

## Phonetic Description: Japanese

### I. Introduction

The Japanese language is currently spoken by around 125.4 million people. More than 99% of these speakers reside in Japan, and the remaining percentage can be found in emigrant communities in places such as Hawaii, Brazil, and Peru. Japanese was originally labeled as a ‘language isolate’ (a language that could not be classified into a larger language family), but it is now considered to be part of the Japonic family. This family also includes the Ryukyuan languages, which are spoken on the Ryukyu Islands located between southern Japan and Taiwan.



*Left: Japan, shown in red (image source).*

*Right: Ryukyu Islands (image source).*

### II. Phonemes

#### Consonants

	Bilabial	Alveolar	Alveolar-palatal	Palatal	Velar	Uvular	Glottal
Nasal	m	n	(ɲ)		(ŋ)	(ɴ)	
Stop	p b	t d			k g		
Affricate		(t͡s) (d͡z)	(t͡ɕ) (d͡ʒ)				
Fricative	(ɸ)	s z	(ɕ) (ʒ)	(ç)			h
Liquid		r					
Semivowel				j	w		

*Consonant phonemes in Japanese (Wikipedia).*

Phoneme	Orthographic	Phonemic	Phonetic	Gloss
/m/	<matsuri>	/maturi/	[ma̠tsi <sup>β</sup> ɾi]	‘festival’
/n/	<nani>	/nani/	[na̠ni]	‘what’
(/ɲ/)	<nihon>	/nihoN/	[ɲi <sup>β</sup> hōN]	‘Japan’
(/ŋ/)	<ongaku>	/oNgaku/	[ōŋgakɯ <sup>β</sup> ]	‘music’
(/ɳ/)	<jishin>	/zisiN/	[d͡ʑiɛ̃N]	‘earthquake’
/p/	<pan>	/paN/	[pa̠N]	‘bread’
/b/	<bangumi>	/baNgumi/	[ba̠ŋgɯ <sup>β</sup> mi]	‘(TV) program’
/t/	<tanoshii>	/tanosi/	[ta̠no̞ɕi:]	‘fun, enjoyable’
/d/	<dansei>	/daNse/	[da̠ũsɛ:]	‘man’
/k/	<kaisetsu>	/kaisetu/	[ka̠isɛ̃tsi <sup>β</sup> ]	‘explanation’
/g/	<genjitsu>	/geNzitu/	[gɛ̃ɲd͡ʑi <sup>β</sup> tsi <sup>β</sup> ]	‘reality’
(/ts/)	<tsugi>	/tugi/	[tsi <sup>β</sup> gi]	‘next’
(/d͡z/)	<zutto>	/zuQto/	[d͡ʑi <sup>β</sup> tt̚o]	‘always’
(/t͡ɕ/)	<chiisai>	/tisai/	[t͡ɕi:sai]	‘small’
(/d͡ʑ/)	<jinken>	/ziNkeN/	[d͡ʑĩŋkɛ̃N]	‘human rights’
(/ɸ/)	<futari>	/hutari/	[ɸɯ <sup>β</sup> ta̠ɾi]	‘two people’
/s/	<sangatsu>	/saNgatu/	[sa̠ŋgatsi <sup>β</sup> ]	‘March’
/z/	<tsuduki>	/tuduki/	[tsi <sup>β</sup> zi <sup>β</sup> ki]	‘continuation’
(/ɕ/)	<shio>	/sio/	[ɕio]	‘salt’
(/z̥/)	<gojuu>	/gozju/	[gɔ̥z̥i <sup>β</sup> :]	‘fifty’
(/ç/)	<hito>	/hito/	[çit̚o]	‘person’
/h/	<hanabi>	/hanabi/	[ha̠na̠bi]	‘fireworks’
/r/	<ranbou>	/raNbo/	[ra̠mb̥o:]	‘rowdiness’
/j/	<yado>	/jado/	[jad̚o]	‘lodging’
/w/	<watashi>	/watasi/	[ɯ <sup>β</sup> ata̠ɕi]	‘I, me’

*Examples of consonant phonemes in Japanese. Phonetic transcriptions provided by [Wiktionary](#).*

Notes ([Wikipedia](#)):

- /N/ is a special mora that encompasses all of [N, m, n, ɲ, ŋ, ũ] without a following vowel.
- /Q/ is another special mora that indicates a doubled consonant, which is known as consonant gemination (or consonant lengthening).
- For a more comprehensive understanding of the conversion between the phonemic and phonetic transcriptions in the examples, see the table [here](#).

## Vowels

	Front	Central	Back
Close	i		u
Mid	e		o
Open		a	

*Vowel phonemes in Japanese ([Wikipedia](#)).*

Phoneme	Orthographic	Phonemic	Phonetic	Gloss
/a/	<ashita>	/asita/	[aɕita]	‘tomorrow’
/i/	<itami>	/itami/	[itamɨ]	‘pain’
/u/	<usagi>	/usagi/	[ɯᵝsagi]	‘rabbit’
/e/	<endorooru>	/endororu/	[ẽndɔ̞ɾɔ̞ːɾɯᵝ]	‘endroll’
/o/	<otona>	/otona/	[otona]	‘adult’

*Examples of vowel phonemes in Japanese. Phonetic transcriptions provided by [Wiktionary](#).*

Notes ([Wikipedia](#)):

- /u/ is a close near-back vowel with the lips unrounded ([ɯ]) or compressed ([ɯᵝ]).
- /e, o/ are the mid vowels [ɛ, ɔ].
- /a/ is the open central unrounded vowel [a] (or alternatively, [ä]).

## III. Pitch accent

### Preliminaries

Japanese is a pitch accent language – words are distinguished by changing the pitches of particular moras, which are units of sound in phonology. Unlike syllables, each mora lasts for the same amount of time.

Orthographic	Phonetic	Syllables	Moras	Gloss
<zettai>	[d͡zɛ̞t͡tai]	2 (zet.tai)	4 (ze-t-ta-i)	‘absolute’
<okaasan>	[o̞kaːsãɴ]	3 (o.kaa.san)	5 (o-ka-a-sa-n)	‘mother’

*In Japanese, the number of syllables and moras for a word are not necessarily equal.*

For the examples that follow, we need to know what particles are. They are parts of speech that are not inflected and give meaning to a phrase or sentence. The particle *ni* (‘to’, ‘in’, ‘at’, ‘by’) will be used to demonstrate the different pitch accent patterns.

### ***Pitch accent patterns***

All Japanese words fall into one of the following 4 pitch accent patterns ([Kanshudo](#)).

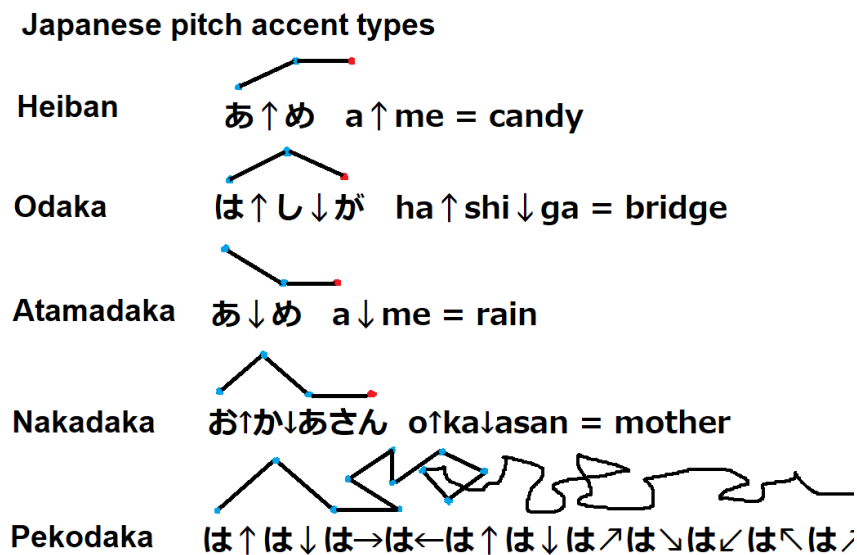
1. 平板 (*heiban*, ‘flat board’)
  - a. The first mora has a low pitch and the subsequent moras have a high pitch.
  - b. The particle following the word has a high pitch.
2. 頭高 (*atamadaka*, ‘head high’)
  - a. The first mora has a high pitch and the subsequent moras have a low pitch.
  - b. The particle following the word has a low pitch.
3. 中高 (*nakadaka*, ‘middle high’)
  - a. The first mora has a low pitch and the second mora has a high pitch. The pitch then drops back to low somewhere later in the word (must be at least three moras long).
  - b. The particle following the word has a low pitch.
4. 尾高 (*odaka*, ‘tail high’)
  - a. The first mora has a low pitch and the subsequent moras have a high pitch (like *heiban*).
  - b. The particle following the word has a low pitch (unlike *heiban*).

Pattern	Orthographic	Phonemic	Phonetic	Gloss
<i>Heiban</i>	<hashini>	/hasini/	[hãɛ̞ṽṽi]	‘at the edge’
<i>Atamadaka</i>	<hashini>	/hasini/	[hãɛ̞ṽi]	‘at the chopsticks’
<i>Nakadaka</i>	<toshokanni>	/tosjokanni/	[tòɛ̞o̞kãṽṽni]	‘at the library’
<i>Odaka</i>	<hashini>	/hasini/	[hãɛ̞iṽi]	‘at the bridge’

*Examples of the 4 pitch accent patterns. Phonetic transcriptions provided by [Wiktionary](#) and [Wikipedia](#).*

Notes ([Kanshudo](#)):

- The first and second moras have different pitches (e.g. if the first is high, then the second is low).
- Once a pitch goes low, it will stay low for the rest of the word.



*Visual of the Japanese pitch accent patterns. The last one ('Pekodaka') is not a real pitch accent – it is just poking fun at streamer Pekora's [unique laughter](#) ([image source](#)).*

#### IV. Sources

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