



**(1) What language(s) does this problem involve?**

Mokilese

**What is the aim of this problem?**

To explore the grammar of classifiers

**(2) Background Information**

Mokilese is spoken by about 500 people on the atoll of Mokil, in the Pacific state of Micronesia. This language makes use of classifiers. Classifiers are used to classify objects (things, people and so on) according to criteria that the language's speakers consider important (in much the same way that English uses *who* and *what* to distinguish humans from everything else).

**(3) The problem**

Here are some phrases in Mokilese, along with their English translations.

doahk jilmen	'three dogs'	doahk pahmen	'four dogs'	doahk limmen	'five dogs'
pinjel jilpas	'three pencils'	pinjel pahpas	'four pencils'	pinjel limpas	'five pencils'
peipa jilkij	'three pieces of paper'	peipa pahkij	'four pieces of paper'	peipa limkij	'five pieces of paper'
suhkoa jilpas	'three trees'	suhkoa pahpas	'four trees'	suhkoa limpas	'five trees'
woi jilmen	'three turtles'	woi pahmen	'four turtles'	woi limmen	'five turtles'
woal jilmen	'three men'	woal pahmen	'four men'	woal limmen	'five men'
alek jilpas	'three reeds'	alek pahpas	'four reeds'	alek limpas	'five reeds'
pilawa jilkij	'three slices of bread'	pilawa pahkij	'four slices of bread'	pilawa limkij	'five slices of bread'
aji jilpas	'three chopsticks'	aji pahpas	'four chopsticks'	aji limpas	'five chopsticks'
wija jilkij	'three blocks of land'	wija pahkij	'four blocks of land'	wija limkij	'five blocks of land'
jeri jilmen	'three children'	jeri pahmen	'four children'	jeri limmen	'five children'

**Q3.1.** First identify the words or word-parts that mean

- a. 'three'
- b. 'four'
- c. 'five'

**Q3.2.** List (in any order) the three classifiers, and their meanings (i.e. the way in which they classify objects).

**Q3.3.** List the order in which the number, the noun, and the classifier appear in each example. Use the abbreviations 'NUMB' for *number*, 'N' for *noun*, and 'CL' for *classifier*. If any of these is always part of the same word as the next one, write '+' after it.

#### 4) Solutions and mark-scheme

**Q3.1.** [1 point per correct answer]

- a. 'three' Answer: jil-
- b. 'four' Answer: pah-
- c. 'five' Answer: lim-

**Q3.2.** [1 point per correct form; 1 point per correct meaning. For –men, allow 'animal' or some other description that includes people, dogs and turtles, such as 'animate being', but not 'mammal']

Answer: Mokilese classifiers: -men 'animal', -pas 'cylindrical', -kij 'flat'

**Q3.3.** [1 point for each form in the right position]

Answer: N NUMB+CL

#### 5) Commentary

##### Exploring the system

Let's start by looking just at the first two rows of data. Let's first highlight all the whole words that stay the same in each row in Mokilese.

<b>doahk</b> jilmen	'three dogs'	<b>doahk</b> pahmen	'four dogs'	<b>doahk</b> limmen	'five dogs'
<b>pinjel</b> jilpas	'three pencils'	<b>pinjel</b> pahpas	'four pencils'	<b>pinjel</b> limpas	'five pencils'

This gives us an inroad into the problem, and suggests something important about how the structure of Mokilese differs from the structure of English. In Mokilese, it looks like the noun appears first in the phrase, whereas in English, the noun appears second. In other words, there are differences in the word order of English and Mokilese. This is important, because it allows us to be sure to focus on the right words when we are trying to understand some aspect of the grammar of this unfamiliar language.

*When solving problems like this, it's always a good idea to try to look for repeated patterns in the unfamiliar language, and see how this matches up to patterns in English – in what ways does the structure of the two languages differ? In what ways are the structures similar?*

This suggestion about the word order is a hypothesis: we would need to test it against the rest of the data to see if the hypothesis can be falsified or not. When we look at the rest of the data, we see that all of the examples in the other rows behave in the same way: in Mokilese, the noun appears first.

*So what do you know now?*

*Grammar: the nouns appear before the numeral in Mokilese*

*Vocabulary: the word doahk means 'dogs'; the word pinjel means 'pencils'*

Now let's look again at the first two rows, but this time we'll focus on other words:

doahk <b>jilmen</b>	'three dogs'	doahk <b>pahmen</b>	'four dogs'	doahk <b>limmen</b>	'five dogs'
pinjel <b>jilpas</b>	'three pencils'	pinjel <b>pahpas</b>	'four pencils'	pinjel <b>limpas</b>	'five pencils'

Notice there are two sets of correspondences:

- Mokilese has two words for each of the English numerals (look at the columns): 'three' = *jilmen* or *jilpas*; 'four' = *pahmen* or *pahpas*; 'five' = *limmen* or *limpas*
- The second part of the Mokilese word is repeated in each cell on a given row: *jilmen*, *pahmen*, *limmen* in row 1; *jilpas*, *pahpas*, *limpas* in row 2

So this would suggest that these Mokilese words are made up of two parts: the first part that relates to the English numbers, and the second part, which seems a bit mysterious.

If we look down each column for the whole table, we can see that our intuitions are correct. What we find is this:

Words translated as English 'three'	Words translated as English 'four'	Words translated as English 'five'
jilmen	pahmen	limmen
jilpas	pahpas	limpas
jilkij	pahkij	limkij

So it looks like three = jil-, four = pah- and five = lim-, because these are the parts that are consistent in phrases involving English 'three', 'four' and 'five' respectively.

*So what do you know now?*

*Grammar: the Mokilese forms corresponding to English numerals incorporate not just some reference to number, but something else as well*

*Vocabulary: jil- 'three'; pah- 'four'; lim- 'five'*

But what about the mysterious second part (i.e. -men, -pas and -kij)?

Let's have a look at the English nouns whose Makilese counterparts all co-occur with these three forms. Again, it's often helpful to put things into a table to group them together.

-men words	-pas words	-kij words
dogs, turtles, men, children	pencils, trees, reeds, chopsticks	pieces of paper, slices of bread, blocks of land

Can you see any similarities between the sets of English words?

*It's important here to try to be precise. For example, we might think that -men is used with nouns that denote living things; but trees and reeds are living things, and the translations of these words in Mokilese appear with -pas. So we would need to restrict this, and say that -men is used with nouns that denote animals - including humans, of course!*

What about -pas words? These all seem to be used with nouns that denote things which are cylindrical in shape. Words with -kij appear to be used with nouns that denote things which are flat.

Now we can put all this together to build up a fragment of Mokilese grammar, and compare it to English:

*Word order*

English: numeral then noun

Mokilese: noun then number+classifier

*Internal structure of Mokilese number-classifier words*

Mokilese number elements: jil- 'three', pah- 'four', lim- 'five'

Mokilese classifiers: -men 'animal', -pas 'cylindrical', -kij 'flat'

## 6) Taking it further

By a *classifier*, we mean a word or a part of a word that is used to categorise sets of nouns depending on some shared property of the things the nouns refer to. We have seen that Mokilese has a classifier for animals. Similarly, Japanese has a classifier for mechanical things, while Chinese has a classifier for lamps and electric lights. So classifiers can be used for very general categories and for very specific ones, in various languages of the world.

Classifiers are related to measure words, but they are not the same thing. For example, words like *pint*, *drop* and *cupful* might all be used with liquids in English (e.g. *a pint/drop/cupful of water*), but they do not necessarily have to collocate with nouns that denote liquids (*a cupful of flour; he showed not a drop of pity*). Compared to speakers of other languages, speakers of English don't make use of classifiers as part of their linguistic system. However, it's interesting to note that certain mass nouns of English won't (typically) take a bare numeral: we don't say *three waters* or *six breads*. The use of measure words (like glasses or loaves) allow something that is largely shapeless and lacking in a defined structure to be more easily countable.

As noted above, some classifiers can be very specific, while others have a more general applicability. For instance, the Chinese classifier *tiáo* is typically used with nouns that denote objects that are long and bendy or flexible (like rivers, streets and snakes) while *gè* has fewer restrictions on the kind of noun it appears with.

Classifiers are a feature of many languages, including sign languages. For example, in American Sign Language, the use of sign in which the index finger is extended, while other fingers and the thumb are folded, may occur with signs denoting a singular person, or cylindrical objects like pencils – essentially, long skinny things.

You can read more about classifiers in the languages of the world here:

<http://wals.info/chapter/55>