



DISCOVERY KIT #2

MUSIC AND YOUR BRAIN

Explore how music affects different parts of your brain and how it helps you think, learn, remember, and feel.

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MEET YOUR MUSICAL BRAIN

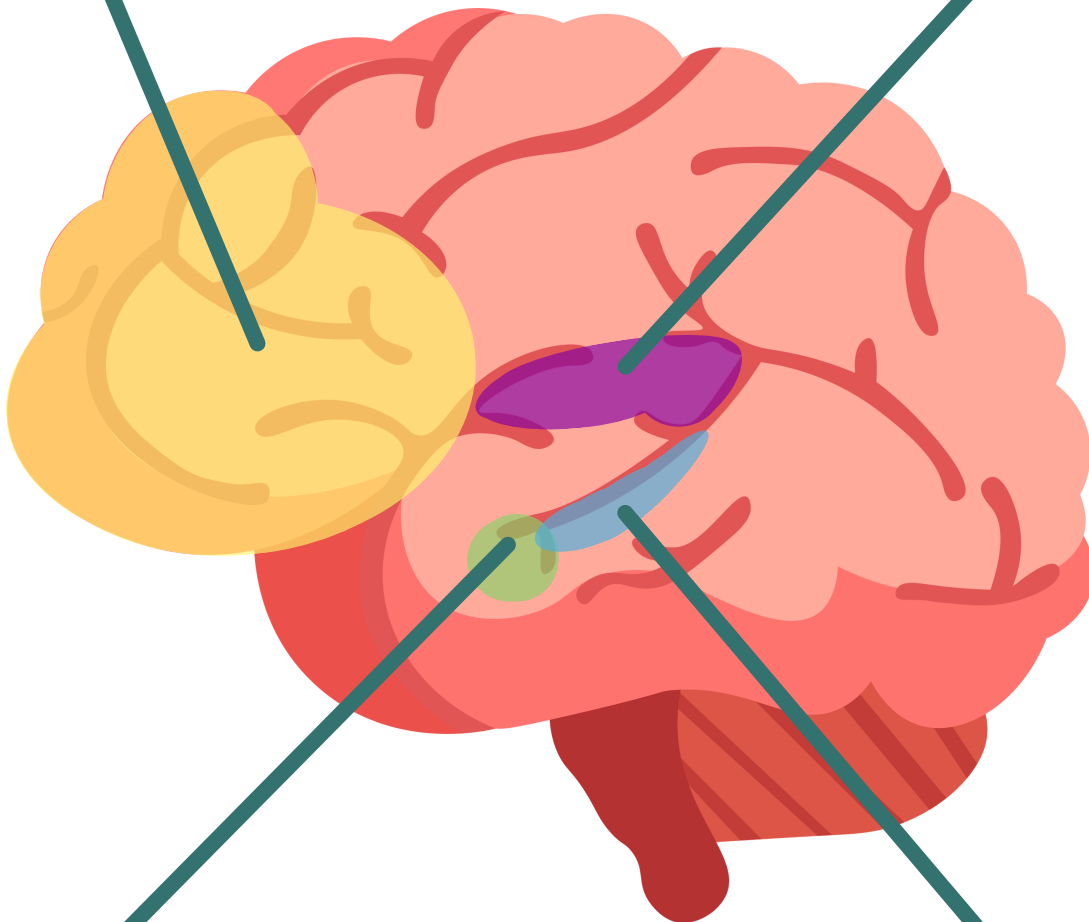
Every time you listen to music, your brain becomes incredibly active. Different parts of your brain work together to help you hear sounds, remember songs, experience emotions, and stay focused.

PREFRONTAL CORTEX:

HELPS YOU FOCUS, SOLVE PROBLEMS, MAKE DECISIONS, AND STAY ORGANIZED.

AUDITORY CORTEX:

PROCESSES THE SOUNDS YOU HEAR, INCLUDING RHYTHM, MELODY, AND PITCH.



AMYGDALA:

HELPS YOU EXPERIENCE EMOTIONS AND CONNECT FEELINGS TO MUSIC.

HIPPOCAMPUS:

CREATES MEMORIES AND CONNECTS SONGS WITH IMPORTANT EXPERIENCES.

YOUR MUSICAL BRAIN AT WORK

1 PREFRONTAL CORTEX:

The prefrontal cortex helps you focus, solve problems, and make decisions. When you listen to music, it recognizes patterns, predicts what comes next, and helps you stay focused while learning or practicing new skills.

2 AUDITORY CORTEX:

The auditory cortex processes every sound you hear. It recognizes rhythm, melody, pitch, tempo, and different instruments, allowing your brain to understand music rather than hearing random sounds.

3 AMYGDALA

The amygdala helps you understand and respond to emotions. It connects songs to the feeling you experience while listening to them, explaining why music can make you feel happy, calm, excited, or emotional.

4 HIPPOCAMPUS

The hippocampus creates and stores memories. It connects songs with important people and experiences, which is why hearing a familiar song can instantly remind you of a specific moment.

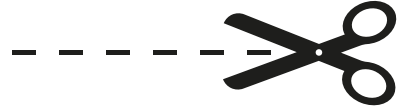
TOGETHER, THESE FOUR REGIONS WORK AS A TEAM EVERY TIME YOU LISTEN TO MUSIC!

BRAIN DETECTIVE CARDS

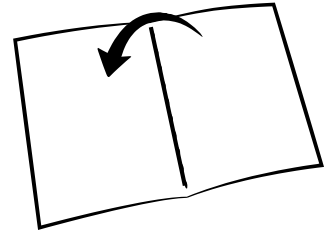
Use what you learned to solve each mystery!

HOW TO MAKE YOUR CARDS:

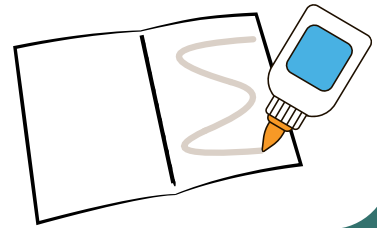
1 CUT ALONG THE DOTTED LINES.



2 FOLD ALONG THE SOLID LINE WITH THE PICTURE ON THE OUTSIDE.

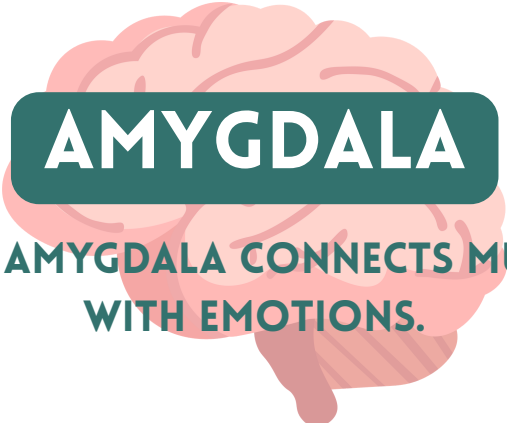


3 GLUE THE BLANK SIDES TOGETHER.



Each card describes something that happens when you listen to music. Read the clue, then guess which part of the brain is doing the work before flipping the card over!

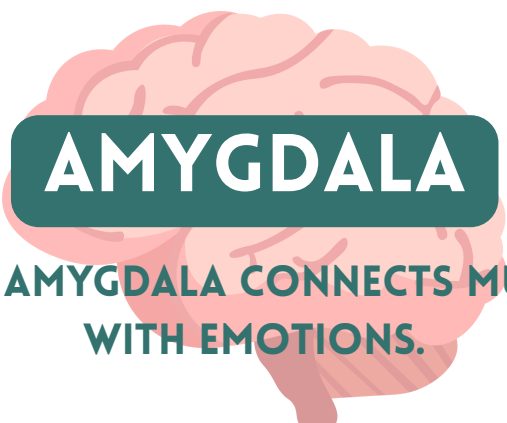




AMYGDALA

THE AMYGDALA CONNECTS MUSIC
WITH EMOTIONS.

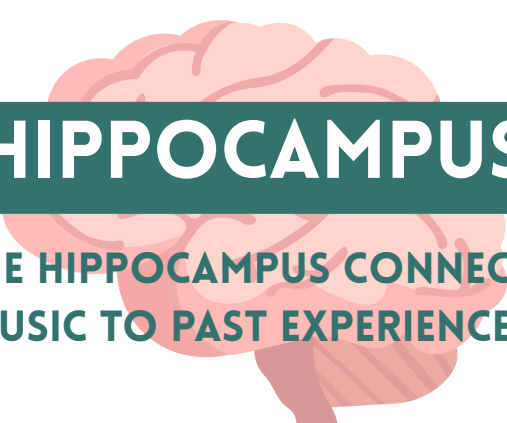
AN UPBEAT SONG
INSTANTLY BOOSTS
YOUR CONFIDENCE
BEFORE A GAME OR
PERFORMANCE



AMYGDALA

THE AMYGDALA CONNECTS MUSIC
WITH EMOTIONS.

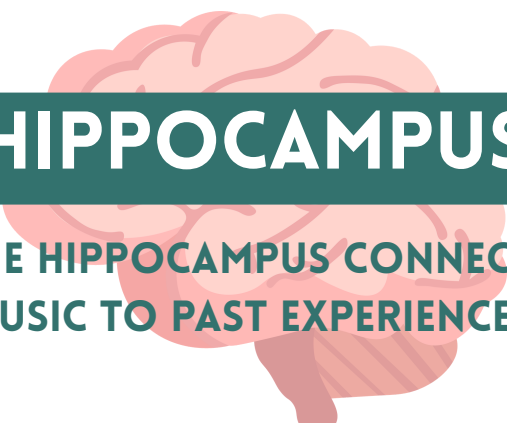
A SUSPENSEFUL MOVIE
SOUNDTRACK MAKES
YOUR HEART RACE EVEN
THOUGH NOTHING SCARY
HAPPENED YET.



HIPPOCAMPUS

THE HIPPOCAMPUS CONNECTS
MUSIC TO PAST EXPERIENCES.

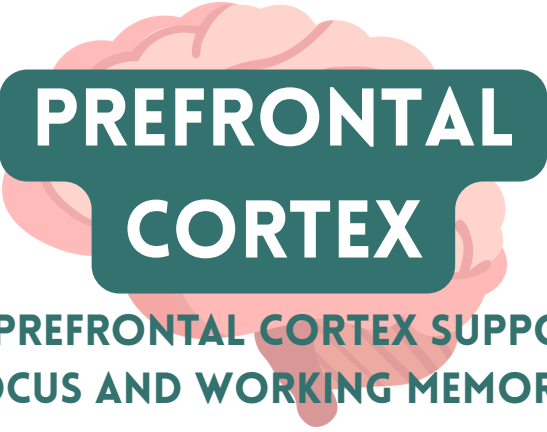
YOU HEAR A SONG AND
INSTANTLY REMEMBER
ALL OF THE LYRICS EVEN
THOUGH YOU HAVEN'T
HEARD IT IN YEARS.



HIPPOCAMPUS

THE HIPPOCAMPUS CONNECTS
MUSIC TO PAST EXPERIENCES.

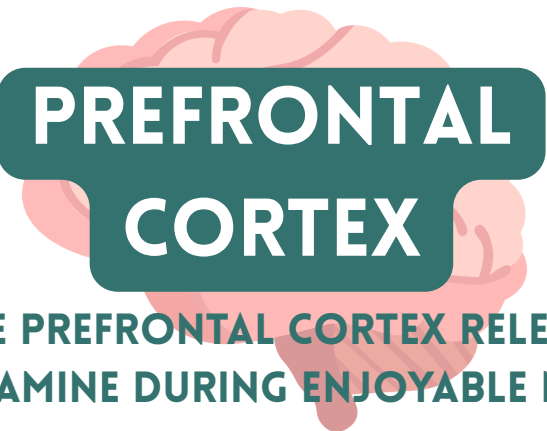
A SONG FROM YOUR
CHILDHOOD BRINGS
BACK VIVID MEMORIES
OF A SPECIFIC EVENT.



PREFRONTAL CORTEX

THE PREFRONTAL CORTEX SUPPORTS
FOCUS AND WORKING MEMORY.

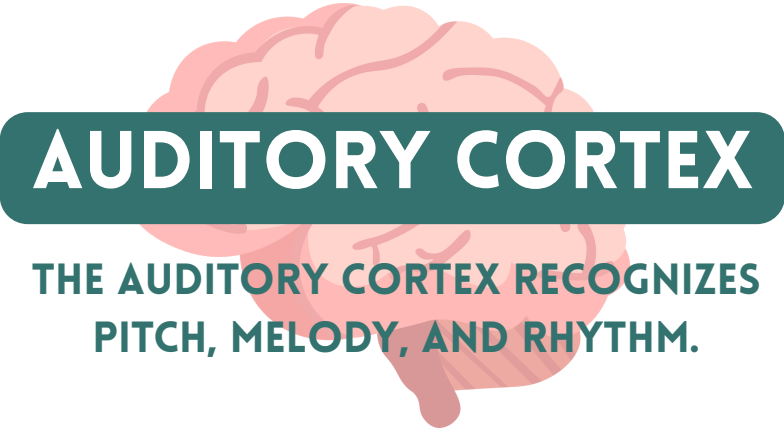
YOU PRACTICE THE SAME
PIANO SONG UNTIL YOU
FINALLY PLAY IT
PERFECTLY.



PREFRONTAL CORTEX

THE PREFRONTAL CORTEX RELEASES
DOPAMINE DURING ENJOYABLE MUSIC.

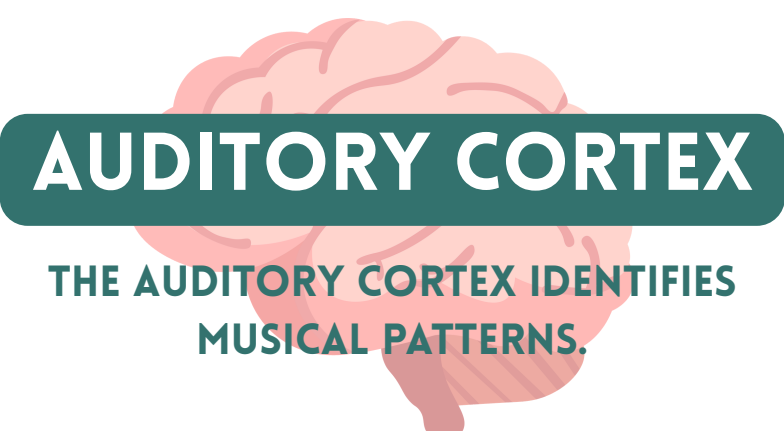
A SONG YOU'VE BEEN
WAITING TO HEAR
FINALLY COMES ON AND
YOU FEEL A RUSH OF
EXCITEMENT.



AUDITORY CORTEX

THE AUDITORY CORTEX RECOGNIZES
PITCH, MELODY, AND RHYTHM.

YOU RECOGNIZE YOUR
FAVORITE SONG AFTER
HEARING ONLY THREE
NOTES.



AUDITORY CORTEX

THE AUDITORY CORTEX IDENTIFIES
MUSICAL PATTERNS.

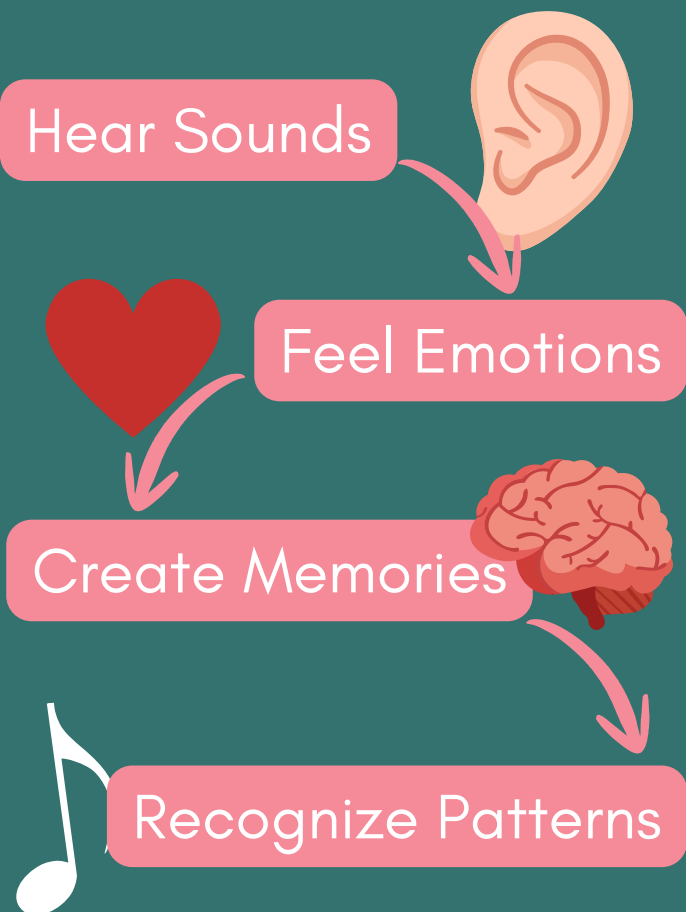
BEFORE THE NEXT NOTE
OF A SONG PLAYS, YOU
CAN ALREADY PREDICT
WHAT IT WILL BE.

MUSIC HELPS MEMORY

WHY ARE SONGS SO MEMORABLE?

Our brains process music using many different regions at the same time. As you listen, your brain hears sounds, recognizes patterns, creates emotions, and stores memories all at once. Because so many parts of your brain are working together, songs often make it easier to remember information.

YOUR BRAIN AT WORK



EVERYDAY EXAMPLES

You've probably memorized songs like:

- The ABC's
- Happy Birthday
- Twinkle, Twinkle
- Jingle Bells
- Take Me Out to the Ball Game

AMAZING MUSIC & BRAIN FACTS

YOUR BRAIN LOVES A CHALLENGE

RESEARCHERS HAVE FOUND THAT LISTENING TO COMPLEX MUSIC ACTIVATES MORE AREAS OF THE BRAIN THAN SIMPLE MELODIES. AS YOUR BRAIN RECOGNIZES RHYTHMS, HARMONIES, AND PATTERNS, DIFFERENT REGIONS WORK TOGETHER TO UNDERSTAND WHAT YOU'RE HEARING.



MUSIC CAN HELP YOU LEARN

RESEARCHERS HAVE FOUND THAT STUDYING WITH THE SAME BACKGROUND MUSIC DURING LEARNING AND REVIEW CAN SOMETIMES MAKE INFORMATION EASIER TO REMEMBER. YOUR BRAIN CONNECTS THE MUSIC WITH WHAT YOU LEARNED, CREATING ANOTHER CLUE TO HELP YOU RECALL IT LATER.

MUSIC FORMS STRONGER MEMORIES

SCIENTISTS HAVE DISCOVERED THAT MANY PEOPLE WITH ALZHEIMER'S DISEASE CAN STILL RECOGNIZE FAMILIAR SONGS, EVEN WHEN OTHER MEMORIES BECOME DIFFICULT TO RECALL. BECAUSE MUSIC ACTIVATES MANY PARTS OF THE BRAIN AT ONCE, IT CAN CREATE MUCH STRONGER MEMORIES.



MUSICAL MEMORIES

Write down some songs that you remember from specific events from your life.

CURRENT FAVORITE SONG

CELEBRATION

MEMORY WITH FAMILY

MEMORY WITH FRIENDS

SPORTS GAME

HOLIDAY

VACATION OR TRIP

COME UP WITH YOUR OWN EVENT AND SONG:

MY MUSICAL TIMELINE

Choose six memories from the previous page and place them in order based on your age when the memory took place.

MEMORY/EVENT	SONG	AGE

On the next page, you will get to create your own musical timeline using the format below.

IN EACH BOX, INCLUDE:

1. The event
2. Your age at the time of the memory
3. The song you remember
4. A drawing of the memory

Age	Event
	Drawing of Memory Song Title

MY MUSICAL TIMELINE

A blank musical timeline template. It features a central vertical line with circular endpoints at the top and bottom. Six rectangular boxes are arranged in two columns and three rows, connected to the central line by horizontal lines. Each box has a light blue tab on its top-left corner and two horizontal lines inside, intended for writing musical notes or lyrics.

REFLECTION

Think about your journey through your musical brain.

WHICH BRAIN REGION INTERESTED YOU THE MOST? WHY?

WHAT SURPRISED YOU THE MOST ABOUT HOW MUSIC AFFECTS YOUR BRAIN?

WHAT SONG ON YOUR MUSICAL TIMELINE IS THE MOST MEANINGFUL TO YOU? WHY?

HELP US IMPROVE

ENJOYED THIS DISCOVERY KIT? SCAN THIS QR CODE TO COMPLETE A QUICK 2-MINUTE SURVEY. YOUR FEEDBACK HELPS TO CREATE EVEN BETTER EDUCATIONAL RESOURCES.

