

Maltese Grapheme to Phoneme (G2P) Rules

- The set of context-sensitive rewrite rules for Maltese G2P is given in the table below.
- The set of rules $F = \{f_i\}$ must be applied in the given order.
- Each G2P rule is defined by a left and right context (where applicable), the grapheme character(s) and phoneme replacement(s), together with any condition that might apply to this rule. A word boundary is indicated by the character ‘-’ and the meta-characters C and V stand for the consonants and vowels respectively.
- $f_i: xGy \rightarrow xPy \mid \text{Rule conditions}$ $G \in \{\text{set of graphemes}\}, P \in \{\text{set of phonemes}\}$
where x is the left context, y is the right context

Rule number	Left Context	Grapheme(s)	Right Context	Phoneme(s)	Rule conditions	Example
<i>Diphthongs</i>						
1		għu		ɔ ʊ	Can also be realised as /ɐ ʊ/.	tiegħu
2		ghi		ɛ ɪ	Can also be realised as /ɐ ɪ/.	tieghi
3		aj		ɐ ɪ		mingħajr
4		aw		ɐ ʊ		jemigraw
5		ej		ɛ ɪ		fejn
6		ew		ɛ ʊ		zewg

Rule number	Left Context	Grapheme(s)	Right Context	Phoneme(s)	Rule conditions	Example
7		iw		ɪ ʊ		liwja
8		oj		ɔ ɪ		bojod
9		ow		ɔ ʊ		
<i>Vowels and vowel lengthening rules</i>						
10	ie	gh	e	j		qieghed
11		agha		æ:		mbaghad
12		eghe		ɛ:		inxteghel
13		ogho		ɔ:		boghod
14	C	e	hiC, ghiC	ɛ:	C = any consonant. Right context can be either “hiC” or “ghiC”.	fehimni
15	C	a	-	æ:	Rule applies to single-syllable words only. The symbol ‘-’ represents word boundary (end of word).	ra
16	C	e	-	ɛ:	Rule applies to single-syllable words only.	re
17	C	o	-	ɔ:	Rule applies to single-syllable words only.	go
18	C	u	-	u:	Rule applies to single-syllable	kju

Rule number	Left Context	Grapheme(s)	Right Context	Phoneme(s)	Rule conditions	Example
words only.						
19		aha		ɐ:		naraha
20		aho		ɔ:		tahom
21		ehe		ɛ:		deher
22	gh	a		ɐ:		ghar
23		a	gh	ɐ:		fieragh
24	gh	e		ɛ:		ghemil
25		e	gh	ɛ:		qeghda
26	gh	o		ɔ:		ghomja
27		o	gh	ɔ:		loghba
28	h	a		ɐ:		kollha
29		a	h	ɐ:		tah
30	h	e		ɛ:		hena
31		e	h	ɛ:		xehda
32		ie	ghC	ɛ:		ibieghdu
33		ie		ɪ		bieb
34		i	h, gh, h, q	i:		smigh
35		a		ɐ		dar
36		e		ɛ		kelb
37		i		ɪ		bir
38		o		ɔ		qorq

Rule number	Left Context	Grapheme(s)	Right Context	Phoneme(s)	Rule conditions	Example
39		u		ʊ		tuffieħ
<i>Consonants</i>						
40		b	ċ, f, ħ, k, p, q, s, t, x, z, -	p		libsa
41		b		b		borma
42		ċ	b, d, ġ, g, v, ż	dʒ		arċduka
43		ċ		tʃ		kċina
44	V	d	x, dx, tx	tʃ	V = any vowel.	riedx, roddx, ridtx
45	V	d	s, ds	ts		ghadsa, imqaddsa
46	n	d	n	n		ghandna
47		d	ċ, f, ħ, k, p, q, s, t, x, -	t		mard
48		d		d		dort
49		f	b, d, ġ, g, v, ż	v		fdal
50		f		f		fidda
51	V	gh	hV	h		tagħhom

Rule number	Left Context	Grapheme(s)	Right Context	Phoneme(s)	Rule conditions	Example
52	V	gh	V		Silent.	laghab
53	C, V	gh	V, C		Silent. Different left and right contexts, i.e., if a vowel is on left context, then right context must be a consonant.	nilaghbu, erbgħa
54	-	gh			Silent. Word starts with gh.	ghar
55		gh	-	h	Word ends with gh.	fieragh
56		ġ	ċ, f, ħ, k, p, q, s, t, x, -	ʃ		ħrigt
57		ġ		dʒ		ġebbla
58		g	ċ, f, ħ, k, p, q, s, t, x, -	k		spag
59		g		g		gremxul
60	-	h			Silent. Word starts with h.	hena
61		h	-	h	Word ends with h.	fiħ
62	C	h	V		Silent.	seraqħom
63	i, ie	h	V	j	Different vowels as left and right contexts.	fihom

Rule number	Left Context	Grapheme(s)	Right Context	Phoneme(s)	Rule conditions	Example
64	u	h	a, i, ie, o, u	w		nafuha
65	V	h	V		Silent.	sehem
66		h			Silent.	
67		ħ		h		ħanut
68		j		j		jasal
69		k	b, d, ġ, g, v, ż	g		kbirna
70		k		k		kelb
71		l		l		lima
72		m		m		mejda
73		n	b, p	m		denb, qanpiena
74	i	n	l	l		inlumu
75	i	n	m	m		inmekkek
76	i	n	r	r		inrabbi
77		n		n		naqas
78		p	b, d, ġ, g, v, ż	b		
79		p		p		pipa
80		q		ʔ		qattus
81		r		r		ras

Rule number	Left Context	Grapheme(s)	Right Context	Phoneme(s)	Rule conditions	Example
82	V	s	s-x	ʃ		miss xejn
83	V, s	s	x-	s		kinisx, rassx
84		s	b, d, ġ, g, v, ż	z		masġar
85		s		s		sena
86		t	b, d, ġ, g, v, ż	d		tbajja
87	V	t	x	tʃ		ratx
88	V	t	s	ts		ghatsa
89		t		t		torta
90		v	ċ, f, ħ, k, p, q, s, t, x, z, -	f		kattiv
91		v		v		vapur
92		w		w		werqa
93		x	b, d, ġ, g	ʒ		xbajt
94	V	x	V	ʒ	This rule applies only to words from a known word list.	televixin
95		x		ʃ		kaxxa

Rule number	Left Context	Grapheme(s)	Right Context	Phoneme(s)	Rule conditions	Example
96	V	zz	V	dz	This rule applies only to words from a known word (or part-of-word) list, e.g., “(ori)zz(ont)”, “(nali)zz(a)”, “(ga)zz(.)”, etc.	gazzetta
97		z		ts		zalza
98	V	ž	ž-x	ʃ		ghožž xejn
99	V	ž	x	s		nehmižx
100	ž	ž	x-	z		ghožžx
101		ž	č, f, ħ, k, p, q, s, t, x, -	s		žfin
102		ž		z		žrar
<i>Accented vowels</i>						
103		à		à		università
104		è		è		kafè
105		ì		ì		Indrì
106		ò		ò		però
107		ù		ù		tabù