Look around the room. What sensations do you feel right now?

INVESTIGATE

3.2

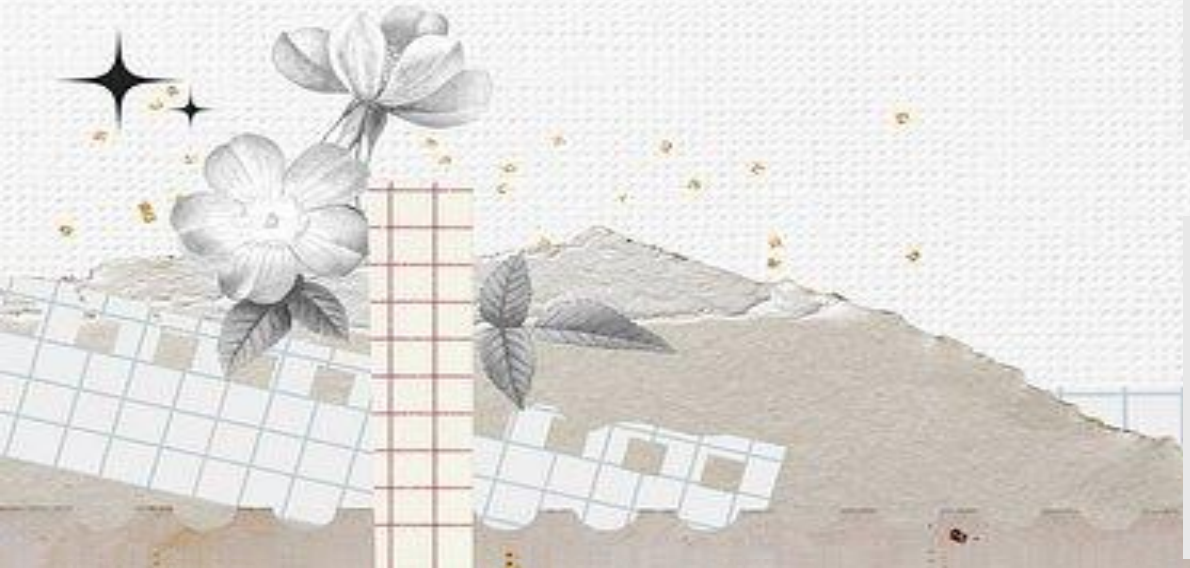
Sensation

As a Young Psychologist, I will be able to…

The Process of Sensation

Sensation- a physical feeling or perception resulting from something that happens to or comes into contact with the body.

This starts in your receptor cells & sense organs- Our eyes, ears, nose, tongue, & skin.



Transduction- Detection of stimulus in the environment that our brain converts to neural impulses

Sensory Reduction- the deliberate reduction or removal of stimuli from one or more of the senses so the brain won't become overwhelmed.

Sensory Thresholds

Ernst Weber- Developed theories to determine the point at which sensations begin & end. Weber's Law

Just Noticeable Difference (JND)- The smallest difference between two stimuli that is detectable 50% of the time.

***This must ALWAYS be a constant!

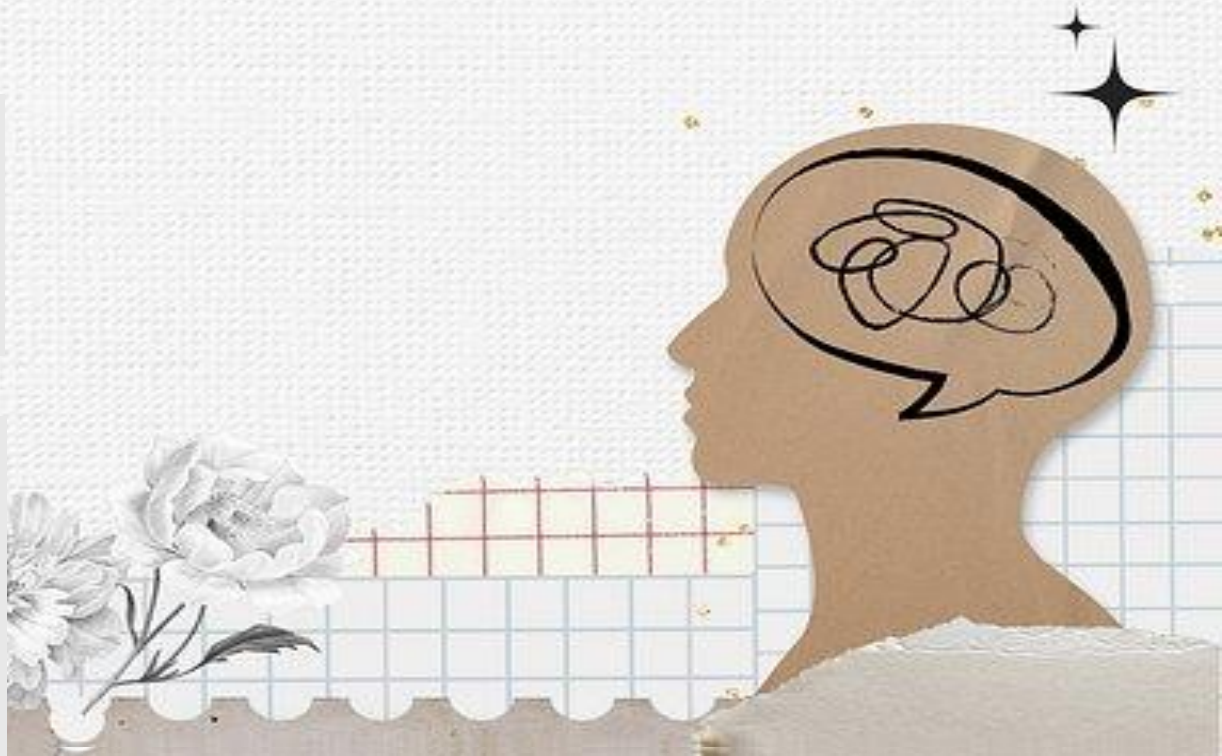
Detecting of Stimuli

What determines whether we can detect a particular stimulus of light, sound, smell, & so one?

One factor is the amount of the stimulus present, the minimum amount of detection is 50% of the time

Difference Threshold- The smallest physical difference between 2 stimuli that is detectable 50% of the time.

Our ability to detect something is also influenced by psychological factors such as motivation, expectations, & motivations



Signal Detection Theory

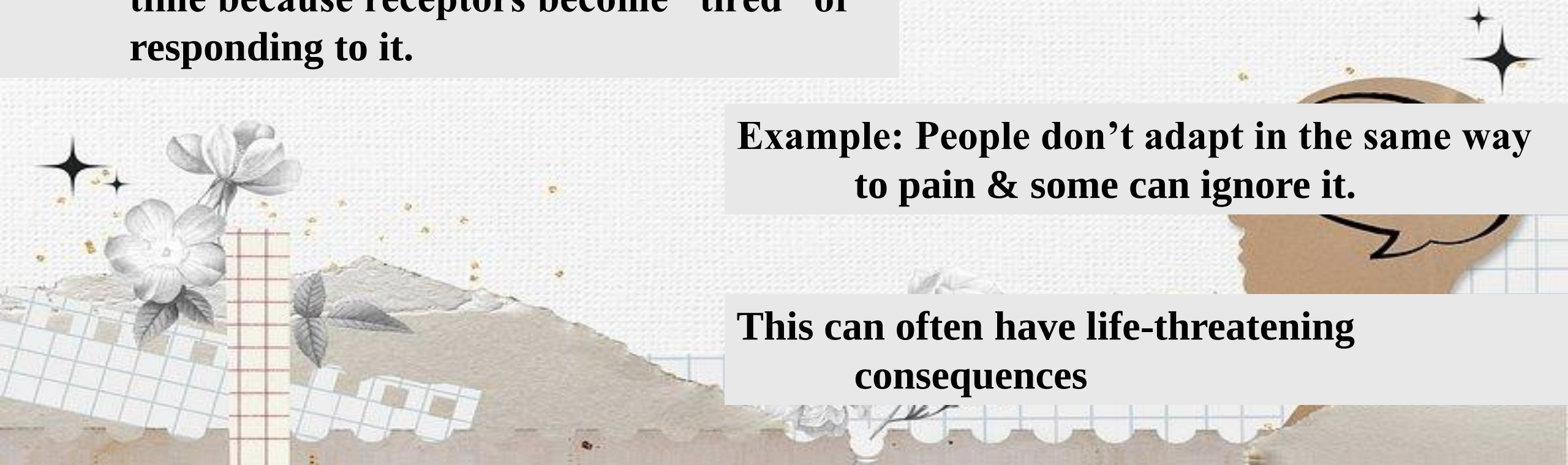
A means to measure the ability to differentiate between information-bearing patterns & random patterns that distract from the information

Habituation- The process of creating a "habit" to ignore outside stimuli

Detecting Stimuli

There are some careers where people learn to detect a particular stimulus & avoid other background noise

Sensory Adaptation- After we perceive a stimulus, we may become less & less aware of it over time because receptors become "tired" of responding to it.



Example: People don't adapt in the same way to pain & some can ignore it.

This can often have life-threatening consequences

Sensory Receptors & Energy

Remember Sensory Receptors? Different parts of your body detect different things

Humans will “ignore” some energy such as X-rays, radio waves, & nuclear energy.

Some animals have abilities to detect different energies that humans can’t

Vision

We rely most heavily on our vision to comprehend the world, so much so that we will choose vision over our other senses

When light enters the retinas, we convert the information to the visual cortex in the brain to make sense

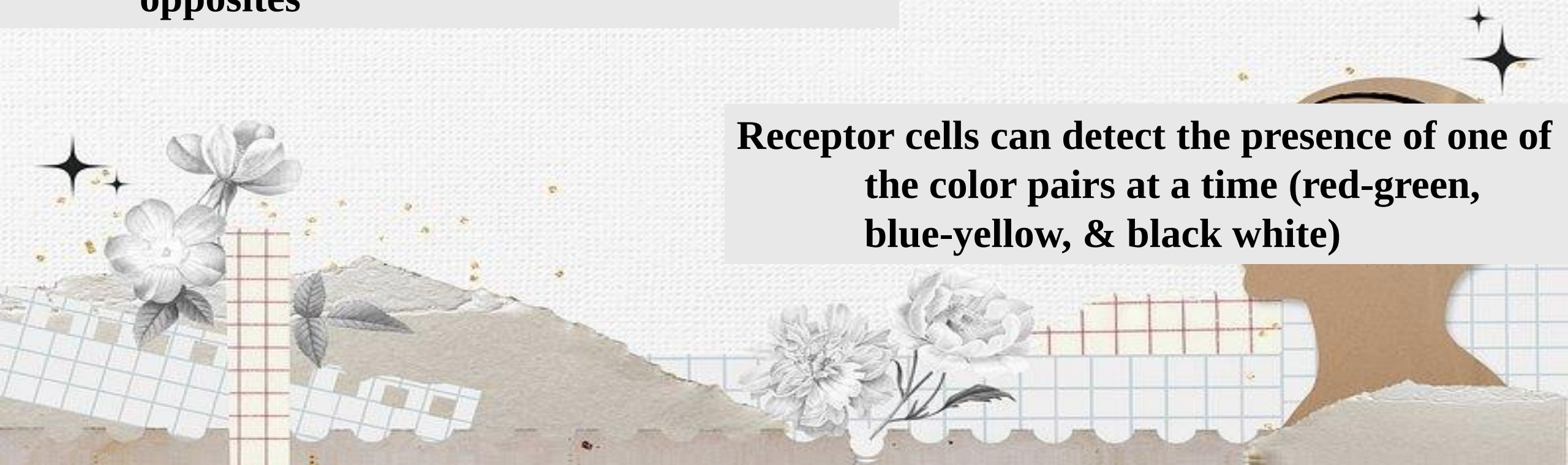
Our difference threshold for colors is so low that we can discriminate between 7 million color variations!

Color also has a powerful effect on our thoughts, feelings, & behaviors

Vision

Trichromatic Theory- The (false) theory that we have 3 color receptors in our eyes that see green, blue, & red

Opponent-Process theory of color- we have receptor systems that contain 2 color opposites



Receptor cells can detect the presence of one of the color pairs at a time (red-green, blue-yellow, & black white)

Adaptation in Our Sight

Dark Adaptation- When the eye recovers its ability to see when going from a brightly lit state to a dark state

Light Adaptation- When the eye recovers its ability to see when going from darkness to a brightly lit state

Sound

Sound waves vary in length (frequency) & height (amplitude). Example: growls are longer waves thus have a lower pitch

Amplitude is measured in decibels. The threshold is 0 decibels. A whisper is 10, and a train can be 100

Hearing is important for the potential of danger & we form fast impressions of people based on tone of voice

Hearing Impairments

Term used to refer. To difficulties in hearing

Conduction hearing impairment- problems with the mechanics of the outer or middle ear. Sounds can’t pass from the eardrum to the cochlea

Nerve Hearing Impairment- Problem with the inner ear or in the auditory pathways to the brain.

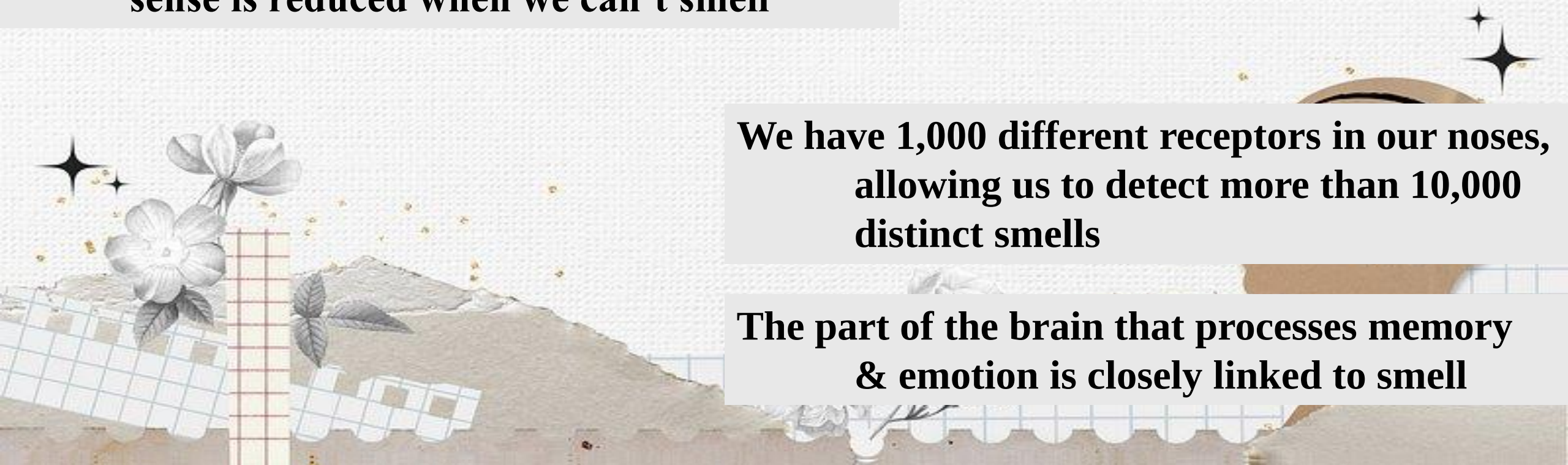
Tinnitus- A loud ringing nose in one’s ears caused by infections or loud noises.

Cochlear implant- A device that is worn behind the ear to a sound processor for people to “hear” sound.

Smell & Taste

These are chemical senses because they rely on specialized chemoreceptor cells

Smell & taste receptors are located near each other & interact. This is why our taste sense is reduced when we can't smell



We have 1,000 different receptors in our noses, allowing us to detect more than 10,000 distinct smells

The part of the brain that processes memory & emotion is closely linked to smell

Smell & Taste

We can detect 5 distinct tastes: sweet, sour, saly, bitter, & umami (a delicious or savory taste)

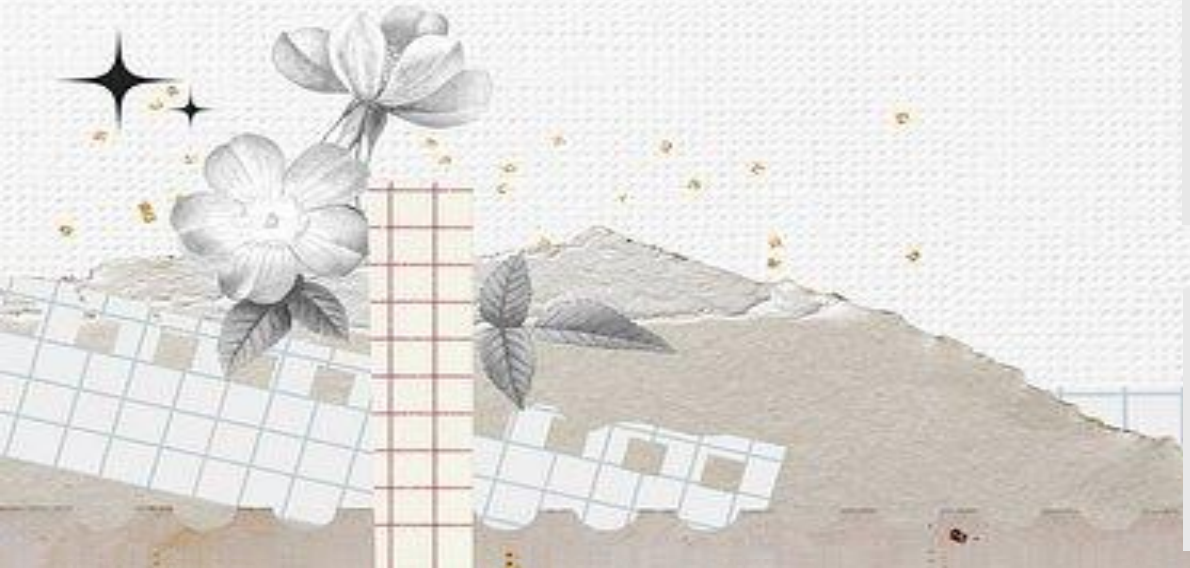
As we age, so does our sensitivity to taste. This is why children often do not like stronger-tasting foods

Taste is our least critical sense, but it does team up with our other senses to determine if a food can be eaten

Body Senses

Vestibular Sense- Our sense of our body movement & maintains balance & posture

The sensory organs that process this are in the inner ear to respond to the head's movement



Kinesthetic Sense- Perception of body movement, such as the position of our arms & legs. It tells the muscles of the body to move

Touch- A mixture of 4 sensations of pressure, warmth, cold, & pain with the receptors in the skin

Pain Disorders

Congenital analgesia, Congenital insensitivity to pain with anhidrosis (CIPA)- You cannot feel pain.

Phantom Limb Pain- When people who have a limb removed can still "feel" pain in the missing limb.

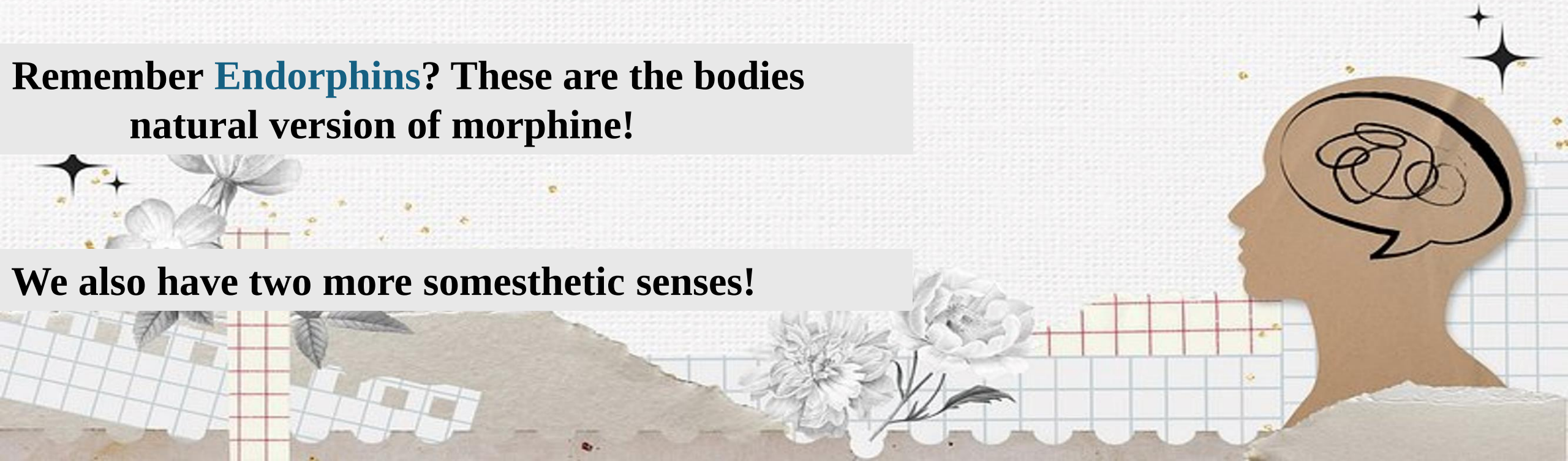
Pain Gate-Control Theory

Pain must pass through a "gate" located in the spinal cord

Substance P- A Neuromodulator that releases information regarding pain to the spinal cord.

Remember Endorphins? These are the bodies natural version of morphine!

We also have two more somesthetic senses!



The Importance of Touch

Skin-to-skin contact helps babies grow & touch reduces stress on the cardiovascular system

People who get hugs each week are less likely to become sick & people who hold hands with a partner show lower levels of pain

However, not all touch is good due to psychological perceptions