Talented students in senior and junior secondary school who enjoy solving puzzles and who have a knack for logic and languages are invited to test their minds against fiendish and fun linguistic problems in the twenty-sixth Australian Computational and Linguistics Olympiad (OzCLO) to be held in March 2023. Students who have a keen interest in English, languages, maths or computing are a good match for the competition.

OzCLO is an exciting team-based national competition which challenges students to solve puzzles in fascinating real languages. Students work together in teams of four on a range of analytical problems. The top three teams for each region will go through to the National Round. The winners of the National Round are offered the opportunity to represent Australia at the International Linguistics Olympiad (IOL), which will be held in July 2023 in Hungary.

There is a training package an past problems including solutions available for

schools, and lots of information on the OzCLO website: **www.ozclo.org.au**.

The Australian Computational and Linguistics Olympiad (OzCLO) has been held at universities around Australia since 2008, with over 2000 secondary students competing since then. The competition is coordinated by a team of linguists at several Universities in Australia.

Regional and National Rounds:

Regional: 1 March 2023 National: 22 March 2023

Registration, information and contact:

www.ozclo.org.au

opens 16 January, closes 24 February

Registration fee: 40\$ per team

Students in years 11 and 12 will be eligible to enter the Senior competition, and students in years 7 to 10 will participate in the Junior competition. All registrations will be managed through their teacher

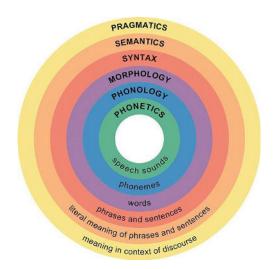
contact, students will not be contacted individually.

Do your students enjoy solving problems and cracking codes?

Get involved in OzCLO 2023!



www.ozclo.org.au



THE INTERNATIONAL PHONETIC ALPHABET (2005)

CONSONANTS (PULMONIC)

	LANAL CONONE				00866			BADICAL		LARTECA
	Bildeial	Labio	Dontal Alveolar Palato- alveolar	Retroflex	Paletal	Velar	Ovular	Pharyngod	Epi- glottel	Glottal
Nasal	m	m	n	η	n	ŋ	N	8 9		
Flosive	pЬ	qu do	t d	t d	C 1	kg	q G		7	7
Fricative	фβ	fv	θ ð s z ∫ 3	\$ Z	çj	хү	Хк	h c	2 H	h fi
Approximant		υ	1	- 1	j	щ				11 11
Trill	В		r				R		:10	
Top, Flop		v	ſ	r						
Lateral fricative			+ 5	1	X.	4.				
Lateral approximent			î	l	Á	T.				
Lateral flap			1							

Where symbols appear in pairs, the cree to the right represents a modally voiced consumer, except for marriance.

Shaded areas denote articulations judged to be impossible.

CONSONANTS (NON-PULMONIC)

(require posterior stops)	implosives	Ejectives		
⊙ Silabial fricated	6 Bilebial	* Examples:		
Laminal absolut fricated ("destal")	d Dental or	p" tilabial		
Apical (post) alweolar abrupt ("retroflex")	∫ Palatal	t' Dental or alveolar		
Laminal postalveolar abrust ("polatal")	of Velse	k* Velar		
Lateral alveolar fricated ("lateral")	d Uvular	s' Alveolar fricative		

CONSONANTS (CO-ARTICULATED)

- Votceless labialized velar approximant

 Voiced labialized velar approximant

 Voiced labialized polatal approximant

 Voiceless palatalized postal volar (alvoolo-palatal) fricative
- $\begin{tabular}{ll} Z & Veiced pulatalized postalveolar (alveolo-pulatal) fricative \\ \hline f) & Simultaneous x and f. (disputed) \end{tabular}$
- $\ensuremath{\overline{\mathrm{Kp}}}\xspace$ $\ensuremath{\mathrm{tS}}\xspace$ Affricates and double articulations may be joined by a tie har

VOWELS		
Front Hear	rest Control No	serback Back
Close i vy-	i \ u-	— u † u
Near close	1 . A 1 0	• 0
Close mid e	0	- x + o
Mid	1 3	
Open mid	E/00-3	6-A-D
Near open	æ	9
Opers	a • Œ-	-a b
Vowels at right & le	ft of bullets are round	led & surrounded.

SUPRASEGMEN	TONE						
Primary stress	Extra stress	Level tones			Contour tone examples		
, Secondary stres	Secondary stress [foona'ts[an]				ĕ	1	Rising
el Long	C" Half-long	é	1	Tiigh	ê	٧	Falling
e short	č Extra-short	ě	+	Mid	ĕ	1	High rising
. Syllable break Linking		è	4	Lose	è	d	Low rising
INTONATION			J	Bottoni	ē	1	High falling
Minor (foot) break			Tone terracing			1	Low falling
Major (intonation) break			1 Upstep		ĕ	4	Peaking
/ Global rise	Clobal fall	1	D	rwintep	ĕ	4	Dipping

DIACRITICS Discritics may be placed above a symbol with a descender, as fi. Other was symbols may appear as discritics to represent phonetic details in (fricative release). If (prestly voice), 'a (glottal count), '(appendix a class), or (diphthoratization).

SYLLABICITY & RELEASES		PHOLATICAL		PERMARY ARTICULATION		MICOMPARY NETICULATION				
n a	Syllabic	nd	Votcelassar Slack voice	t b	Dental	t*d*	Labialized	эx	More rounded	
e o	Non-syllabic	s d	Modal voice or Stiff voice	t d	Apical	ti di	Palatalized	o xw	Less rounded	
th ht	(Prelaspirated	n a	Breathy voice	t d	Laminal	tv dv	Velarized	ēž	Naulized	
d ⁿ	Nasal release	na	Cresky voice	uţ	Advanced	t° d°	Pharyngnalized	33	Rhoticity	
d ¹	Lateral release	0.8	Strident	i t	Retracted	1 z	Velarized or pharyogealized	e o	Advanced toogue roof	
ť	No audible releise	nd	Linguolabial	äj	Centralized	เน็น	Mid- centralized	e o	Stetracted toogue roof	
eβ	Lowered (Bis	a bilib	ial approximant)	e a	Raised (2 is a w	riced alveol	ar non-sibilant fe	icative, I	a fricative trill)	

Try out this sample puzzle!

Kannada is one of the major languages of India, spoken by more than 25 million people primarily in the south of the country, near Bangalore. It is a very old language and it uses its own writing system. In this puzzle, the Kannada letters are transcribed using the Roman alphabet. The letters L, D, T, and N represent a special pronunciation of those sounds with the tongue curled upward.

Hint: There is no translation for "the" in Kannada.

mane 'house' manege 'to (the) house' peeTe 'market' peeTege 'to (the) market' tande 'dad' tandege 'to dad' roTTige 'to (the) flat bread' roTTi 'flat bread' chaTNige 'to (the) chutney' chaTNi 'chutney' hakki 'bird' hakkige 'to (the) bird' taayi 'mother' taayiae 'to mother' jooLakke 'to (the) corn' iooLa 'corn' pustaka 'book' pustakakke 'to (the) book' simha 'lion' simhakke 'to (the) lion' kalkatta 'Calcutta' kalkattakke 'to Calcutta' manushya 'man' manushyanige 'to (the) man' ammanige 'to mum' amma 'mum' huDuganige 'to (the) boy' huDuga 'boy' sneehita 'friend' sneehitanige 'to (the) friend'

- (a) Which parts of the words in the second column correspond to the English word 'to'?
- (b) Now, here are some new words in Kannada:

hamsa 'swan'

akka 'older sister'

tangi 'younger sister'

How would you so	ay:
'to (the) swan'	

'to (the) older sister' _____

'to (the) younger sister'

Problem by Mirjam Fried. Copyright 1999-2007. Department of Linguistics,

University of Oregon



If you enjoyed this puzzle, talk to a teacher about getting involved in **OzCLO** or check out:

www.ozclo.org.au