Introducing Camelids

Continuing ideas for exploring the global environment, now in the 2024 International Year of Camelids
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Drawing by Huff y-Doodle2014 [20]

Camelids', you say, 'is that a spelling mistake?' No, the 2024 International Year (IY) promoted by the Food and Agricultural Organisation (FAO) of the United Nations raises awareness of the value of camelids 'to the livelihoods of millions of households in hostile environments' around the world [1]. This article will introduce camelids by suggesting learning activities and resources for literacy (especially dictionaries and suffixes), science (classifying life forms), and numeracy (counting, grouping and tabulating). These ideas could be applied to other living things.

Literacy

Unfamiliar words like 'camelid', can be an opportunity to practice word building through identifying their base word and suffix, and the use of dictionaries to confirm meanings. This could be a springboard to finding other 'like' words, eg with other suffixes.

Applying this to camelids, can your learners identify the base word in it? (I have given hints with the images on this page!) Next, are they aware of the difference between prefixes and suffixes and how they add meaning and build words? Suffixes are indicated in a dictionary with a hyphen leading the letters, e.g. '-id'. Like base words, suffixes can come from different contexts, so a choice may be needed for the correct meaning from a dictionary. Discovering the meaning of the suffix '-id' in 'camelid' can demonstrate this.

Suffixes are quick to look up in a physical dictionary, coming alphabetically after the letters without the hyphen, i.e. after 'id' comes '-id'. The Macquarie Dictionary has three meanings of this suffix: '-id[1]' (for zoological family names); '-id[2]' (replacing -ide); and -id[3]' (with some adjectives of sense) [2]. Given the base word 'camel', the correct meaning of the suffix should be... the first one. If you have a physical dictionary, it is quick, and reinforces memory of the alphabet. They can be found in second-hand shops.

What about online dictionaries? I found these more difficult to use for suffixes. There are a number of online dictionaries. Which one do you choose and why/not? The Macquarie Dictionary (Australian English) has a free trial and then a paid subscription [3]. The Oxford English Dictionary (British English) has no such hurdle and its definitions are clear, giving four modern and two older meanings of -id in a webpage with 18 entries for id, I'd, ID, I.D. and -id [4]. The Collins Online Dictionary has over 30 definitions, covering these five 'id' spellings, and providing meanings from British English dictionaries (five suffix contexts) and American English dictionaries (six suffix contexts), acknowledging the source of each [5]. With about 20 definitions, Dictionary.com, did not identify its first group as American English, while acknowledging its second group as British English, sourced from the Collins Dictionary. However, with its meanings and origins in the same font size, and video advertisements playing at the side, I found this layout a bit 'noisy' [6]. In our digital world, it is worth knowing where information comes from and on which culture it is based, hence my preference for the Macquarie Dictionary.

If you are looking online for exercises on suffixes, Enchanted Learning combines prefixes and suffixes, and has a number of worksheets [7]. While Vocabulary.com does not have a suffix meaning for -id, it does have a suffix activity page for -id words in four increasing difficulty levels (none of them having the scientific one needed) and with a range of activities to aid their learning [8]. Australian home educator Stacey, at Simply Living Creative Learning, provides a range of free downloadable prefix and suffix worksheets which you can preview to see if they will suit your learners [9]. Randi House, an Arkansas Teacher of the Year, demonstrates in a short video a 'wheel' activity to summarise examples of suffixes and their meanings which could be adapted to any suffix or prefix [10].

Science

Science is full of new words and so also needs reading skills, e.g. what is a camelid?Online dictionaries give a range of complexity in their definitions. The Free Dictionary cites two dictionary's meanings, of which the first (from the American Heritage Dictionary of the English Language) has a simple statement of key features of this family of animals: padded feet; two-toes; and cleft upper lip [11]. (Is there something omitted here that your learners might have expected?) Other dictionaries have more technical language, more suited to older learners. This American Heritage Dictionary also gives a list of the key animal species of this family: alpacas; camels; guanacos; llamas; and vicuñas [12]. Camelids are a group of camel-like animals, not just humped camels.

Do learners know how lifeforms are classified? If not, the IYC2024 provides an opportunity to learn about the taxonomy of living things. Taxonomy is a way of defining and classifying all living things.

As an introduction to the Linnaeantaxonomy's hierarchy, learners could be given a puzzle to organise an alphabetical list of the ranks (or taxa) into a descending list, with the biggest, broadest group at the top, going down to more specific sub-groups with fewer members, to one animal at the bottom: class, family, genus, kingdom, order, phylum, species. (Hint: Start with words of known meaning!)

When finished, learners can check their listing with one of the many diagrams online. I prefer ones with large, clear font size and different colours for each level, e.g. by Thermophiles,or Ms Woz, whose arrows indicate changes in similarities and numbers of life forms [13, 14 respectively]. Learners may like to create their own representation of such a diagram. Such a list can also be used to develop memory skills, e.g. using the first letters (k, p, c, o, f, g, s) to create a sentence as a memory aid (a mnemonic).

How does taxonomy work? Active Wild's 'animal classification' web page describes this classification system well, incorporating questions for the reader and many examples [15]. In reading this, readers might notice the number of words that are not English-based. The Linnaean taxonomy uses Latin and Greek names and suffixes for different groups and species. These names are preferred to common English names as they allow people from all over the world to communicate about living things without confusion due to local names and different languages.

The suffixes indicate the level of the taxonomy to which the name belongs. Wikiversity'sweb page for 'Taxonomy (Biology)' provides a table of these suffixes [16]. Awareness of such suffixes will aid recognition of new words from this taxonomy e.g. Camelidae, with its Latin '-idae' suffix ending, indicates a family level for the base word 'camel' meaning the same as Camelidsin English, with the English suffix -id.

But not all base words are from English! For example, this list of six -id ending animal families have Latin base names: ailurid; arachnid; blattid; cricetid; diomedeid; and elapid [17]. With dictionary help, learners will be able to find these animal families. Learners could create drawings or find images to match them. They could use these to make an image-name matching puzzle to challenge others!

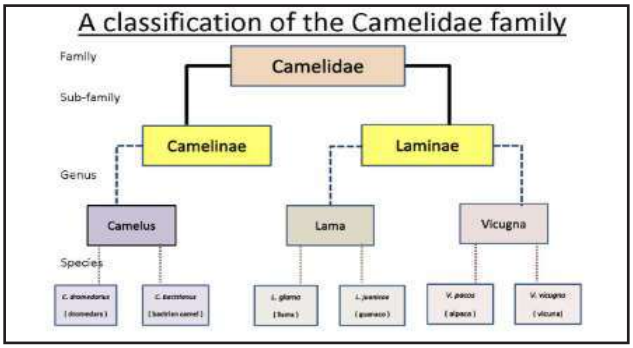
A lot of science is about observation and recording — learners look for living things and at what they are like. The taxonomy is based on observable similarities in the level to which the living thing belongs, and levels above that. That gives a basic description of the life form, e.g. Camelidae/Camelids are:

- Kingdom: Animalia = an animal
- Phylum: Chordata = with a backbone
- Class: Mammalia = a mammal
- Order: Artiodactyla = hoofed, even-toed
- Suborder: Tylopoda = pad footed
- Family: Camelidae = ...

From sites like BiologyOnLine,learners could research these characteristics common to camelids:

- Their (suffix) -ore food group
- teeth
- stomachs: number and function
- body shape: neck, legs, feet, toes,
- habitat: social, environmental [18].

How do they differ? That involves looking at the species (members of the family) which were listed under the earlier definition of the camelids [12]. Taxonomy can be shown as a family-tree-like diagram, going down through genus, and sub-genus to species levels. There are several diagrams online. Your learners might like to try to create one to show levels, Latin names, and common names, e.g. the one below is based on Parkman's [19] .



Numeracy

Opportunities to count, group and make data tables (in this case, about camelids) are numeracy skills that can use many resources.

How many species of camelids are there? Learners could use visual resources for this, e.g. count the camelid species in this article's header image or from web pages like *IYC2024* (photos), *AI EPS* (clear stylistic drawings), *Stichting Dalel* (more realistic drawings) or *Camelids-size comparison* (a five-minute video) [20, 21, 22, 23, 24 respectively].

Ordering a list by size, up or down, could be done using the resources above, except for the video.

Grouping for a table could be done using any of these above resources, eg. by number of humps, by height groups or by critically endangered/ unthreatened (see *Stichting Dalel*'s) [23]. After watching the video once, learners could decide how to group its data for a table, e.g. by size, era, extinct/ extant [24]? Are any results surprising?

In observing life forms, some key visual features used to compare and describe species are size, colours, body parts and shapes. Tables can be created with species grouped around such features, and from that, sub-groups recognised through similarities and differences. Sub-groups found may be the genus levels. Check against the diagram on the previous page, which shows the levels.

Camelids are mammal herbivores with canine and tusk-like teeth, and three ruminant stomachs to process the plants in their tough environments. They have long necks and legs, and two-toed hoofed feet with soft pads. Living in herds in about 90 countries, they are mostly domesticated animals. These camels, llama and vicuñas are the focus of 2024's IY [1].

I hope your learners will enjoy getting to know them and the peoples who live with them this year, thus taking part in this 2024 International Year of Camelids!

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