

Д<u>О</u>БРОЕ <u>У</u>ТРО = Good morning HET = No ДА = Yes Д<u>О</u>БРЫЙ ДЕНЬ = Good afternoon

 $\Pi OK\underline{A} = Bye$

Reading Russian in 10 minutes Чтение по-русски за 10 минут

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- Russian is an Indo-European language (distant, but relative of English)
 - If you can read, you can decipher a lot of words
 - Borrowed words, words of common origin
- Russian uses Cyrillic script
 - Stems from the script developed in 9 AD by Saints Cyril and Methodius (who were both Greek monks, hence a Greek influence)
 - Really took off in the territory which is present day Bulgaria
 - About 50 languages use Cyrillic alphabet
 - Not just Slavic, but other language groups too (e.g. Turkic)
 - A few major languages (i.e. with state status)
 - There are differences in reading rules among all these languages + additional letters and the lack of other ones
- Russian Cyrillic alphabet (a better term)
 - 33 letters, ~ phonetic (English & French are not)
 - I'll go among them one by one and not in an alphabetic order (basics first, then consolidate on nuances)



The same / almost the same

- A Called "Ah", reads like "A" in PAF
- Called "O", reads like "O" in FOR (tends towards "A" when unstressed)
- K Called "Ka", reads like "K" in ASKAP
- M Called "eM", reads like "M" in MULTIBEAM
- T Called "Te", reads like "T" in **TELESCOPE**

Almost the same, as English "c" also sometimes reads as "s":

C Called "eS" and always reads like "S" in **SYSTEM** (btw, single-letter word "C" means "with")

We can already make some words:

<u>ATOM TOKAMA</u>K Or even my (short) name: MAKC Stress is a difficult subject, I'll help you throughout this talk



Greek influence – may cause confusion

 Φ Called "eF", reads like "F" in PAF – remember Greek Phi

- \prod Called "Peh", reads like "P" in **PAF** remember Greek Pi
- P Called "eR", reads like "R" in **R**adio remember Greek Rho
- Γ Called "Ghe", reads like "G" in Galaxy remember Greek Gamma
- \prod Called "Deh", reads like "D" in **D**ata remember Greek Delta
- \prod Called "eL", reads like "L" in teLescope remember Greek Lambda

A bit less straightforward, but also of Greek origin:

- **B** Called "Veh", reads like "V" in Volume remember Greek Beta (btw, single-letter word "B" means "in" or "at") which is actually Veta
- X Called "ha", often transliterated as "kh" or "h", reads like "ch" in German "ich" or "x" in a Mexican way to say México (Greek Chi).



Familiar sounds, but different symbols

- H Called "eN", reads like "N" in Nebula N -> H: remember N_2H^+
- **b** Called "Beh", reads like "B" in **B**eam B -> **b**: Beam is Broken
- 3 Called "Zeh", reads like "Z" in Zenith Zenith is 3 by 30 deg
- Y Called "OOh", reads like "OO" in the Moon often transliterated as "u" or "ou".

СУП = soup (both, meaning + pronunciation)

IO Called "you", reads like English word "you" – often transliterated as "u", "yu" or "ju".

CO<u>IO</u>3 = Soyuz (rocket), btw it means "Union"

Stress is a difficult subject, as before I'll help you



Some weird symbols

- Called "Shah", reads like "SH" in redSHift remember Bracewell's Shah function (bed of nails) = Dirac's comb
- **U** Called "Cheh", reads like "CH" in eaCH, CHange, muCH, etc MATH = (sports) match (and reads ~ the same)
- Difficult! Called "Shchah", often transliterated as "shch" or "sch", but it is NOT equivalent to III in Russian. It is a "soft" (palatized) version of III with no matching sound in English.

A good approximation is "X" sound in the word seXual without the leading "k" sound

A few more weird symbols

Called "TSeh", reads like "ts" in a quick succession

- often appears in place of the Latin letter "C" in Latin words
- and this is how Latin letter "C" is pronounced in math and chemistry (e.g. CO -> Ц O -> tseh oh; note – many elements are referred to by their Latin names)



Called "Zheh", often transliterated as "zh", reads like "S" in meaSure, pleaSure



Solution Called "Ya", often transliterated as "ya" or "ia" or "ja", reads like "Ya" in Yandasoft (rebranded ASKAPsoft). In fact, the Wajarri word for picture can be written in Cyrillic as:

Btw, single-letter word "Я" means "I [am]"

I'm marking the stress as before



Back to more familiar sounds

- Called "eeh", reads like "ee" in feed, usually transliterated as "i" and it can cause confusion for readers in an open syllable. (btw, the single-letter word """ means "AND")
- May be difficult. Pronounced (and called) close to "i" in ill, but ideally should be further from the "И" sound described above.
 Try to bend the tip of your tongue upwards. Often transliterated as "y" or "i" and can also cause confusion.

MышкаvsМишкаMeans "little mouse"Means "little bear"
or a very informal address to a guy
With the name of МИХАИЛ

Btw, changing the word's ending to """ or """ is the most common way to construct the plural form of the word



Another familiar sound

Й

Called "eeh short", considered to be a consonant and a separate letter rather than an accented version of """. Often transcribed as "y" or "i" which may be confusing.

Reads as "Y" in maY.

In fact, the month of May in Russian is: $MA\ddot{H}$



Can you decipher the town's name?

НАРРАБР<u>А</u>Й

Helping you with the stress is hardly necessary in this word



Almost at the finish line

- E Called "yeh", reads like the whole English word "yeah". It is transliterated as "e" which can be confusing given the reading rules in English (e.g. "ee" or "ea" combinations).
- Called "eh", reads like "e" in electron. Also transliterated as "e". It was introduced to make "E" without a leading "Й" sound.

ЭTO = This (neutral gender/if you don't know what it is)

- Called "yoh", reads like "yo" in YOur. Usually transliterated as "e" or "yo". Often replaced by "E" in Russian, which can add to confusion. Always gets stressed. Sometimes converts to "E" when the word changes and the stress can move away too.
 - **Ë** K = hedgehog
(reads ~ yozh)**E** K I = hedgehogs
(reads ~ yeh-zheeh)more like I
at the end
(nuance)



The majority of consonants can be both "hard" and "soft" (palatized). We touched this a bit while discussing \coprod and \amalg .

May be difficult. This is because all consonants in English are "hard". Think about consonant sounds in Spanish – these are "soft" versions.

Remember vowels with the leading " \breve{H} " sound:

E ~ ЙЭ (yeh) Ë ~ ЙО (yoh) Ю ~ ЙУ (you) Я ~ ЙА (ya)

After a consonant, they loose their leading "Ă" sound and make the consonant "soft".

Tip: just drop " \check{n} ", if you struggle with the soft/hard aspect – it will be understood.

EJIEHA (common name) may turn into Yelena or Elena

nuance++: "" does the same (used to be """, hence "eeh short")

📗 Silent: Ь (soft sign) and Ъ (hard sign)

Sometimes it is necessary to break the rule we just talked about

- b Makes the preceding consonant "soft". The next vowel reads like at the start of the word (i.e. as the letter is called) nuance: "И" gets (regains) a leading "Й" sound nuance++: sometimes no effect (e.g. after "Ж", "Ш", "Щ")
- Ъ Makes the preceding consonant "hard". The next vowel reads like at the start of the word (i.e. as the letter is called)
- Both "b" and "b" are often transliterated as ' (apostrophe) or omitted Tip: treat both as a gap + add " \breve{M} " before " \breve{M} " - it will be ~ ok CEJI = he (has) sat CEJIb = mudflow CBIHBU = pigs HDO $\breve{M}OPK$ = New York





ПАРКС





Image credit: CSIRO, wikipedia



ТИДБИНБ<u>И</u>ЛЛА



НЬЮ Н<u>О</u>РСИЯ



More practice





Image credit: Wikipedia



КАЛ<u>Я</u>ЗИН (РТ-64)

Image credit: Сергей Дукачёв





PT-22PT = P<u>A</u>ДИОТЕЛЕСК<u>О</u>П



ДКР-1000



БСА

Image credit: PRAO



Stress is a difficult subject

The language standard encourages people to put the accent mark, especially if there is an ambiguity. But it is rarely done.

The only hard rule – " \ddot{E} " is **always stressed**. Unfortunately, it can be written as "E" (it can be confusing in some family names) \frown

For example, you may recall Chebyshev polynomials in math: He was actually **<u>YEB**BIIII</u>**<u><u>E</u></u>**, although $T_n(\cos\theta) = \cos(n\theta)$ most Russians would say **YE5** JIIIEB Other Russian names with "Ë" you may be familiar with: KOPOJIEB - the father of the Soviet space program $\Gamma OP \overline{D} A \underline{H} \underline{\ddot{E}} B$ – the father of $\Pi EPECTPO \overline{H} KA$ XPYIIIEB - the guy who promised to bury America in 60s



Perhaps, it's the main difficulty for understanding (e.g. for names) Usually mis-pronunciation can be figured out, but it can also be offensive (rarely) or funny (more often)

English speakers tend to struggle more with female family names (many, but not all, Russian family names change with gender) Tip: try to change it into a male name. Stress should stay fixed.

*[OEË]BA -> *[OEË]B *ИНА -> *ИН *АЯ -> *[ИЫО]Й

Tip: In longish words put a stress somewhere else, not where your first reaction tells you (for English speakers) or read by syllables.



Image credit: wikipedia

МАР<u>И</u>Я ШАР<u>А</u>ПОВА



Unstressed vowels can be pronounced differently (reduction) although it is always a similar sound enough variation with regional accents

The most pronounced: unstressed "O" sounds closer to "A"

Btw, you can guess abbreviated compound words:

POCKOCMOC = Russia's space agency POCABUAUUS = Russia's aviation regulator Heaps of Latin words *tion -> *ЦИЯ

Stress can also change the meaning (homographic words)!

3AMOK = Lock

Homographic words can get you in trouble Quite dangerous (true for many derivatives too): $\Pi \underline{H} C A T B =$ to write $\Pi \underline{H} C A T B =$ to pee Less likely to catch you (easy to break the ambiguity): ПЕРЕДОХНУТЬ = to have a break/rest ПЕРЕДОХНУТЬ = to die out (like animals, very derogatory) Ambiguity exists only in some forms and only in plural: **БЕЛКИ** = squirrels **<u>BEJIKI**</u> = proteins Ambiguity exists only in some forms:

 $\mathbf{A} \Pi \Pi \mathbf{A} \mathbf{Y} = I' II \text{ pay}$ $\mathbf{A} \Pi \Pi \mathbf{A} \mathbf{Y} = I' \text{m crying / I cry}$





Conjugation, declination/declension

Verbs have conjugations (may look different)

English retained it for "to be" (I am, you are, he/she is)

Russian has it for all verbs!

+ different cases for formal/informal 2nd person pronouns
+ gender form in the past tense, singular number (disappears in plural or for a formal address)

Nouns also have cases depending on their role in the sentence! English pronouns retained a bit of it: (I, me, my, mine)

Russian has at least six cases (degeneracy vs. number of exceptions)

ACTPOHOMИЯ = Astronomy

ИНСТИТУТ АСТРОН<u>О</u>МИИ = Institute of Astronomy Я ИНТЕРЕСУЮСЬ АСТРОН<u>О</u>МИЕЙ = I'm interested in astronomy Я ПРЕПОДА<u>Ю</u> АСТРОН<u>О</u>МИЮ = I'm teaching astronomy



Intro into Russian names

First name / last name concept may be confusing

Patronymic as the middle name – not random (it essentially says "a son of" or "a daughter of" + father's name), has a gender form

МАКС<u>И</u>М АЛЕКС<u>А</u>НДРОВИЧ ВОРОНК<u>О</u>В

Some family names look like patronymic (but different stress)!

Women —		Men	
<u>A</u> HHA	<u>А</u> НЯ	АЛЕКС <u>А</u> НДР	P C <u>A</u> IIIA
<u>О</u> ЛЬГА	<u>О</u> ЛЯ	СЕРГ <u>Е</u> Й	СЕР <u>Ё</u> ЖА
ТАТЬ <u>Я</u> НА	Т <u>А</u> НЯ	MAKC <u>M</u> M	MAKC
ЕКАТЕР <u>И</u> НА	К <u>А</u> ТЯ	АНДР <u>Е</u> Й	АНДР <u>Ю</u> ША
НАТ <u>А</u> ЛЬЯ	НАТ <u>А</u> ША	ОЛЕГ	ОЛЕГ
АНАСТАС <u>И</u> Я	Н <u>А</u> СТЯ	<u>Ю</u> РИЙ	<u>HO</u> PA
МАР <u>И</u> Я	M <u>A</u> IIIA	APT <u>Ë</u> M	T <u>Ë</u> MA



That's it. Now it is your turn

- 1. АСТРОФ<u>И</u>ЗИКА
- 2. АВСТР<u>А</u>ЛИЯ
- 3. КОСМОЛ<u>О</u>ГИЯ
- 4. ПУЛЬС<u>А</u>Р
- 5. ГАЛ<u>А</u>КТИКА
- 6. КОРОНАВ<u>И</u>РУС
- 7. ОБЪ<u>Е</u>КТ
- 8. Ф<u>У</u>НКЦИЯ
- 9. ЛУН<u>А</u>
- 10. PAK<u>E</u>TA
- 11. PECTOPAH
- 12. ЭЛЕКТРОНИКА

One of the most difficult words to read for English speakers:

13. ЗАЩИЩ<u>А</u>ЮЩИХСЯ (of those who defend themselves)



Thank you

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