Break the Code (4th-6th Class)

WORKSHOP ROI

Workshop step-by-step:

1. Pupils will begin the workshop by looking at the history of encryption and its usefulness. Discussed will be different methods of encrypting, laying special emphasis on writing backwards and substitution shifts, as the pupils are going to need this knowledge to solve tasks that are prepared for them. Discuss why, and where encoding can be used.
2. Activity:
   Divide pupils into groups of 2, 3 or 4. Each group gets an envelope marked "TOP SECRET" with the encrypted instruction, the corresponding cipher and the sentence that they need to encrypt themselves. Pupils decode the first part of the instruction by reading it backwards. To solve the second part, they use cipher provided. The message is:

   "Use this cipher to decode the message below:
   Take any book from the shelf.
   In the book find all the words that are used in a sentence.
   Describe exact position of each word on the page.
   Write it all down and put it into the envelope.
   Write down the tittle of the book on the envelope."

   <u>Examples of positive quotes for encoding:</u>
   "The more you give away the happier you become."- unknown
   "You always pass failure on the way to success." – Mickey Rooney
   "A person who never made a mistake never tried anything new"- Albert Einstein

3. If some children find it difficult to finish the task– help them to move on the right path. Ask them to write clearly so others will easily understand their writing. Wait till all the groups finish the exercise, than explain to them what they need to do next. Advise them to pick the book up wisely so they will find all the wording used in the given sentence. Ideally give them access to the dictionaries. Walk around and assist them if needed. When this part is completed, ask the children to put the books back and collect all the envelopes. Make sure each envelope has the book's title written on it. Distribute the envelopes among the class ensuring that each team does not get their own. Now, the new task is to decode the encrypted message. Give pupils a hand looking for the right book if needed.
4. Discuss the exercise with children, was it difficult, which part was the hardest, which was the easiest.
5. Hand them out "Congratulations" jigsaw puzzle, one per person.

Encryption facts for the workshop:

- Story of Dr Richard James Hayes, Irish code-breaker, whose cryptoanalysis helped defeat the Nazis.

- Hayes was born in Abbeyfeale in Co. Limerick in 1902 and grew up in Claremorris, Co. Mayo. He was educated at Clongowes Wood College and Trinity College Dublin. His day-job was as Director of the National Library of Ireland - but during wartime, he secretly led a team of cryptanalysts as they worked feverishly on the infamous "Görtz Cipher" - a fiendish Nazi code that had stumped some of the greatest code breaking minds at Bletchley Park, the centre of British wartime Cryptography. Hayes was admired by MI5. Hayes died in 1976, leaving behind a collection of papers and manuscripts that is now catalogued in the National Library.

  Documentary on Radio 1: Richard Hayes, Nazi codebreaker.
  https://www.rte.ie/radio1/doconone/2017/1003/909437-richard-hayes-nazi-codebreaker/

- A code is a system of symbols, letters, words, or signals that are used instead of ordinary words and numbers to send messages or store information. A code is used to keep the message secret. Codes and ciphers are forms of secret communication. The science that studies such secret communication is called cryptology. The term cryptology is derived from the Greek kryptós (“hidden”) and lógos (“word”).
- Encryption techniques: numbers stand for letters, signs stand for letters, writing backward, mirror writing(Leonardo Da Vinci), invisible ink, Morse code, pigpen cipher, transposition cipher (e.g. Caesar cipher, one of the most ancient forms of encryption).

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Congratulations!

You have completed all the tasks.

You would make an excellent secret agent!

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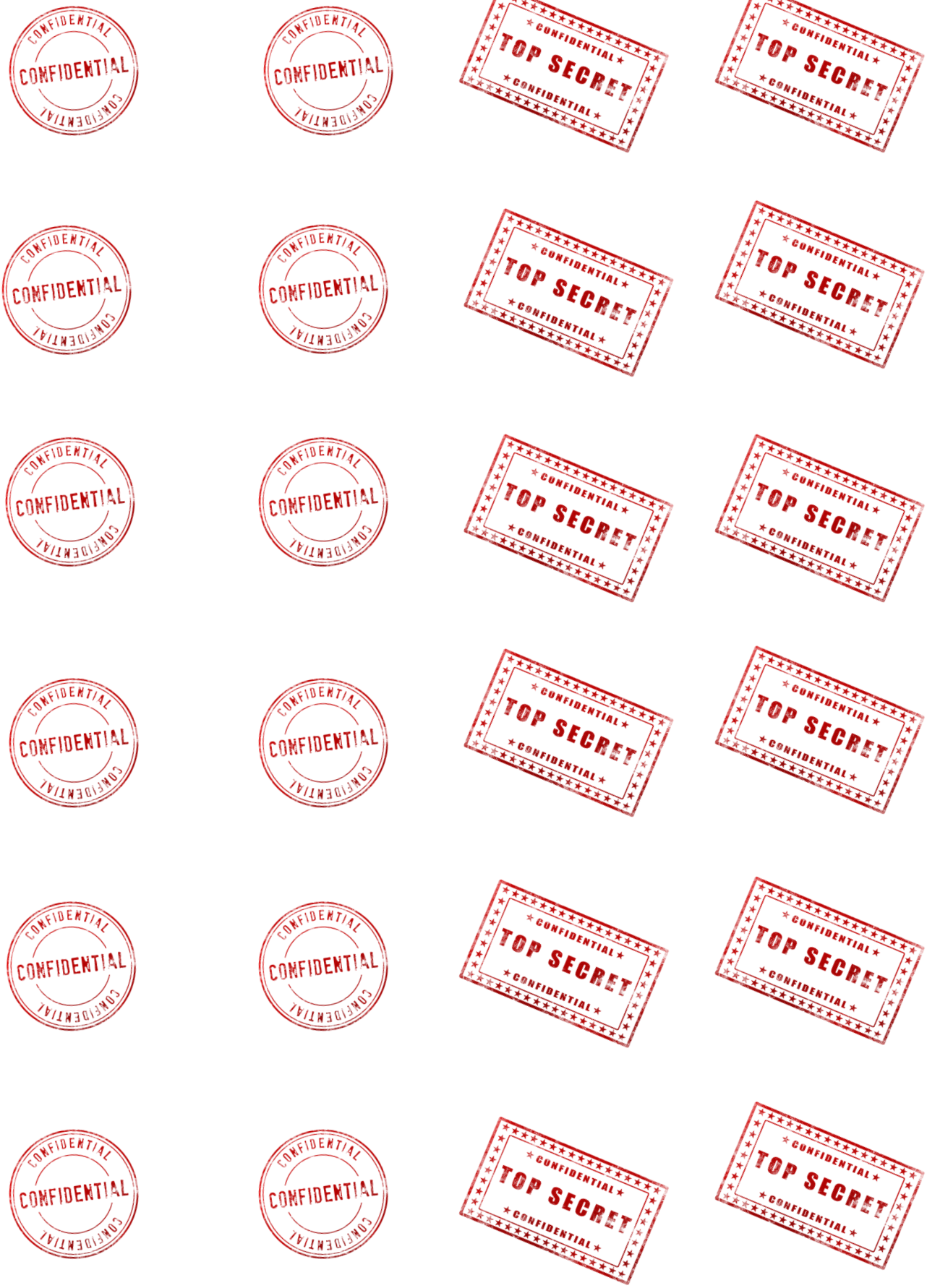
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