Data Categorisation

Introduction

Imagine you are setting up your kitchen. You put pots and pans in one cabinet, utensils in another shelf, and food items in some other compartment. You might even group spices by flavour or organise ingredients by type. We do such things to find the items easily whenever required. This thoughtful organisation reflects the skill of recognising patterns and grouping similar items and is commonly known as data categorisation.

Data categorisation refers to the process of organising data into different groups or categories based on shared characteristics. It is an essential skill required in several fields such as scientific research, decision-making in business etc. It brings order to our tasks, helping us find what we need more quickly, and we use it daily without even knowing it!

Let's do some activities to fine-tune this skill.

Activity 1: Observe the items given below.






Categorise the above items by following the instructions given below.

1. Choose any 2 items randomly from above list.
2. Think of a category under which the items can fall under. Example: Sofa and Knife can fall under a category "Things in a cafe".
3. Repeat the process by making more such pairs.

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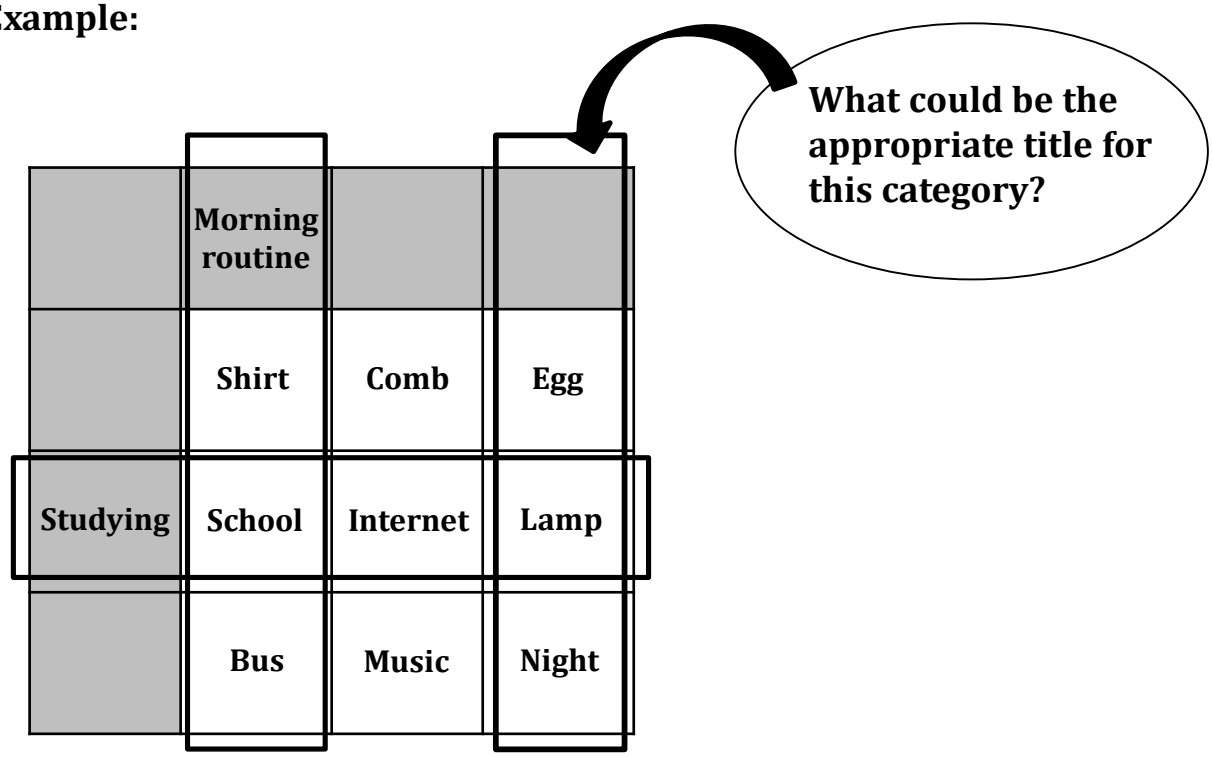
Activity 2 : Categorise the given items using a sudoku grid (children can work in groups of 2-3)

1. Each grid in the workspace sheet has 9 words arranged in different combinations.
2. Categorise groups of 3 words that are arranged horizontally, vertically and/or diagonally.
3. You can think of a title that describes what the 3 words have in common and write it in the grey cell.
4. Same title cannot be used for more than one category.
5. If you're not sure how the words are related, it's okay to leave some title spaces blank.
6. Once you've finished the given grids, you can try to create new arrangements in the blank grid by changing the positions of the words. Remember, each word has to occupy only one cell in the grid.

Example:



In this example, Shirt, School and Bus are things associated with morning routine. Similarly things like School, Internet and Lamp are related to studying.

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	Night	Bus	Lamp
	Shirt	Egg	Music
	School	Internet	Comb

	Egg	Comb	Lamp
	Internet	Bus	Night
	Music	School	Shirt

	School	Internet	Lamp
	Egg	Music	Bus
	Shirt	Night	Comb

	Comb	Night	Lamp
	Internet	School	Egg
	Shirt	Music	Bus

	Music	Comb	Night
	Lamp	Bus	School
	Shirt	Egg	Internet

Blank Grid:

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Background

Categorisation and generalisation are fundamental processes in human cognition and are influenced by various biases, as demonstrated by several researchers (Vlach, 2016). Working with categories is also integral to the decision-making process across professions and is essential for adaptive action and problem-solving (Gelman & Meyer, 2011; Paradis et al., 2012). Therefore, it is important to nurture this skill in children from an early stage.

The current activity aims to engage children in the foundational skill of categorisation, as well as in puzzle-solving, which can support the development of reasoning and critical thinking. The first task encourages children to use visual thinking and pattern recognition as they identify novel relationships among discrete objects to categorise them. The second activity is inspired by the concept of a relationship matrix, a method used to represent associations between different entities. It also draws from Sudoku— a logic-based puzzle shown to aid in understanding complex mathematical concepts, foster strategic problem-solving approaches, and enhance concentration and reasoning (Jinon, 2022; Cook et al., 2007). Together, these activities are designed to stimulate cognitive flexibility and promote deeper learning.

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References

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