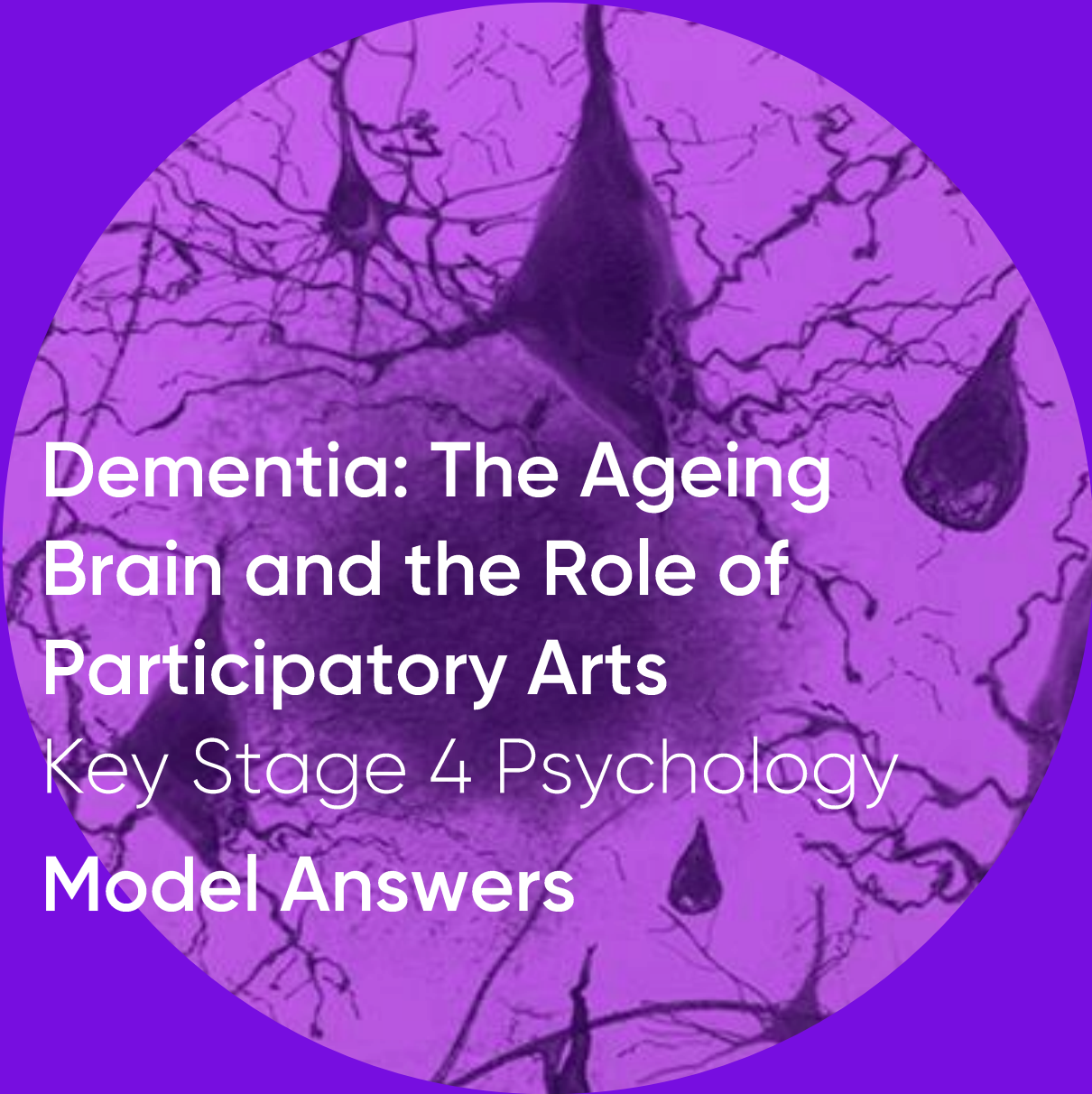


Research
Based
Curricula

A circular inset containing a microscopic image of brain neurons, showing cell bodies and branching dendrites/axons in shades of purple and blue.

Dementia: The Ageing Brain and the Role of Participatory Arts

Key Stage 4 Psychology
Model Answers

2019



Resource One

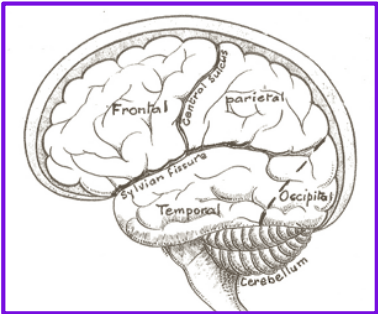
Model Answers



Answers

1.
 Frontal lobe –executive functioning, motor skills, reasoning, higher-level cognition.
 Temporal Lobe – the formation and storage of memories, auditory and language processing.
 Parietal Lobe – the processing of tactile sensory information, somatosensory information, some language processing.
 Occipital Lobe –interpretation of visual stimuli, including colour and motion perception.

2. Sample sketch:



3.
 Any four of the following:
 Acetylcholine, Norepinephrine, Dopamine, Serotonin, Gamma-aminobutyric acid (GABA), Glutamate

- 4.

Brain Structure		Brain Function
Amygdala		System of interconnected structures associated with emotional and motor responses, including fear, pleasure and memory.
Corpus Callosum		Part of the endocrine system that receives information to produce hormones.
Hippocampus		Multifunctional structure that regulates sexual behaviour, eating, temperature and aims to maintain homeostasis in the body and brain.
Limbic System		Uniquely shaped structure in the limbic system that is responsible for memory.
Pituitary glands		Small structures associated with processing emotions and the fight, flight or freeze response.
Hypothalamus		Thick structure of white matter connecting the left and right hemispheres of the brain, responsible for physical co-ordination. Also processes complicated thought patterns.

Resource One Model Answers



Answers

5.

The Hippocampus – found in the limbic system. Its main function is in the formation of new memories and the storage of long-term memories.

6. Students have the freedom to compare and contrast any of the available structures detailed in the data source. Below are two examples of how to answer this question:

a) Based on the information given in the provided table, the substantia nigra and corpus callosum both play a role in movement: the substantia nigra is associated with motor functioning while the corpus callosum is more specifically responsible for physical co-ordination. Differences lie in the physical nature of these brain structures: while the substantia nigra is the smallest part of the brain, the corpus callosum is a large thick structure of white matter.

b) The thalamus and hippocampus are similar given that they are both part of the limbic system of the brain and therefore contribute to emotional and motor functions. However, the thalamus is responsible for the regulation of consciousness, sleep and alertness, while the hippocampus has a leading role in memory formation and storage.

7

Students answering this question could offer any number of potential answers. Given that this question is of a more exploratory, opinion-based nature than previous questions, any answers given are acceptable, so long as the student demonstrates good reasoning and builds an argument.

E.g. "I expect the hippocampus to be largely affected by dementia, given that dementia is associated with memory loss and this is the main function of the hippocampus."

Resource Two

Model Answers



Answers

1. Dementia is an umbrella or broad term for the symptoms that are experienced and caused by different degenerative brain diseases, including Alzheimer's disease.
2. Alzheimer's disease is the most common cause of dementia where degeneration of the brain is caused by the presence and build-up of protein plaques and tangles.
- 3.. The hippocampus is one of the first structures of the brain to be damaged by Alzheimer's disease, given the well-known link between dementia and memory loss. Therefore, the hippocampus is damaged before the amygdala. The consequences of this is that a person with Alzheimer's disease may often recall emotional aspects of their memories even if they are unable to recall the factual content.
4. In the given artwork, the affected blue-coloured neurons depict tangles, which are caused by the tau protein build-up. The orange circular features are plaques, which are caused by beta-amyloid protein build-up.
5. Beta-amyloid protein plaques form when proteins on the surface of neurons are broken down differently. A protein called APP (amyloid precursor protein) is normally sectioned by enzymes on the surfaces of neurons, resulting in the freeing of amyloid-beta protein fragments, which are then broken down and cleared in the body. With Alzheimer's disease, these amyloid-beta proteins are no longer sufficiently regulated or cleared by the body, resulting in an imbalance of amyloid-beta proteins which clump together and form large plaques which increase in size, becoming insoluble. These clumped plaques are toxic to the brain and disrupt the normal functioning of neurons.

Resource Two

Model Answers



Answers

Unlike plaques which form outside of neurons, Alzheimer's disease neurofibrillary tau tangles form in the interior of neurons. Normally, signals in the brain pass from the main body of one neuron, through the synapse or synaptic gap, and into an adjacent neuron with ease. Before the signals pass through the synapse, they travel down a long tube known as a microtubule. Microtubules are maintained and taken care of by normal tau protein, which act as glue or a 'caretaker' to help keep them in working order. However, in Alzheimer's disease the tau protein detaches from the microtubules, in turn breaking down the circuits and causing microtubules to fall apart. Fragments of freed tau protein clump together and form tangles which are located inside the neuron. Without the long microtubular circuits, signals cannot be sent from one neuron to another; resulting in loss of neuronal transmission and death of cells.

6

Students have a wide variety of choice for answering this question, based on the Alzheimer's Society information from the data source. Part of an example of how students could answer this question follows. A longer paragraph answer is desirable.

"According to the Alzheimer's Society, the hippocampus begins to experience damage from the onset of Alzheimer's disease, which results in memory recall problems and difficulties learning new information.

Damage can occur to the visual system in the temporal lobes, which may result in difficulty perceiving and recognising faces and places."

7.

In this answer, students are being asked to build upon the information they have received in the data source. Any answers are acceptable, provided that the student builds a good argument based on relevant evidence. The answer to this question is linked to the following excerpt from the data source:

"In contrast to these losses, many abilities are retained, particularly those acquired long ago. Learned skills such as dancing or playing the piano rely on procedural memories, and so are mostly stored deep within the brain. In Alzheimer's disease, these skills are often retained the longest."

Students are expected to quote this section of the source and discuss how people with Alzheimer's disease may retain musical and skill-based memories.

Resource Three

Model Answers



Answers

1. Lewy bodies dementia has a lot of overlap with Parkinson's disease, given that the Lewy body clumps are similar to the abnormal proteins in the brains of those developing Parkinson's. Therefore, depending on the stage of the disease and the way it manifests itself, it could be misdiagnosed as either Alzheimer's disease or Parkinson's disease in the earlier stages.
2. Vascular dementia is caused by problems with blood vessels and circulatory fluids. Vascular dementia can be caused by three different brain-related health issues.
 - a) A collection of mini strokes across the brain in different areas can cause multi-infarct dementia, where symptoms are dependent on where the damage is caused.
 - b) Blood vessels deep inside the brain at the subcortical level can be damaged by a stroke, leading to subcortical vascular dementia, in which white matter deep inside the brain cannot receive typical signals from the frontal lobe.
 - c) Dementia can be followed by a major stroke, with symptoms that are more associated with stroke such as movement-based and motor function loss. This form of dementia can be improved with rehabilitation, unlike other dementia causes.
3. Behavioural-variant frontotemporal dementia and semantic frontotemporal dementia differ based on the areas and structures of the brain that are damaged first. In the behavioural-variant type, the frontal lobe is affected first; specifically, the frontal cortex, where personality changes, lack of motivation and repetition of the same words and actions may be observed. Damage to further areas follows later in the disease progression. Contrastingly, the semantic type receives the first damage in the front of the left temporal lobe, dealing with verbal semantic memory, followed by the right temporal lobe, where recognition of faces, objects and places is damaged.

Resource Three

Model Answers



Answers

4

Students’ answers will vary for this question, but some of the key words from the prior data source are expected to be included in their answers. These are included below, though some students may pick up on additional words that have not been included.

Type of Dementia	Keywords
Alzheimer’s Disease	Plaques; beta-amyloid; tangles; tau; hippocampus; memory; shrinkage; amygdala; visual system; frontal lobe; limbic system.
Frontotemporal dementia	Frontal lobe; temporal lobes; shrinkage; tau proteins; behavioural-variant; frontal cortex; semantic; temporal; verbal semantic memory; faces; objects.
Dementia with Lewy bodies	Lewy bodies; proteins; cerebral cortex; limbic system; brain stem; Parkinson’s disease; vision; perception; attention; movement; memory; emotional expression.
Vascular dementia	Blood vessels; circulatory fluids; stroke; clot; blockage; multi-infarct; mini-strokes; sub-cortical; white matter; cerebral cortex; motor; rehabilitation.

5

This activity requires students to write a short, summarised essay (approximately 500 words or one page in length) about the similarities and differences between the different types of dementia disease discussed in the past data source. The important feature to look out for in this activity is that students do not simply repeat descriptive information but effectively compare and contrast the different types. The following features will contribute to a model answer:

- Showing clear understanding of each different type of dementia and offering clear descriptions of each.
- Making comparisons/contrasts between the different brain structures that are affected by the diseases.
- Making comparisons/contrasts between the different symptoms that result from the different diseases.

6

This activity is interpretive and intended to encourage students to find creative ways to express what they are learning from this pack, without being limited by guidelines or recommendations. Ensure that there is both a creative piece and a short written explanation of it.

Resource Four

Model Answers



Answers

1.

Positive emotions – Observing the person's emotions and considering whether they are potentially positive or negative.

Engagement – Considering whether the person is interacting or engaging any activities or other people.

Relationships – Observing the development, maintenance or breaking down of relationships of people with dementia.

Meaningfulness – Making sure they are still doing daily activities that they enjoy and are able to maintain important parts of their lives, such as religion or hobbies.

Achievement – Thinking about whether the person still feels like they achieve things or complete tasks or activities on a daily basis.

2.

1) value the person with dementia, their family and their friends;

2) treat the person with dementia with dignity and as an individual;

3) attempt to empathise with the person with dementia, and consider their perspective; and lastly,

4) create a positive social environment and community.

3. Students have the opportunity to choose from two of the three following myths:

"A diagnosis of dementia means that life is over" – This belief is held by many but encourages an unhelpful attitude that can lead people with dementia to 'give up' on trying. Rather, people with dementia can live meaningful lives and continue with their normal everyday activities with support from others where necessary. Instead of thinking that someone is 'dying' with dementia, rephrase that they are 'living with dementia and living well'.

Resource Four

Model Answers



(Answer to Question 3 continued...)

"Dementia makes people aggressive and violent" – While some people in the moderate to very late stages of dementia can occasionally become violent, it is not always the case. Often, the reason for violent aggressive behaviour is that the person is frustrated with their changing skills, confused about where they are, or misjudging familiar faces as unfamiliar intruders. Considering this, it is important that the environment is comfortable and calming, and that we approach the person with as friendly and welcoming a disposition as possible.

"People with dementia do not understand what is going on around them; they are like an empty shell" – Confusion is possible at any stage of dementia, but it does not mean that the individual cannot understand what is happening around them. The 'empty shell' is dehumanising and leads people to focus on what the person with dementia is losing, rather than what they can still do. Treating the individual with respect, describing their situation without negative phrases and finding alternative methods of communication can make things more accessible for the person with dementia.

4.

Student answers may vary for this question, based on their interpretation of the elements of each health-based model. A model answer is one that will consider two or three similarities between the models but also critically consider the differences between the elements or terms used. The aim of the activity is to practice building an argument. Examples of comparisons that can be made are below; however, this list is not exhaustive and students are welcome to make their own interpretations, so long as they are able to justify and argue their point effectively:

Identity and meaning; Occupation and Achievement; Positive Emotions and Love/Comfort; Occupation and meaning/engagement; Attachment and relationships.

5.

Potential guidelines could include some of the following:

- Approach the person with dementia with a positive/welcoming/positive facial expression.
- Explain who you are so that the person is less likely to respond defensively or aggressively.
- Find alternative ways to communicate with the person with dementia if they are having trouble with conversation (e.g. music, dance, photo books).
- Empathise with the person and consider their perspective before making decisions.
- Focus on what the person with dementia can do, rather than what they have lost.
- Encourage as many positive emotions as possible by finding things that the person enjoys or finds meaningful.

Resource Five

Model Answers



Answers

1.

A dementia-friendly community is a city, town or village where people with dementia are understood, respected and supported. Dementia-friendly communities are vital in helping people live well with dementia and remain a part of their community.

2.

Answers may include the following:

- Visit and volunteer at services like Alzheimer's Society Memory Cafés or Singing for the Brain activity groups.
- Raise awareness by becoming dementia friends, accessing Alzheimer's training or conducting lessons in schools.
- Host community events that are accessible to people with dementia.
- Help local organisations receive training on how to effectively communicate with customers
- Create a local dementia-friendly alliance led by people in the community

3.

Participatory arts activities are creative activities that aim to promote health and wellness. They are normally led by professional artists or creative practitioners and can include music, visual arts and crafts, drama, poetry, storytelling, dance, movement, photography or film-making. They are distinct from therapy.

4.

- a) Therapies are conducted by trained therapists, unlike participatory arts which are typically conducted by professional artists or creative practitioners.
- b) Therapies normally have an end goal of 'psychological change' for their 'clients', while participatory arts focus more on the process of members taking part rather than on the measurable health outcome.

Resource Five

Model Answers



Answers

(Answers to Question 4 continued...)

c) Therapies are often one-to-one and commonly take place in clinical or nursing home settings, while participatory arts are almost always group-based and take place in community settings, such as museums and theatres.

5.

There are no right or wrong answers in this activity. Students are welcome to explore different ideas. Some sample ideas are shown below:

Theme	Activity
Food week	Make art using dough
Animal week	Create animal art using tissue paper
'Chitty Chitty Bang Bang'	Create a spin-off group-based story
William Wordsworth	Write poems based on 'daffodils' theme
Summertime	Sing 'All Things Bright and Beautiful'
Safari	Use percussion to mimic different animals
Judy Garland	Sing 'Somewhere Over the Rainbow'

6.

This activity is intended to enable students to express themselves creatively and to use a creative research method – photography – to provide evidence of something. Each student will create an individual, unique photo essay with a short paragraph explaining the meaning of each photograph. See pages 40 and 41 of Resource 5 to see example images with short accompanying captions and explanations.

Resource Six

Model Answers



Answers

1.

a. To determine whether participating in a community singing group can have a positive impact on people with dementia and their carers.

b. The poetry intervention involved different types of poetry and techniques, brainstorming, homework, and participants' reading their own poetry aloud to the group.

c. The Grange Comedy Project encompassed four weeks of two-three hour once-weekly workshops, using a mockumentary approach of unscripted, improvised acting with humour and parody.

d. Research by Flat et al (2015) found that 84% of participants said that art-viewing-art-making activities met their expectations, with 89% stating that they would attend the activities again. Benefits that were discussed during focus groups included cognitive stimulation, improved self-esteem, and increased social connections. Similarly, Belver et al (2017) and Burnside et al (2015) found that their participants showed high levels of engagement, satisfaction and improved social relationships. In particular, Burnside et al (2015) found themes including joint respite, personal growth and personhood during interviews with carers. Belver et al (2017) stated that participants' cognitive decline did not seem to affect their participation.

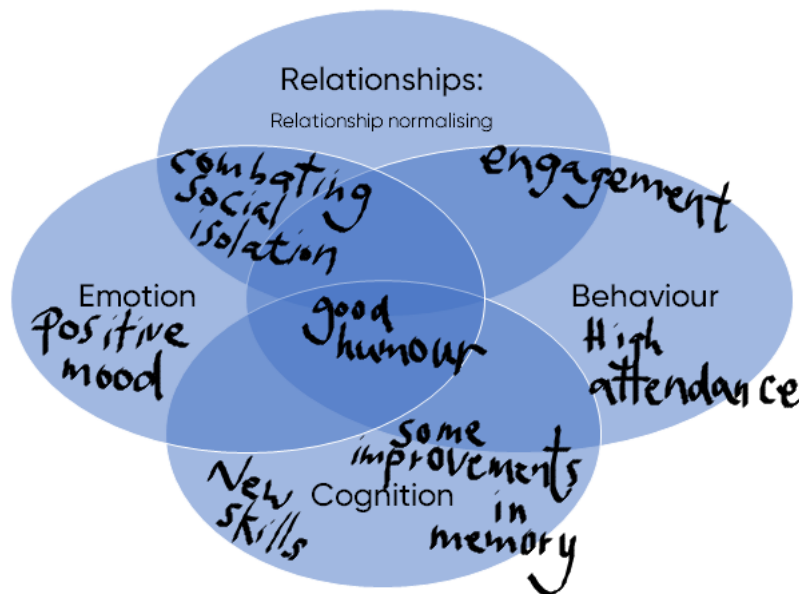
Resource Six Model Answers



2

Answers

Answers may include the following, though take into account the variability of student answers and judgements:



3

This essay can be from between one to two pages in length, based on similar information that has been considered in Activity 1 and Activity 2 but in a different format. The aim of the essay is to get students practising their critical analysis of data sources and developing their skills in essay-writing and summarising key findings. A sample essay structure for this question is as follows:

- Introduction to what participatory arts are
- A summary of the kinds of participatory arts activities that are researched in published literature for people with dementia
- Consider three or four areas that are mentioned in the research, including both benefits and drawbacks where relevant:
 - Individual behaviour
 - Emotions
 - Cognition
 - Social relationships
- Conclude with brief summary

Final Reflection Model Answers



Guidance

Your PowerPoint should last about 10 minutes.

You should spend no longer than 2 minutes on each slide of your PowerPoint, so aim for at least 5 slides.

Include a contents page at the beginning of your PowerPoint, which should summarise the areas you will be covering in your presentation

In general, student slides should cover the following:

- What dementia is, the different types of dementia and resulting symptoms
- Positive approaches and perspectives on living with dementia
- Ways that society can help
- What participatory arts and examples of activities
- The benefits that participatory arts can have for people with dementia
- Your predictions for the future of participatory arts for dementia, based on the literature you have been presented in this pack.

Students can choose their own PowerPoint style, but the following slides will offer some guidance on what they could look like, based on material I have pretended at conferences:

What are participatory arts?

Health & Medicine | Lancaster University

Creative practitioners and “professional artists that conduct creative or performing arts programs in community settings for the purpose of promoting health and wellness’ (Castora-Binkley *et al*, 2010: 353).

Drama	Singing	Multi-sensory
Art-making	Dance	Film-making
Music	Movement	Photography

Final Reflection Model Answers



Guidance

Gaps in the Literature

Health &
Medicine



1. Majority of reviewed papers found positive results –
 - “in the moment” (Hafford-Letchfield, 2013: 846)
 - “sociability and communication” in the group (Stevens, 2012: 70)
2. No comparisons between different arts activities (e.g. music and storytelling)
3. Few evaluations of the benefits of these activities to carers or family members
4. Few papers identified their conceptual or theoretical framework –
 - Phenomenological
 - Psychological e.g. intergroup contact theory
 - Person-centred e.g. Kitwood’s framework



Dementia in the UK



In the UK:

2018 =

850,000 people with dementia and
700,000 informal carers
(Lewis et al, 2014; Alzheimer’s Society,
2018).

1/3 live at home alone
(Mirando-Costillo, 2010)

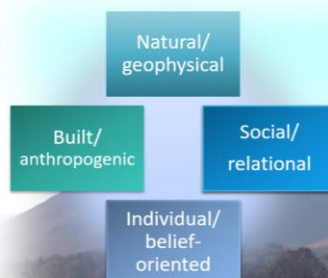
45% do not feel part of their
community
(Alzheimer’s Society, 2014).



Theoretical Framework



Therapeutic Landscapes



PERMA Model of Wellbeing





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