

Warming up for September



Session 2

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22 February 2021



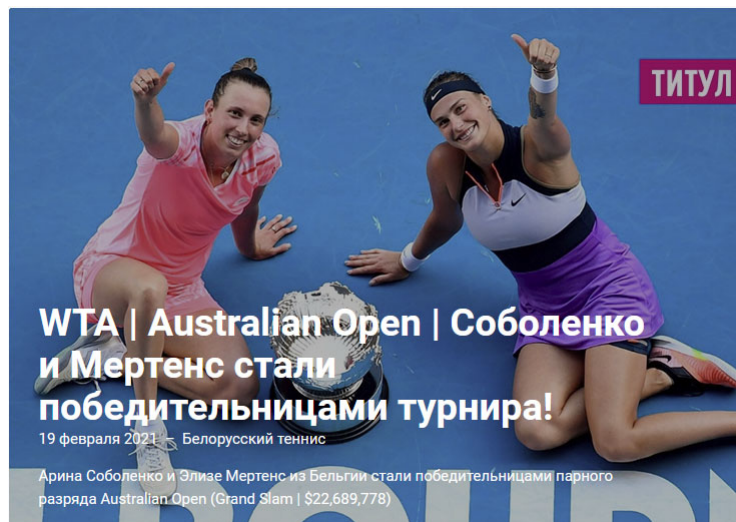
"When the doctor told you to warm up before exercising, I don't think he meant with hot chocolate and hot cross buns."

1

Belgium

+

Belarus



19 февраля 2021 | Белорусский теннис

Арина Соболенько и Элизе Мертенс из Бельгии стали победительницами парного разряда Australian Open (Grand Slam | \$22,689,778)

2

Belgium = Ukraine

1



1

*«Брендон Мехеле розморозив морозилку: «Брюгге» має вигідну позиці. для матчу-відповіді після 1:1 із київським «Динамо», — говорить заголовок видання **Nieuwsblad.be**, натякаючи на українські морози.*

Intro

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3

What's on the "menu" for today?

- speaking: extending your socialising skills
- Listening and speaking: a technical topic
- Some grammatical issues

Speaking

4



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Hello! How are you?

Fine, thanks. How are you?

Speaking

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How are you doing?

I'm doing well, thanks.

Speaking

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How are things going? (non-specific, general)

How is it going? (US)

Oh, (it's going) great.

Could be better.

Speaking

7



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How is everything?

Everything 's okay, thanks.

Not so good, actually.

Speaking

8



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How have you been?

I've been great, thanks. (or: fine/alright)

I've not been so good, lately.

Speaking

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What's new (with you)? (update)

Nothing much.

Oh, just a couple of things.

A great deal, actually.

Speaking

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How's life (treating you)?

I'm fine, thank you.

Still the same old stuff, I'm afraid.

Speaking

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How are you feeling?

I'm alright. I'm feeling great.

I'm not feeling so good, actually. (= I'm not so happy)

≠ I'm not feeling well. (= I'm not so healthy, feeling sick...)

Speaking

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What are you up to? (What kind of 'mischief' are you up to?)

What 've you been up to? (What kind of 'mischievous' things?)

Oh, nothing much. What about you?

Oh, the usual stuff. And how are you?

Speaking

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How are things coming along? (formal: implies some sort of progress)

Quite well, actually.

Not so well, I'm afraid.

Speaking

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How are you doing?	I'm doing well, thanks.
How are things going?	Oh, (it's going) great. (+)
How is it going? (US)	Could be better. (-)
How is everything?	Everything's okay. Thanks.(+) Not so good, actually. (-)
How have you been?	I've been great thanks. (+) I've not been so good, actually. (-)
What's new (with you)?	Nothing much. / Not much at all. Oh, just a couple of things. A great deal, actually.
How's life (treating you)?	I'm fine, thank you (or: thanks) Not too well I'm afraid.

Speaking

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How are you feeling?	I'm feeling great. (+) I'm not feeling so good, actually. (-)
What are you up to?	Oh, nothing much. What about you?
What have you been up to?	Oh, the usual stuff.
Somewhat more formal:	
How are things coming along?	Quite well, actually. (+) Fairly well, thank you. (+) Not so well, I'm afraid. (-)

Speaking

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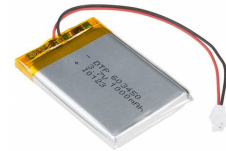


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LISTENING AND UNDERSTANDING

Introduction



Listening

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LISTENING AND UNDERSTANDING

Introduction

Listen without text:

What are some companies trying to do?

Why are they trying to do this?

When should it be done?



Listening

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All of us need a break every now and again and some time to **recharge our batteries**. But if you're the owner of an electric car, that might take a bit longer than you'd like, not to mention the fact that you'll probably have to **recharge** them again before too long, which is why lots of companies are trying to **improve battery technology** to make electric vehicles more **appealing** to customers, something that needs to happen in the next 10 years if the government is going to meet its target of **ending new sales** of petrol and diesel cars by 2030. I spoke to Peter Bruce, Professor of Materials Science from Oxford University and Chief Scientist at the Faraday Institution. He's been working on **rechargeable** lithium ion energy **storage** since the 1990s.



Listening

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What is the strength of a lithium ion battery? What is its advantage?

The lithium ion battery has that advantage that it can **store** more energy in the **same size and weight** compared with other batteries and that's what's important in **portable** electronics and of course it is exactly the same reason why it's the **technology of choice** for the electrification of transport, certainly passenger vehicles and light goods vehicles.



Listening

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The lithium ion battery is good, but obviously not good enough. Why?

But the lithium ion batteries that we have today are in many cases still not as good as we would like them to be, and we need them to be, to be **competitive with** the sort of performance we're all used to from the internal combustion engine. The **deficiencies** if you like of the lithium battery currently are ... we would like electric vehicles to give us **a longer driving range** before you have to recharge them. So we would like batteries to give us maybe 400, 500 miles between recharges. We would also like to **recharge them faster**, maybe in 10 minutes instead of half an hour or longer. And of course, also critically to be **cheaper**.



Listening

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What's the moderator's question?



How 're we gonna go about **improving the technology** that we've already got to sort of meet those **challenges**?

Listening

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How could batteries be made to last longer?

One of the ways of getting batteries that will last for longer between recharging is to replace the **current materials** with new materials. So, people are trying to replace the graphite with silicon. They are trying to replace the **current generation** of [of] lithium transition metal oxide materials with **new materials** that can store more charge. So what that means is, for example if I can find new negative and positive electrodes that **can store** more lithium per unit mass and volume, then I'm going to be able to store more energy in my cell and **my electric vehicle** will be able to drive farther before **having to be recharged**.



Okay

Listening

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What is a solid state battery according to you?

There's a huge interest all around the world in **developing** and **perfecting** the all solid state battery. It's seen as the next big thing in battery technology and what I mean by solid state battery, well, in a conventional lithium ion battery, the one that we all have in our, in our eh, mobile phones and those of us who have EVs **will have it in our cars**. The electrolyte, the medium between the stuff that's between the two electrodes is a liquid. You replace that liquid with a solid that has, does a similar function. Now you have an all solid state battery. It sounds simple. It turns out to **be quite a challenge**.



Listening

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(...) but there are other advantages. Safety is obviously one, because you don't have flammable liquids as you **do** in a conventional lithium ion battery.



We have flammable liquids in conventional batteries, but we **don't** in solid state batteries

In solid state batteries there are no flammable liquids, but we **do have** them in conventional batteries.

↓
to emphasise the verb 'have'

But lithium metal stores a lot of charge **per unit weight**, and that's what is attractive about being able to use it as the negative electrode and solid state batteries could **potentially** allow us to do that.



What could a lithium-air battery be?

What, what's a lithium-air battery? How does that work?

Yeah, so so. The lithium-air battery has that advantage that it uses lithium metal as the negative electrode. So, again you get that step change in **energy storage** from that and the other electrode, you **get rid of** that lithium metal oxide that you have in a lithium ion battery and you just have **porous carbon** and you use oxygen from the air to react. So it's sort of, it **breathes**.



Listening

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*So, again you get that **step change** in energy storage from that ...*

A **step change** is a sudden or major change in the way that something happens or the way that someone behaves.

Here: a significant change, especially an improvement

*and you just have **porous** carbon*

/'pɔːrəs /

Listening

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What could be the advantage of the lithium-air battery?

So when you, when you discharge the battery, when you're using it to **power a device**, oxygen is basically sucked in from the atmosphere and it reacts in this, in the pores of the **carbon electrode**, this positive electrode made of carbon, and produces a product which then decomposes again when you charge. So, it's different. It's, it's, you're undergoing a **chemical reaction** really in the positive electrode, an advantage of course as you're using **oxygen from the air**, which so far hasn't been taxed, it's still free and you're using lithium metal, which we know is that, eh it's a sort of Holy Grail of negative electrodes.



Listening

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*...oxygen from the air, which so far hasn't been **taxed**...*

If something taxes your strength, your patience, or your resources, it uses nearly all of them, so that you have great difficulty in carrying out what you are trying to do.

Here: no **special or heavy use** has been made of it

*...it's a sort of **Holy Grail** of negative electrodes.*

(in medieval legend) the bowl used by Jesus at the Last Supper. It was allegedly brought to Britain by Joseph of Arimathea, where it became the quest of many knights
Here: any desired ambition or goal; so, the ultimate electrode everybody wants to get.

Listening

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Now, like most things in life, you know, the bigger the **advantage**, the bigger the **challenge** and that's certainly true. But the lithium-air battery is probably the best battery that one could get in terms of energy storage per unit mass and would be a **game changer** in certain applications.



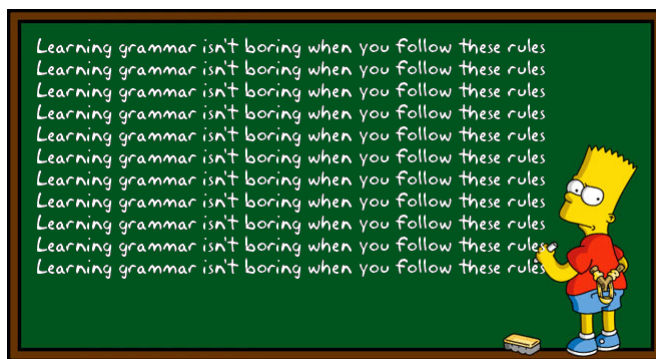
Listening

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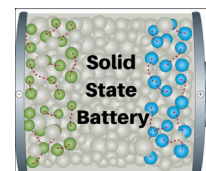


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Some grammatical issues in this “battery conversation”



Listening

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All of us **need** / ~~have needed~~ a break every now and again and some time to recharge our batteries. But if you **are** / ~~will be~~ the owner of an electric car, that might take a bit longer than you ~~had liked~~ / **would like**, not to mention the fact that **you'll probably have** / ~~you probably have~~ to recharge them again before too long, which is why lots of companies ~~try~~ / **are trying** to improve battery technology to make electric vehicles more ~~appealed~~ / **appealing** to customers, something that needs to happen in the next 10 years if the government ~~meets~~ / **is going to meet** its target of ending new sales of petrol and diesel cars by 2030. I spoke to Peter Bruce, Professor of Materials Science from Oxford University and Chief Scientist at the Faraday Institution. He **'s been working** / ~~'s worked~~ on rechargeable lithium ion energy storage since the 1990s.

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But the lithium ion batteries that we have today are (...) not as good as we **would like** / ~~had liked them~~ to be, and we need them to be, to be competitive with the (...) performance (...) from the internal combustion engine. (...) We **would like** / ~~had liked~~ electric vehicles to give us a longer driving range before you ~~had~~ / **have** to recharge them. So we **would like** / ~~had liked~~ batteries to give us maybe 400, 500 miles between recharges. We **would also like** / ~~had also liked~~ to recharge them faster (...) and of course, also critically ~~being~~ / **to be** cheaper.

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One of the ways of getting batteries that will last for longer between recharging is to replace the current materials with new materials. So, people ~~try~~ / **are trying** to replace the graphite with silicon. They ~~try~~ / **are trying** to replace the current generation of lithium transition metal oxide materials with new materials that can store more charge. So (...) **if** I can find new negative and positive electrodes that can store more lithium per unit mass and volume, **then** **I'm going to be** / **I will be** able to store more energy in my cell and my electric vehicle **is going to be** / **will be** able to drive farther before having to be recharged.

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But lithium metal stores a lot of charge per unit weight, and that's what is attractive about ~~been~~ / **being** / ~~to be~~ able to use it as the negative electrode (...).

That is attractive **about** this metal.

(**Preposition** + **noun phrase**)



verb phrase

That is attractive **about** **being a teacher.**
living in Europe.
having a computer.

(**Preposition** + **verb"-ing"** + **complements**)

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Other examples:

[*to have*] ...and my electric vehicle will be able to drive farther **before** to be recharged.

[*to end*] ...the government is going to meet its target **of** new sales of petrol and diesel cars by 2030

[*to develop*] There's a huge interest all around the world **in** and

[*to perfect*] the all solid state battery.

[*to be*] It sounds simple. It turns out **to** quite a challenge. here: 'to' ≠ preposition

[*to see*] I'm really looking forward **to** you again in the next session.

here: 'to' = preposition

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I'm looking forward **to** the next holiday.
the end of the pandemic.
the barbeque with friends.

to (=preposition) + noun phrase



I'm looking forward **to** **meeting** her.
going on holiday.
getting my new lense.

to (=preposition) + verb phrase

→ **verb -ing**

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to have	The lithium-air battery has that advantage that it uses lithium
to get	metal as the negative electrode. You get rid of that lithium metal
to have	oxide that you have in a lithium ion battery and
to have	you just have porous carbon and
to use	you use oxygen from the air to react.
to discharge	When you discharge the battery,
to suck / basically	oxygen is basically sucked in from the atmosphere and
to react	it reacts in the pores of the carbon electrode
to produce	and produces a product,
to decompose	which decomposes again
to charge	when you charge .

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it has ... it uses ... you get.... you charge

Simple present: this is the normal course of events (**general**)

the focus is on the events as they normally occur

when(ever) a....., then b.... and c

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BUT:

..., when **you're using it** to power a device,,

you're undergoing a chemical reaction really in the positive electrode, an

advantage of course as **you're using** oxygen from the air,

which so far hasn't been taxed, it's still free

and **you're using** lithium metal

Present Continuous: the occasional emphasis on **a gradual process**, a trend...

"when you're using it to power ..." read: *"while you're using it to power ..."*

The distinction simple ~ continuous also applies to the other tenses:

Perfect: He **has written** two articles on this topic. clear result

He **has been working** on energy storage since the 1990s. process

Past: Afterwards he **suspected** these factors might be of some influence.

She continued her work, while she **was being** treated for cancer.

He **had never thought** these would be the results.

Several companies **had been trying** to find a solution, when he came up with ...

Future I hope, we'll **understand** the phenomenon, once we have the results.

In a first phase, you **will be researching** and **writing** reports....

Which form is the correct one?

1. One category of debates **deals** / is dealing with the question of how this can be achieved.
2. During the third phase of the study, participants **completed** / were completing a follow-up questionnaire.
3. Evidence mounts / **is mounting** that this problem also affects health professionals.
4. In Section 3, we give 2 examples of estimators which **belong** / are belonging to this category.
5. The mechanism **did not allow** / was not allowing the visual system to differentiate between both stimuli.
6. Antibiotic resistance emerges / **is emerging** as a major health problem.

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Which form is the correct one?

7. We have investigated / **have been investigating** ways to address this problem by developing a software engineering paradigm (...).
8. Mechanisms of interaction between antitumor compounds and biological molecules have been studied / **have been being studied** for decades.
9. Valve-in-valve apps: why and how they **were developed** / were being developed (...)
10. Now that new alloys and hard composites were developed / **were being developed**, research workers began to use loads 1000 times smaller.
11. What is clear is that for many years in the future universities will develop and apply / **will be developing and applying** different approaches to blending technology with face-to-face learning. [in a 2013 article!]

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sources

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