

LESSON 5



LET'S TALK ABOUT EYES & EARS

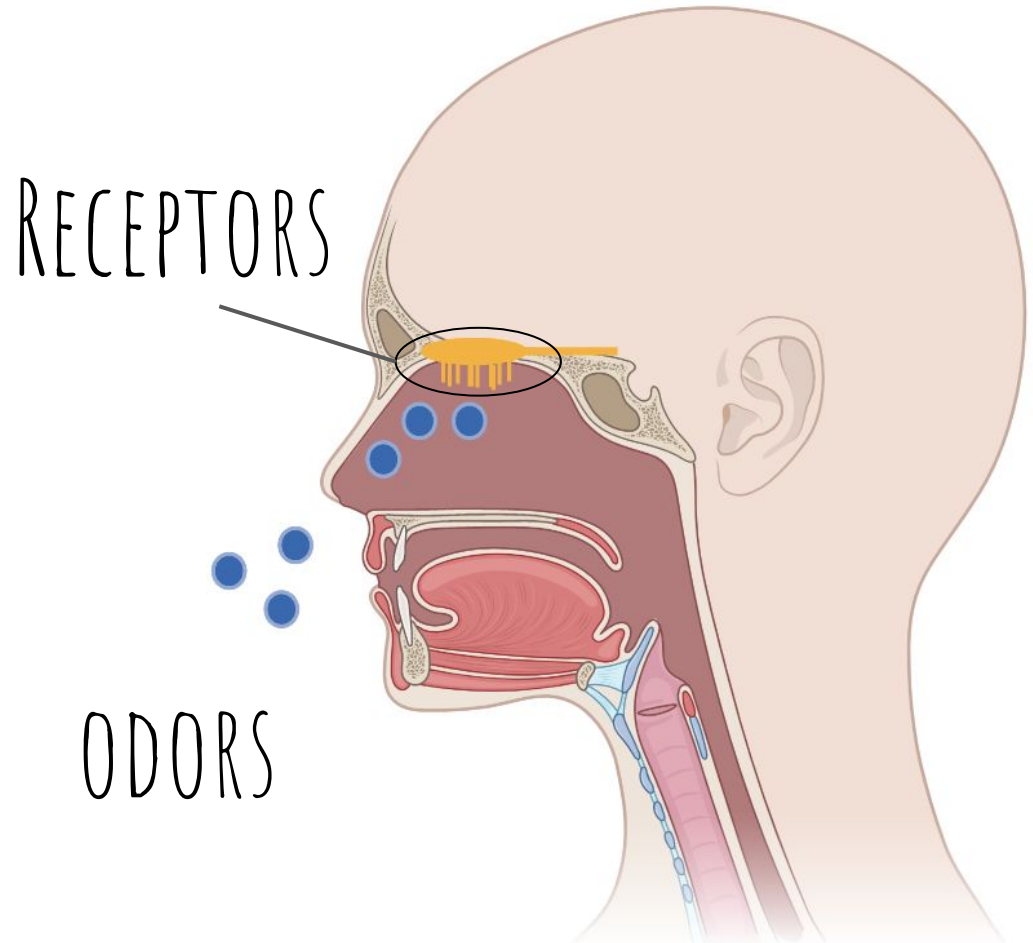
WHAT DID WE LEARN LAST TIME?

WE LEARNED ABOUT OUR
ABILITY TO SMELL & TASTE
THINGS!



WHAT DID WE LEARN LAST TIME?

"RECEPTORS" IN
OUR NOSE RECEIVE
OR CATCH ODORS
(SMELLS) THAT ARE
IN THE AIR.



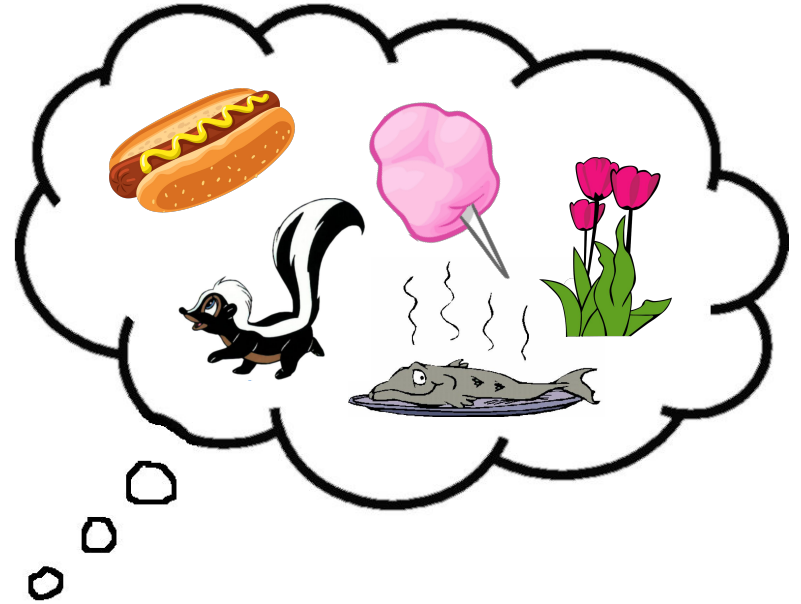
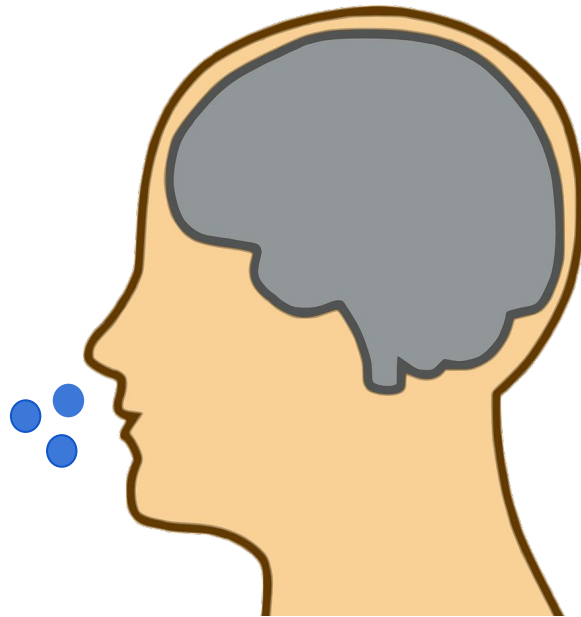
WHAT DID WE LEARN LAST TIME?

THESE RECEPTORS
SEND A SIGNAL
(MESSAGE) TO OUR
BRAIN THROUGH A
CHAIN OF **NEURONS**.



WHAT DID WE LEARN LAST TIME?

THEN, OUR BRAIN
INTERPRETS THE MESSAGE.

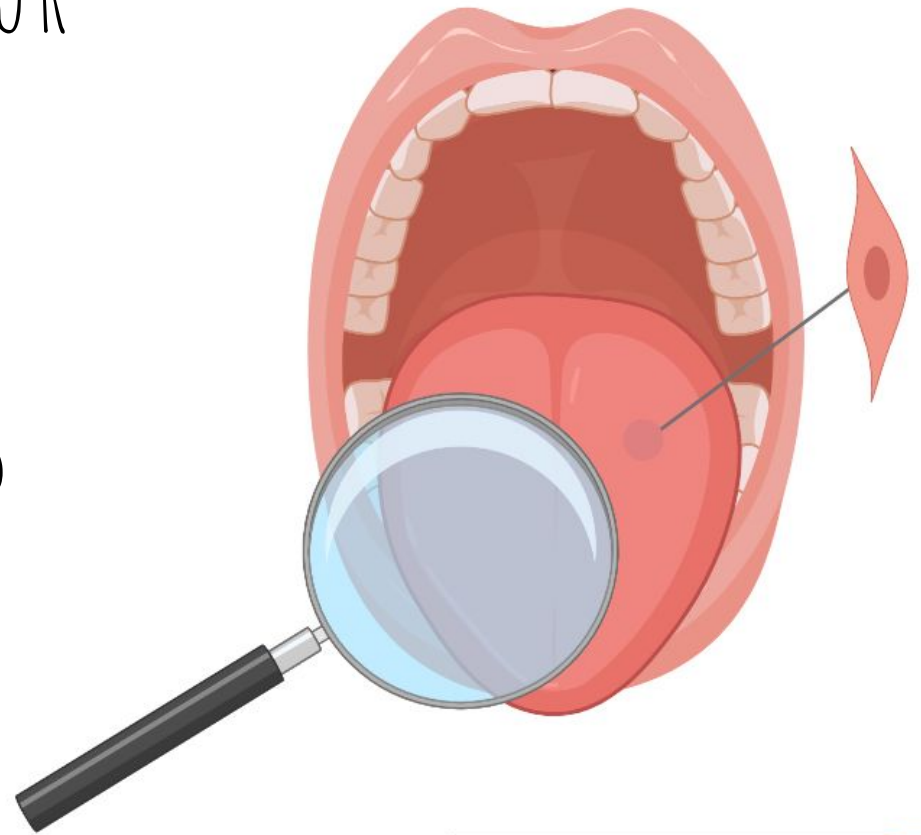


HAVE I SMELLED THIS
BEFORE?

DOES THIS SMELL GOOD?

WHAT DID WE LEARN LAST TIME?

WE ALSO LEARNED THAT OUR TONGUE HAS **RECEPTORS** THAT **SEND MESSAGES** TO THE BRAIN ABOUT THINGS THAT WE TASTE.



WHAT DID WE LEARN LAST TIME?

OUR TASTE BUDS CAN PICK UP ON **FIVE** DIFFERENT TYPES OF TASTE.

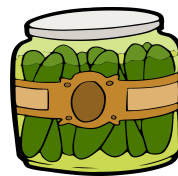
SWEET



SALTY



SOUR



BITTER

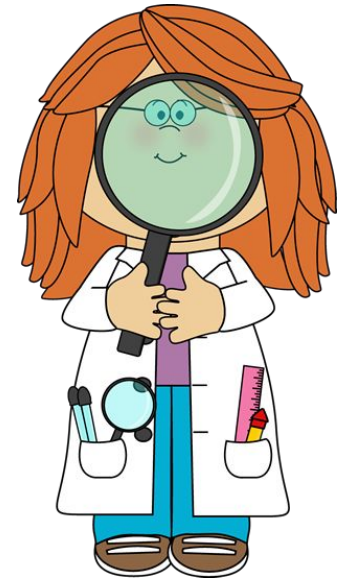


SAVORY

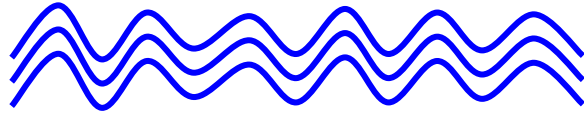


TODAY WE ARE GOING TO LEARN ABOUT:

OUR ABILITY TO
HEAR & SEE
THINGS!



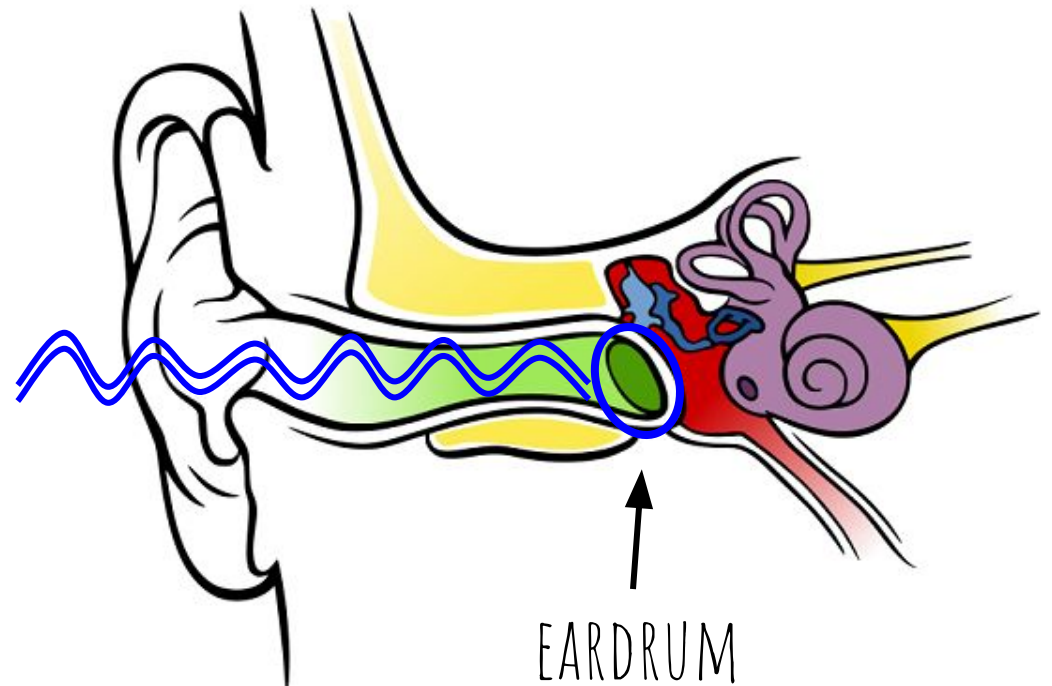
HOW DO WE HEAR THINGS?



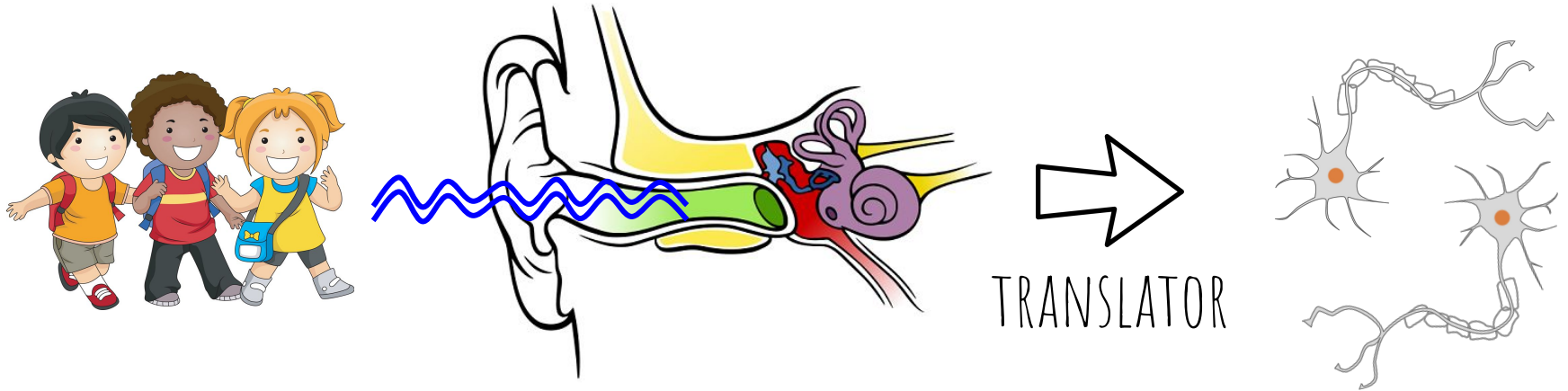
WHEN OUR FRIENDS CALL TO US, THEIR VOICES
TRAVEL THROUGH THE AIR AS **SOUND WAVES** &
ENTER OUR EARS!

ONCE INSIDE OUR EARS...

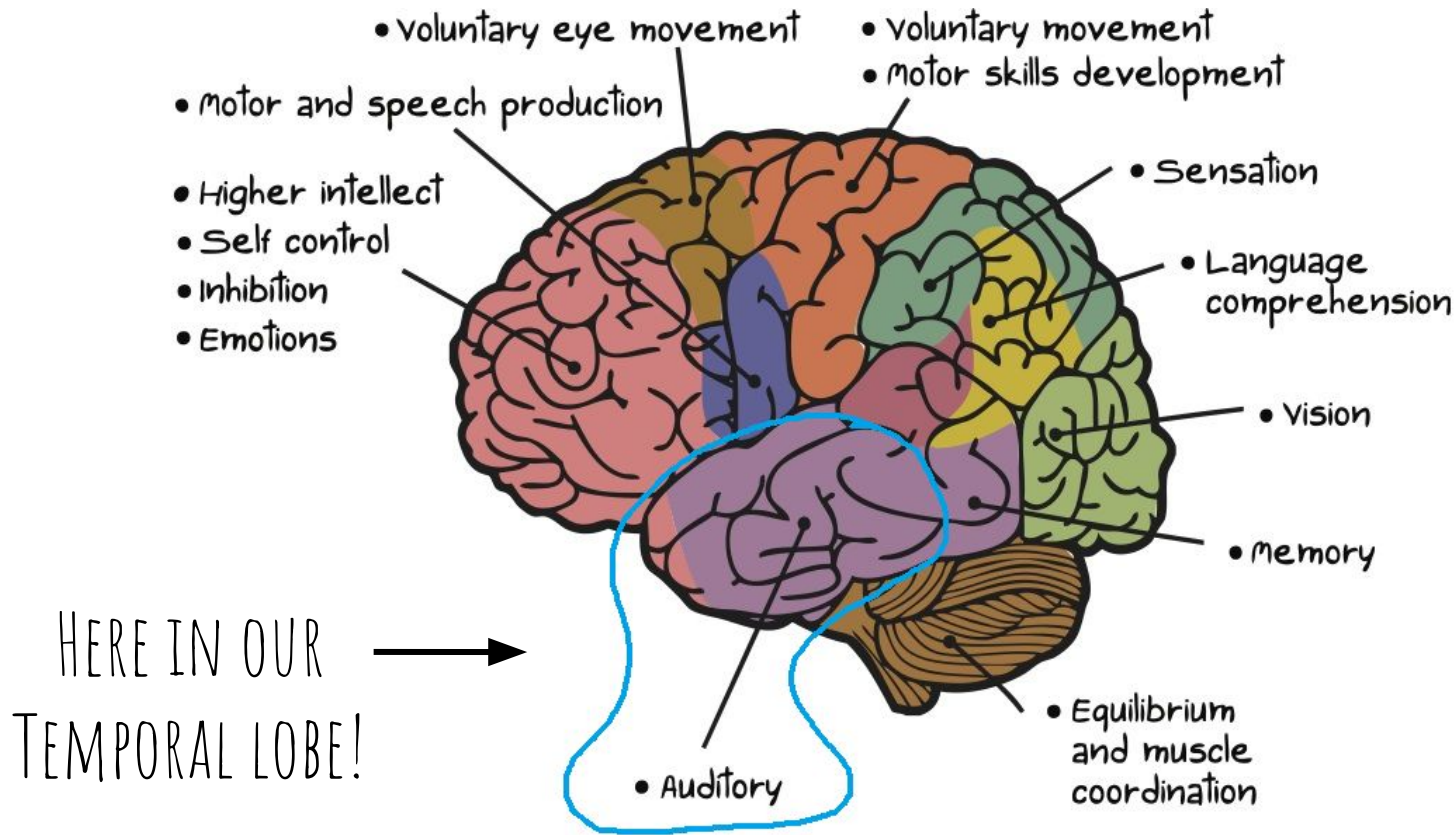
THE SOUND WAVES
BOUNCE AROUND
UNTIL THEY BUMP
INTO SOMETHING
CALLED THE
EARDRUM.



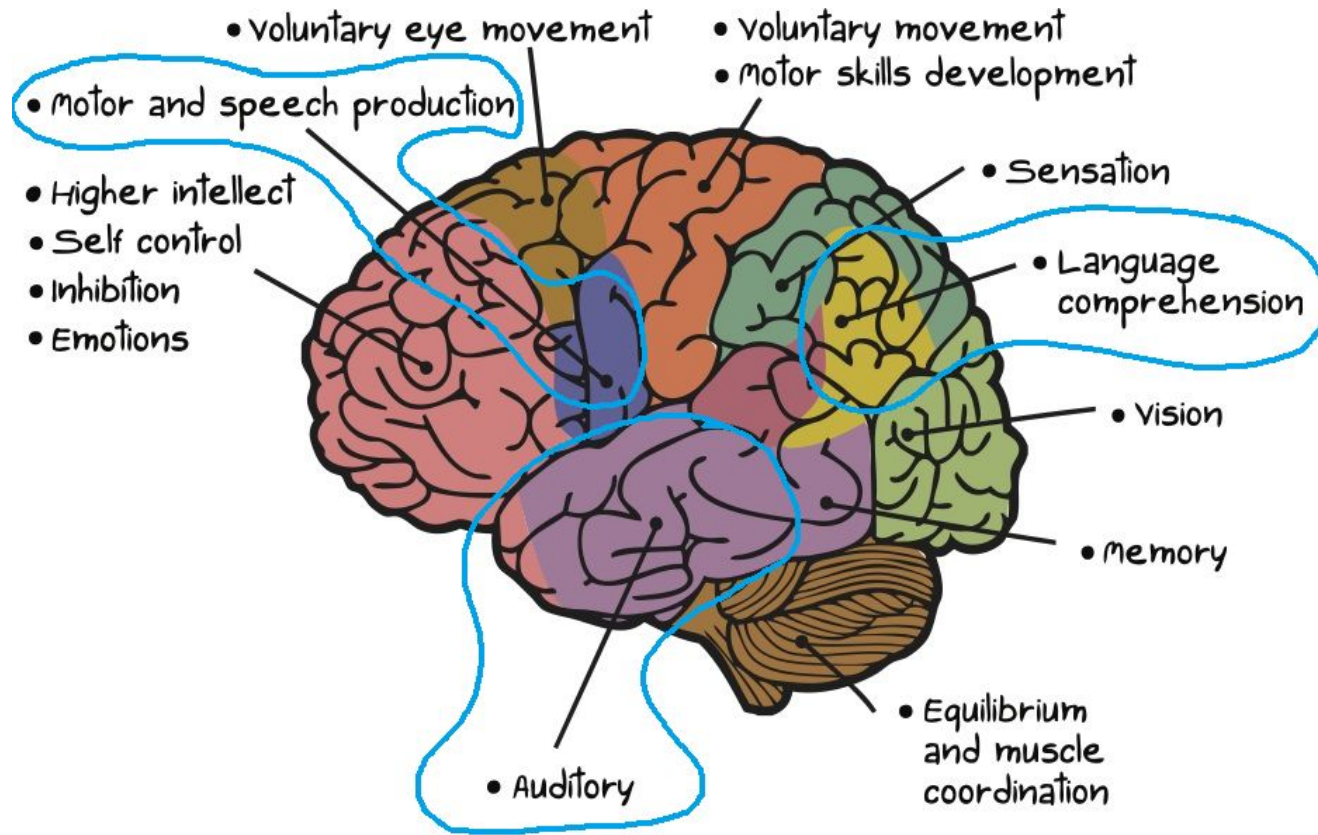
THE EARDRUM IS LIKE A TRANSLATOR...



IT TAKES A SOUND WAVE & TURNS IT INTO A **NEURAL MESSAGE** THAT THE BRAIN CAN UNDERSTAND.



THIS NEURAL MESSAGE IS SENT TO A PART OF THE
BRAIN CALLED THE **AUDITORY CORTEX**.



THE AUDITORY CORTEX THEN **WORKS TOGETHER** WITH OTHER PARTS OF OUR BRAIN TO HELP US MAKE SENSE OF WHAT WE'VE HEARD & RESPOND!

HOW DO WE SEE THINGS?

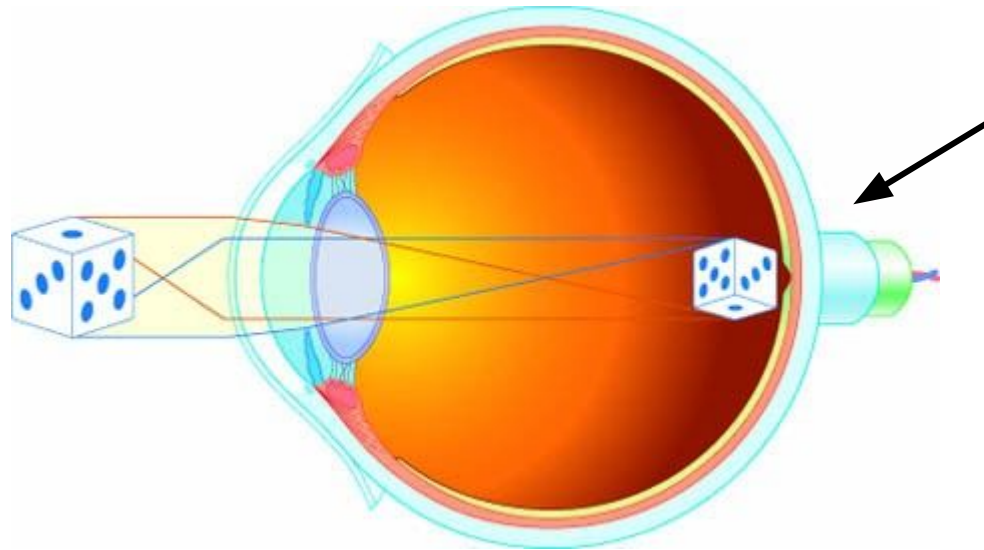
THINGS THAT
WE SEE ENTER
OUR EYES IN
THE FORM OF
LIGHT WAVES!



HOW DO WE SEE THINGS?

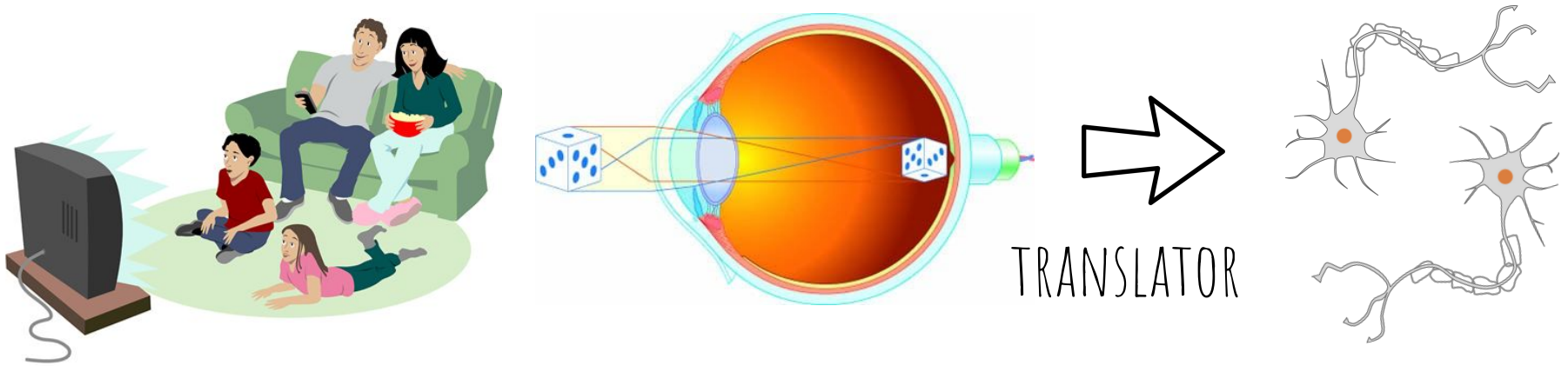
THESE LIGHT WAVES TRAVEL THROUGH OUR EYES AND BUMP INTO **RECEPTORS** IN THE BACK OF OUR EYEBALLS.

WE SEE A
BOARD GAME
DIE.



RECEPTORS
HERE "CATCH"
THE IMAGE.

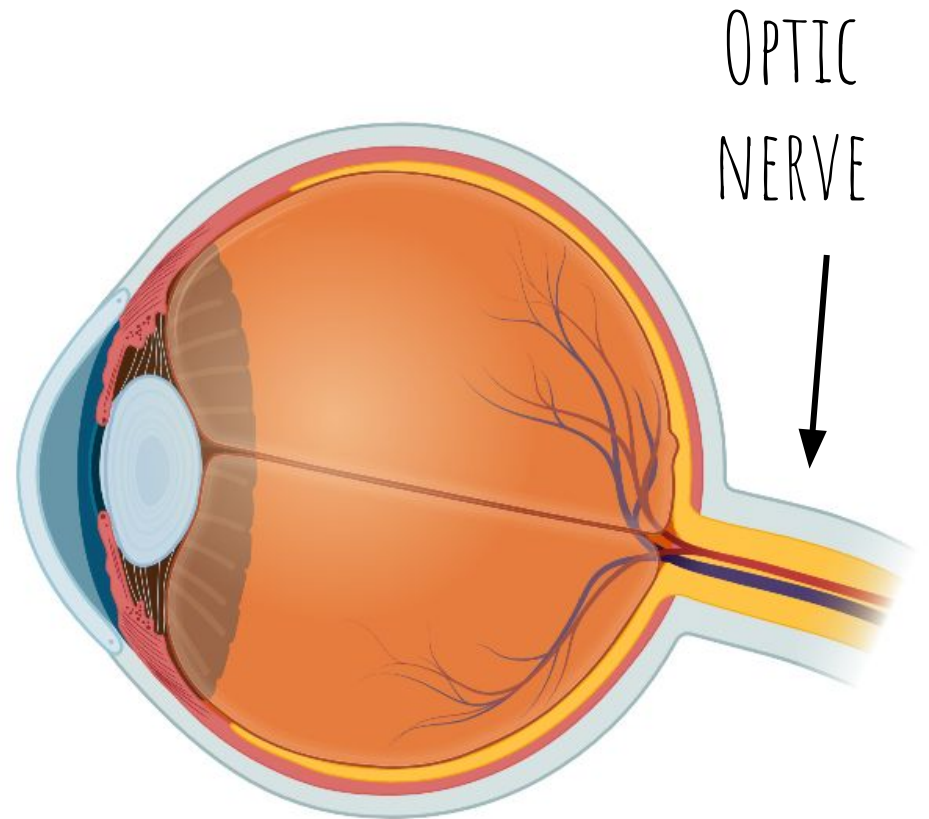
NOW WHAT?



JUST LIKE WITH SOUND, THIS LIGHT IS TURNED INTO
A **NEURAL MESSAGE** THAT THE BRAIN CAN
UNDERSTAND.

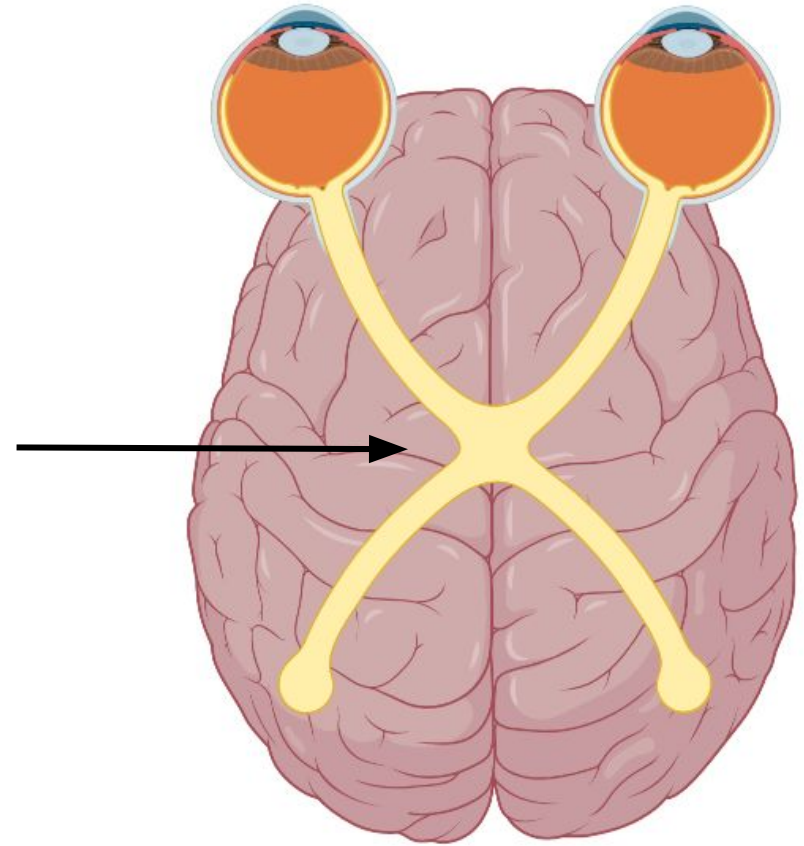
OFF TO THE BRAIN!

THIS NEURAL MESSAGE
LEAVES THE BACK OF
THE EYE THROUGH
SOMETHING CALLED
THE **OPTIC NERVE**.

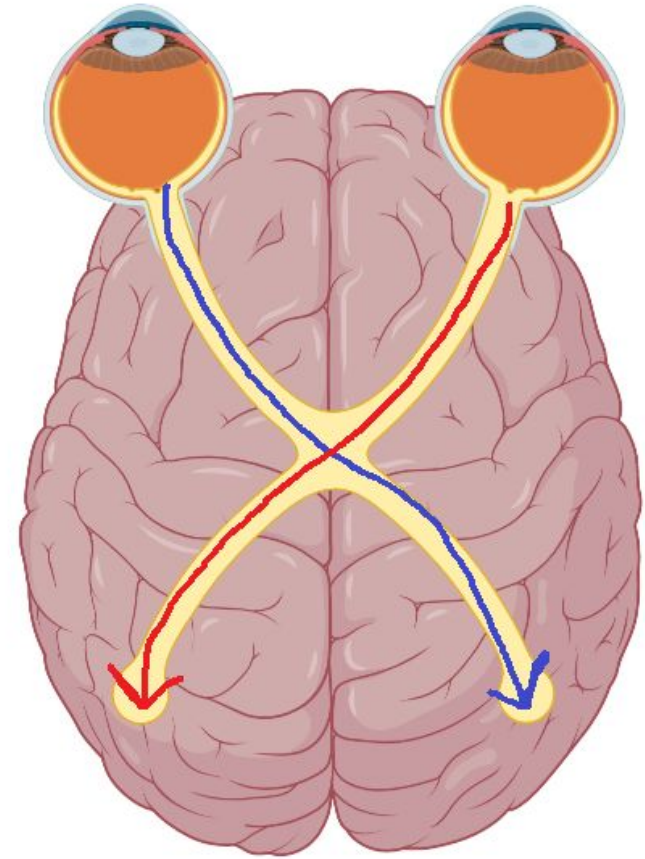


ON THE WAY THROUGH
THE BRAIN...

THE OPTIC NERVES
FROM EACH EYE
CRISS-CROSS!

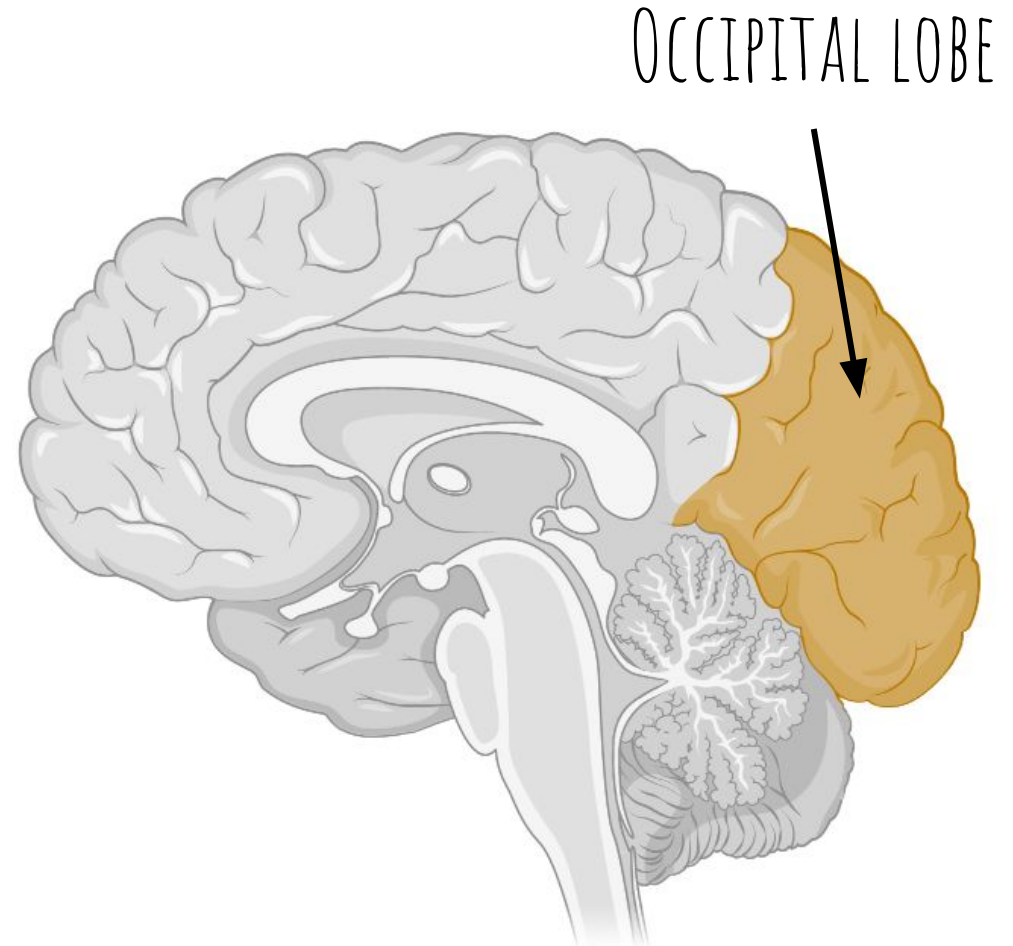


THIS MEANS THAT IMAGES
FROM OUR RIGHT EYE ARE
SENT TO THE LEFT SIDE OF
OUR BRAIN AND IMAGES
FROM OUR LEFT EYE ARE
SENT TO THE RIGHT SIDE OF
OUR BRAIN.



HERE!

AFTER TRAVELING
THROUGH THE BRAIN
THE NEURAL MESSAGE
REACHES ITS FINAL
DESTINATION... **THE
OCCIPITAL LOBE!**



WHAT AM I LOOKING AT?

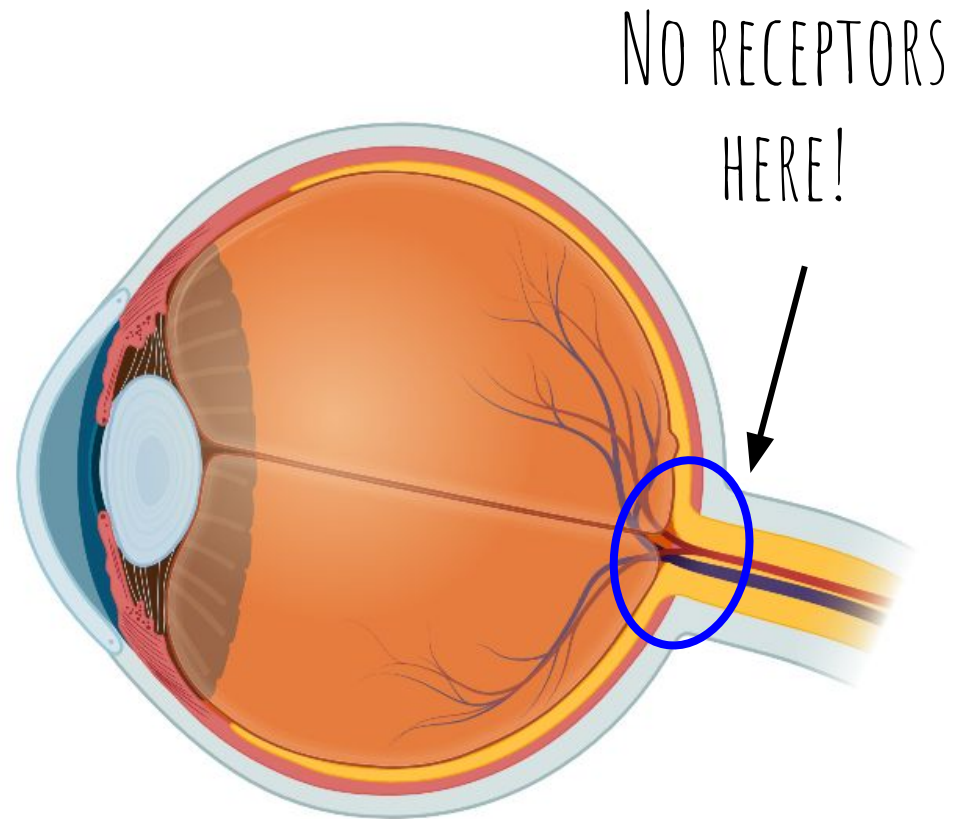
THEN, THE OCCIPITAL LOBE **WORKS TOGETHER** WITH OTHER PARTS OF THE BRAIN SO THAT WE CAN INTERPRET WHAT WE SEE.



THAT'S THE DIE I NEED TO ROLL ON MY TURN!

BELIEVE IT OR NOT...

THERE ARE **NO RECEPTORS**
WHERE THE OPTIC NERVE
LEAVES OUR EYE, SO WE
ACTUALLY CAN'T SEE
ANYTHING HERE. WE CALL
THIS OUR **BLIND SPOT**.



LET'S DO AN EXPERIMENT!

WE'VE JUST LEARNED THAT WE HAVE A **BLIND SPOT** WHERE THE OPTIC NERVE LEAVES OUR EYE. LET'S DO AN EXPERIMENT TO FIND OUR BLIND SPOT!



CLOSE YOUR **LEFT EYE** & LOOK AT THE WHITE CROSS WITH YOUR **RIGHT EYE**.
MOVE YOUR HEAD SLOWLY TOWARDS & AWAY FROM THE COMPUTER UNTIL
THE WHITE CIRCLE DISAPPEARS FROM THE BLUE BACKGROUND.



YOU'VE FOUND
YOUR BLIND
SPOT!

NOW LET'S FIND THE BLIND SPOT FOR YOUR OTHER EYE. CLOSE YOUR **RIGHT EYE** & LOOK AT THE WHITE CROSS WITH YOUR **LEFT EYE**. MOVE YOUR HEAD TOWARDS AND AWAY FROM THE COMPUTER.



AGAIN THE
WHITE CIRCLE IS
GONE!

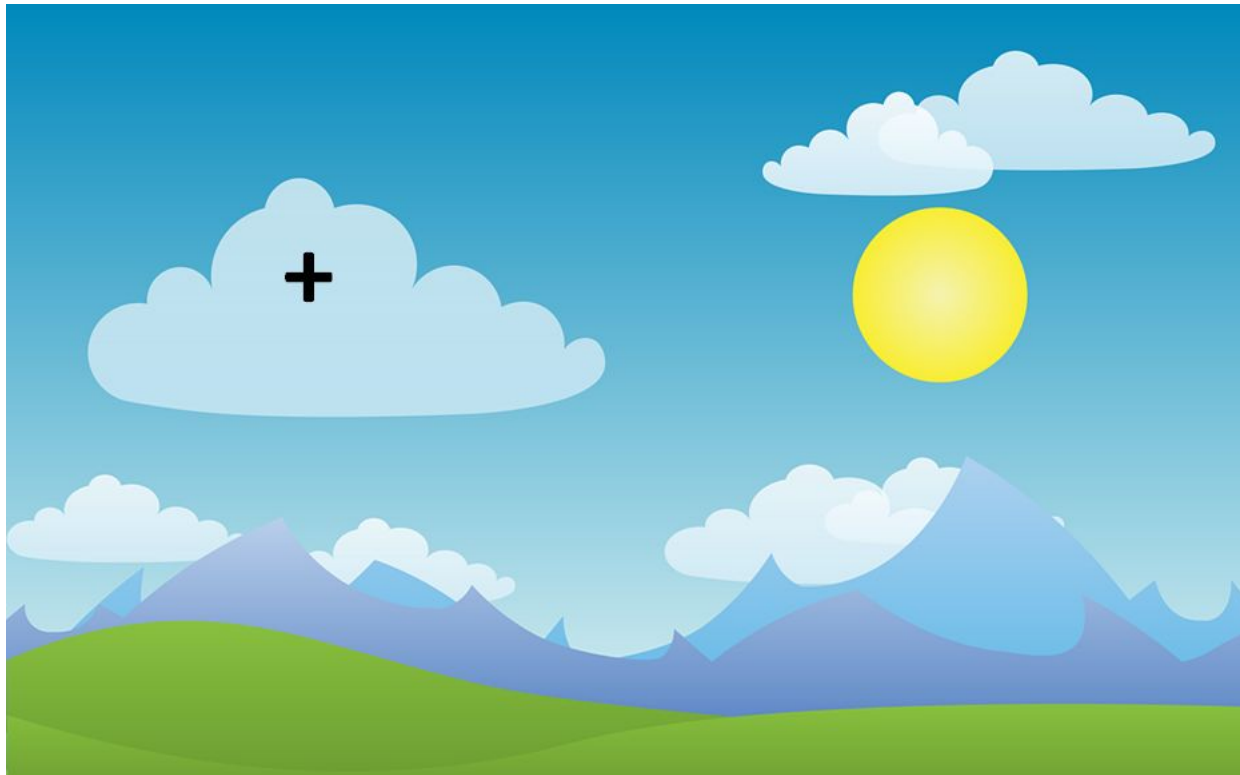
YOUR BRAIN **AUTOMATICALLY**
FILLS IN YOUR BLIND SPOT
BASED ON WHAT IT SEES IN THE
SURROUNDING
ENVIRONMENT, SO YOU DON'T
EVEN NOTICE THE HOLE!



LET'S DOUBLE CHECK THIS →

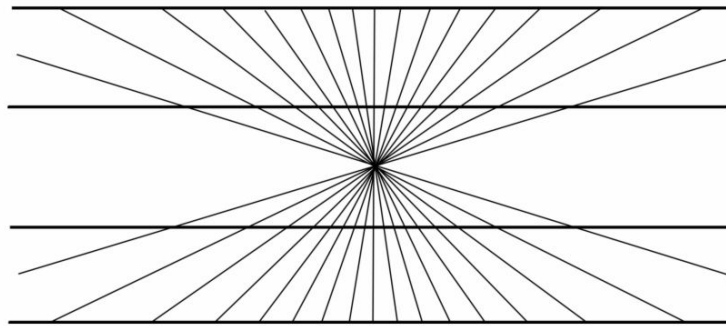
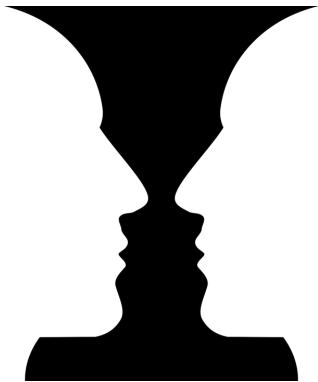
CLOSE YOUR **LEFT EYE** AND LOOK AT THE CROSS WITH YOUR **RIGHT EYE**.

MOVE TOWARDS & AWAY FROM THE COMPUTER TO MAKE THE SUN
DISAPPEAR, BUT NOTICE THAT YOUR BRAIN REPLACES IT WITH THE SKY!



BUT WAIT...

SOMETIMES OUR BRAIN CAN BE TRICKED BY THE THINGS THAT WE SEE IN OUR SURROUNDINGS.

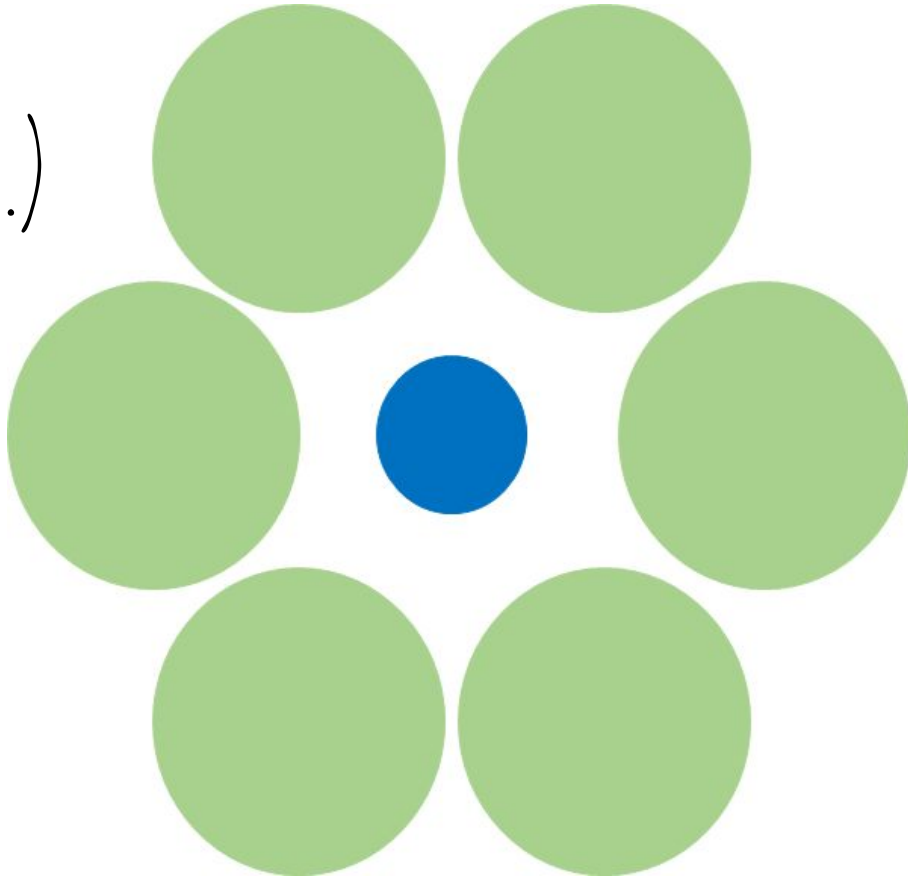


WE CALL THESE
OPTICAL
ILLUSIONS!

FOR EXAMPLE...

WHICH BLUE CIRCLE
IS BIGGER?

A.)



B.)

DID YOU SAY B??

THEY ARE ACTUALLY THE SAME SIZE!



BUT OUR BRAIN IS INFLUENCED BY THE GREEN
CIRCLES AROUND THE OUTSIDE.

WE'RE DONE! CAN YOU NAME **ONE**
THING THAT YOU LEARNED TODAY?

1.)

