

For Teachers: Please have the students read the sentences one at a time and correct their pronunciation of each sentence then have them repeat after you. Wait until after they read the sentence (use the number in place of the missing word) to have the students choose the correct answer to fill in the blank. When the students finish the article, move on to the further questions.

4[C] – Saving a Copy

11.1(4C)A2E

- In 1993, director Steven Spielberg had a big hit with his movie *Jurassic Park*. The movie was about a theme park where people could see cloned dinosaurs, but it was criticized by some scientists as unrealistic. Dinosauクローンをつくることrs, they say, could never be brought back to life by cloning. What those scientists did not know, though, was how much progress cloning would make after the movie was produced.
- In particular, a new method known as "interspecies cloning" has brought the world of Spielberg's movie much closer to reality.
- Interspecies cloning means using the egg of one species of animal to produce a clone of another species.
- First, an egg is taken out of a female animal and the DNA is removed. Then the DNA of another animal is put into the egg.
- Electricity is passed through the egg, causing it to start growing.
- The egg is then put back into the mother's body, where it develops into a normal baby. Scientists have so far managed to create a number of animal clones in this way.

Further Questions&A * Ask student to answer the question on their own at first. If the student can't answer correctly, have him look at the last page and read the "example answer" for the question. Have the student try to memorize the answer, if it's too long or difficult, you should divide the sentence into 2 or 3 parts to make it easier to remember. Once they have memorized the answer, the teacher should ask the question one last time so that the student can practice answering. Also if you find any mistakes, please mark the page and let me know ASAP.

- 1) Why do you think scientists said it was impossible to clone dinosaurs like in the movie *Jurassic Park*?
- 2) What is interspecies cloning? 異種間クローニングとはなんですか。
- 3) How does interspecies cloning work? 異種間クローニングはどのように作用しますか。
- The DNA of one species is put into the embryo of a different species.
- One scientist who has been working on interspecies cloning is Betsy Dresser of the Audubon Nature Institute in New Orleans. Dresser's goal, however,

もたらすことはなかった 絶滅(ぜつめつ)した
has not been to bring extinct animals back to life.

むしろ 防(ふせ)ぐ 絶滅(ぜつめつ)
17. Rather, she hopes to prevent animals from becoming extinct in the future.

今までのところ 作(つく)り上(あ)げた アフリカヤマネコ
So far, she has produced clones of African wildcats by putting their DNA
普通(ふつう)の
into the eggs of ordinary pet cats. (普通の猫の卵細胞にアフリカヤマネコのDNAを入れる事によってア
フリカヤマネコのコピーを^{つく}り^あげた) The clones she has produced
健康(けんこう)的(てき)なだけでなく 出産(しゅっさん)する
have not only been healthy, but have also given birth to kittens themselves.

動物(どうぶつ)の集団(しゅうだん) それが必要(ひつよう)なときに ~することを許(ゆる)す ~を増(ふ)やす
18. She believes that this kind of cloning will allow scientists to increase
animal populations when it is necessary.

Further Questions&A

4) What is Betty Dresser's goal? Betty Dresser の目標(もくひょう)はなんですか。
ひとつひとつ列挙(れっきょ)する 絶滅(ぜつめつ)しそうな

To catalogue all the DNA of endangered species so that they might
再創造(さいそうぞう)させられる
be recreated in the future if they go extinct.

5) Have the clones she has made been healthy? 彼女(かのじょ)が作り上げたクローンたちは健康(けんこう)ですか。
Yes, and some have even had children.

よく憶(おぼ)えておく 冷凍(れいとう)の
25. With this goal in mind, Dresser has been creating a "frozen zoo" of
絶滅(ぜつめつ)に瀕(ひん)した ちっちゃな かけら ~を含(ふく)む
endangered animals. She has collected tiny pieces of skin containing
種(しゅ)の
the DNA of hundreds of different species from around the world.

入(い)れ物(もの) 専門家(せんもんか) 賛成(さんせい)する
26. She keeps these frozen in small containers so that if it becomes necessary in
the future, clones can be created. Not all experts agree with the idea of
creating clones.

防(ふせ)ぐ 損害(そんがい)
27. Some of them say that it is more important to prevent damage to the
環境(かんきょう)
environment.

このように 続(つづ)ける 彼(かれ)らがどこにいても
28. In this way, animals could continue to live where they are. Dresser agrees but
反論(はんろん)する 選択(せんたく) 絶滅(ぜつめつ)
argues that if it is a choice between extinction and cloning, it is better to
~を選(えら)ぶ
choose cloning.

Further Questions&A

6) Why do some people disagree with Betty Dresser's method?
反対(はんたい)する

なぜ一部の人は Betty Dresser の方法(ほうほう)に反対(はんたい)しているのですか。

保存(ぼぞん)する
31. They feel it would be better to focus energy on preserving the environment
rather than rely on cloning to fix it after it is too late.
頼(たよ)る 決定(けつてい)する

7) Do you think it would be possible to bring extinct species back using Betty
Dresser's methods? あなたは絶滅種(ぜつめつしゅ)を Betty Dresser の方法(ほうほう)で呼び戻(よ)すことができるとおもいますか。
個体(こたい)

33. We can create individuals if we have the DNA, but not whole species.

34. 8) What is an extinct animal you would ^{呼(よ)び戻(もど)す} bring back if you could?

35. もし絶滅種を1つ呼び戻すことができるならあなたは何を呼び戻したいですか。

36. *Seeing the flying dinosaurs might be nice.*

37. (41) Why did some scientists ^{批評(ひひょう)する} criticize *Jurassic Park*?

38. なぜ科学者は *Jurassic Park* を非難しましたか。

39. 1 They disliked using dinosaurs for entertainment.

40. 2 They ^{反対(はんたい)した} opposed the idea of creating ^{作り物の} fake dinosaurs.

41. 3 They ^{疑(うたが)った} doubted that dinosaurs could ever be cloned.

42. 4 They thought the dinosaurs in it were the wrong size.

43. (42) What is one way that scientists have been able to ^{産(う)み出(だ)す} create animal clones? ^{科学者が動物のクローンを生み出すことができている一つの方法は何かですか。}

44. 1 By ^{~と取(と)り替(か)える} replacing the DNA in an animal's egg with the DNA of another animal. ^{育(そだ)てることによって}

45. 2 By ^{~に使用(しよう)される} raisings many different kind animals to be used ^{集(あつ)めること} collecting DNA.

46. 3 By ^{除々(じょじょ)に} gradually changing DNA to create a new animal.

47. 4 By using electricity to create DNA in a ^{実験室(じっけんしつ)} laboratory.

48. (43) What is Better Dresser trying to do? ^{なに} Better Dresser は何をしようとしていますか。

49. 1 Increase the ^{様々(さまざま)な} variety of pets that people keep.

50. 2 Create new species that can ^{~を避(さ)ける} avoid extinction.

51. 3 Show that cloned animals are not healthy.

52. 4 Make it possible stop species from dying out.

53. (44) Why are some ^{専門家(せんもんか) ~に反対(はんたい)する} experts against cloning?

54. ある専門家たちがクローン化に反対しているのはなぜですか。

55. 1 They are ^{心配(しんぱい)している} concerned about the effect of clones on other animals.

56. 2 They worry that cloning will only be able to help a few species.

57. 3 They think that it would be better to ^{~を守(まも)る} protect the places where animals live.

58. 4 They ^{~だと思(おも)う} believe that ^{貯蔵(ちょぞう)すること} storing animal DNA for the ^{未来} future will be too expensive.

59. (45) Which of the ^{後(あと)につづく} following statements is true?

60. 次の陳述のうち、正しいものを選びなさい。

61. 1 *Jurassic Park* seems much more ^{現実的(げんじつてき)な} realistic now than ^{それが初(はじ)めて現(あら)れたとき} when it was first shown.

62. 2 Dresser has collected clones of many different species from all over the world.

63. 3 There is a ^{可能性(かのうせい)} possibility that even ^{普通(ふつう)の} ordinary pets like cats will become ^{絶滅(ぜつめつ)しそうな} endangered.

64. 4 It is still ^{不可能(ふかのう)な} impossible to create clones that are able to produce ^{産(う)む} babies of their own.

Review Questions

65. 1) Why do you think scientists said it was impossible to clone dinosaurs like in the movie Jurassic Park?
66. *The ^{過程(かてい)} process used in the movie would not work in real life.*
67. 2) What is interspecies cloning?
68. *A ^{クローン} clone of one ^{種(しゅ)} species is created using the ^{胚(はい)} embryo of a different species.*
69. 3) How does interspecies cloning work?
70. *The DNA of one species is put into the ^{胚(はい)} embryo of a different species.*
71. 4) What is Betty Dresser's goal?
72. *To ^{ひとつひとつ列挙(れっきょ)する} catalogue all the DNA of ^{絶滅(ぜつめつ)しそうな} endangered species so that they might ^{再創造(さいそうぞう)させられる} be recreated in the future if they go extinct.*
73. 5) Have the clones she has made been healthy?
74. *Yes, and some have even had children.*
75. 6) Why do some people ^{反対(はんたい)する} disagree with Betty Dresser's method?
76. *They feel it would be better to focus energy on ^{保存(ほぞん)する} preserving the environment rather than ^{頼(たよ)る} rely on cloning to ^{決定(けつてい)する} fix it after it is too late.*
77. 7) Do you think it would be possible to bring extinct species back using Betty Dresser's methods?
78. *We can create ^{個体(こたい)} individuals if we have the DNA, but not whole species.*
79. 8) What is an extinct animal you would ^{呼(よ)び戻(もど)す} bring back if you could?
80. *Seeing the flying dinosaurs might be nice.*

解答: (41) 3 (42) 1 (43) 4 (44) 3 (45) 1

436	いってい、ふへん 一定の、不変の	constant					カソテント
437	こうもく、ひんもく 項目、品目	item					アイテム
438	からだ 身体の、 ぶつりがくじょう 物理学上の	physical					フィジカル
439	さる、 ～を去る、やめる 、てはな 、手離す	quit					クウィット
440	つよ ～を強める、 ぞうきょう 増強する	strengthen					ストレンクセ
441	そくしん ～を促進する、 促進させる	promote					プロモ
442	ちきゅうおんだんか 地球温暖化	global warming					グローバル ウォーミン
443	いじ ～を維持する、 けいぞく 継続する	maintain					メインテイ
444	いんたい 引退する	retire					リタイア
445	そうぞう ～を想像する、 こころ か 心に描く	imagine					イマジ
446	すいめんか、すいちゅう 水面下の、水中 の	underwater					アンダウォタ ア
447	あつい、ふとい 厚い、太い	thick					シック
448	はんきよう 反作用する、 はんたい 反対する	react					リアクト
449	こうつうじゅうたい 交通渋滞	traffic jam					トラフィック ジャム
450	そしきか、そしき 組織化、組織	organization					オーガナイゼ イション