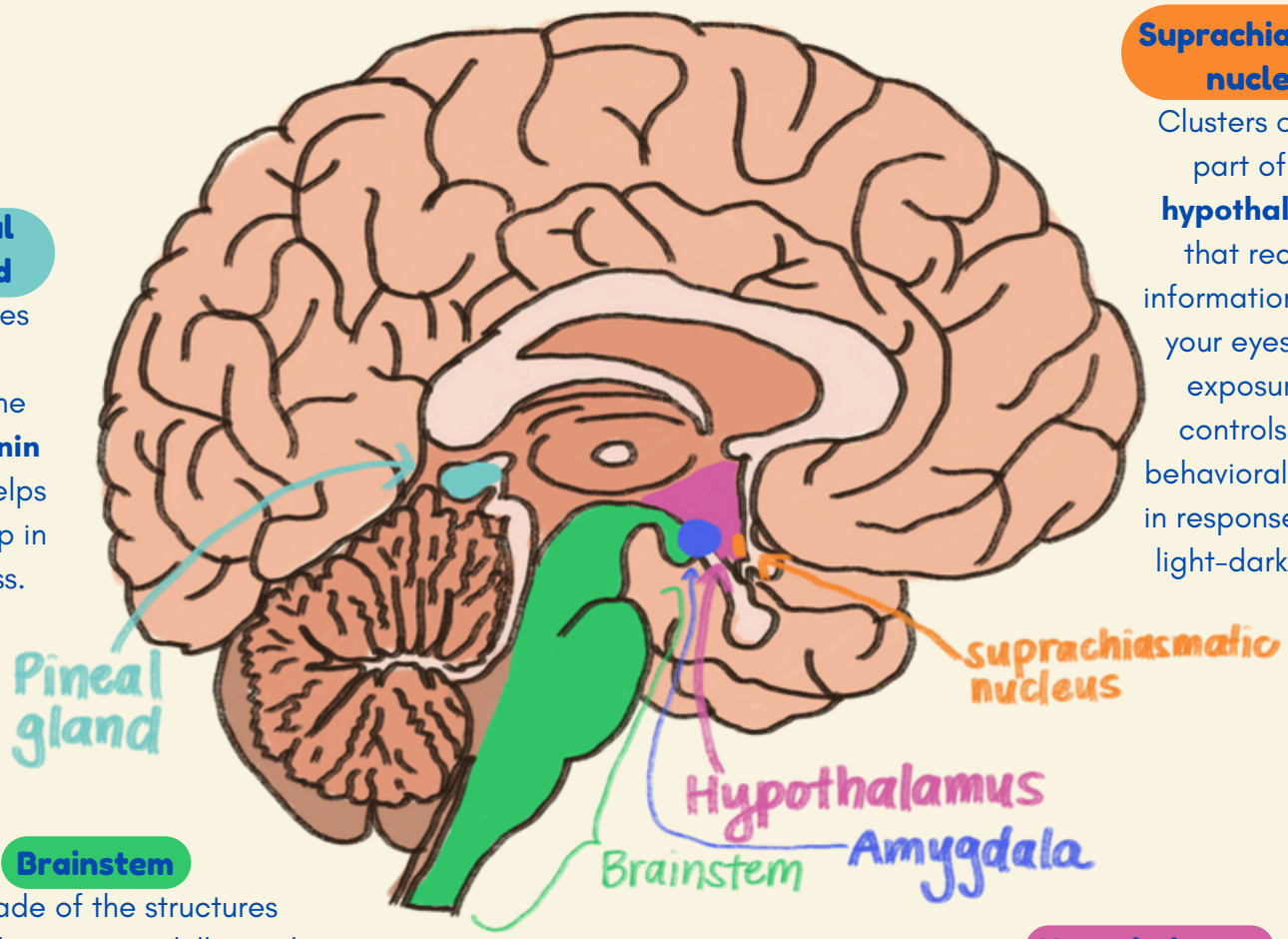
SLEEP & THE BRAIN

Sleep is important for brain functions such as forming pathways to create new memories, removing toxins in the brain that build up in the day, and helping you stay focused in the day.

Pineal Gland
Produces the hormone **melatonin** which helps you sleep in darkness.



Suprachiasmatic nucleus
Clusters of cells part of the **hypothalamus** that receive information about your eyes' light exposure. It controls your behavioral rhythm in response to the light-dark cycle.

Brainstem
It is made of the structures called the pons, medulla, and midbrain. In the brainstem a brain chemical called **GABA** is released known for producing a calming effect. The brainstem controls posture and limb movements so we are still when we dream.

Amygdala
Involved in processing emotions and becomes active during the stage of sleep when dreaming occurs.

Hypothalamus
It contains nerve cells that control sleep and wakefulness. Sleep promoting cells in the hypothalamus release the brain chemical GABA which produces a calming effect.

Infographic by Hannah Pon

References:
National Institute of Neurological Disorders and Stroke. (2024, September 5). Brain basics: Understanding sleep. National Institute of Neurological Disorders and Stroke; National Institute of Neurological Disorders and Stroke. https://www.ninds.nih.gov/health-information/public-education/brain-basics/brain-basics-understanding-sleep