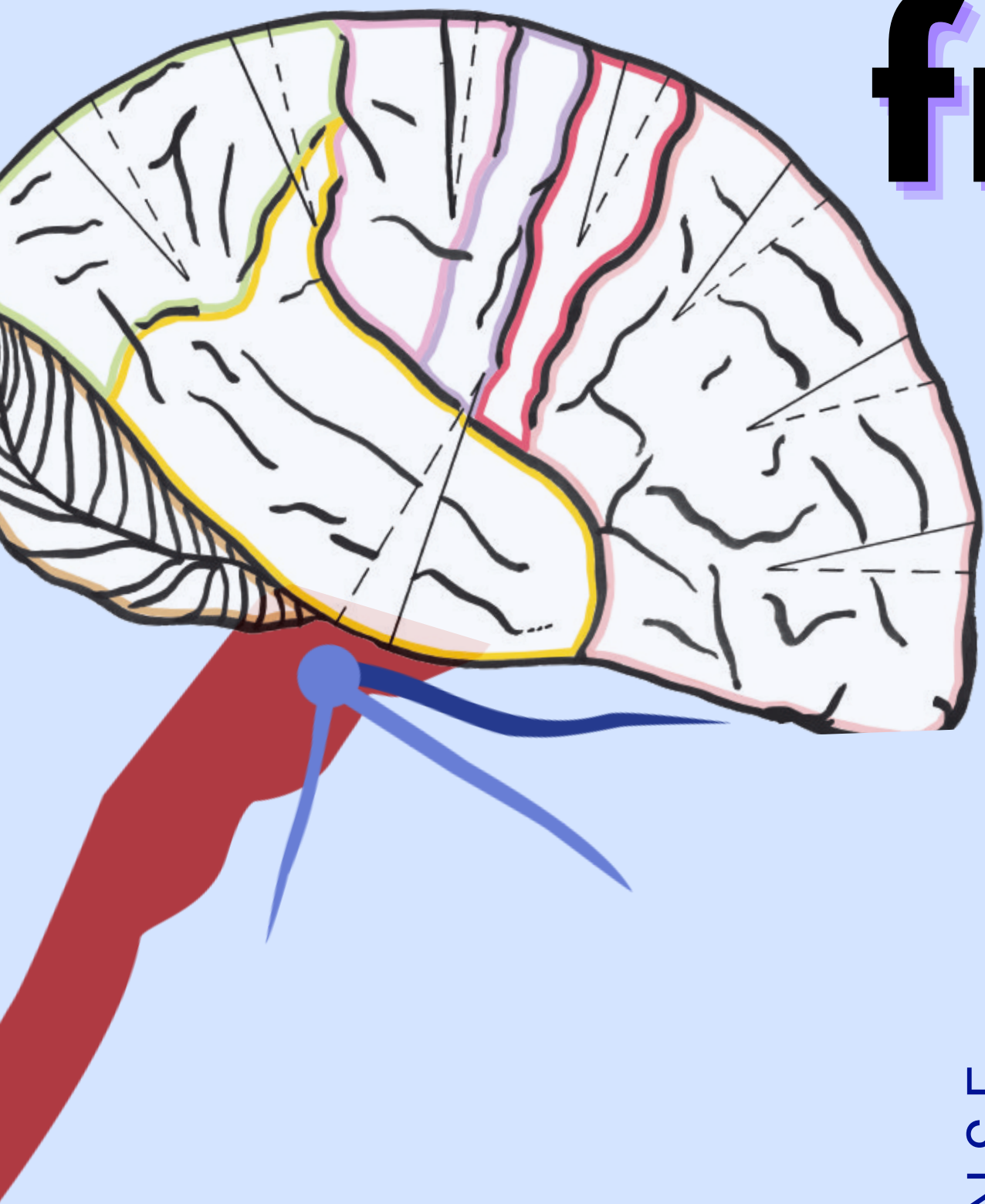


brain freeze



Outcomes


1. I know I need to take care of my body through the story and the activity.
(see SCN 2-12a)
2. I have explored the reaction of my body in response to outside conditions.
(see SCN 2-12b)

NERVE RESPONSE

Learning points

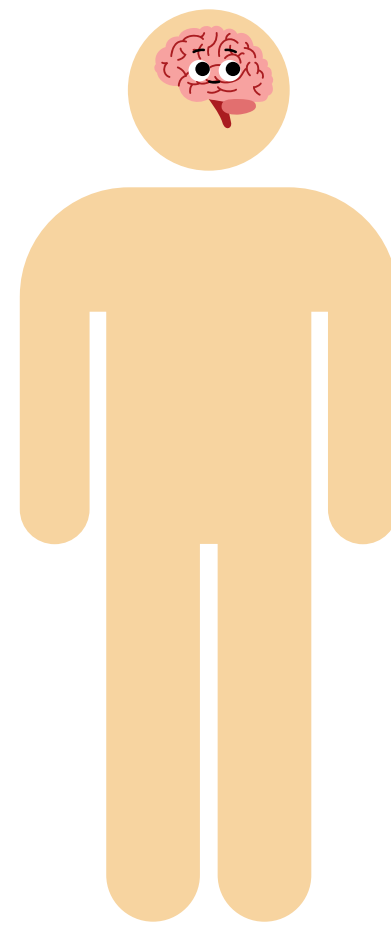
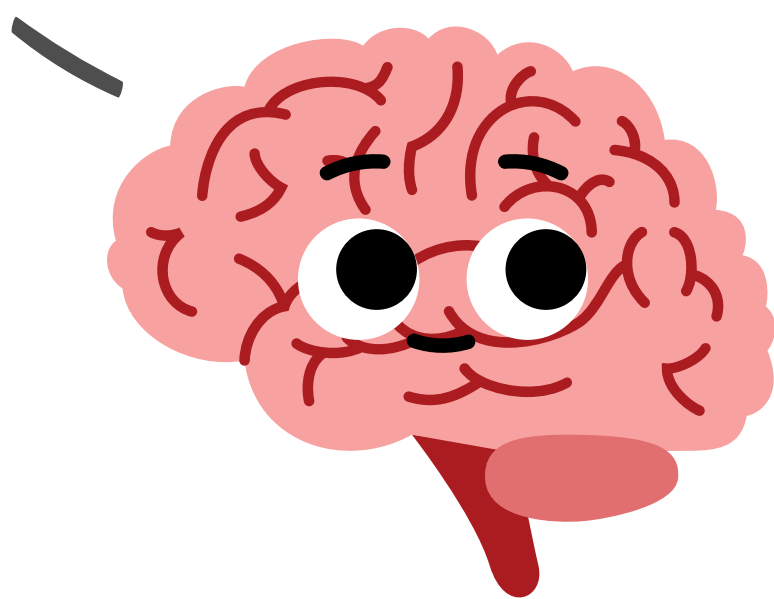
1. Know the concept of blood supply and understand the reasons for brain freeze.
2. Eliminate misconceptions about brain freeze and be able to describe how brain freeze happens.
3. Know the structure of the brain.

Storytelling INTRODUCTION

 The comic story shown in the resource is available by itself, see the link at the end.

A Brain, as a comic character, will tell a story of brain freeze. Some background knowledge is attached in this pack.

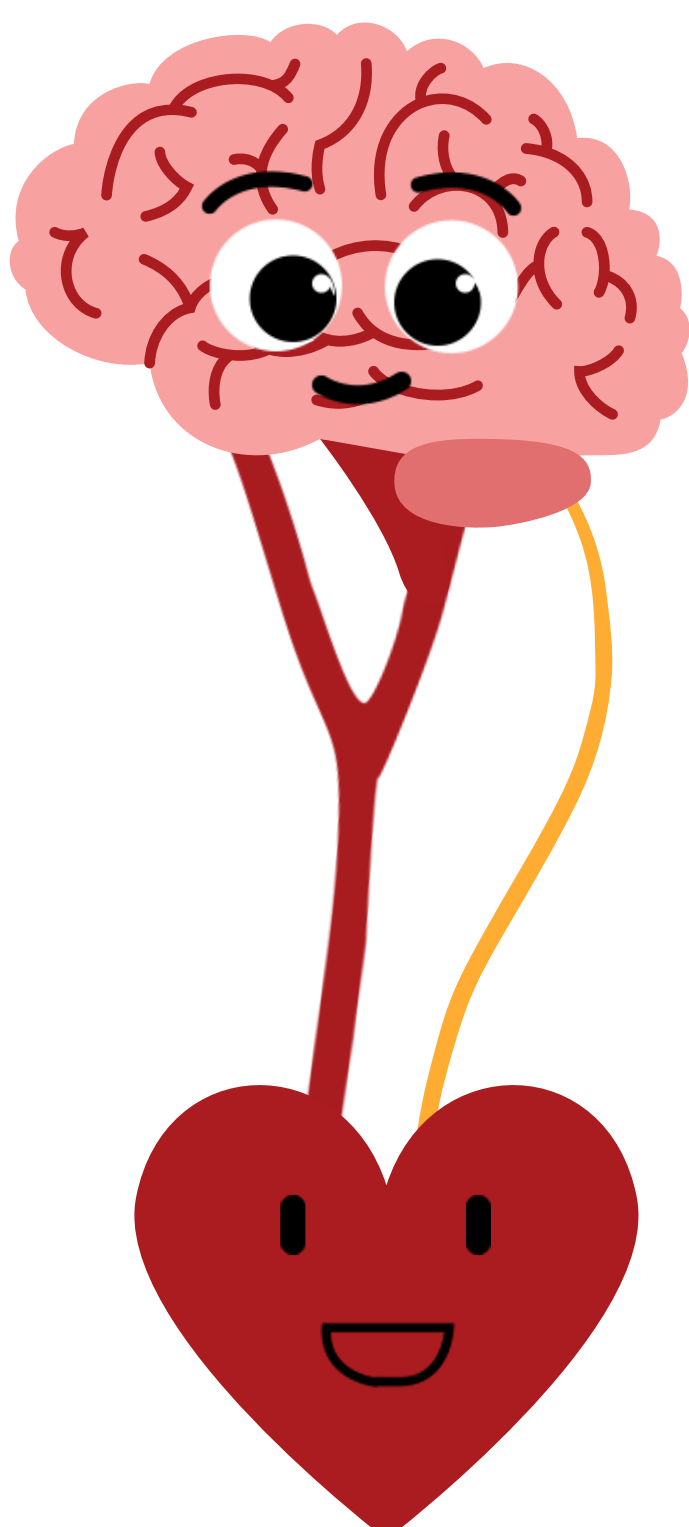
Hi, I'm Brainnie.



I'm petite, but I am a commander of the body!

Brain Size

The human brain accounts for about 2% of our body weight, but consumes 20-25% of our energy intake, i.e. the brain consumes about 10 times more energy than any other organ.

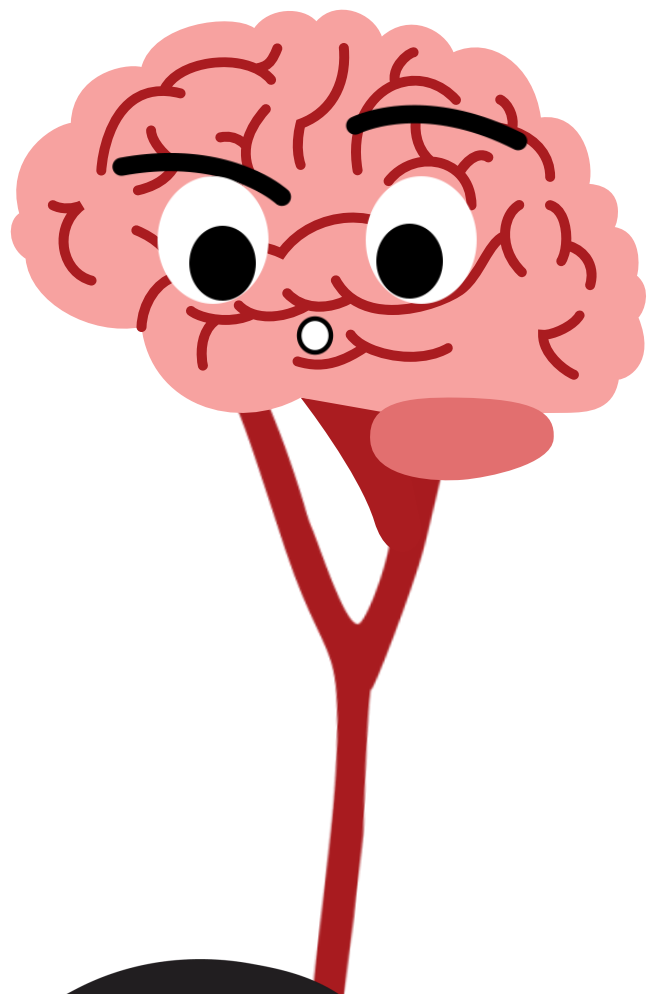


This is my friend Heart, she's so giving.

Blood Supply

2 arteries from the heart pump the blood and bring it to the brain, one is **the internal carotid artery**, the other is **the vertebral artery**.

Storytelling BRAIN FREEZE



When something goes wrong in the body, the brain can sense it immediately.



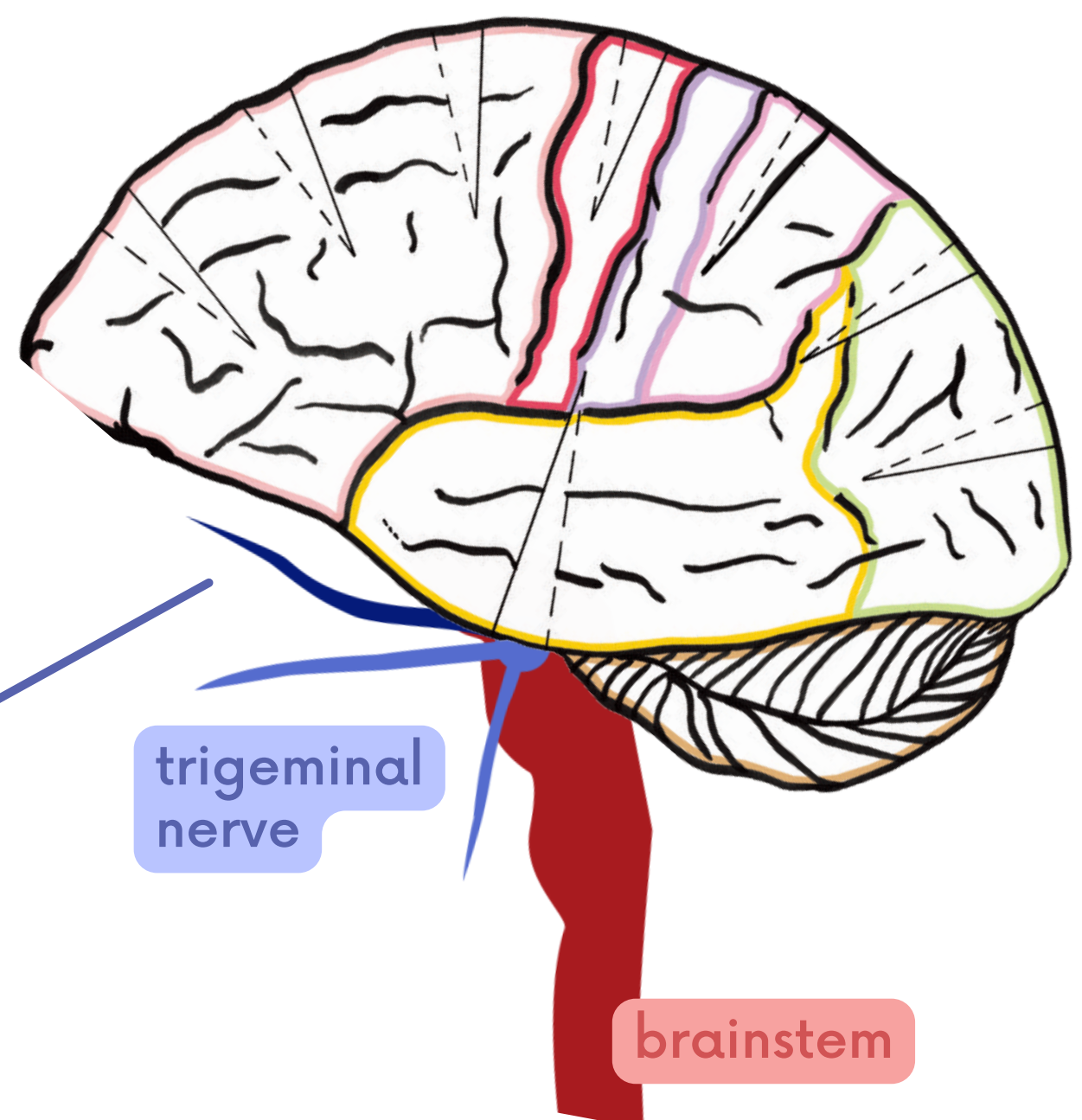
E.g., while you're wolfing down a popsicle...
Then you get a headache.



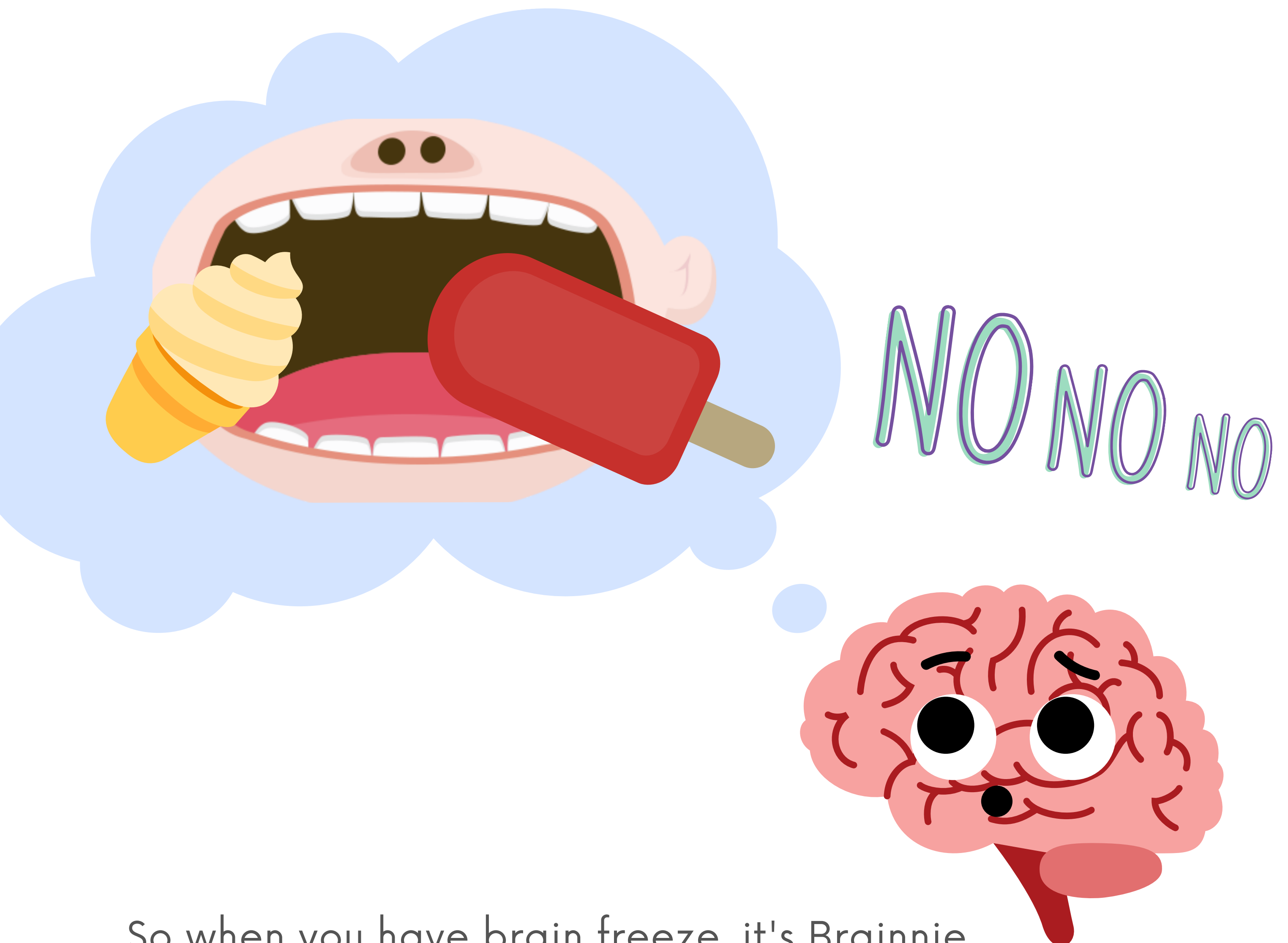
Is your brain frozen?

Brain Freeze

When the upper jaw feels cold food all of a sudden, the blood vessels close to the throat constrict, and then the rush of the blood in vessels triggers the pain receptors. This signal then is sent to the brain by a nerve responsible for sensation in the face, called the trigeminal nerve. **One branch** of the trigeminal nerve goes to the forehead, where you feel the headache.



Storytelling BRAIN FREEZE



So when you have brain freeze, it's Brainnie telling you to stop!

To Ease Brain Freeze

How to ease brain freeze? Pupils may can come up with some ideas before getting to the answer!

Firstly, simply stopping eating the icy food.

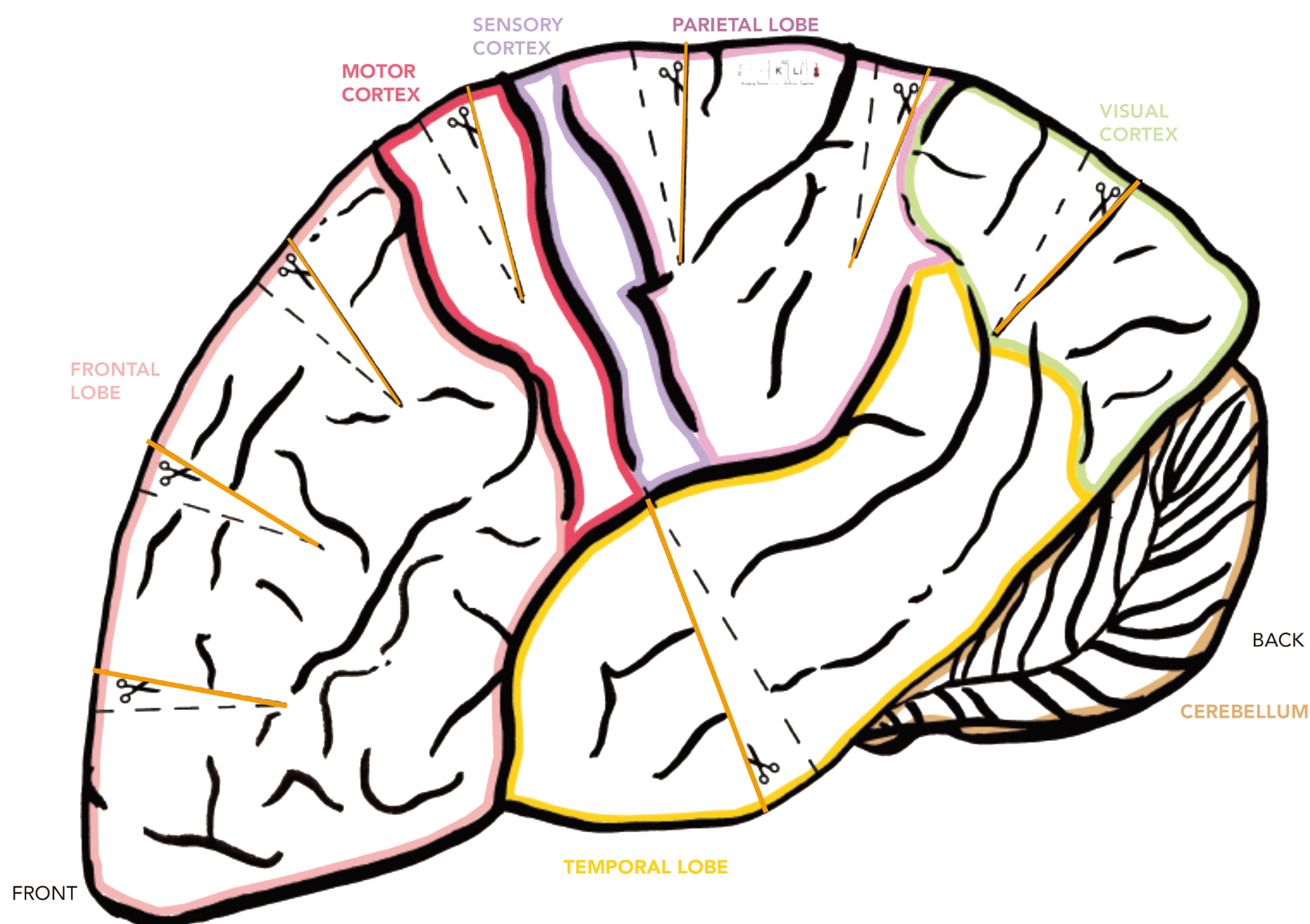
And then, you can warm up your mouth to relieve the headache by pressing the tongue against the roof of your mouth or drinking some warm water.

Brain hat

HANDS-ON ACTIVITY

➤ See the link at the end of this resource for the Brain Hat Template & Instructions.

The brainstem with the trigeminal nerve is connected to both the cerebrum and cerebellum. Where are these in the brain? Make a brain hat and find out the structure of the brain with pupils!



Introduce different parts of the brain when the learners colour them. Pupils can picture where the brainstem lies while wearing the coloured hats. You can explain it with an analogy of the shape of broccoli!

Links for online resources

Full version of the comic story:

<https://drive.google.com/file/d/1zzaKg9scARRpDx6wjEi-T6bAEJh6XZpa/view?usp=sharing>

Brain Hat Template & Instructions:

<https://www.scienceceilidh.com/brainhat>

Further research links

Brainstem:

<https://www.physio-pedia.com/Brainstem>

How to ease brain freeze:

<https://www.hopkinsmedicine.org/health/conditions-and-diseases/how-to-ease-brain-freeze>