

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(ぎじゆつ)} a technique known as "genetic fingerprinting".
- 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.

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9. **2) IS MOST DNA IN PEOPLE DIFFERENT?** ^{ほとんどのDNAは異なりますか。}
10. *No. Only a small ^{量(りょう)} amount of the DNA is different from person to person.*
11. The ^{役(やく)に立(た)つ} usefulness of this was ^{最初(さいしよ)の} first shown in Canada.
12. 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.
13. 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.
14. 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.
15. The DNA from the hairs and the parent's cat ^{-であるとわかる} turned out to be the same, and different from that of the other cats.
16. 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 標本(ひょうほん) 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. The biggest 困難(こんなん) difficulty with genetic fingerprinting is 確実(かくじつ) making sure which part of the DNA is 特有(とくゆう) unique .
24. For this reason, it is important to have some 例(れい) examples of DNA of 遺伝的(いでんてき) genetically related 関連(かんれん) animals to identify which 見分ける genes are 役割(やくわり) shared and which are not.
25. With this 念頭(ねんとう) in mind , the United States Federal Bureau of Investigation (FBI) 捜査(そうさ)

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29. FBI かがくしゃ が たんに 科学者達に ようせい 要請して せつりつ 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 プロフィール 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. 含(ふく)む
It contains the DNA profiles of 1,394 different cats.
34. だけでも Although the scientists plan to ~を含(ふく)む include the DNA of dogs and other animals, they believe that cat DNA will be especially 思(おも)う useful .
35. This is because cats 残(のこ)す leave 毛皮(けがわ) fur 去(さ)ったあとに behind ~する所(ところ) wherever they go. This makes it almost 不可能(ふかのう)な impossible for people 近(ちか)くの nearby to 避(さ)ける avoid 付(つ)くこと getting fur on their clothes.
36. For this 理由(りゆう) reason, police 自信(じしん) confidently 期待(きたい) expect the DNA of cats 役割(やくわり) to play a part in many 将来(しょうらい) future 犯罪(はんざい) crime 捜査(そうさ) investigations.
37. *DNA = deoxyribonucleic デオキシ・リボ核(かく)の acid = 酸(さん) 生化学 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
 4. 4 is used for identifying individuals who have been at crime scenes. ~の方法(ほうほう) 発見(はっけん)する 似ている点(ちているてん) 切り離(はな)す 場面(ばめん)

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55. (39) What is one thing that the new database will do?
 56. 新しいデータベースがすることのひとつは何ですか。 示(しめ)す 割(わり)り当てられた 遺伝的(いでんでんてき)に 関係(かんけい)のある
 57. 1 Show which genes are shared by genetically related animals. 提供(ていきょう)する
 58. 2 Provide a list of cats that have been at crime scenes around the world. 専門家(せんもんか)
 59. 3 Store information about experts on genetic fingerprinting. 見極(みきわ)める 異常(いじょう)な
 60. 4 Identify which types of DNA are unique to humans.
61. (40) Why do the police think cat DNA will be more useful to them than DNA from other animals? 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。
 62. 1 Cats are less likely to be noticed at a crime scene. ~しそうなない 警告(けいこく)
 63. 2 Cats have a wider variety of DNA than other animals. 幅広(はばひろ)い さまざまな
 64. 3 Cat fur tends to remain at a crime scene for a longer time. ~しがちである 残(のこ)る
 65. 4 Cat fur is more likely to be found on criminals' clothes. 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.*

プロフィール

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81. *It is unlikely ^{ありそうもない} criminals will come ^{犯罪 (はんざい) の} ^{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 ^{せんしょくたい} 染色体の ^{ひとくみ} 一組

解答: (37) 2 (38) 3 (39) 1 (40) 4

121	形)医療の いりょう	medical					メ ディ ク ル
122	副)したがって	thus					ザ ス
123	動)~を主張する しゅちよう	argue					ア ー ギ ュ ー
124	動)~を推薦する、薦める すいせん すすめる	recommend					リ カ メ ン ド ウ
125	名)記事 きじ	article					あ ー テ ィ ク ル

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132		complex					ク ス
133	形)同様の、似た どうよう に た	similar					ス ィ ミ ラ ー
134	名)距離 きより	distance					デ ィ ス タ ン ス
135	名)(定年)退職、 退職後の人生 たいしよく たいしよくご じんせい	retirement					リ タ ィ ア メ ン ト