

When males are not needed

This is not a word-for-word transcript

Neil

Hello. This is 1 Minute English from BBC Learning English. I'm Neil.

Rob

And I'm Rob. Do you think there are big differences between men and women, Neil? – Apart from the old stereotypes we sometimes hear, like - that men can't express emotions...

Neil

I suppose biologically there are differences, Rob. I mean, men and women's bodies are different.

Rob

Right, and it takes both - a man and a woman - to make a baby.

Neil

Well, that's true - in humans anyway. But in this programme we'll be hearing about creatures in the wild where the classic 'boy meets girl' love story doesn't apply.

Rob

Yes, we'll be meeting some female animals who don't need a male to make babies.

Neil

These creatures reproduce by parthenogenesis - also called 'virgin birth', this is the process where the female can reproduce without a mate – the term used for an animal's sexual partner.

Rob

All animal species survive by making babies – reproducing to make copies of themselves. But amazingly, the female of some species can do it all by herself!

Neil

But before that, it's time for my quiz question. In Britain's Chester Zoo in 2017,

'Flora' laid eleven eggs that developed into healthy babies. Her zookeepers were mystified because Flora had only been kept with other females and had never been near a male. But what type of animal was Flora? Was she:

- a) a python?,
- b) a zebra shark?, or
- c) a Komodo dragon?

Rob

Hmm, pythons are pretty unusual creatures so I'll say Flora was a python.

Neil

OK, Rob, we'll find out later if you're right. Actually, it's not only reptiles who behave this way – the females of many animal species are able to reproduce without sex.

Rob

By doing this they gain several advantages: they can rapidly spread, colonise and control large areas and they don't waste time and energy looking for a mate.

Neil

But if a world without sex is so much better, why bother with males at all?

Rob

Good question, Neil, and one which BBC World Service programme, Discovery, asked evolutionary biologist, Chris Wilson:

Chris Wilson

Well absolutely! And there are other advantages I mean, if you're an all-female population you don't have to waste time searching and competing for mates, there are no more sexually-transmitted diseases and so it seems like the easiest decision – and yet, less than one percent of all animal species are completely celibate – and that's a huge fundamental puzzle in evolutionary biology that we're still not entirely sure we understand – it's called sometimes the paradox of sex.

Neil

Despite the advantages of going without sex, in reality fewer than one percent of all animals are celibate – live without having sex.

Rob

This begs the question, why is sex so common when it seems so inefficient? Chris calls this the paradox of sex. A paradox is a situation which seems contradictory because it contains two opposite facts, for example, the existence of males if we can reproduce without them.

Neil

As a male myself, I have to say I'm feeling a little underappreciated right now,

Rob!

Rob

Well don't worry, Neil, because it turns out there might be a use for males after all! It seems the sex paradox has been solved by one of nature's most ingenious insects - aphids.

Neil

Here's ecologist, Amber Wright, explaining how to the BBC World Service's Discovery programme.

Rob

See if you can hear the strategy American aphids use to reproduce.

Amber Wright

The aphids we have in the US – when spring comes around, the eggs hatch and they'll be all female for several generations, and then at the end of the summer they will hatch out males and females and mate, and then create eggs that wait for next year – kind of the best of both worlds.

Presenter Lucy Cooke

Hedging their bets basically – using cloning to rapidly colonise and then using sex to mix up the genes.

Neil

In the spring, female aphids lay eggs which hatch – break open allowing the

young to come out. The young aphids that hatch are all female.

Rob

But later, at the end of summer, both female and male aphids hatch out and start to reproduce by mating. So the aphids have the best of best of both worlds – they enjoy the advantages of very different things at the same time.

Neil

Or to put it another way, the aphids hedge their bets – they follow two courses of action instead of choosing between them. By cloning themselves with ‘virgin births’ and reproducing sexually, aphids maximise their chances of survival.

Rob

Gardeners around the world will be upset to hear that – those young aphids just love eating tomato plants!

Neil

But on the plus side, it seems being male can be useful after all.

Rob

But not if you’re Flora, the female you asked about in your quiz question. So, what type of animal was she?

Neil

Right – I asked whether the-virgin-Flora was a) a python, b) a shark or c) a Komodo dragon.

Rob

I guessed a) a python

Neil

Well, Rob, you’re right that some female pythons can reproduce by themselves – and sharks too – but the correct answer is that Flora was, c) a Komodo dragon.

OK, let’s recap the vocabulary, starting with mate - an animal’s sexual partner; something you don’t have if you’re celibate – living without sex.

Rob

Animal eggs hatch – or break open to let the young out.

Neil

And a paradox is a situation which seems contradictory because it contains two opposite facts.

Rob

Species which reproduce parthenogenetically and sexually have the best of both worlds - enjoy the advantages of very different things at the same time.

Neil

And if you hedge your bets, you follow two courses of action instead of choosing between them so you don't miss out.

Rob

Well, that's all there's time for. Bye for now!

Neil

Goodbye!

VOCABULARY

mate

an animal's sexual partner

celibate

not having sex

paradox

situation which seems contradictory or impossible because it contains two opposite facts

hatch

when an egg breaks open in order to allow the young animal to come out

the best of both worlds

situation where you can enjoy the advantages of very different things at the same time

hedge your bets

follow two courses of action instead of making a decision between them in order to avoid the possibility of losing out