

LEVEL C1

Should We Bring Extinct Animals Back to Life?

Dire Wolves, Mammoths and a Very Expensive Hairdresser

In April 2025 Colossal Biosciences announced that three white pups were dire wolves, back from the Ice Age. Sean argues that de-extinction is worth the money and the hype, while Olivia sees gene-edited grey wolves, a mammoth that keeps being postponed and funds that could save animals still alive today.

Key words

- on the back foot
- give the game away
- concede
- shameless
- clumsy
- surrogate
- trample
- thaw
- moral hazard
- bounty
- cheap shot
- soft spot
- small print
- startled
- settle for

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How to use it

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Listen to the episode on YouTube.

2

Read the transcript and learn the key words.

3

Do the activities, then check the answer key.

Includes the full transcript, key words, activities and answers

Listen to the episode on the Aprendos YouTube channel

Key words

These words appear in the episode.

Key words	Meaning	Example
on the back foot <i>phrase</i>	In a weak position, where you have to defend yourself instead of taking control.	<i>The interviewer's first question about the missing money put the minister on the back foot for the rest of the programme.</i>
give the game away <i>idiom</i>	To reveal something secret, often by accident.	<i>We had planned a surprise party, but my brother gave the game away by asking Dad what he wanted to drink on Saturday.</i>
concede <i>verb</i>	To admit, often unwillingly, that something is true or that the other person is right.	<i>After an hour of arguing, my uncle finally conceded that the map was upside down.</i>
shameless <i>adjective</i>	Not embarrassed about doing something that other people see as wrong or cheeky.	<i>It was a shameless attempt to get a free dessert: he told the waiter it was his birthday for the third time that year.</i>
clumsy <i>adjective</i>	Done without much skill or care, so that it often goes wrong; also used for people who drop or knock things over.	<i>The first version of the app was so clumsy that half the buttons did nothing at all.</i>
surrogate <i>noun</i>	A female who carries and gives birth to a baby for someone else.	<i>The couple spent years looking for a surrogate before their daughter was finally born.</i>
trample <i>verb</i>	To step heavily on something, pressing it down or damaging it.	<i>By the end of the festival, the crowd had trampled the grass into thick brown mud.</i>
thaw <i>verb</i>	To become soft or liquid again after being frozen, because the temperature rises.	<i>Take the chicken out of the freezer in the morning so it has time to thaw before dinner.</i>
moral hazard <i>noun</i>	A situation where people take more risks because they believe someone else will deal with the consequences.	<i>Some economists say that rescuing banks creates a moral hazard, because bankers learn that they will always be saved.</i>
bounty <i>noun</i>	Money paid as a reward for catching or killing a person or an animal.	<i>In the old western films, the sheriff always puts a bounty on the outlaw's head.</i>
cheap shot <i>noun</i>	An unfair remark that attacks someone's weak point.	<i>Mentioning his divorce during a debate about school funding was a cheap shot.</i>
soft spot <i>noun</i>	If you have a soft spot for someone or something, you like them a lot, often without a good reason.	<i>I know it's a terrible film, but I've always had a soft spot for it.</i>

Key words	Meaning	Example
small print <i>noun</i>	The details of an agreement, often written in tiny letters, that may contain important conditions.	<i>The flight looked cheap until I read the small print and found a charge for every bag.</i>
startled <i>adjective</i>	Suddenly surprised or slightly frightened by something unexpected.	<i>The startled cyclist braked hard when a deer jumped out of the bushes.</i>
settle for <i>phrasal verb</i>	To accept something that is less than you wanted, because you cannot get more.	<i>The café had run out of croissants, so I settled for a slice of toast.</i>

Full transcript

Should We Bring Extinct Animals Back to Life?: Dire Wolves, Mammoths and a Very Expensive Hairdresser

- SEAN** Three white pups, carried by ordinary hound-mix dogs, and when they're only weeks old they lift their heads and howl.
- OLIVIA** They're wolves, Sean. Wolves howl.
- SEAN** Dire wolves, and that's a sound nobody had heard since the Ice Age.
- OLIVIA** Nobody has heard it yet. You're describing grey wolves with twenty edits.
- SEAN** That's a rather cruel way of putting it.
- OLIVIA** I didn't come up with it. Their own chief scientist did.
- SEAN** This is Aprendos English, level C1. I'm Sean.
- OLIVIA** And I'm Olivia.
- SEAN** Today we're arguing about bringing extinct animals back to life. I say yes, and I'm aware I'm starting **on the back foot**.
- OLIVIA** You are. I say it's a very bad idea, and I'm going to enjoy this.
- SEAN** Right then, let me set the scene before you take it apart. In April 2025, a Dallas company called Colossal Biosciences put three wolf pups on the cover of Time magazine and announced that the dire wolf was back.
- OLIVIA** The one from Game of Thrones.
- SEAN** The real one came first, although calling the female Khaleesi, next to two males named Romulus and Remus, rather **gives the game away**. According to the company, its scientists read ancient DNA from a tooth and a piece of skull. Then they rewrote a handful of genes in grey wolf cells to match.
- OLIVIA** Rewrote. So not one piece of ancient DNA actually went into those animals.
- SEAN** No, they edited the wolf's own genes.
- OLIVIA** So they took a grey wolf, made it bigger and whiter, and gave it a wider head. I'm sorry, but that sounds like a very expensive hairdresser.
- SEAN** A hairdresser with a gene-editing licence.
- OLIVIA** The experts weren't laughing. Independent scientists said these animals were "not a dire wolf under any definition of a species ever." And the wolf specialists at the IUCN, the body behind the Red List of endangered species, concluded that the project "does not contribute to conservation."
- SEAN** I know, I've read it...
- OLIVIA** ...and then Beth Shapiro, their chief scientist, called them "grey wolves with twenty edits," and said that "dire wolf" was just a colloquial name.
- SEAN** Fine. I'll **concede** that one straight away, because the name was marketing, and fairly **shameless** marketing at that. If they'd called them "wolves with a few ancient features", though, would you and I be talking about them?
- OLIVIA** Probably not.
- SEAN** Exactly, and that attention pays for the science.
- OLIVIA** So the exaggeration is a feature...

- SEAN ...the exaggeration is the wrapping paper, and I care about the present inside it.
- OLIVIA Which is what, exactly?
- SEAN Tools. If you can make precise edits in a wolf and get healthy pups out of a dog, you can use the same tricks on animals disappearing right now.
- OLIVIA Before we get to those, can I tell you about an animal that already came back? Briefly.
- SEAN The bucardo.
- OLIVIA You've done your homework.
- SEAN Only because I knew you'd use it. Go on.
- OLIVIA The bucardo was a wild goat, the Pyrenean ibex, from the mountains between Spain and France. In the end there was exactly one left, a female called Celia, and scientists took a small piece of skin from her ear and froze it.
- SEAN How did she die?
- OLIVIA In January 2000 a tree fell on her.
- SEAN That's almost too sad to be true.
- OLIVIA So the team in Aragon used her frozen cells to make cloned embryos, which they transferred into goats and goat-ibex hybrids. Almost every pregnancy failed. Then, in the summer of 2003, one female was born alive...
- SEAN ...and she lived for a few minutes.
- OLIVIA A few minutes. She had an extra lobe in one lung, and she simply couldn't breathe. People call the bucardo the only animal that has gone extinct twice.
- SEAN That's heartbreaking, but I think it's actually on my side of the table.
- OLIVIA How can a baby goat suffocating be on your side?
- SEAN Because of what came next, which I find rather wonderful. Years later, the local hunting federation in Aragon teamed up with scientists to check whether Celia's frozen cells were still usable. Cloning was **clumsy** in those days, so you can't judge today's science by what failed back then.
- OLIVIA I didn't know about the second attempt. But even if the clone had lived, she'd have been a female with no male of her kind anywhere on Earth.
- SEAN Fair point. I hadn't thought of that.
- OLIVIA And you still have to count the cost to the animals. Nearly sixty **surrogate** mothers were used and six lost their pregnancies, all for a few minutes of life, and now they want to scale that up to elephants.
- SEAN You mean the mammoth.
- OLIVIA I mean the mammoth. Asian elephants are endangered, and their pregnancies can last almost two years. You'd be asking a mother from an endangered species to carry something that isn't hers for all that time.
- SEAN Which is precisely why they're working on artificial wombs...
- OLIVIA ...that don't exist.
- SEAN That don't exist yet.

- OLIVIA** And even if the calf arrives safely, elephants learn everything from their mothers and aunts, like which plants to eat and where to find water. Who teaches a mammoth to be a mammoth when there hasn't been one for thousands of years?
- SEAN** Honestly, that's the question that bothers me most, and I haven't got a tidy answer. I suppose an elephant herd would have to raise it, and it would grow up as something in between.
- OLIVIA** An elephant in a fur coat.
- SEAN** With a very good hairdresser.
- OLIVIA** You're stealing my joke now.
- SEAN** I'm borrowing it. Now, timing, which I think actually helps me.
- OLIVIA** Really? I think it hurts you most. When the company launched, they talked about a mammoth calf by 2028. Guess what they're saying now.
- SEAN** 2030?
- OLIVIA** Later. Last month Time reported that Ben Lamm, the chief executive, now says the early 2030s, and he was quite specific: "not 2036, but not 2030 either."
- SEAN** Very precise vagueness.
- OLIVIA** They used to think they'd need to change about sixty genes to turn an elephant into something like a mammoth. Now it's more like a hundred and fifty, and apparently still rising.
- SEAN** But that's what honest science looks like, surely. You start with a guess, the problem turns out to be harder than you thought, and you say so publicly...
- OLIVIA** ...after raising hundreds of millions of dollars on the easier version.
- SEAN** That's a bit harsh.
- OLIVIA** Is it? A few weeks earlier, another headline was still promising 2028, so the date seems to depend on who's asking.
- SEAN** I'd call that optimism, and they've produced some genuinely impressive things along the way. For the woolly mouse, they edited several hair genes, some inspired by mammoths and some already known in mice, and got mice with long, golden-brown coats.
- OLIVIA** Which proves they can make a mouse hairy...
- SEAN** ...it proves they can change several genes at once and still get healthy animals, which is the whole game as far as the mammoth is concerned.
- OLIVIA** Okay, let's pretend it all works and there's a baby mammoth. Where does it live?
- SEAN** This is where I get excited, actually. In north-eastern Siberia there's a place called Pleistocene Park, which the scientist Sergey Zimov started decades ago and his son Nikita runs today.
- OLIVIA** And they're making mammoths there?
- SEAN** No, they're trying to rebuild the grassland that mammoths lived on, which scientists call the mammoth steppe. The idea is that big animals **trample** the snow in winter, so the cold can reach the frozen ground underneath and keep it frozen. That matters because the permafrost holds an enormous amount of carbon...
- OLIVIA** ...which escapes as it **thaws**.
- SEAN** Exactly, so heavy animals stamping around in the snow could, in theory, slow down climate change a little.
- OLIVIA** That's clever, I'll admit. Which animals do they use?

- SEAN Horses, mainly, along with bison...
- OLIVIA ...and not a single mammoth.
- SEAN Not yet.
- OLIVIA So the park already does the trampling with animals that exist. If the point is heavy feet in the snow, a Yakutian horse will do the job without anybody spending decades inventing it.
- SEAN A mammoth would knock down trees, though, and a horse can't. And the Zimovs have said they'd happily take mammoths if anyone ever manages to make them.
- OLIVIA Fine, you get one point for the trees.
- SEAN I'll take it gratefully, and I suspect you're about to talk about money.
- OLIVIA I am, because this is where I think you lose. In 2017 a team of conservation scientists led by Joseph Bennett took possible de-extinction candidates from New Zealand and New South Wales. They asked a simple question: if governments pay to look after revived animals, what happens to the species that are still here?
- SEAN Fewer of them get saved.
- OLIVIA Fewer of them get saved. The money comes out of the same small pot that pays for rangers and rat traps.
- SEAN Except you're leaving out the best bit of that study...
- OLIVIA ...am I?
- SEAN They also looked at what happens when an outside sponsor pays for the revived animals. In that case, they said, there could even be benefits for endangered species sharing the same habitat. That's Colossal's situation, because this is investors' money, and nobody in Dallas is raiding a national park's budget.
- OLIVIA The same paper says it's still a bad deal, because that sponsor could have given the money straight to animals that are still alive.
- SEAN But they wouldn't have, because nobody gets a billionaire's attention by asking for money for a rare beetle. You get it with a mammoth.
- OLIVIA Which brings me to what worries me even more, and economists call it moral hazard. Picture a planning meeting about a new mine going through the last patch of forest where some little frog lives. Somebody at the back says, "Relax, there's frog DNA in a freezer in Texas, so they'll bring it back if they have to." Once extinction sounds reversible, it stops feeling like an emergency.
- SEAN Do you honestly think a planning officer in Doncaster is going to say that?
- OLIVIA I think a lobbyist will say it, and a politician who wants the mine will be delighted to hear it.
- SEAN That's a fair worry, I'll grant you.
- OLIVIA Last summer, back home in Bellingham, my neighbour spent her weekends pulling up invasive Himalayan blackberry along a creek, with a few volunteers and a tiny grant. When I read about billions for a mammoth, I think about her gardening gloves.
- SEAN I'd love her to have far more, but those billions were never going to reach her creek.
- OLIVIA You don't know that.

- SEAN** Neither do you. Let me make what I think is my strongest case, which is about responsibility. Take the thylacine, the Tasmanian tiger, a striped marsupial hunter. The government paid **bounties** for dead ones because farmers blamed them for killing sheep, and the last known thylacine died in a zoo in Hobart in 1936.
- OLIVIA** I know this one, and it's grim. That same year they finally made it a protected species...
- SEAN** ...fifty-nine days before the last one died.
- OLIVIA** So they protected it when there was basically nothing left to protect.
- SEAN** So when people tell me we shouldn't play God, I'd say we already did, with bounties and traps. Bringing it back would be a way of owning up.
- OLIVIA** I find that genuinely moving, although I'd like to know how they're planning to do it.
- SEAN** They're starting from a living relative called the fat-tailed dunnart.
- OLIVIA** Which is what?
- SEAN** A marsupial that weighs about as much as a few teaspoons of sugar.
- OLIVIA** Wait, the tiger's surrogate mother is the size of a mouse?
- SEAN** That, or an artificial womb they're developing. Marsupial babies are born tiny and grow in the pouch, so it's less mad than it sounds. The team rebuilt the thylacine's genome from a head that had been kept in alcohol for over a century. Last year they suggested the animal could be back in the wild in as little as eight years.
- OLIVIA** And the mammoth was going to arrive in 2028.
- SEAN** That's a **cheap shot**.
- OLIVIA** I'm only repeating their own promise, and besides, a thylacine would come back to a Tasmania full of roads and feral cats.
- SEAN** And, crucially, without the bounties.
- OLIVIA** And the dodo is their bird project, isn't it?
- SEAN** It is, and I have a **soft spot** for this one. My grandad kept racing pigeons...
- OLIVIA** ...of course he did.
- SEAN** In a loft behind his house in Rotherham, and he'd sit up there for hours chatting to them. The dodo was basically a giant pigeon, and if you'd told him that, he'd have wanted one in the loft.
- OLIVIA** It would never have fitted through the door.
- SEAN** Nor would it have flown home. The last widely accepted sighting was in 1662, on a tiny island off Mauritius.
- OLIVIA** And a new dodo would come back to an island full of hotels and the animals that sailors brought.
- SEAN** Which is why the company says it's also funding habitat work there, and helping a rare pink pigeon that still survives on the island.
- OLIVIA** Then you've just made my argument. If the useful part is saving the habitat and the pink pigeon, do that and skip the giant one.
- SEAN** I'd rather do both.
- OLIVIA** You can't do both with the same money...
- SEAN** ...and I keep telling you it isn't the same money.
- OLIVIA** Shall I give you a case where I actually like the technology?

- SEAN I'd be delighted.
- OLIVIA The northern white rhino. The last male, Sudan, died in Kenya in 2018. Two females are left, Najin and her daughter Fatu, and they live under armed guard at a conservancy called Ol Pejeta. Neither of them can carry a pregnancy.
- SEAN So they're functionally extinct already.
- OLIVIA Functionally, yes. But a team called BioRescue has been collecting eggs from Fatu and fertilising them with frozen sperm from males who died years ago. They've got dozens of embryos stored in Berlin and in Italy.
- SEAN And haven't they tried one in a southern white rhino?
- OLIVIA They did a test run first, using an embryo from the southern subspecies, which is far more common. The surrogate, a female called Curra, died of an infection, and it was only afterwards that they confirmed she'd been pregnant.
- SEAN So they found out after she'd died?
- OLIVIA Yes. It was the first IVF pregnancy ever in a rhino, which was terribly sad and also proof that it can work. That's the kind of project I'd happily fund, because the animals still exist and nobody's putting them on a magazine cover.
- SEAN But it's the same toolbox, frozen cells and a surrogate from a close relative. So you like the tools and object to where they're pointed.
- OLIVIA I like them pointed at animals that are still breathing.
- SEAN And Colossal has started pointing them there too, with genetic rescue work for that very rhino. This month its foundation even announced a partnership with the IUCN's species commission, the same organisation whose wolf experts said the dire wolves weren't dire wolves.
- OLIVIA I'd want to read the small print first, but fine, it's a step towards respectability.
- SEAN So they've been criticised, they've listened, and they're funding exactly the sort of work you like...
- OLIVIA ...and they still call a hairy grey wolf a resurrection. Ben Lamm told Time that the genome-engineering technologies alone "are worth tens of billions." To me that's the most honest sentence in the whole saga. The animals are the advert, and the technology is the product.
- SEAN And if the product saves the rhino, why should I care what the advert looks like?
- OLIVIA Because the advert teaches millions of people that extinction can be undone...
- SEAN ...or it teaches millions of children that extinction matters. I suspect more eight-year-olds learned the word "extinct" from those white pups than from any charity leaflet.
- OLIVIA That's a guess, Sean...
- SEAN ...and so is yours.
- OLIVIA Fair. Do you know what I keep coming back to, though? Romulus, Remus and Khaleesi live on a two-thousand-acre preserve in the United States, behind a tall fence, at a secret location. According to Time, they back away from people and hide when they're startled.
- SEAN Which is exactly how a wolf ought to behave.
- OLIVIA But the animals a dire wolf used to hunt vanished alongside it, so they'll never have anything to hunt. They exist to be looked at.
- SEAN For now. Can I finish with something that has actually worked?
- OLIVIA Go on.

- SEAN** It's from Yorkshire, naturally. There's a little plant called the York groundsel, which was only discovered in the late seventies and had died out by 2000. Its seeds had been saved in the Millennium Seed Bank, and in 2023 plants grown from them were put back in York.
- OLIVIA** Wait, your big success story is a weed?
- SEAN** A weed that was lost and came back, and apparently the first extinct species ever returned to where it used to live.
- OLIVIA** It's a plant that was frozen as a seed, though. Nobody rewrote its genes, and it didn't need a surrogate mother or a magazine cover.
- SEAN** And yet it's growing in York. That's all I want, really, a world where losing something doesn't have to be final.
- OLIVIA** Okay, I'll admit something, but it's small, so don't get excited. You've moved me slightly on the money, and on the toolbox. If the tools that make a hairy wolf end up putting a northern white rhino calf on the ground in Kenya, I'll be glad somebody built them.
- SEAN** That's more than slightly.
- OLIVIA** It's precisely slightly. I still think the dire wolves are three very well-groomed grey wolves, and that mammoth date is going to keep moving.
- SEAN** I'll settle for slightly. It's more than I had when we started.
- OLIVIA** So, listeners, whose side are you on? Should we bring extinct animals back, or put everything into the ones we've still got? Make your case in the comments.
- SEAN** And if you want to go through our arguments line by line, the complete text is waiting below, and the PDF costs nothing.
- OLIVIA** And subscribe for a front-row seat the next time I win an argument.
- SEAN** Until next time, everyone.
- OLIVIA** Bye! And Sean, give the hairdresser my regards.

Did you understand?

Choose the correct answer.

1. How did Colossal's own chief scientist, Beth Shapiro, describe the three pups?

- ☐ As true dire wolves, the first seen since the Ice Age.
- ☐ As grey wolves with twenty edits.
- ☐ As dogs carrying pieces of ancient wolf DNA.

2. What happened to the bucardo clone born in the summer of 2003?

- ☐ She lived for several years but never found a mate.
- ☐ She was healthy at first but was killed by a falling tree.
- ☐ She died within minutes because one lung was faulty.

3. What has happened to the date for the first mammoth calf, according to Olivia?

- ☐ It was once 2028, and Ben Lamm now talks about the early 2030s.
- ☐ It was once 2036, and the company now hopes for 2030.
- ☐ It has stayed at 2028, although the number of genes has grown.

4. What did the 2017 study led by Joseph Bennett say about an outside sponsor paying for revived animals?

- ☐ It would remove every cost to conservation, so it was the best option.
- ☐ It would have exactly the same effect as spending public money.
- ☐ It could even benefit endangered species sharing the same habitat.

5. Why is Olivia happy to fund the work on the northern white rhino?

- ☐ Scientists have already delivered a healthy northern white calf in Kenya.
- ☐ The animals still exist, and nobody is putting them on a magazine cover.
- ☐ The project avoids frozen cells, so no surrogate mother has to suffer.

Exercise 1. Spot the mistake

Is the key word used correctly? Decide, then check the fix.

1. Calling the female pup Khaleesi gave the game away, because nobody could guess which TV series had inspired the name.

- ☐ Correct ☐ Wrong

2. After the first tough question about the missing report, the minister was on the back foot for the rest of the interview.

- ☐ Correct ☐ Wrong

3. If winters in Siberia get much colder, the permafrost will thaw and release its carbon.

- ☐ Correct ☐ Wrong

4. The horses in Pleistocene Park trample the snow so lightly that they hardly leave a mark.

☐ Correct ☐ Wrong

5. The startled wolves backed away and hid as soon as the keepers came near.

☐ Correct ☐ Wrong

6. Putting gene-edited grey wolves on a magazine cover and calling them dire wolves was a shameless piece of marketing.

☐ Correct ☐ Wrong

Exercise 2. Word partners

Match each beginning with the key word it naturally goes with. Two key words fit nowhere.

1. to act as a _____
2. to take a _____
3. to read the _____
4. to have a real _____
5. to create a _____
6. to put a _____

- a) bounty
- b) cheap shot
- c) clumsy
- d) moral hazard
- e) small print
- f) soft spot
- g) startled
- h) surrogate

Use one pair in a sentence about your own life, or about an animal you would like to see brought back.

Exercise 3. Your turn

Should we bring extinct animals back, or put everything into the ones we've still got? Make your case in three or four sentences. Use at least two words from the list.

Answer key

Check your answers after you finish the activities.

Did you understand?

1. As grey wolves with twenty edits.
2. She died within minutes because one lung was faulty.
3. It was once 2028, and Ben Lamm now talks about the early 2030s.
4. It could even benefit endangered species sharing the same habitat.
5. The animals still exist, and nobody is putting them on a magazine cover.

Exercise 1. Spot the mistake

1. Wrong. If you give the game away, you reveal something, so everyone could guess. Correct: "Calling the female pup Khaleesi gave the game away, because everyone could see which TV series had inspired the name."
2. Correct
3. Wrong. Ice thaws when it gets warmer. Correct: "If Siberia gets much warmer, the permafrost will thaw and release its carbon."
4. Wrong. To trample means to step heavily and press something down. Correct: "The horses in Pleistocene Park trample the snow, so the cold can reach the frozen ground underneath."
5. Correct
6. Correct

Exercise 2. Word partners

1. to act as a surrogate
2. to take a cheap shot
3. to read the small print
4. to have a real soft spot
5. to create a moral hazard
6. to put a bounty

I have a real soft spot for the dodo, but before anyone brings it back to Mauritius, I'd want to read the small print on who pays for the habitat work on the island.

Exercise 3. Example answer

I'll concede that the dire wolf name was mostly marketing, and the moral hazard argument worries me too. Still, the same tools could help the northern white rhino, whose last two females can't carry a pregnancy. If the mammoth never arrives, I'd happily settle for a rhino calf born in Kenya. That alone would make the whole saga worth it.