**Digital flashcards**

**Lesson 1: Flashcard algorithms**

**Introduction**

In this ‘unplugged’ lesson pupils use flashcards to practice words learnt in another language. They consider the ‘responder’ and ‘shower’ roles of the people using the flashcards and write, test and debug algorithms for others to follow.

**Time:** @60 minutes

**Materials needed:** flashcards with pictures of objects pupils have learnt the words for in the foreign language they are studying (examples included on slides 11-15 of the presentation), large and A4 sheets of paper, printouts of algorithm word bank

**Learning objectives**

* To know and understand what algorithms are
* To write algorithms with clear instructions
* To test and debug algorithms

**Lesson summary**

* Using flashcards (5 minutes)
* Creating algorithms (25 minutes)
* Independent algorithmic writing (20 minutes)
* Testing and debugging algorithms (10 minutes)

**Introduction: Using flashcards (5 minutes)**

* Give out a set of flashcards to pairs of pupils and model discuss how they can be used to practice using another language.
* Ask pupils to work in their pairs to use the flashcards, taking turns to be the person responding to the cards and the person showing the cards.
* As a class discuss the vocabulary and address any misunderstandings or pronunciation issues.

**Creating algorithms (25 minutes)**

* Recap pupils’ understanding of the term algorithms by asking them to reflect on the algorithms they have previously written.
* Explain that pupils are going to write algorithms to give instructions on how to use flashcards.
* Recap what algorithms are and how sentences included in algorithms should be written (command sentences that instruct someone what to do).
* As a class, compose the first steps in a sequence for an algorithm that instructs someone how to use the cards in the role of responder.
* Give out large sheets of paper and ask pupils to write down the remaining sequence.
* Once the algorithm has been written, test it by following the instructions while using the flashcards. Identify any steps of the algorithm that need to be modified and recap the importance of testing and debugging.

**Independent algorithmic writing (20 minutes)**

* Working in their pairs, ask pupils to write the algorithm to instruct someone how to carry out the role of the person showing the flashcards.

**Testing and debugging algorithms (10 minutes)**

* Display **slide 9** and ask pupils to follow the instructions.
* Invite pupils to give examples of instructions they found easiest/least easy to follow and record these as a class.
* Invite pupils’ ideas on what the ‘easiest to follow’ statements have in common and how the ‘least easy statements’ could be improved.

**Extension ideas:**

* Pupils could create their own set of flashcards using presentation software and could consider how flashcards could support their learning in other subject areas.

**Differentiation**

**Support:**

* Pupils can use the algorithm word bank to support with sequencing their algorithm, their use of verbs in the imperative form and noun choices.

**Stretch & challenge:**

* Pupils can be challenged to write a more detailed algorithm. They could also evaluate each other’s algorithms by identify words/phrases that could be ambiguous and offering suggested improvements.

**Opportunities for assessment:**

* Informal observations of pupils’ understanding of pupils’ vocabulary, writing and debugging algorithms.
* More formal assessment of pupils’ algorithms.