

## CODE LANGUAGES (LEVEL 1)

<b>Description</b>	Learners will discover the purpose of language and begin to get more familiar with the evolution of language as well as codes. They will explore invisible ink, glyphs, numerical codes, braille, and sign language to finally design their own code letter. In addition, they will gain an understanding of languages associated with visual and auditory impairments.
<b>Leading Question</b>	Can you write a letter in a hidden code language?
<b>Total Time Required</b>	~ 5 hours over 5 days
<b>Supplies Required</b>	Paper, Pencil, Eraser, Dough
<b>Subjects</b>	Literacy, numeracy, history
<b>Supervision</b>	Medium
<b>Learning Outcomes</b>	By the end of this project, the outcome is expected to be: <ol style="list-style-type: none"> <li>1. Understanding of the history and evolution of language especially from oral to written language</li> <li>2. Understanding the different types of language for those with visual or auditory impairments</li> <li>3. Understanding numerical concepts and patterns through written language</li> </ol>
<b>Previous Learning</b>	Knowledge of the alphabet

**DAY 1** - Today you will begin by exploring and understanding the history of languages, the purpose of languages and how languages have evolved over time.

<b>Suggested Duration</b>	<b>Activity and Description</b>
<b>10 minutes</b>	<p>Think of how many languages you can speak, read and write, and think about words in those languages:</p> <p>Write or say out loud the same word in the different languages that you speak. For example: Water in English, Paani in Hindi and Maa' in Arabic. What are the most common words used in your language? Think of the top 5 words you use and write or say them in the 2 – 3 languages you know.</p>


	Write the same alphabet in multiple scripts, for example: what would the letter A, B, and C be in the other language's script?						
10 minutes	<ul style="list-style-type: none"> <li>End this activity by designing 5-10 of your own alien or "made up" words. These words can represent an emotion or action that you do not think there is a word for in the languages that the learner currently knows.</li> <li>You can use a table like the one below to develop the "new words". Be creative! For example:</li> </ul> <table border="1" data-bbox="483 579 1409 793"> <thead> <tr> <th data-bbox="483 579 906 642">Scenario</th> <th data-bbox="906 579 1409 642">New Word</th> </tr> </thead> <tbody> <tr> <td data-bbox="483 642 906 726">Being angry because you are sleepy</td> <td data-bbox="906 642 1409 726">Angrepy</td> </tr> <tr> <td data-bbox="483 726 906 793"></td> <td data-bbox="906 726 1409 793"></td> </tr> </tbody> </table> <p data-bbox="467 842 1349 905">You can share the new words created with their friends and family and ask them to use them as new vocabulary.</p>	Scenario	New Word	Being angry because you are sleepy	Angrepy		
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Being angry because you are sleepy	Angrepy						
15 minutes	<p data-bbox="467 926 1344 999">You will begin to understand why written language was developed as they explore oral language through the game of Chinese Whispers</p> <p data-bbox="467 1052 688 1077">Chinese Whispers:</p> <ul style="list-style-type: none"> <li>Listen to a story from someone in the family (please make sure this is not a common story that people know from before).</li> <li>Re-narrate the story to another family member.</li> <li>The third family member will narrate this story to another family member.</li> <li>Reflect on how this story changes as more and more people hear and retell it.</li> </ul> <p data-bbox="467 1413 1406 1476">After the last person has finished narrating the story to the last family member, ask the last family member to tell the story to everyone.</p> <p data-bbox="467 1520 850 1545">Answer the following questions:</p> <ul style="list-style-type: none"> <li>What do you notice about the story being told at the end of the game? Is it the same or different from the one that was told at the beginning of the game?</li> <li>How can one avoid such a scenario where the story keeps changing each time it is told? How would writing it down solve that problem?</li> </ul>						

<p><b>15 minutes</b></p>	<p>Reflect and answer the following questions:</p> <p>What do you notice about the story being told at the end of the game? Is it the same or different from the one that was told at the beginning of the game?</p> <p>How can one avoid such a scenario where the story keeps changing each time it is told? How would writing it down solve that problem?</p>
<p><b>10 minutes</b></p>	<p><b>Reflection:</b></p> <ul style="list-style-type: none"> <li>- What have you learnt from today's activities?</li> <li>- What do you remember the most from today's activities?</li> <li>- What do you still have some questions about?</li> </ul> <p>Ask questions from your parents or educators.</p>

**DAY 2** - Today, you will learn about one of the earliest forms of written language i.e., glyphs and write sentences using glyphs

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<p><b>Suggested Duration</b></p>	<p><b>Activity and Description</b></p>
<p><b>5 minutes</b></p>	<p>Imagine there is no written language and there are no words, how would you share a message or a story with a friend?</p> <p>Begin exploring some of the older written languages. When people first started the written language, they used something called glyphs – pictures to represent words. These drawings were often done on stonewalls to represent the object you want to tell the other person about.</p>
<p><b>20 minutes</b></p>	<p>We will now explore some of the older written languages. When people first started the written language, they used something called glyphs – pictures to represent words. These drawings were often done on stonewalls to represent the object you want to tell the other person about.</p> <p>Why do you think these drawings were made on stonewalls? For example: a girl, Luna, went out in the sun to fly a kite. It began to rain, and her kite got wet and torn so Luna was sad.</p>

	 <p>Make glyphs of 10 common words. Think of how they can draw these words so that everyone can understand them. It is important that this drawing also be easy to copy.</p> <ul style="list-style-type: none"> <li>- Two weather elements e.g. Rain and Wind</li> <li>- Two animals e.g. Dog and Parrot</li> <li>- Two places e.g. Home and School</li> <li>- Two people e.g. Mother and Friend</li> <li>- Two objects e.g. A Toy and Car</li> </ul> <p>Write a short 3 - 5 sentence letter in glyphs e.g., a letter to their father to tell him they love him.</p>
<p><b>10 minutes</b></p>	<p>Play a game of Pictionary with your family.</p> <p><b>Preparation:</b></p> <ul style="list-style-type: none"> <li>- Get a sheet of paper and cut 10 cards in a shape of your own choice.</li> <li>- Compile a list of words of items/animals/objects to be drawn on the cards e.g., Flower, Horse, Computer etc.</li> <li>- 2-3 teams with each team having 2-3 members</li> <li>- Paper, pencils and erasers or a board and chalk to draw</li> <li>- A paper with a points column for each of the teams</li> </ul>
<p><b>30 minutes</b></p>	<p><b>Rules:</b></p> <ul style="list-style-type: none"> <li>- One team member from each team will pick 3 cards</li> <li>- The same team member will draw a picture for each of the words on the cards without writing the word on the card.</li> <li>- The other team member will guess the word based on the picture</li> <li>- Each team gets a point for each of the pictures whose words are guessed right, the team can get as many points as the words they guess, with the maximum being 3 points per round.</li> </ul> <p>Add the total after playing one or two rounds of the game and compare the larger number to decide who won the game.</p>

	Optional: Have an extension of the game, the cards can have full sentences that have to be drawn and guessed using glyphs.
<b>10 minutes</b>	<p><b>Reflection:</b></p> <ul style="list-style-type: none"> <li>- What have you learnt from today's activities?</li> <li>- What do you remember the most from today's activities?</li> <li>- What do you still have some questions about?</li> </ul> <p>Ask your parent or guardian any questions you may have about today's lesson.</p>

**DAY 3** - Today you will explore how language works for those with compromised vision or total blindness and similarly for those that are unable to hear.

<b>Suggested Duration</b>	<b>Activity and Description</b>
<b>15 minutes</b>	<p>Imagine your ears are not working, how would you be able to communicate with others? How would you know what others are telling you or when others are speaking to you?</p> <p>Try it! You can put some cotton or block your ears with your hands tightly and ask family members to whisper. See if you can understand what they are saying to you.</p> <p>Do you know someone with a hearing disability? How does he/she communicate with others?</p> <p>Sign language is the visual-manual language of those with hearing issues – people make words and letters using their hands.</p> <p>Examples:</p>

									
<p><b>10 minutes</b></p>	<p>For those who do not have visual tools – pretend you are eating food that is often the sign for food and eating. Hold both hands up palms facing out that shows finished, etc.</p> <p>Create signs for 5 of the most common words you use.</p> <table border="1" data-bbox="467 903 1386 1260"> <thead> <tr> <th>Word</th> <th>Sign</th> </tr> </thead> <tbody> <tr> <td>Good</td> <td></td> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> </tbody> </table> <p>Now try and do a sentence by acting it out/signing it out. To easily do this, you can:</p> <ul style="list-style-type: none"> <li>● First write out the sentence in words</li> <li>● Create a sign for each of the words in the sentence</li> <li>● Act out the sentence using the signs for each of the words created</li> </ul>	Word	Sign	Good					
Word	Sign								
Good									
<p><b>30 minutes</b></p>	<p>Play a game of Charades to understand communication by signing and acting it out.</p> <p>Preparation:</p> <ul style="list-style-type: none"> <li>- Get a sheet of paper and cut 10 cards in a shape of your own choice.</li> </ul>								

	<ul style="list-style-type: none"> <li>- Compile a list of 10 words/items/objects e.g., Flower, Bird, Hungry etc.</li> <li>- Write the words/items/objects on each of the cards</li> <li>- 2-3 teams with each team having 2-3 members</li> <li>- Paper, pencils and erasers or a board and chalk to draw</li> <li>- A paper with a points column for each of the teams</li> </ul> <p>Rules:</p> <ul style="list-style-type: none"> <li>- One team member from each team will pick 3 cards</li> <li>- The same team member will act each of the words on the cards</li> <li>- The other team member will guess the word based on the acting</li> <li>- The team member acting out the words is not allowed to use verbal clues</li> </ul> <p>Each team gets as many points as the words they guess, with the maximum being 3 points per round.</p> <p>Add the total after playing a couple of rounds of the game and compare the larger number to decide who won the game.</p>
<p><b>15 minutes</b></p>	<p>Imagine that you cannot see, how would you recognize things? How would you read a book/story or even recognize words from a story you have been told?</p> <ul style="list-style-type: none"> <li>● You can simulate this experience by putting a blindfold on your eyes, and then you can have someone else around the house. They can make you touch a specific object and then ask you to identify what the object is.</li> <li>● You can then research either on the internet or by asking their parents/adults how people with visual impairment communicate with each other and read in real life.</li> </ul> <p>People with visual impairment listen to audio messages and have a special way of writing called braille. Braille is a form of written language, in which characters are represented by patterns of raised dots that are felt with the fingertips. People can read it by touching the letters with their fingertips.</p>
<p><b>10 minutes</b></p>	<p>Now you will explore the concept of Braille, which is a written language that the blind can read by touching the letters</p>

	<p>Use flour dough or playdough to make letters and words. You can ask family members to close their eyes and feel the letters and tell you what word/letters you have formed.</p> <p>Similarly, you can also write letters, poke holes in the paper, and flip it to touch the protruding parts and “feel out” the letters.</p>
<b>10 minutes</b>	<p><b>Reflection:</b></p> <ul style="list-style-type: none"> <li>- What have you learnt from today’s activities?</li> <li>- What do you remember the most from today’s activities?</li> <li>- What do you still have some questions about?</li> </ul> <p>Ask your parent or guardian any questions you may have about today’s lesson.</p>

**DAY 4** - Today you will explore code numerical languages.

<b>Suggested Duration</b>	<b>Activity and Description</b>															
<b>5 minutes</b>	<p>Have you ever wanted to tell someone something that you do not want anybody else to read or understand? How do you usually do that?</p> <p>Now, imagine you can create a language that only and the person you are talking to can understand. That is what code language is about. Today you will explore code numerical languages.</p>															
<b>15 minutes</b>	<ul style="list-style-type: none"> <li>- Explore numerical substitutions for the different letters of the alphabet to create a numerical code language.</li> <li>- Imagine if:</li> <li>- If A = 1, B = 2, C = 3 and so on. How will you write the word BAD i.e. B=2, A=1 and D = 4 so we get 2.1.4?</li> </ul> <p>Write the entire code. E.g. what letters = what numbers? You can use a table like the one below to write out your numerical codes:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tbody> <tr> <td>A</td> <td>B</td> <td>C</td> <td>D</td> <td>E</td> </tr> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> </tr> <tr> <td>F</td> <td>G</td> <td>H</td> <td>I</td> <td>J</td> </tr> </tbody> </table>	A	B	C	D	E	1	2	3	4	5	F	G	H	I	J
A	B	C	D	E												
1	2	3	4	5												
F	G	H	I	J												



<b>10 minutes</b>	<p>Literacy Extension</p> <ul style="list-style-type: none"> <li>Write a 2 - 3 short sentence letter to your best friend or parent using words with this code. (Tip: You can first write out the sentences in the usual words and then convert them into the new numerical code).</li> </ul>
<b>30 minutes</b>	<p>For older learners, you can now try to create a different numerical code. Some ideas of variations include:</p> <ul style="list-style-type: none"> <li>Every letter is +2 from the previous letter e.g. A = 2, B= 2+2=4, C=4+2=6 etc.</li> <li>Every letter is -3 from the previous letter e.g. Z = 100, Y= 100-3=97, X=97-3=94</li> <li>Only even or odd number</li> <li>Every letter is a number that ends with 10 e.g. A=10, B=20 etc.</li> </ul> <ul style="list-style-type: none"> <li>Make your own code, write a sentence in code and the codebreaker that shares the code.</li> </ul>
<b>10 minutes</b>	<p><b>Reflection:</b></p> <ul style="list-style-type: none"> <li>What have you learnt from today's activities?</li> <li>What do you remember the most from today's activities?</li> <li>What do you still have some questions about?</li> </ul> <p>Ask your parent or guardian any questions you may have about today's lesson</p>

## DAY 5 - Today you will write a secret code of your own!

<b>Suggested Duration</b>	<b>Activity and Description</b>
<b>10 minutes</b>	<p>Start by finding out how secret codes are applicable and used in people's daily lives. You can interview your parents or an adult at home or in your community.</p> <p>You can use the following questions during this discovery process:</p> <ul style="list-style-type: none"> <li>What are some of the areas in real life where people use secret codes?</li> </ul>

	<ul style="list-style-type: none"> <li>• What are some of the common secret codes used by people?</li> </ul>
<b>40 minutes</b>	<p>Hide two objects of your choice anywhere in your home and have family members find these using your own code, oral language, and code written language:</p> <ul style="list-style-type: none"> <li>• To find the first hidden object, give family members an oral code cue that could be made up words and/or signed out for family members. For example, for an object hidden in the bed, sign out sleeping and bed for family members to guess that it is hidden in the bed.</li> <li>• To find the second hidden object, give family members a written code clue; you can use numerical substitution or glyphs, or both. For example, for an object hidden under a kitchen counter – draw spoons and knives as a glyph to give family members a hint.</li> </ul> <p>Ask family members to break these codes and then find the two objects they have hidden.</p>
<b>10 minutes</b>	<p>Overall project reflection: Reflect on the power and evolution of language using the 3-2-1 technique. Reflect on:</p> <ul style="list-style-type: none"> <li>• Three things you have learned from today’s activities</li> <li>• Two things you found interesting</li> <li>• One thing that you still have a question about</li> </ul>

<b>Modifications for Simplification</b>	<ul style="list-style-type: none"> <li>• Learners can focus on the instructions, demonstrations and cues given and not design their own codes.</li> </ul>
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## ASSESSMENT CRITERIA

The learners will be able to:

- Develop and display creativity in developing their own alien words, glyphs and signs.
- Gain clarity of writing and drawings in letters.
- Understand the demonstration and share the scientific experiment of oxidation.
- Understand and critically think through ciphering and deciphering.
- Gain and develop an ability to write code breakers, especially for the “braille” and “numerical patterns”.