(September 2001–February 2002)* T: What is the age identifier from March to August 2003? *(03)* ... from September 2003 to February 2004 ? *(53)* T: Now work through Exercise 2 as quickly as you can.	Here, again, T should use a local example. It might be helpful to also look at the previous system as many vehicles have number plates registered under that system. T asks Ps the questions and helps them, if necessary, to give the answers. T writes Exercise 2 on board and gives Ps 3 or 4 minutes to write the answers in Ex.Bs. Whole class review, with mistakes corrected and any misunderstandings dealt with.

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Activity **2B** *(continued)*		***Notes*** **OS 15.3** is shown or copies of Appendix 2 given out.
	20 mins	
3	**Random letters** T: The third and final part of the registration mark consists of three random letters. How many possibilities are there? *(*$26 \times 26 \times 26$*)* T: OK, but we don't use I and Q, so how many now? *(*$24 \times 24 \times 24$*)* T: This gives a total of 13 824 possible combinations of random letters. T: Can we use all of the available combinations? For example, do you think we can use 'AAA'? *(?)* T: This is allowed, but some words are not ... *(Rude words)* T: That's right. Offensive words are not allowed. T: Personalised number plates that have registration marks spelling out their owners name, age, etc. are very popular. Using either the previous or the current system, can you make a registration mark that would be suitable for you?	This is a good discussion topic. Ps might need help with this – T could start with a shortened 'alphabet', e.g. A, B and C, and perhaps list the 27 possibilities in a logical way. Ps can work in pairs to think of registration marks they would like to have. Class can discuss these together after a few minutes. (Do not spend too long on this activity, although Ps might like to continue in their own time.)
	35 mins	
4	**Future systems** T: Is this system likely to remain in use? *(Yes, for some time)* T: How many vehicles can be registered each year? Work in pairs on this problem. T: Who has a method for this? *(*13824×529*)* T: Total? *(About 7.3 million)* T: Is this for a whole 12-month period? P: No, just for six months. T: So the total for 12 months would be? *(About 14.6 million)* T: Does this allow sufficient registrations for a year? *(Yes!)* T: What about in 50 years' time? *(?)*	Discussion should be encouraged, with Ps working in pairs followed by an interactive review of their answers. They could also be asked whether the number of registrations is increasing or decreasing each year. Further help/guidance might be needed; T should monitor Ps' progress. Certainly OK for the foreseeable future but not necessarily for ever! (The DVLA have suggested that the format might be reversed from 2050 to extend the system for another 50 years.) Class discussion could lead on to environmental issues: do we really need the ever-increasing number of vehicles on our roads; provision of public transport, etc.
	45 mins	
	Homework Activity 2 or Activity 3.	