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Level 6 – 4th July, 2022

Octopuses and humans share intelligence gene

FREE online quizzes, mp3 listening and more for this lesson here:

<https://breakingnewsenglish.com/2207/220704-octopus.html>

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Please try Levels 4 and 5 (they are easier).

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THE ARTICLE

From <https://breakingnewsenglish.com/2207/220704-octopus.html>

It is common knowledge that sea creatures like dolphins have a high level of intelligence. Scientists have now discovered that octopuses also have "remarkable" intelligence. A team of Italian marine biologists have revealed that octopi have a gene that also determines the intelligence of humans. The eight-tentacled sea creature has short sequences of DNA called "jumping genes". These same genes make up 45 per cent of the human genome. The researchers said the DNA sequences are important for learning and for creating and storing memories in the brain. The scientists say the DNA may give octopuses cognitive abilities that are similar to those humans have.

The scientists say their research findings are important as they give an insight into how octopuses amend their behaviour in response to different stimuli. Scientists describe this process as "behavioural plasticity". Biologist Graziano Fiorito suggested that the research could help us understand more about intelligence in humans. He said: "The brain of the octopus is functionally analogous in many of its characteristics to that of mammals....For this reason [the DNA] represents a very interesting candidate to study to improve our knowledge of the evolution of intelligence." He says the brain structure of octopuses may mean the creatures are more similar to mammals than invertebrates and other sea life.

Sources: <https://www.livescience.com/jumping-genes-octopus-intelligence>
<https://www.natureworldnews.com/articles/51619/20220629/octopus-human-brain.htm>
<https://www.eurekalert.org/news-releases/956980>

WARM-UPS

1. OCTOPUSES: Students walk around the class and talk to other students about octopuses. Change partners often and share your findings.

2. CHAT: In pairs / groups, talk about these topics or words from the article. What will the article say about them? What can you say about these words and your life?

common / knowledge / intelligence / scientists / biologists / gene / genome / humans research / octopus / process / plasticity / characteristics / candidate / evolution / sea

Have a chat about the topics you liked. Change topics and partners frequently.

3. INTELLIGENCE: Students A **strongly** believe there should be lessons on increasing intelligence at schools; Students B **strongly** believe the opposite. Change partners again and talk about your conversations.

4. MARINE CREATURES: What do you know about these marine creatures? What do you want to know? Complete this table with your partner(s). Change partners often and share what you wrote.

| | What I Know | What I Want to Know |
|------------|-------------|---------------------|
| Octopuses | | |
| Squid | | |
| Plankton | | |
| Starfish | | |
| Jelly dish | | |
| Sea horses | | |

5. MARINE: Spend one minute writing down all of the different words you associate with the word "marine". Share your words with your partner(s) and talk about them. Together, put the words into different categories.

6. KNOWLEDGE: Rank these with your partner. Put the best thing to have knowledge of at the top. Change partners often and share your rankings.

- Money
- Nutrition
- Coding
- Politics
- Psychology
- Literature
- The environment
- Marine biology

VOCABULARY MATCHING

Paragraph 1

- | | |
|---------------------|--|
| 1. common knowledge | a. An animal, rather than a human being. |
| 2. creature | b. A thin, flexible leg on a creature like an octopus or squid. |
| 3. remarkable | c. Relating to or found in the sea. |
| 4. marine | d. Worthy of attention; impressive. |
| 5. tentacle | e. Something known by most people. |
| 6. genome | f. Relating to the mental action of getting knowledge and understanding through thought, experience, and the senses. |
| 7. cognitive | g. The complete set of genes or genetic material in a cell or organism. |

Paragraph 2

- | | |
|------------------|--|
| 8. amend | h. The process by which life is believed to have developed from earlier forms during the history of the earth. |
| 9. stimuli | i. Make small changes to something. |
| 10. plasticity | j. A warm-blooded animal with a backbone, hair or fur, milk, and the birth of live young. |
| 11. analogous | k. An animal without a backbone. |
| 12. mammal | l. The adaptability of an organism to changes in its environment. |
| 13. evolution | m. Comparable in many ways. |
| 14. invertebrate | n. Things that arouse activity or energy in someone or something. |

BEFORE READING / LISTENING

From <https://breakingnewsenglish.com/2207/220704-octopus.html>

1. TRUE / FALSE: Read the headline. Guess if a-h below are true (T) or false (F).

1. Not many people know about the intelligence of dolphins. **T / F**
2. Scientists said octopuses are remarkably intelligent. **T / F**
3. Humans and octopuses share the same intelligence genes. **T / F**
4. Human and octopus cognitive abilities are incredibly different. **T / F**
5. The research gives an insight into what octopuses like and dislike. **T / F**
6. Adapting behaviour to stimuli is called behavioural plasticity. **T / F**
7. The scientist said an octopuses brain was similar to a mammal brain. **T / F**
8. The scientists said octopus brains are identical to those of invertebrates. **T / F**

2. SYNONYM MATCH: (The words in **bold** are from the news article.)

- | | |
|----------------------|----------------|
| 1. creatures | a. action |
| 2. remarkable | b. alike |
| 3. determines | c. amazing |
| 4. sequences | d. conclusion |
| 5. similar | e. shape |
| 6. findings | f. regulates |
| 7. process | g. development |
| 8. analogous | h. animals |
| 9. evolution | i. comparable |
| 10. structure | j. cycles |

3. PHRASE MATCH: (Sometimes more than one choice is possible.)

- | | |
|---|-----------------------------|
| 1. common | a. amend their behaviour |
| 2. dolphins have a high | b. tentacled sea creature |
| 3. The eight- | c. of intelligence |
| 4. 45 per cent of the human | d. abilities |
| 5. the DNA may give octopuses cognitive | e. sea life |
| 6. an insight into how octopuses | f. level of intelligence |
| 7. Scientists describe this process as | g. of octopuses |
| 8. the evolution | h. knowledge |
| 9. the brain structure | i. genome |
| 10. invertebrates and other | j. "behavioural plasticity" |

GAP FILL

From <https://breakingnewsenglish.com/2207/220704-octopus.html>

It is common knowledge that sea (1) _____ like dolphins have a high level of intelligence. Scientists have now discovered that octopuses also have "(2) _____" intelligence. A team of Italian marine biologists have revealed that octopi have a (3) _____ that also determines the intelligence of (4) _____. The eight-tentacled sea creature has short (5) _____ of DNA called "jumping genes". These same genes make up 45 per cent of the human (6) _____. The researchers said the DNA sequences are important for learning and for creating and (7) _____ memories in the brain. The scientists say the DNA may give octopuses cognitive abilities that are (8) _____ to those humans have.

remarkable
sequences
similar
creatures
humans
storing
gene
genome

The scientists say their research (9) _____ are important as they give an insight into how octopuses (10) _____ their behaviour in response to different stimuli. Scientists describe this process as "behavioural (11) _____". Biologist Graziano Fiorito suggested that the research could help us understand more about intelligence in humans. He said: "The brain of the octopus is (12) _____ analogous in many of its characteristics to that of (13) _____....For this reason [the DNA] represents a very interesting candidate to study to (14) _____ our knowledge of the evolution of intelligence." He says the brain (15) _____ of octopuses may mean the creatures are more similar to mammals than invertebrates and other sea (16) _____.

amend
improve
functionally
life
findings
structure
plasticity
mammals

LISTENING – Guess the answers. Listen to check.

From <https://breakingnewsenglish.com/2207/220704-octopus.html>

- 1) It is common knowledge that sea creatures like dolphins have a _____ intelligence
 - a. height level of
 - b. highly evil of
 - c. hail evil of
 - d. high level of
- 2) The eight-tentacled sea creature has short _____
 - a. sequins says of DNA
 - b. seek consequences of DNA
 - c. sequences of DNA
 - d. sea quinces of DNA
- 3) These same genes make up 45 per cent of _____
 - a. the human jean gnome
 - b. the human genome
 - c. the human g-gnome
 - d. the human gee numb
- 4) DNA sequences are important for learning and for creating _____
 - a. and store ring memories
 - b. and store in memories
 - c. and stowing memories
 - d. and storing memories
- 5) The scientists say the DNA may give octopuses _____
 - a. cognitive abilities
 - b. cog native abilities
 - c. agog native abilities
 - d. cog knitting abilities
- 6) scientists say their research findings are important as they _____
 - a. give an insight
 - b. giver an insight
 - c. gives an insight
 - d. give a nine sight
- 7) how octopuses amend their behaviour in response _____
 - a. too different stimuli
 - b. two different stimuli
 - c. to different stimuli
 - d. tool different stimuli
- 8) suggested that the research could help us understand more about intelligence _____
 - a. on humans
 - b. inhumane
 - c. in humans
 - d. in human
- 9) candidate to study to improve our knowledge of the _____
 - a. revolution of intelligence
 - b. evolution of intelligence
 - c. involution of intelligence
 - d. evolving of intelligence
- 10) octopuses may mean the creatures are more similar to _____
 - a. mammals than in vertebrates
 - b. mammals than invert vibrates
 - c. mammals than in verticals
 - d. mammals than inverted beets

LISTENING – Listen and fill in the gaps

From <https://breakingnewsenglish.com/2207/220704-octopus.html>

It is common knowledge that (1) _____ dolphins have a high level of intelligence. Scientists have (2) _____ octopuses also have "remarkable" intelligence. A team of Italian marine biologists have revealed that octopi have a gene (3) _____ the intelligence of humans. The eight-tentacled sea creature has (4) _____ DNA called "jumping genes". These same genes make up 45 per cent of the human genome. The researchers said the DNA sequences are important for learning and for (5) _____ memories in the brain. The scientists say the DNA may give octopuses (6) _____ are similar to those humans have.

The scientists say their (7) _____ important as they give an insight into how octopuses amend their behaviour in response to different stimuli. Scientists (8) _____ as "behavioural plasticity". Biologist Graziano Fiorito suggested that the research could help us understand more about (9) _____. He said: "The brain of the octopus is functionally (10) _____ of its characteristics to that of mammals....For this reason [the DNA] represents a very interesting candidate to (11) _____ our knowledge of the evolution of intelligence." He says the brain structure of octopuses may mean the creatures are more (12) _____ than invertebrates and other sea life.

COMPREHENSION QUESTIONS

From <https://breakingnewsenglish.com/2207/220704-octopus.html>

1. What does the article say has a high level of intelligence?
2. Where are the scientists from who conducted the research?
3. What are the DNA sequences called that were part of this research?
4. What did scientists say the DNA was important for creating in the brain?
5. What similar ability do octopuses and humans have?
6. What did the octopuses respond to?
7. Who is Graziano Fiorito?
8. What did scientists say was analogous to mammal characteristics?
9. What might octopus brains help us to understand the evolution of?
10. What do the researchers say octopus brains are similar to?

MULTIPLE CHOICE - QUIZ

From <https://breakingnewsenglish.com/2207/220704-octopus.html>

- 1) What does the article say has a high level of intelligence?
 - a) apes
 - b) dolphins
 - c) jelly fish
 - d) whales
- 2) Where are the scientists from who conducted the research?
 - a) Egypt
 - b) Fiji
 - c) Australia
 - d) Italy
- 3) What are the DNA sequences called that were part of this research?
 - a) jumping genes
 - b) jumping jacks
 - c) jumping Jennies
 - d) jamming jacks
- 4) What did scientists say the DNA was important for creating in the brain?
 - a) connections
 - b) neurons
 - c) memories
 - d) protein
- 5) What similar ability do octopuses and humans have?
 - a) predicting soccer match results
 - b) cognitive ability
 - c) touching
 - d) fishing
- 6) What did the octopuses respond to?
 - a) different stimuli
 - b) music
 - c) colour
 - d) flashes
- 7) Who is Graziano Fiorito?
 - a) an octopus breeder
 - b) an octopus expert
 - c) a biologist
 - d) a journalist
- 8) What did scientists say was analogous to mammal characteristics?
 - a) the octopus brain
 - b) octopus tentacles
 - c) human characteristics
 - d) dolphins
- 9) What might octopus brains help us to understand the evolution of?
 - a) intelligence
 - b) fish
 - c) molluscs
 - d) sea life
- 10) What do the researchers say octopus brains are similar to?
 - a) apes
 - b) dolphins
 - c) lobster
 - d) mammals

ROLE PLAY

From <https://breakingnewsenglish.com/2207/220704-octopus.html>

Role A – Money

You think money is the most important thing to have knowledge of. Tell the others three reasons why. Tell them what is wrong with their things. Also, tell the others which is the least important of these (and why): coding, literature or the environment.

Role B – Coding

You think coding is the most important thing to have knowledge of. Tell the others three reasons why. Tell them what is wrong with their things. Also, tell the others which is the least important of these (and why): money, literature or the environment.

Role C – Literature

You think literature is the most important thing to have knowledge of. Tell the others three reasons why. Tell them what is wrong with their things. Also, tell the others which is the least important of these (and why): coding, money or the environment.

Role D – The Environment

You think the environment is the most important thing to have knowledge of. Tell the others three reasons why. Tell them what is wrong with their things. Also, tell the others which is the least important of these (and why): coding, literature or money.

AFTER READING / LISTENING

From <https://breakingnewsenglish.com/2207/220704-octopus.html>

1. WORD SEARCH: Look in your dictionary / computer to find collocates, other meanings, information, synonyms ... for the words 'octopus' and 'human'.

| | |
|----------------|--------------|
| octopus | human |
|----------------|--------------|

- Share your findings with your partners.
- Make questions using the words you found.
- Ask your partner / group your questions.

2. ARTICLE QUESTIONS: Look back at the article and write down some questions you would like to ask the class about the text.

- Share your questions with other classmates / groups.
- Ask your partner / group your questions.

3. GAP FILL: In pairs / groups, compare your answers to this exercise. Check your answers. Talk about the words from the activity. Were they new, interesting, worth learning...?

4. VOCABULARY: Circle any words you do not understand. In groups, pool unknown words and use dictionaries to find their meanings.

5. TEST EACH OTHER: Look at the words below. With your partner, try to recall how they were used in the text:

| | |
|---|---|
| <ul style="list-style-type: none">• common• remarkable• gene• 45• storing• cognitive | <ul style="list-style-type: none">• findings• process• help• many• evolution• life |
|---|---|

OCTOPUSES SURVEY

From <https://breakingnewsenglish.com/2207/220704-octopus.html>

Write five GOOD questions about octopuses in the table. Do this in pairs. Each student must write the questions on his / her own paper. When you have finished, interview other students. Write down their answers.

| | STUDENT 1 _____ | STUDENT 2 _____ | STUDENT 3 _____ |
|------|--------------------|--------------------|--------------------|
| Q.1. | | | |
| Q.2. | | | |
| Q.3. | | | |
| Q.4. | | | |
| Q.5. | | | |

- Now return to your original partner and share and talk about what you found out. Change partners often.
- Make mini-presentations to other groups on your findings.

OCTOPUSES DISCUSSION

STUDENT A's QUESTIONS (Do not show these to student B)

1. What did you think when you read the headline?
2. What images are in your mind when you hear the word 'octopus'?
3. What do you know about octopuses?
4. What do you think of the intelligence of dolphins?
5. What do you think of your intelligence?
6. Why do people have different levels of intelligence?
7. Which marine creatures do you like best?
8. What do you know about DNA?
9. How useful do you think it is to have eight tentacles?
10. In what other ways are octopuses similar to humans?

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OCTOPUSES DISCUSSION

STUDENT B's QUESTIONS (Do not show these to student A)

11. Did you like reading this article? Why/not?
12. What do you think of when you hear the word 'human'?
13. What do you think about what you read?
14. How intelligent do you think octopuses are?
15. In what ways do octopuses show their intelligence?
16. Do you think we should be eating octopuses?
17. What do you know about the 'evolution of intelligence'?
18. How can we improve our intelligence?
19. What are the differences between vertebrates and invertebrates?
20. What questions would you like to ask the researchers?

DISCUSSION (Write your own questions)

STUDENT A's QUESTIONS (Do not show these to student B)

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

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DISCUSSION (Write your own questions)

STUDENT B's QUESTIONS (Do not show these to student A)

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

LANGUAGE - CLOZE

From <https://breakingnewsenglish.com/2207/220704-octopus.html>

It is (1) _____ knowledge that sea creatures like dolphins have a high level of intelligence. Scientists have (2) _____ discovered that octopuses also have "remarkable" intelligence. A team of Italian marine biologists have revealed that octopi have a gene that also (3) _____ the intelligence of humans. The eight-tentacled sea creature has short sequences (4) _____ DNA called "jumping genes". These same genes make up 45 per cent of the human (5) _____. The researchers said the DNA sequences are important for learning and for creating and storing memories in the brain. The scientists say the DNA may give octopuses cognitive abilities that are similar to (6) _____ humans have.

The scientists say their research findings are important as they give an insight (7) _____ how octopuses amend their behaviour in response to different stimuli. Scientists describe this process (8) _____ "behavioural plasticity". Biologist Graziano Fiorito suggested that the research could help us understand more about intelligence in humans. He said: "The brain of the octopus is functionally (9) _____ in many of its characteristics to that of mammals....For this (10) _____ [the DNA] represents a very interesting candidate to study to improve our knowledge of the evolution (11) _____ intelligence." He says the brain structure of octopuses may mean the creatures are more similar to mammals than invertebrates and other (12) _____ life.

Put the correct words from the table below in the above article.

- | | | | | |
|-----|-----------------|-----------------|----------------|----------------|
| 1. | (a) common | (b) commoner | (c) commons | (d) commonly |
| 2. | (a) knowing | (b) known | (c) now | (d) knows |
| 3. | (a) detrimental | (b) determining | (c) determines | (d) determine |
| 4. | (a) on | (b) to | (c) at | (d) of |
| 5. | (a) gnome | (b) genie | (c) genome | (d) geneticist |
| 6. | (a) them | (b) those | (c) that | (d) this |
| 7. | (a) unto | (b) into | (c) onto | (d) intro |
| 8. | (a) was | (b) as | (c) has | (d) ease |
| 9. | (a) spontaneous | (b) religious | (c) analogous | (d) rigorous |
| 10. | (a) knowledge | (b) ethos | (c) belief | (d) reason |
| 11. | (a) at | (b) on | (c) to | (d) of |
| 12. | (a) seals | (b) seal | (c) seas | (d) sea |

SPELLING

From <https://breakingnewsenglish.com/2207/220704-octopus.html>

Paragraph 1

1. It is common enwlkgoed
2. A team of Italian marine sistilbogo
3. The eight-encaedttl sea creature
4. make up 45 per cent of the human moneeg
5. the DNA sueeqecsn
6. the DNA may give octopuses givniteco abilities

Paragraph 2

7. in response to different itimusl
8. Scientists describe this process as behavioural stilptacyi
9. functionally uaglansoo
10. the uventlooi of intelligence
11. the brain urscterut of octopuses
12. more similar to mammals than seetrvbianrte

PUT THE TEXT BACK TOGETHER

From <https://breakingnewsenglish.com/2207/220704-octopus.html>

Number these lines in the correct order.

- () important for learning and for creating and storing memories in the brain. The scientists say the DNA may
- () The scientists say their research findings are important as they give an insight
- () that octopuses also have "remarkable" intelligence. A team of Italian marine biologists have
- () revealed that octopi have a gene that also determines the intelligence of humans. The eight-tentacled sea
- () give octopuses cognitive abilities that are similar to those humans have.
- () up 45 per cent of the human genome. The researchers said the DNA sequences are
- () into how octopuses amend their behaviour in response to different stimuli. Scientists describe this process
- () creature has short sequences of DNA called "jumping genes". These same genes make
- () us understand more about intelligence in humans. He said: "The brain of the octopus is functionally analogous in many
- () as "behavioural plasticity". Biologist Graziano Fiorito suggested that the research could help
- () interesting candidate to study to improve our knowledge of the evolution of intelligence." He says the brain
- (**1**) It is common knowledge that sea creatures like dolphins have a high level of intelligence. Scientists have now discovered
- () structure of octopuses may mean the creatures are more similar to mammals than invertebrates and other sea life.
- () of its characteristics to that of mammals....For this reason [the DNA] represents a very

PUT THE WORDS IN THE RIGHT ORDER

From <https://breakingnewsenglish.com/2207/220704-octopus.html>

1. level high have of a Dolphins intelligence .
2. revealed gene . Biologists that a have have octopi
3. intelligence . human A also determines that gene
4. important . said DNA The are researchers sequences the
5. abilities . The cognitive DNA octopuses may give
6. findings their scientists The research say important . are
7. behavioural describe as this Scientists process plasticity .
8. octopus of the is The functionally analogous . brain
9. our Improve intelligence . of knowledge of the evolution
10. creatures The sea more mammals . are to similar

CIRCLE THE CORRECT WORD (20 PAIRS)

From <https://breakingnewsenglish.com/2207/220704-octopus.html>

It is *common / commonly* knowledge that sea creatures like dolphins have a high level of intelligence. Scientists have now discovered that octopuses also have "*remarked / remarkable*" intelligence. A team of Italian marine biologists have *revealed / revealing* that octopi *has / have* a gene that also determines the intelligence *on / of* humans. The eight-tentacled *sea / seas* creature has short sequences of DNA called "jumping genes". These same genes make *down / up* 45 per cent of the human genome. The researchers said the DNA sequences are important *for / of* learning and for creating and storing memories *in / on* the brain. The scientists say the DNA may give octopuses cognitive abilities that are *similar / similarity* to those humans have.

The scientists say their research findings are important as they give an *sighting / insight* into how octopuses *armed / amend* their behaviour in response to different *stimulus / stimuli*. Scientists describe this *process / progress* as "behavioural plasticity". Biologist Graziano Fiorito suggested that the research could help us understand more about intelligence *at / in* humans. He said: "The brain of the octopus is functionally *religious / analogous* in many of its characteristics to that of *mammal / mammals*....For this reason [the DNA] represents a very *interesting / interested* candidate to study to improve our knowledge *in / on* the evolution of intelligence." He says the brain structure of octopuses may mean the creatures are more similar to mammals than invertebrates and *other / others* sea life.

Talk about the connection between each pair of words in italics, and why the correct word is correct.

INSERT THE VOWELS (a, e, i, o, u)

From <https://breakingnewsenglish.com/2207/220704-octopus.html>

_t _s c_mm_n kn_wl_dg_ th_t s__ cr__t_r_s l_k_ d_lph_ns h_v_ _ h_gh l_v_l _f _nt_ll_g_nc_. Sc__nt_sts h_v_ n_w d_sc_v_r_d th_t _ct_p_s_s _ls_ h_v_ "r_m_rk_bl_" _nt_ll_g_nc_. _ t__m _f _t_l__n m_r_n_ b__l_g_sts h_v_ r_v__l_d th_t _ct_p_ h_v_ _ g_n_ th_t _ls_ d_t_r_m_n_s th_ _nt_ll_g_nc_ _f h_m_ns. Th_ __ght-t_nt_cl_d s__ cr__t_r_ h_s sh_rt s_q__nc_s _f DN_ c_ll_d "j_m_p_ng g_n_s". Th_s_ s_m_ g_n_s m_k_ _p 45 p_r c_nt _f th_ h_m_n g_n_m_. Th_ r_s__rch_rs s__d th_ DN_ s_q__nc_s _r_ _mp_r_t_nt f_r l__rn_ng _nd f_r cr__t_ng _nd st_r_ng m_m_r__s _n th_ br__n. Th_ sc__nt_sts s_y th_ DN_ m_y g_v_ _ct_p_s_s c_gn_t_v_ _b_l_t__s th_t _r_ s_m_l_r t_ th_s_ h_m_ns h_v_.

Th_ sc__nt_sts s_y th__r r_s__rch f_ndngs _r_ _mp_r_t_nt _s th_y g_v_ _n _ns_gh_t _nt_ h_w _ct_p_s_s _m_nd th__r b_h_v__r _n r_sp_ns_ t_ d_ff_r_nt st_m_l_. Sc__nt_sts d_scr_b_ th_s pr_c_ss _s "b_h_v__r_l pl_st_c_ty". B__l_g_st Gr_z__n_ F__r_t_ s_gg_st_d th_t th_ r_s__rch c__ld h_lp _s _nd_rst_nd m_r_ _b__t _nt_ll_g_nc_ _n h_m_ns. H_ s__d: "Th_ br__n _f th_ _ct_p_s_ _s f_nct__n_lly _n_l_g__s _n m_ny _f _ts ch_r_ct_r_st_cs t_ th_t _f m_mm_ls....F_r th_s r__s_n [th_ DN_] r_pr_s_nts _ v_ry _nt_r_st_ng c_nd_d_t_ t_ st_dy t_ _mpr_v_ __r kn_wl_dg_ _n th_ _v_l_t__n _f _nt_ll_g_nc_." H_ s_y_s th_ br__n str_ct_r_ _f _ct_p_s_s m_y m__n th_ cr__t_r_s _r_ m_r_ s_m_l_r t_ m_mm_ls th_n _nv_rt_br_t_s _nd _th_r s__ l_f_.

PUNCTUATE THE TEXT AND ADD CAPITALS

From <https://breakingnewsenglish.com/2207/220704-octopus.html>

it is common knowledge that sea creatures like dolphins have a high level of intelligence scientists have now discovered that octopuses also have remarkable intelligence a team of italian marine biologists have revealed that octopi have a gene that also determines the intelligence of humans the eighttentacled sea creature has short sequences of dna called jumping genes these same genes make up 45 per cent of the human genome the researchers said the dna sequences are important for learning and for creating and storing memories in the brain the scientists say the dna may give octopuses cognitive abilities that are similar to those humans have

the scientists say their research findings are important as they give an insight into how octopuses amend their behaviour in response to different stimuli scientists describe this process as behavioural plasticity biologist graziano fiorito suggested that the research could help us understand more about intelligence in humans he said the brain of the octopus is functionally analogous in many of its characteristics to that of mammalsfor this reason the dna represents a very interesting candidate to study to improve our knowledge of the evolution of intelligence he says the brain structure of octopuses may mean the creatures are more similar to mammals than invertebrates and other sea life

PUT A SLASH (/) WHERE THE SPACES ARE

From <https://breakingnewsenglish.com/2207/220704-octopus.html>

It is common knowledge that sea creatures like dolphins have a high level of intelligence. Scientists have now discovered that octopuses also have "remarkable" intelligence. A team of Italian marine biologists have revealed that octopi have a gene that also determines the intelligence of humans. The eight-tentacled sea creature has short sequences of DNA called "jumping genes". These same genes make up 45 percent of the human genome. The researchers said the DNA sequences are important for learning and for creating and storing memories in the brain. The scientists say the DNA may give octopuses cognitive abilities that are similar to those humans have. The scientists say their research findings are important as they give an insight into how octopuses amend their behaviour in response to different stimuli. Scientists describe this process as "behavioural plasticity". Biologist Graziano Fiorito suggested that the research could help us understand more about intelligence in humans. He said: "The brain of the octopus is functionally analogous in many of its characteristics to that of mammals.... For this reason [the DNA] represents a very interesting candidate to study to improve our knowledge of the evolution of intelligence." He says the brain structure of octopuses may mean the creatures are more similar to mammals than invertebrates and other sea life.

HOMework

1. VOCABULARY EXTENSION: Choose several of the words from the text. Use a dictionary or Google's search field (or another search engine) to build up more associations / collocations of each word.

2. INTERNET: Search the Internet and find out more about this news story. Share what you discover with your partner(s) in the next lesson.

3. OCTOPUSES: Make a poster about octopuses. Show your work to your classmates in the next lesson. Did you all have similar things?

4. INTELLIGENCE: Write a magazine article about schools training students to be more intelligent. Include imaginary interviews with people who are for and against this.

Read what you wrote to your classmates in the next lesson. Write down any new words and expressions you hear from your partner(s).

5. WHAT HAPPENED NEXT? Write a newspaper article about the next stage in this news story. Read what you wrote to your classmates in the next lesson. Give each other feedback on your articles.

6. LETTER: Write a letter to an expert on octopuses. Ask him/her three questions about them. Give him/her three of your opinions on them. Read your letter to your partner(s) in your next lesson. Your partner(s) will answer your questions.

ANSWERS

VOCABULARY (p.4)

1. e 2. a 3. d 4. c 5. b 6. g 7. f
8. i 9. n 10. l 11. m 12. j 13. h 14. k

TRUE / FALSE (p.5)

- 1 F 2 T 3 T 4 F 5 F 6 T 7 T 8 F

SYNONYM MATCH (p.5)

| | | | | |
|------|------|------|------|-------|
| 1. h | 2. c | 3. f | 4. j | 5. b |
| 6. d | 7. a | 8. i | 9. g | 10. e |

COMPREHENSION QUESTIONS (p.9)

- Dolphins
- Italy
- Jumping genes
- Memories
- Cognitive ability
- Different stimuli
- A biologist
- The octopus brain
- Intelligence
- Mammals

WORDS IN THE RIGHT ORDER (p.19)

- Dolphins have a high level of intelligence.
- Biologists have revealed that octopi have a gene.
- A gene that also determines human intelligence.
- The researchers said the DNA sequences are important.
- The DNA may give octopuses cognitive abilities.
- The scientists say their research findings are important.
- Scientists describe this process as behavioural plasticity.
- The brain of the octopus is functionally analogous.
- Improve our knowledge of the evolution of intelligence.
- The sea creatures are more similar to mammals.

MULTIPLE CHOICE - QUIZ (p.10)

1. b 2. d 3. a 4. c 5. b 6. a 7. c 8. a 9. a 10. d

ALL OTHER EXERCISES

Please check for yourself by looking at the Article on page 2.
(It's good for your English ;-)