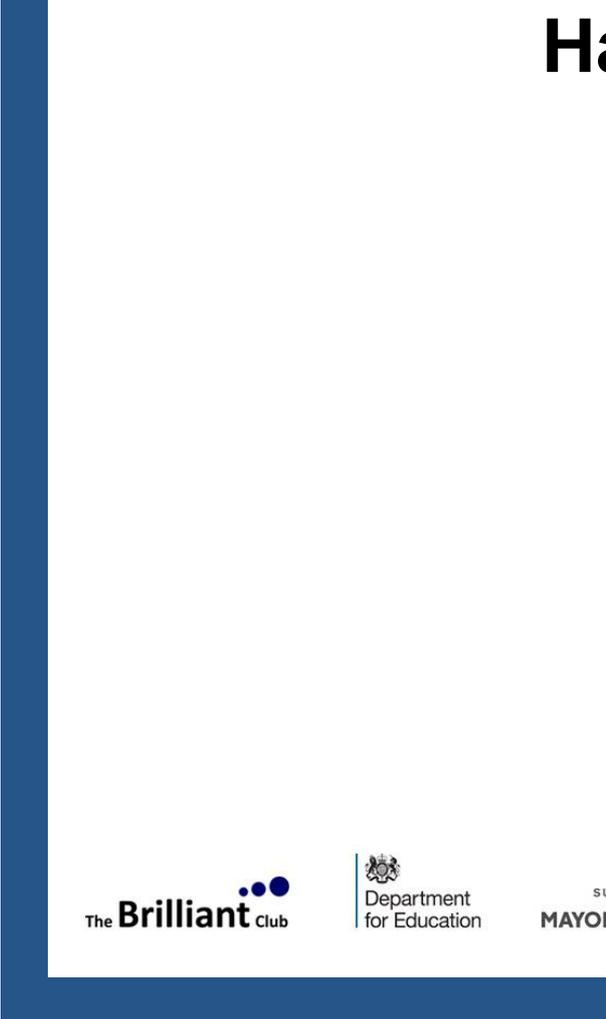


University Learning in Schools

Biology

**My Brain During the Day:
Keywords**

Handout



Keywords by topic

Left brain – left hemisphere of the brain known to be more important for logical, strategic and rational thinking

Right brain – right hemisphere of the brain known to be more important for creativity, curiosity and intuition-based decisions

Brain specificity – different brain areas are responsible for different functions

Brain area – part of the brain found to be important for a particular function

Cortex – outer area of the brain responsible for complex tasks

Frontal lobes – part of cortex responsible for complex thinking, such as strategic planning, predicting, evaluating the situation, controlling our actions, making decisions

Motor cortex – part of cortex responsible for feeling and coordinating movements

Sensory cortex – part of cortex responsible for feeling and processing bodily sensations, such as touch, tickling, pain from different areas of the body

Occipital lobes – part of cortex responsible for feeling and processing visual stimuli (seeing)

Parietal lobes – part of cortex responsible for memory and speech

Temporal lobes – part of cortex responsible for feeling and processing auditory stimuli (hearing)

Hippocampus – area of the brain responsible for memory formation and perception of space/navigation

Cerebellum – brain area responsible for coordinated movements, such as, walking, riding a bike, holding a pen

Neuron – a cell of the central nervous system (brain and spinal chord) that receives and sends electrical signals

Nerve impulse – electrical signal sent by a neuron (or receptor cell, e.g. in the retina or taste buds) to another neuron

Dendrite – part of the neuron that receives electrical signals from other neurons

Axon – part of the neuron that sends electrical signal to other neurons

Cell body – part of cell, which contains nucleus, and in the case of neuron summates signals collected by different dendrites

Cell membrane – selectively permeable membrane (consists of lipids and proteins) that encloses the cytoplasm of the cell

Neural network – a group of neurons which are connected with each other

Synapse – a junction between two neurons that have a small gap in between them which is mediated by neurotransmitters

Presynaptic neuron – neuron which sends information

Postsynaptic neuron – neuron which receives information

Receptors – proteins in the membrane of the cell where a neurotransmitter can bind

Neurotransmitters – chemicals released in the synapse that transmit signals across synapse from presynaptic neuron to postsynaptic neuron

Serotonin – neurotransmitter that regulates body temperature, responsible for good-quality sleep, good mood and helps to tolerate pain. Lack of it causes depression.

GABA - neurotransmitter that inhibits postsynaptic neurons, regulates anxiety, makes thoughts clearer. The effect of it is imitated by alcohol.

Acetylcholine - neurotransmitter that is involved in muscle contraction, wakefulness, anger, aggression, sexuality

Noradrenaline – a stress hormone, sharp concentration, “fight or flight” response, makes our hearts beat fast under stress or when scared

Dopamine – neurotransmitter that is involved in movement, motivation, reward and wellbeing; causes addictions

Glutamate – the most common neurotransmitter in the brain; it allows us to learn and have memory.

Short-term memory – brain capacity to hold a small amount of information for short periods of time (up to 30s); this type of memory is dependent on the hippocampus (area of the brain responsible for memory formation).

Long-term memory – brain capacity to hold information for long periods of time (from hours to years); this type of memory is dependent on the cortex.

Explicit memory – memory that can be consciously recalled upon desire

Implicit memory – unconscious memories, such as how to walk, or habits we have formed

Episodic memory – a form of explicit memory of what happened to us, when and where it happened and who was there it happened (e.g. remembering our last birthday party)

Procedural memory – a form of implicit long-term memory of how to do things (carry out motor tasks)

Semantic memory – a form of explicit long-term memory of learnt facts (e.g. the capitals of different countries, names of colours, dates of historical events)

Synaptic plasticity – the ability of synapses to strengthen or weaken over time, in response to the increase or decrease in their activity