Coded Letter Writing (Year Five – Year Six)

Lesson overview
Writing in code is a fun and engaging way for students to communicate. It is a great learning activity to develop students' problem solving, communication and creative thinking skills. People all over the world use code to communicate messages in secret for centuries and modern cryptography plays a key role in ensuring data and computer networks are kept secure. In this lesson students will research how coded messages and letters have been used throughout history and will write a letter to a class member using code. As an extension activity students will research other types of letters using information from the website as inspiration.

Learning intention
Students will: - Research, discuss and understand how coded messages have been used all over the world   - Research a code to use or develop their own secret code   - Write a letter to a class member using a secret code   - Decipher a letter written to them in secret code   - Be inspired to research other types of letters used in history

Resources
- Interactive whiteboard - Devices for internet research - Paper to plan and develop own secret code

Assessment	Differentiation
Formative (Assessment for Learning): - Monitoring understanding throughout class discussion and questioning. - Collecting copies of letters as work samples. - Student self-assessment - Peer Assessment - Teacher feedback	**Structured:** Use small group instruction to help support students while composing their code and letter. **Core:** Students are given examples of code to write their letter. **Extension Activities:** Students explore how the concepts in this lesson relate to learning computer coding. Students research other types of letters using information from the website as inspiration.

Australian Curriculum Links
Year 5 - English *Literacy:* - Plan, draft and publish imaginative, informative and persuasive print and multimodal texts, choosing text structures, language features, images and sound appropriate to purpose and audience **(ACELY1704)** **Year 5 – Humanities and Social Sciences** *Inquiry and Skills*   - Locate and collect relevant information and data from primary sources and secondary sources**(ACHASSI095)**

- Interpret data and information displayed in a range of formats to identify, describe and compare distributions, patterns and trends, and to infer relationships **(ACHASSI100)**
- Work in groups to generate responses to issues and challenges **(ACHASSI102)**

Year 6- English

Literacy:
- Plan, draft and publish imaginative, informative and persuasive texts, choosing and experimenting with text structures, language features, images and digital resources appropriate to purpose and audience **(ACELY1714)**

Year 6 – Humanities and Social Sciences

Inquiry and Skills
- Locate and collect relevant information and data from primary sources and secondary sources**(ACHASSI0123)**
- Interpret data and information displayed in a range of formats to identify, describe and compare distributions, patterns and trends, and to infer relationships **(ACHASSI1028)**
- Work in groups to generate responses to issues and challenges **(ACHASSI1030)**

General Capabilities	
Literacy	Personal and Social Capability
Critical and Creative Thinking	Information and Communication Technology (ICT) Capability
Intercultural Understanding	

Lesson introduction	15 mins

1. Display the following coded message on the board:
   WFRJIRTUESAFLUEFTHTJEFRGIHNOCPOVDME
   Ask students what they think it means.
2. After giving them time to discuss, tell the students that you have written what they are going to be learning to do in the lesson today.
3. Give the students more time to try and work out the message and ask for further suggestions to see if they can crack the code.
   WFRJIRTUESAFLUEFTHTJEFRGIHNOCPOVDME
   WRITE A LETTER IN CODE
4. Ask the students if they have ever tried to write a secret code to their friend or read a book or watched a movie that had characters using secret code. Give students time to discuss what they already know about secret codes.
5. Explain to the students that using a secret code is called encryption and has been used throughout history to communicate in secret. The Roman Emperor Julius Caesar sent coded messages to conceal his secret battle plans from his enemies over 2000 years ago! To secure his messages he used what is known as the "Caesar Cipher" (named after him), where he shifted letters of the alphabet to change the original text in the message. For example, if the word 'bad' was encrypted with Caesar's Cipher using a right shift of 3 the word would become 'yxa'.

A	B	C	D	E	F	G	H
↓	↓	↓	↓	↓	↓	↓	↓
X	Y	Z	A	B	C	D	E

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| 6. | Changing a message to secret code is called 'encryption' and the practice and study of the use of secret code to send communication is called 'cryptography'. Encryption is used today by computer programmers, scientists and mathematicians to keep information and computer networks secure. Ask the students to give suggestions as to why messages might have to be sent in secret or information kept private. |

Main body of teaching   **45 mins**

7. Explain to students that they are going to be researching different types of codes used in history and today to write a coded letter to another member of the class. The students will work in pairs to research and choose a code to write their letter in or some students may wish to develop their own secret code to write a message. The following words can be given as suggestions for research:
   - Caesars Cipher
   - Encryption
   - Cryptography
   - Transposition Cipher
   - Reverse code
   - PigPen
   - Book Cipher
   - Decoder Wheel
   - Ubbi Dubbi
   - Morse Code
   - Mirror Writing
   - Letters for Numbers code
   - Pig Latin

8. Once the students have decided on the code they are going to use, allow them time to write their letter to their partner. Remind them that it is important to keep their code a secret as they are going to test whether or not their message can be delivered undetected.

9. Once students have completed writing their secret messages, students can work in groups to roleplay being spies in a secret intelligence agency trying to intercept each other's messages. Students try to crack each other's codes to read the messages.

Plenary   **10 mins**

10. Bring the students back together as a whole group to discuss what they have learnt in the lesson. Encourage students to explain what they did to code their messages and how they worked out other class members' codes if they were successful, or why they couldn't if they were unsuccessful.

11. Review with the students what they have learnt in the lesson and give them the opportunity to evaluate and give feedback. You might ask students to self-evaluate using a rating scale on the following statements:
   - I found lots of interesting information in my research
   - I was able to use a code to send a secret letter.
   - I understand that secret code is a way of communicating with others
   - I would like more help with writing secret code.
   - I found this lesson interesting and would like to know more about the history of letters