

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[B] – Genetic Clues

10.3(4B)A2E

- In ^{最近(さいきん)の} recent ^{ありふれた} years, it has become common for police to use DNA ^{分析(ぶんせき)} analysis to ^{解決(かいけつ)する} solve ^{犯罪(はんざい)} crimes .
- This usually ^{巻(ま)き添(ぞ)えにする} involves ^{技術(ぎじゅつ)} a technique known as "genetic fingerprinting". ^{遺伝子鑑定(いでんしかんてい)}
- Most of the ^{遺伝子(いでんし)の} genetic information in DNA is the same for everyone, but a small ^{割合(わりあい)} percentage is ^{独特(どくとく)な} unique to each individual. ^{個々(この)の}
- By ^{比較(ひかく)すること} comparing someone's DNA to that ^{きづいた} found at the scene of the crime, it is possible to ^{証明(しょうめい)する} prove that he or she was there.
- Now, though, the police have begun ^{だけども} expanding ^{拡大(かくだい)する} this DNA ^{分析(ぶんせき)} analysis to cats.

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) What ^{技術(ぎじゅつ)} technique has become for police to use to ^{解決(かいけつ)する} solve ^{犯罪(はんざい)} crimes ?
- ^{はんざい} 犯罪を解決するために使う ^{つか} 警察官の ^{ぎじゅつ} 技術は何ですか。 ^{なに}
- They use genetic fingerprinting.*
- 2) Is most DNA in people different? ^{ほとんどのDNAは異(こと)なりますか。}
- No. Only a small ^{量(りょう)} amount of the DNA is different from person to person.*
- The ^{役(やく)に立(た)つ} usefulness of this was ^{最初(さいしよ)の} first shown in Canada.
- The police there ^{あやしい} suspected a man of ^{遂行(すいこう)している} carrying out a ^{殺人(さつじん)} murder , but they had no ^{証拠(しょうこ)} evidence that he was ^{居合(いあ)わせて} present at the crime.
- They did, however, find a jacket ^{しかしながら} nearby ^{近(ちか)くの} on which there were some white hairs.
- One of the policemen ^{思(おも)い出(だ)した} remembered that the parents of the man had a white cat.
- They asked ^{科学者(かがくしゃ)} scientists to compare DNA from both the cat and the white ^{くらべる} hairs. They also took DNA ^{標本(ひょうほん)} samples from other cats in the ^{近隣(きんりん)} neighborhood.
- The DNA from the hairs and the parent's cat ^{~であるとかかる} turned out to be the same, and different from that of the other cats.
- This ^{証明(しょうめい)した} showed that the jacket ^{~のものであった} belonged to the man and he was sent to ^{刑務所(けいむしょ)} prison for the ^{犯罪(はんざい)} crime .

Further Questions&A

17. 3) Where was genetic fingerprinting for cats first used?
18. はじめて ねこ いでんし かんてい
初めて猫の遺伝子鑑定をしたところはどこですか。
19. 殺人(さつじん) 事件(じけん)
It was first used on a murder case in Canada.
20. 4) Why did the police take DNA samples from other cats in the neighborhood?
21. けいさつ きんじょ ほか ねこ ひょうほん と
警察が近所の他の猫から DNA 標本を取ったのはなぜですか。
22. *They took DNA from other cats to find out how different they were from the white hairs.*
-
23. 困難(こんなん) 確実(かくじつ) にしている
The biggest difficulty with genetic fingerprinting is making sure which part of the DNA is unique.
特有(とくゆう)で
24. 例(れい) 遺伝的(いでんてき) に
For this reason, it is important to have some examples of DNA of genetically related animals to identify which genes are shared and which are not.
関連(かんれん)した 見分ける 遺伝子(いでんし) 役割(やくわり)をあたえられた
25. 念頭(ねんとう) において 捜査(そうさ)
With this in mind, the United States Federal Bureau of Investigation (FBI) requested scientists to establish databases of animal DNA.
頼(たの)む 制定(せいいてい)する 検索可能(けんさくかのう)にする為(ため)の機能(きのう)
26. 応(こた)えて 導(みちび)かれた 集(あつ)める
In response, a team led by Robert Grahn, a scientist at the University of California at Davis, began to collect DNA from cats around the world.
大学(だいがく)
27. The team's database now has DNA from 1,394 different cats.

Further Questions&A

28. 5) What has the FBI requested scientists to establish?
29. かがくしゃ たち ようせい せつりつ なん
FBI が科学者達に要請して設立したものは何ですか。
30. *The FBI asked scientists to establish a database of animal DNA.*
31. 6) How many different cats does the database now have the profiles of?
32. いまなんしゆるい ねこ
このデータベースには今何種類の猫のプロフィールがありますか。
33. *It contains the DNA profiles of 1,394 different cats.*
-
34. だけでも ~を含(ふく)む
Although the scientists plan to include the DNA of dogs and other animals, they believe that cat DNA will be especially useful.
思(おも)う 特(とく)に 役(やく)にたつ
35. 残(のこ)す 毛皮(けがわ) 去(さ)ったあとに ~する所(ところ)はどこでも ~になる
This is because cats leave fur behind wherever they go. This makes it almost impossible for people nearby to avoid getting fur on their clothes.
不可能(ふかのう)な 近(ちか)くの 避(さ)ける 付(つ)くこと
36. 理由(りゆう) 自信(じしん)をもって 期待(きたい)する 役割(やくわり)をはたす
For this reason, police confidently expect the DNA of cats to play a part in many future crime investigations.
将来(しょうらい) 犯罪(はんざい) 捜査(そうさ)
37. *DNA = deoxyribonucleic acid = 生化学
デオキシ・リボ核(かく)の 酸(さん) せいかがく

Further Questions&A

38. 7) Why do scientists believe that cat DNA will be more useful than other animals?
 39. なぜ科学者たちは猫のDNAは他の動物より役に立つと信じているのですか。
 40. *Cats leave fur behind more than other common pets.*
41. 8) How helpful do you think that this database will be in solving future crimes?
 42. このデータベースは将来の犯罪にどのくらい役立つと思いますか。
 43. *It is unlikely criminals will come in contact with the cats in the database, so it is more useful for studying the genome than solving crime.*

*Choose the correct answer from these choices.

44. (37) The technique of "genetic fingerprinting" 遺伝子鑑定(いでんしかんてい)の技術(ぎじゆつ)は...
 45. 1 was first tested on cats but is now also being used for human beings. 人間(にんげん)
 46. 2 relies on the fact that the DNA of each individual is slightly different. 個人(こじん)のわずかに
 47. 3 can be used to determine the types of people likely to commit crimes. 決意(けつい)する ~しそうな 犯罪(はんざい)を犯(おか)す
 48. 4 is a way of discovering similarities between two separate crime scenes. ~の方法(ほうほう) 発見(はっけん)する 似ている点 切り離(はな)す 場面(ばめん)
49. (38) What did genetic fingerprinting show the police in Canada? 示(しめ)す
 50. 遺伝子鑑定(いでんしかんてい)によってカナダの警察(けいさつ)は何(なに)がわかりましたか。
 51. 1 That the white hairs found on the jacket belonged to the victim of a murder. 犠牲者(ぎせいしゃ) 殺人(さつじん)
 52. 2 That the jacket found at the crime scene belonged to the murderer's father.
 53. 3 That a man they suspected of murder had been at the scene of the crime. 疑(うたが)わしい
 54. 4 That a man had been wrongly sent to prison for murdering someone. 不法(ふぼう)に 刑務所(けいむしょ)
55. (39) What is one thing that the new database will do?
 56. 新(あたら)しいデータベース(データベース)がすることの(ひと)一つ(なん)は何(なに)ですか。
 57. 1 Show which genes are shared by genetically related animals. 示(しめ)す 割(わり)り当てられた 遺伝的(いでんてき)に 関係(かんけい)のある
 58. 2 Provide a list of cats that have been at crime scenes around the world. 提供(ていきょう)する
 59. 3 Store information about experts on genetic fingerprinting. 専門家(せんもんか)
 60. 4 Identify which types of DNA are unique to humans. 見極(みきわ)める 異常(いじょう)な
61. (40) Why do the police think cat DNA will be more useful to them than DNA from other animals?
 62. 1 Cats are less likely to be noticed at a crime scene. なぜ警察(けいさつ)は猫(ねこ)のDNAが他の動物(ほか どうぶつ)からのDNAよりも、彼ら(かれ)にとって有用(ゆうよう)だと考(かんが)えていますか。
 63. 2 Cats have a wider variety of DNA than other animals. ~しようにない 警告(けいこく)
 64. 3 Cat fur tends to remain at a crime scene for a longer time. 幅広(はばひろ)い さまざまな
 65. 4 Cat fur is more likely to be found on criminals' clothes. ~しがちである 残(のこ)る よく見(み)つかりそうな 犯罪者(はんざいしゃ)の

Review Questions

66. 1) What ^{技術 (ぎじゆつ)} technique has become for police to use to ^{解決 (かいけつ) する} solve ^{犯罪 (はんざい)} crimes ?
67. *They use genetic fingerprinting.*
68. 2) Is most DNA in people different?
69. *No. Only a small ^{量 (りょう)} amount of the DNA is different from person to person.*
70. 3) Where was genetic fingerprinting for cats first used?
71. *It was first used on a ^{殺人 (さつじん) 事件 (じけん)} murder case in Canada.*
72. 4) Why did the police take DNA ^{標本 (ひょうほん)} samples from other cats in the neighborhood?
73. *They took DNA from other cats to find out how different they were from the white hairs.*
74. 5) What has the FBI ^{要請 (ようせい) した} requested scientists to ^{設立 (せつりつ) する} establish ?
75. *The FBI asked scientists to establish a database of animal DNA.*
76. 6) How many different cats does the database now have the ^{プロフィール} profiles of?
77. *It contains the DNA profiles of 1,394 different cats.*
78. 7) Why do scientists believe that cat DNA will be more useful than other animals?
79. *Cats leave fur behind more than other ^{ありふれた} common pets.*
80. 8) How ^{役立つ} helpful do you think that this database will be in ^{解決 (かいけつ) する} solving future crimes?
81. *It is unlikely ^{ありそうもない} criminals will come ^{接触 (せつしょく) において} in contact with the cats in the database, so it is more useful for studying the ^{ゲノム} genome than solving crime.*

*genome = ^{せいぶつ} 生物が ^{きのうてき} 機能的に ^{かんぜん} 完全な ^{せいかつ} 生活をするために ^{ひつよう} 必要な ^{いでんしぐん} 遺伝子群を ^{ふく} 含む ^{せんしよくたい} 染色体の ^{ひとくみ} 一組

解答: (37) 2 (38) 3 (39) 1 (40) 4

121	いりょう 形)医療の	medical					メディ クル
122	副)したがって	thus					ザス
123	動)~を主張す る	argue					アーギ ュー
124	動)~を推薦す る、薦める	recommend					リカメ ン ドゥ
125	名)記事	article					あーテ ィ クル
126	副)特に	especially					エスペ シ ャリ
127	動)謝る	apologize					アポロ ジ ャイズ
128	動)~について 話し合う	discuss					ディス カ ス
129	名)汚染	pollution					ポリュ ー ション
130	名)特徴	feature					フィー チ ャー
131	形)重大な、 深刻な	serious					シィリ ア ス
132	形)複雑な	complex					カンプレ ク ス
133	形)同様の、似た	similar					スイミ ラ ー
134	名)距離	distance					ディスタ ン ス
135	名)(定年)退職、 退職後の人生	retirement					リタイ ア メント