



CODE BREAKERS

A Creative Toolkit



Introduction

This resource pack was created following the 'Code Breakers' heritage dance project delivered by Ludus Dance. It's designed to provide inspiration for artists, community practitioners and teachers delivering project work to young people in mainstream or SEN settings. The material explores World War One, Code Breakers and Cryptography.

Programme aims

1. Deliver accessible methods for learning about WW1 Code Breakers & Cryptography
2. Provide high quality experiences for young people with and without disabilities
3. Facilitate a process driven, young person led experience
4. Utilise the historical resources provided to ensure authenticity and accuracy

Key considerations

- The following points were considered important factors for the optimum delivery of arts and heritage focussed sessions for inclusive groups.
- Background knowledge and relevant research relating to the thematic material ensures heritage learning is historically accurately. This resource pack provides an overview of material covered as part of the heritage learning days delivered by the Lancashire County Council Heritage Learning Team
- A flexible and responsive approach is key to adapt to the learning styles and needs of the young people
- Resources can be used to enhance the learning experience and provide a creative stimulus for movement inspiration; scarves, letters, flags, instruments and images
- Teaching assistants, staff and volunteers can provide invaluable support within the session. This is especially relevant when working with SEN groups. The familiarity and consistency from week to week helps build positive working relationships and will help develop greater confidence amongst a group of young people
- Be sure that activities do link with the collections, history, stories of the museum and refresh when needed
- Consider the use of social media platforms to provide a current and present day method of sending and receiving messages between groups, to raise discussion points surrounding online safety and protecting personal content

Want support with cross-curricular dance exploration?

This pack has the heritage information, plans and extra resources/ ideas you will need to explore code making and breaking with your students, however if you would like support with delivering this resource or have ideas for building the work into a full scheme, do not hesitate to get in touch. We can work with you to develop a bespoke package linked across the curriculum.

Get in touch today - info@ludusdance.org / 01524 35936 / www.ludusdance.org.

Workshop Ideas/ Tasks

The following ideas provide potential starting points which can be adapted depending on the learning needs of the group.

Semaphore

Explore semaphore communication using scarves and/or flags (see resource sheet below). Explore how this could be translated on to different body parts in order to simply code the message using the body. "Work with a partner, can you recreate the same shape without scarves/flags using hands, feet and fingers, the whole body etc?"

Morse Code

Present the group with the Morse code pyramid and/or chart. Allow the group to practice sending and receiving simple words and/or messages. "Can you substitute dots and dashes for a movement gesture?" At a simple level, introduce the dashes and dots of Morse code as lengthened verses staccato sounds. The group can respond to the type of rhythm they hear. E.g. Dot = explode, dash = shrivel

Landscapes

Explore and discuss the different terrain and environments in which the codebreakers might have worked. How would this effect your movement and how easily might you be able to achieve your goal given a change of environment.

Passing movement messages

Explore how messages might become distorted. Using a movement adaptation of the game 'Chinese Whispers' how does a movement sequence change when passed from body to body?

Props

Use different props as a starting point for creating messages; long sticks with smooth covered ends, scarves, lycra, sand, balls, balloons etc.

Visual Arts

Explore using visual artwork as a stimulus for movement vocabulary- Paintings, sculpture, sketches can illustrate various aspects of the war and can provide different perspectives dependent on the artistic viewpoint or intention. Discuss the differences between artworks created for different purposes

Kinaesthetic

Examine the qualities of movement of soldiers on parade. Learn simple drills and practice developing and translating across different body parts and in different spaces.

Written

Using the phonetic code to code a poem or message. Explore how this text might be used within a movement sequence.

Spatial Patterning

How can codes be read from a bird's eye view. Explore creating coded patterns on different scales with different numbers of people in the space.

The Heritage

Early on in the war, the British Admiralty found themselves with a number of intercepted German signals and code books which they could not understand. To solve this problem they established a new section, headed up by the director of Naval Education. The section became known as Room 40. The Code Breakers of Room 40 played an important part in intercepting, deciphering and passing on messages transmitted by enemy.

Codes and ciphers were used extensively. Most commonly used codes were simple substitution codes which often required the distribution of codebooks to military personnel. This proved to be a security liability since these books could be stolen by enemy forces. More important messages therefore used mathematical encryption for extra security. Famously, the decoding by Room 40, of the Zimmerman telegram helped bring the United States into the war.

The version of the Phonetic Code, seen below, is one of a few used during the 1914-18 period. The British Army used different versions during the war and these were different again from the ones used by the Royal Navy. The codes were not standardised until after the war.

New Technologies

At the turn of the 20th century, the world was being introduced to an array of new technology utilising electricity. By the time the first world war began, electricity was used in most major cities. Scientists had been researching electricity and ways to harness it well before the 1800's, however it was scientists like Samuel Morse, Alexander Graham Bell, Thomas Edison, Nikola Tesla and many others who turned the mystery of electricity into a usable form.

By the time WW1 came, the electric telegraph, telephone, wireless radio and light bulb would change how the world would conduct warfare. At the outbreak of WW1 each side had many different communication options. Non-electrical systems of communication such as carrier pigeon, dispatch riders, signal flags and semaphore were used alongside and sometimes interchangeably with modern systems described above. Whistles were also used for signalling with Morse Code.

Telephones were used in the trenches because they could pick up and send Morse code between units. This allowed important messages to be delivered and ensured soldiers across the front knew the plans for defence and attack. Telephones were placed in different units and connected by wires to the same switchboard. This allowed soldiers on different parts of the battlefield to communicate with each other but the system could easily fail if the wires snapped or were broken by the enemy.

Wireless (radio) was also used but this was more important at sea to pass messages from ship to ship. Wireless was also used by aircraft to transmit signals but they could only send, not receive, due to their weight.

Electric and Begbie lamps were used at night. Two types of flap or disc instruments opened and shut with the long and short pauses of the Morse code. The one with the three flaps attached to a spring could be attached to a tree or wall. The Heliograph with its mirrors, needed sunshine to transmit messages. A special electric Lucas signalling lamp was also used to get coded messages from soldier to soldier using the Morse code system. Unfortunately, this was also its biggest problem. As anyone could see the light, the enemy could work out what was being communicated if they managed to interpret the code.

Methods of Coding and Transmitting Messages

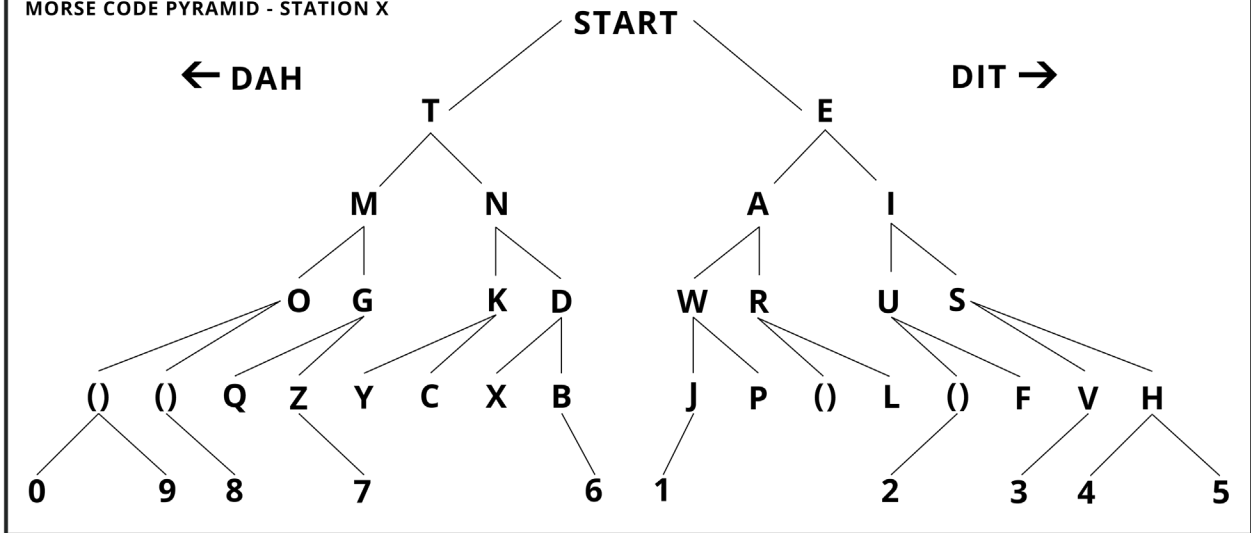
Morse Code

Morse code is a method for encoding text into a series of dashes and dots, that can be sent (transmitted) by means of sound, light or radio waves, and that can be decoded be a skilled listener without special equipment. The system is named after the American artist Samuel Finley Breese Morse who co-developed an electrical telegraph system at the beginning of 1836.

MORSE CODE CHART

A	· _	H	····	O	___	V	··_	0	_____
B	_···	I	··	P	·___·	W	·___	1	·_____
C	_·_·	J	·____	Q	__·_	X	_·_	2	··____
D	_··	K	_·_	R	·_·	Y	_·__	3	··_
E	·	L	·_··	S	··	Z	___·	4	····_
F	··_·	M	__	T	_			5	····
G	___·	N	_·	U	··_			6	_····
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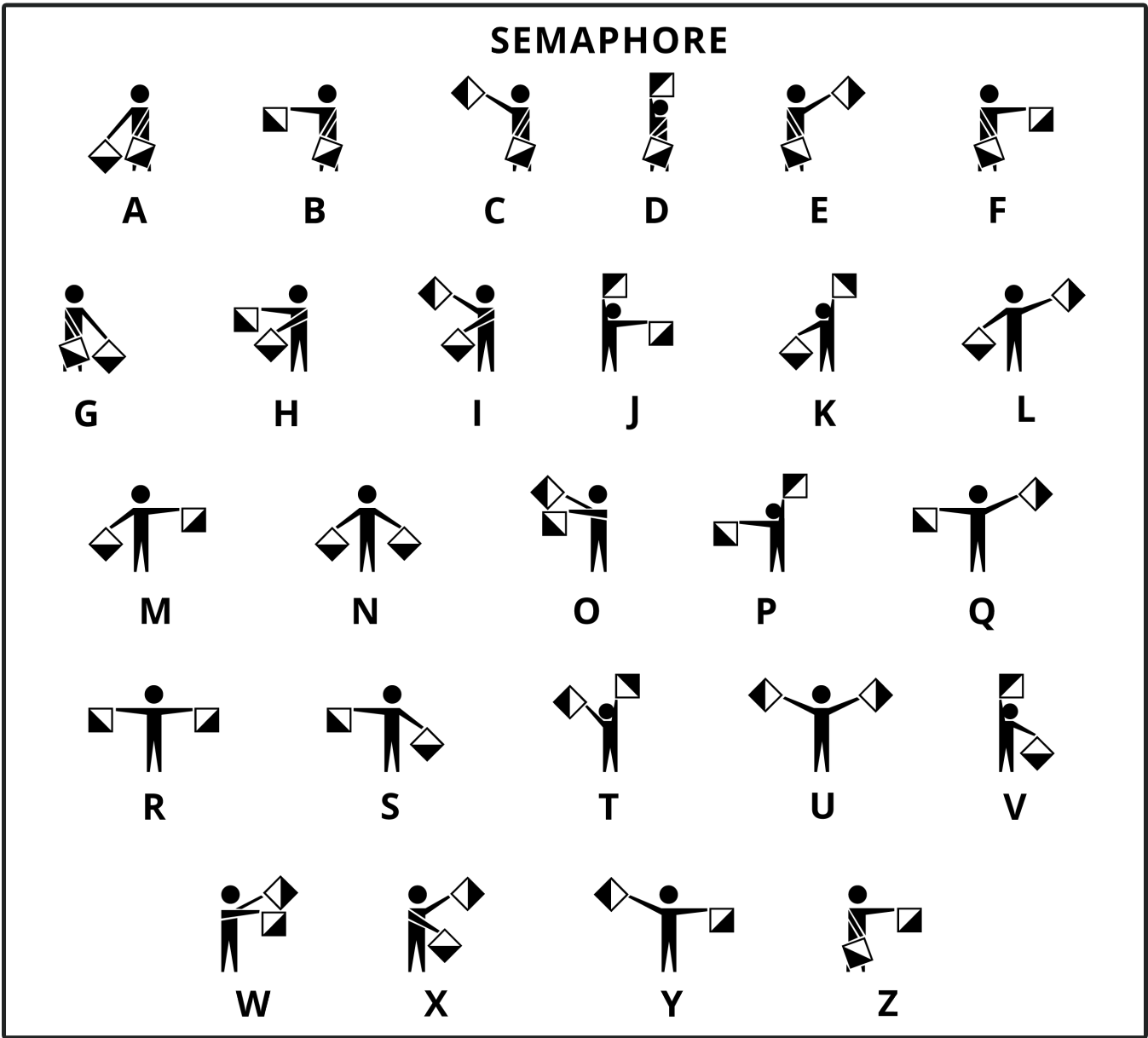
MORSE CODE PYRAMID - STATION X



Semaphore

Two flags (one white and one blue) were used against light or dark backgrounds. The signalman uses semaphore flags to convey a series of letters to another by extending his arms in various positions. The signal pattern resembles a clock face divided into 8 positions: up, down, out, high, low, for each of the left and right hands. Using the standard 26 letter alphabet, the sender sells out each work of the message or sends code letter groups.

There are some problems to using flags. This is a limit to the distance of communication, and only one mile for the naked eye (further with binoculars). Sending is dependent on light and the weather conditions, as well as background terrain. It is not always confidential, as anyone that can read semaphore can read the message.



Substitution Cipher

In cryptography, a substitution cipher is a method of encrypting by which units of plain text are replaced with cipher-text, according to a fixed system e.g. single letters. The receiver deciphers the text by performing the inverse substitution using code books.

FWW PHONETIC CODE		
ALPHABET	CODE	PHONETIC
A	Z	= Zebra
B	A	= Ack
C	B	= Beer
D	C	= Cork
E	D	= Don
F	E	= Eddie
G	F	= Freddy
H	G	= George
I	H	= Harry
J	I	= Ink
K	J	= Jug
L	K	= King
M	L	= London
N	M	= Emma
O	N	= Nuts
P	O	= Orange
Q	P	= Pip
R	Q	= Quad
S	R	= Robert
T	S	= Esses
U	T	= Toc
V	U	= Uncle
W	V	= Vic
X	W	= William
Y	X	= Xerxes
Z	Y	= Yellow

Section	Length	Activity	Link to Theme	Purpose	Resources
Introduction/Ice Breaker	5 mins	Introducing one another to the officer. - Each participant passes a hat/prop and salutes whilst introducing themselves to the group - Participants can work in pairs if more appropriate - If verbal introductions are challenging, each pair can create their own salute and introduction by creating a large, bold shape together with their partner	Learning about basic military introductions Exploring military type movement actions	Introducing the themes. Icebreakers help groups bond.	Army Hat
Warm Up and Theme Introduction	5 mins	General warm up - Imagining washing the body; arms, hands, torso, lower body, feet, face - Getting dressed in uniform. Ask the young people what a soldier might wear - Finish by lining up for inspection - The group leader can march up the line ensuring everyone is suitably prepared for parade. Each session a different participant may play the role of officer	Getting ready for parade	Warming up the body. Introducing the theme of soldiers and providing a context.	Image of a World War One soldier.
Discovery and Discussion	5/10 mins	Exercise – Pass the Secret - The group stands shoulder to shoulder in a circle with a volunteer officer in the centre. A prop is given to one soldier in the circle. The prop has to be passed round in secret without the officer seeing where it is. Music is played. When the music stops the officer has to guess who has the prop - Discussion about the activity and passing secret messages - If appropriate for the learning level, showing a picture of a WW1 code breakers. Who were they? Why were they important?	Introducing the idea of passing messages in secret	Provoke active discussion on why we need to keep some things secret.	A small prop/ item that can be passed around unnoticed.
A Code Breakers Mission.	10 mins	Code breakers footsteps (Adaption of grandmother’s footsteps) - One officer at the end of the room - All code breakers start at the opposite end of the room. They each have a message to pass to the other side of the trench. They must travel low to the ground, as slow as possible so they are not spotted by the enemy. If the officer turns around they must lie totally still. If caught moving they return to the beginning	Travelling through the trenches	Exploring and developing movement vocabulary at low level, with a partner and on different body surfaces (back, side, front).	It might be useful for some participants to carry a prop to represent the message e.g. a sealed envelope
Creative and partner/ group work	10 mins	- Each person draws a ‘secret’ code on a piece of paper. - Split into two teams; Bakers (army) and Stingrays (Navy) and line up along two opposing sides holding the message - Travel towards each other using slow, winding movement vocabulary. Music can help evoke different qualities of movement - Meet a partner from the opposite team, pass the message and travel back to base - Together, in Stingray and Baker teams, help decipher and interpret each message in movement. There is no wrong way of interpreting - Present work. The opposing team can try to guess which movement sequence represents each picture - If appropriate, regroup as Stingray and Baker and choose an order for the deciphered movement sequence	Sending, receiving and deciphering messages.	Developing methods of interpretation at a basic level. Developing creative movement vocabulary and introducing movement sequencing. Fosters team working. This exercise might introduce the idea of symbolism.	Paper and pens.
Regroup- Morse code introduction /rhythmic response	5 mins	Introduce a simple rhythmic Morse Code using rhythmic patterning using un-tuned percussion (tambourine etc) - Initially, the leader sets the code e.g. Shake = stretch, Tap = explode - Each time the cue is heard, a different movement representation of the code word	Introducing Morse Code in a basic and accessible modality	Using movement and percussion to explore code making and breaking.	Instrument
Reflection and consolidation	5 minute	Reflect on the session, learning points and creative exploration.	All topics reflected upon will act as a reminder on learning gained.	See how much information has been learnt.	Could use sticky notes to gather comments.

This workshop was delivered at Red Marsh Specialist School. Participants included 9 young people with a range of mild to complex additional needs. The group was supported by 4 Teaching Assistants.

Section	Length	Activity	Link to Theme	Resources
Introduction/ Ice breaker	10 mins	Line up for parade - Hot seating: - Group leader asks formal questions to the soldiers on parade. Establishes a fictional world within which all the soldiers are WW1 code breakers. The participants, with the group leaders support, create a back story for themselves. (What is their level of experience? Where were they recruited? - The group leader provides key information within the introduction about Room 40, historical context, where code books might have been found etc.	A fun and immersive introduction to the theme.	Paper and pens
Physical warm up, deception and deciphering (this can work in pairs depending on confidence)	20 mins	- Each participant is given an image of a WW1 piece of equipment. Each participant creates 1 fictional purpose for the piece of equipment. They need to attempt to make their fictional purpose as realistic as possible - The group travels freely in the space imagining they are travelling through the trenches. The group leader can elicit some features of the environment which the group respond to. (Travelling low to the ground so as not to distract the enemies attention, travelling through thick cold mud, travelling at speed to avoid gun fire etc) - When the music stops the participants pair up as quickly as possible and share factual and fictional information on their piece of equipment. Each person in the pair must try to decipher which is the most plausible explanation - Once everyone has shared their information in pairs, information is shared collectively as a whole group and the truth is revealed	Introducing the importance of verbal communication, encryption and deciphering at a simple level.	Image of a World War One piece of equipment.
Discovery and discussion (this can work in pairs depending on confidence levels)	15 mins	Pass the secret: - The group makes a long line across the space - Everyone is blindfolded apart from the person at the end - They are given a cue card to develop a simple movement sequence (they are given a minute to try and devise and remember a phrase). When ready they tap the next person in the line who removes their blindfold and watches the sequence only once - They have to interpret and remember the sequence as best they can before tapping the next person on the shoulder and the task continues - Members of the group who have demonstrated the movement keep their blindfolds off to observe how the movement begins to change as it's passed from person to person - Discussion- How might we improve our level of concentration to remember to sequence and pass the message accurately?	Introducing non-verbal methods of communication.	Blindfold.
Deciphering Morse code	10-15 mins	- Group leader introduces Morse Code by playing an example for the group to hear - The group discuss how it works, how reliable and effective it could be within a military operation - Working in pairs participants examine a Morse Code chart and/or pyramid and select a word they would like to transmit through Morse Code. - Using a Morse Code transmitter or, more simply, un-tuned percussion, each pair transmits their word to the others in the group. The first pair to decipher the code wins a point. *It's important that the instrument chosen can demonstrate a distinct difference between a dot and a dash. A tambourine shake = dash, a tambourine tap + dot	Introducing Morse Code	Percussive instrument
Creative and partner/group work	20 mins	- Taking a selected line of a poem, each pair, takes one word from the line and deciphers the Morse Code sequence of dots and dashes - Using a gestural movement action to replicate a dot and another gestural movement action to replicate a dash, develop a short movement phrase using Morse code in movement - Once completed present to the whole group, share and learn each encryption code until the group can demonstrate the full line of the poem in gestural movement - Explore how this sequence might be presented in the space, experiment with groupings, canon, working with different music etc (development - can the sequence be deciphered by another group who have access to a Morse Code chart?)	Sending, receiving and deciphering messages.	Paper and pens.
Examine the poem in detail Creative Exercise b) Regroup-	20 mins	- Read the poem; discuss the emotive content, thematic focus, structure, literary techniques used - Ask the group how might they translate this poem to the audience using movement without using the text? - In larger groups, examine another line of the poem and explore how one abstract aspect of the poem might be represented through movement and symbolism	Introducing Morse Code in a basic and accessible modality.	Paper and pens.
Regroup	10 mins	Sharing of work	Sharing and appreciation of creative material	Paper and pens.
Cool down and reflection	10 mins	Reflect on the session, learning points and creative exploration		N/A