

# CS441: Panphone Sentences

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## 1 Pangram

A pangram is a sentence that uses all the letters of the alphabet (pan means all, gram means written character). Here is a famous example.

**The quick brown fox jumps over a  
lazy dog**

Some people enjoy the challenge of finding shorter sentences that still retain some semblance of meaning, such as these:

**Pack my box with five dozen liquor  
jugs**

**Waltz, bad nymph, for quick jigs vex**

## 2 Panphone

We define a panphone as a sentence that uses all the phonemes of the spoken language. You need not include the letter “x” (for instance), but you must include the “k” sound and the “s” sound.

For convenience, Table 1 lists some common English phonemes that could be included. You may be able to think of more. (Or less. Maybe for you  $w=u$  and  $j=i$ .)

Rather than actually build a sentence with every phoneme, we will approach the problem from a different angle. We will construct a Haiku that uses as many phonemes as possible.

## 3 Haiku

Haiku is a traditional form of Japanese poetry. It is short and fairly simple to compose. Each haiku consists of three lines. The first line has five syllables. The second line has seven syllables. The third line has five syllables.

Here is an example of a haiku that uses a large number of different phonemes.

phon	example	phon	example
i	b(ee)t	&	(a)bout
I	b(i)t	eI	c(a)ne
E	b(e)t	aI	k(i)te
@	b(a)t	>i	b(oy)
A	f(a)ther	iU	v(iew)
U	b(oo)k	aU	c(ow)
u	b(oo)t	oU	h(o)me
f	(f)eed	v	(v)ery
T	(th)ing	D	(th)is
s	(s)ing	z	(z)ip
S	(sh)ow	Z	a(s)ia
tS	(ch)ur(ch)	dZ	(j)u(dj)e
p	(p)an	b	(b)an
t	(t)an	d	(d)andy
k	(c)an	g	(g)ander
l	(l)ittle	h	(h)ansom
r	(r)ound	m	(m)an
w	(w)inter	n	(n)ever
j	(y)es	N	si(ng)

Table 1: Some Common English Phonemes

**Just watch how they splash!**  
**Five boys on the ground. Good thing.**  
**Bet it’s amusing.**

dZ & s t w A tS h aU D eI s p l @ S!  
f aI v b >I z A n D & g r aU n d. g U d T  
i N.  
b E t I t s & m iU z i N.

As poetry, it still needs a little work. And as a panphone, it is still missing k, oU, u, j, and Z.

I composed this haiku after walking to school in a light rain. It took me about an hour. For words using the Z phoneme, I searched the Moby pronunciation dictionary. For the other phonemes, I used my own vocabulary. Some phrases I considered included: gentle rain today, casual morning, watch your feet, don’t growl. I made several lists of the phonemes to use, and marked off each phoneme as

I used it. That made it easier for me to see which phonemes still remained.

## 4 Assignment

Create a haiku using as many different phonemes as you can. Be prepared to share it in class, and to tell how many different phonemes it uses.

The real objective of this assignment is to start developing familiarity with a phonetic alphabet, and to start hearing the different phonemes present in words. Casting it as a haiku should also make the assignment more interesting to complete and more interesting to grade.