



Function area P2

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Functional area of cerebral hemisphere

Motor area

1. Primary motor area (area 4)

Location :

precentral gyrus

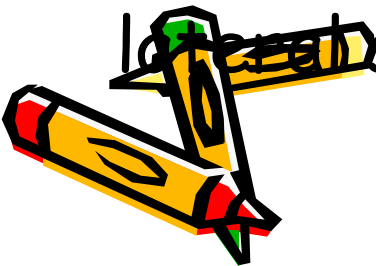
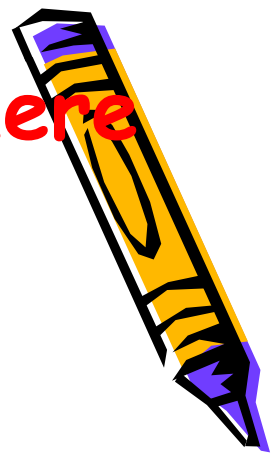
Arrangement

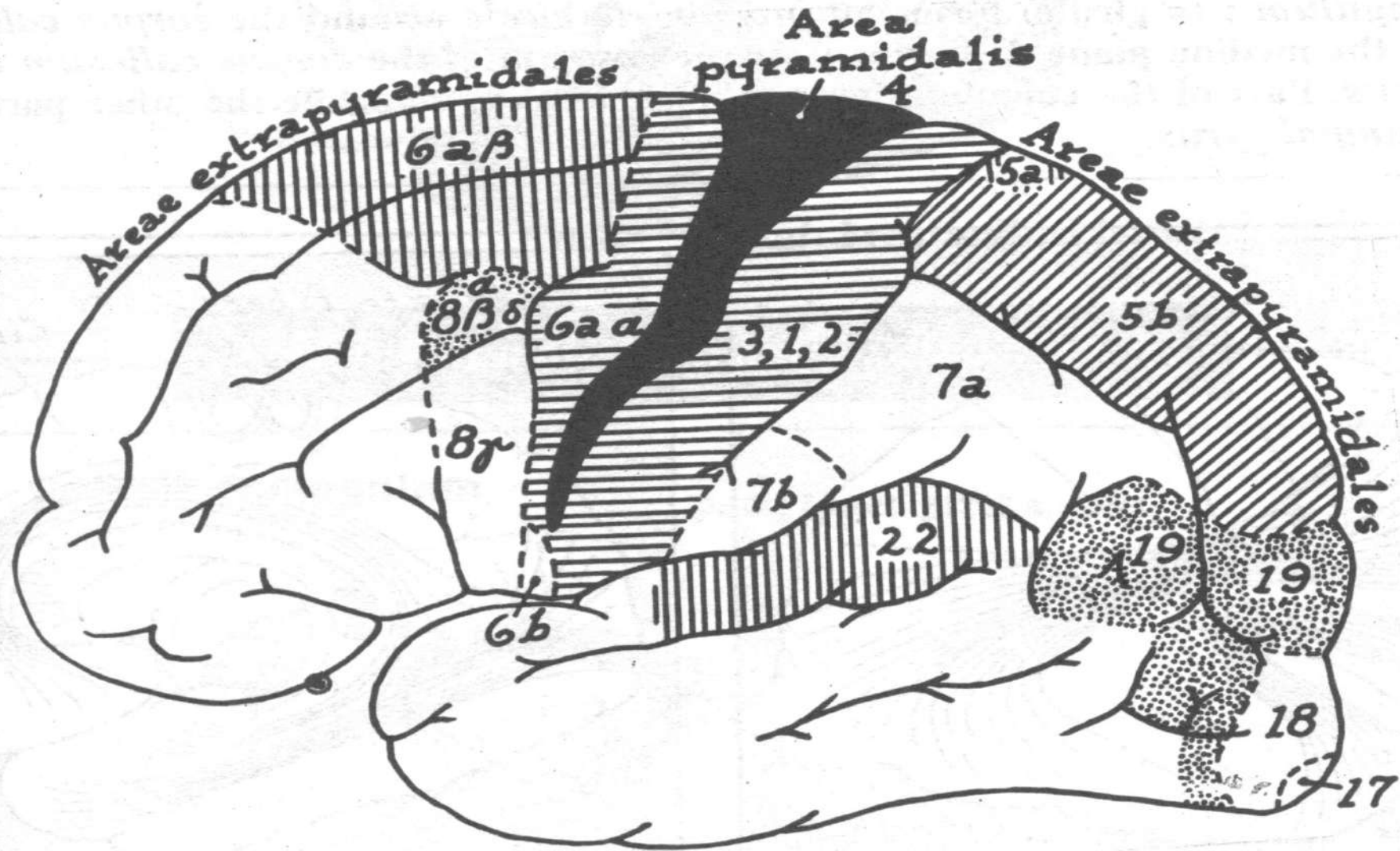
*Above downward feet to head

*In cerebral hemisphere of opposite side

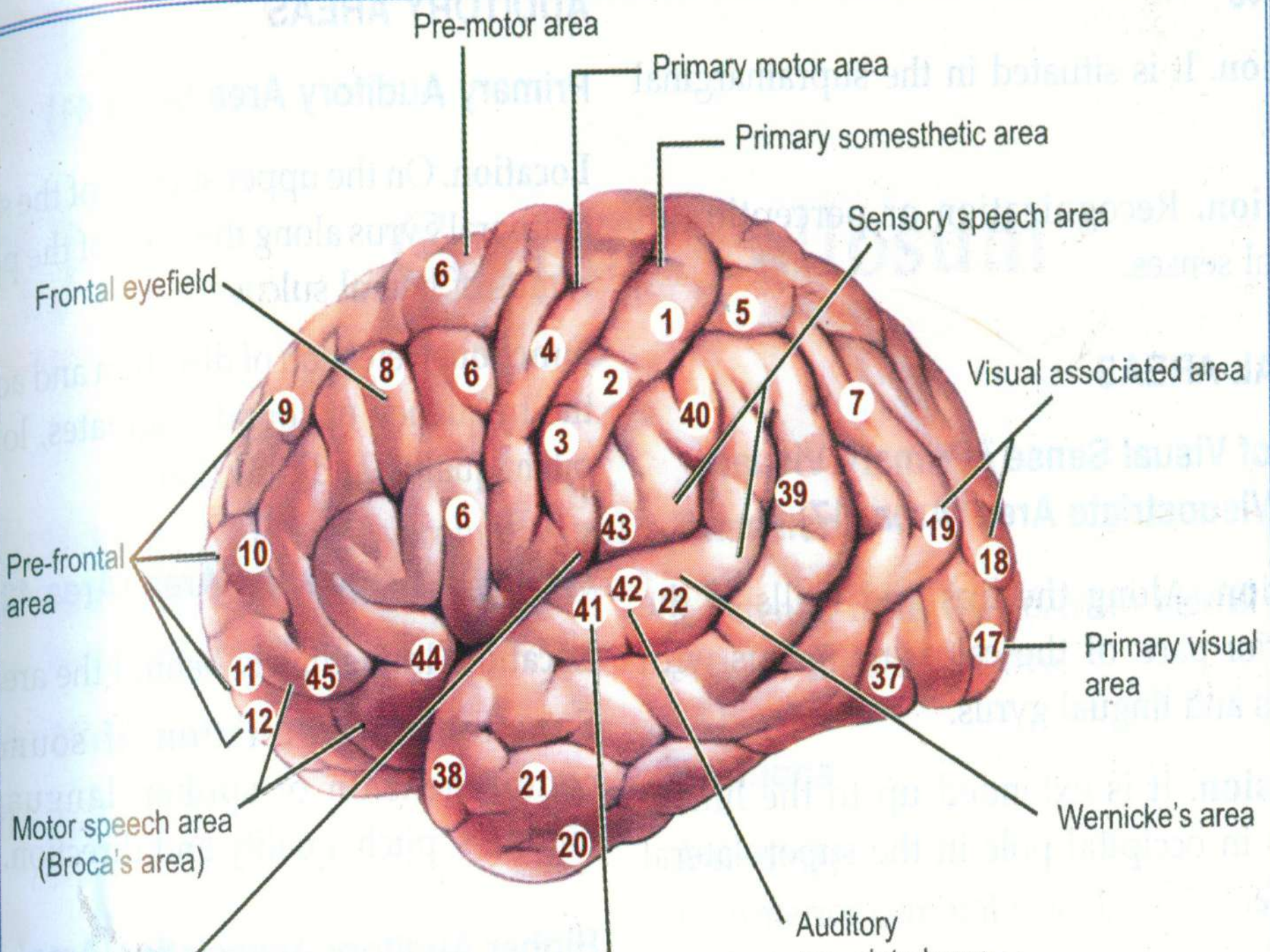
Function;

Movement of voluntary muscles of contra
~~lateral~~ side of the body.





*The MOTOR areas of the cerebral hemisphere.
Projection fibres FROM the cerebral cortex (to lower centres).*



Premotor area (area 6,8)

Area 6

location'

In front of area 4 including superior middle and inferior frontal gyrus

Function

Coordinates series of voluntary movement to perform skilful work

Upper part believed to be writing centre

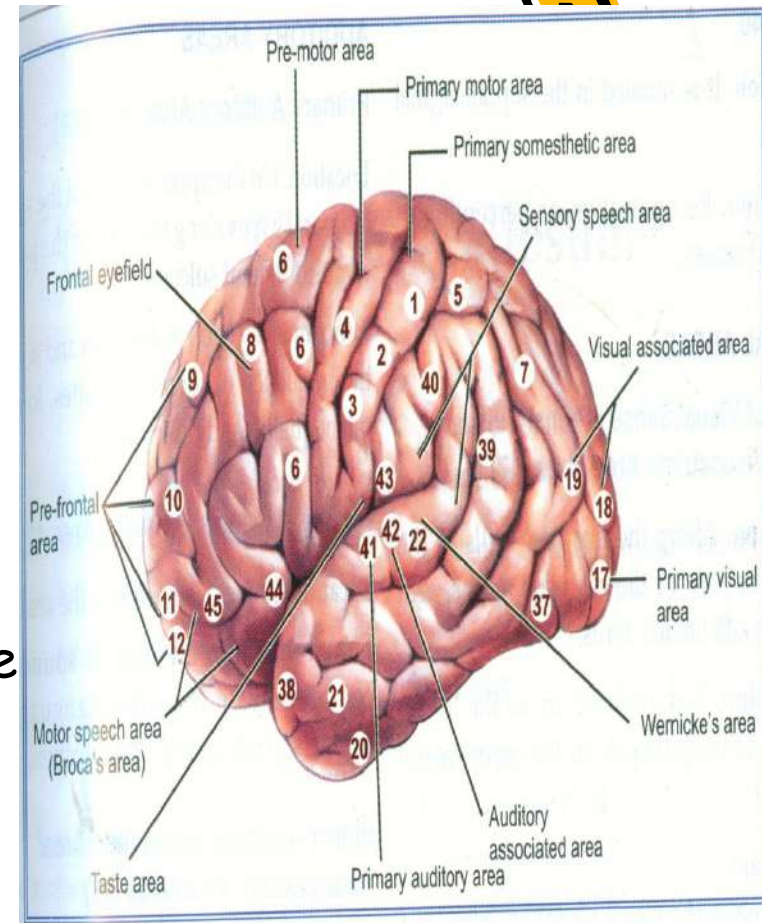
Area 8 = frontal eye field

Location

Rostral to area 6 at middle frontal gyrus

Function

Regulate voluntary conjugate movement of the eye



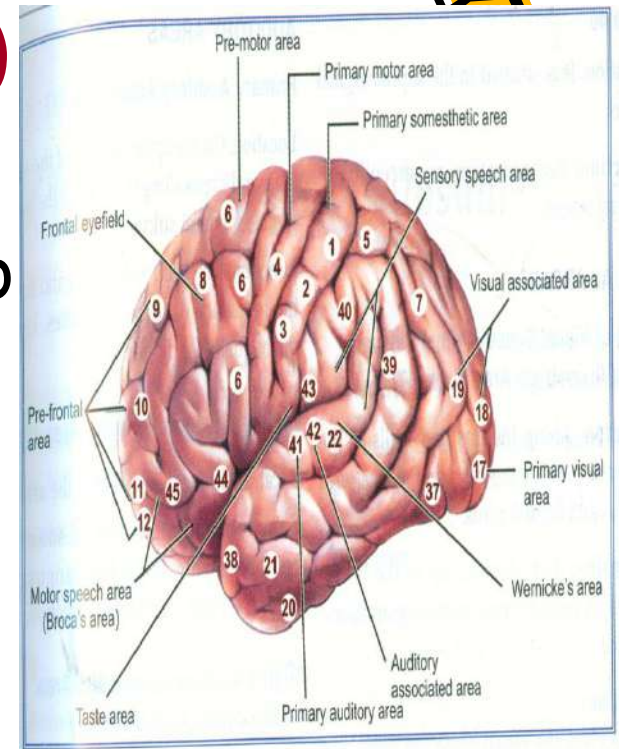
Prefrontal area(area 9-12)

Location

rostral to motor and premotor area in the rest part of frontal lobe.

Functions:

1. concerned to the depth of feeling , abstract, thinking
2. help in mature judgment , distinguish right and wrong , pleasure and displeasure.



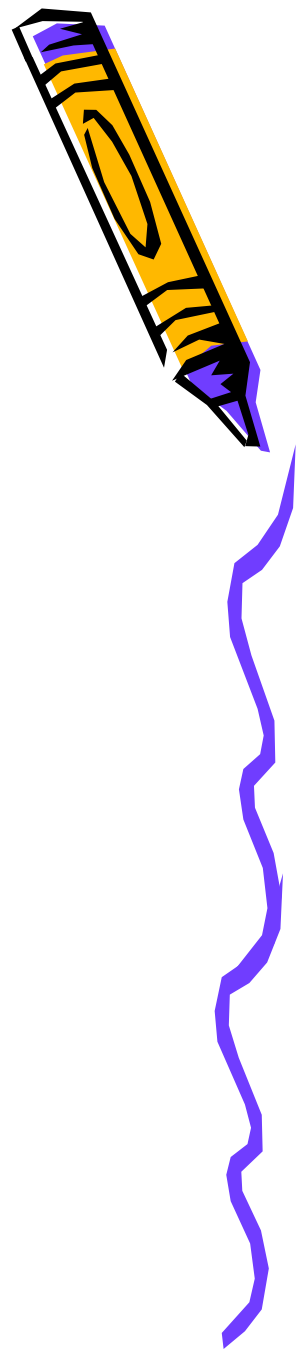
Supplementary motor area

Location:

On medial surface at **middle frontal gyrus** and anterior to primary motor area.

Function:

Bilateral synergistic movement of postural nature.



Sensory area

Primary somesthetic area (area 3,2,,1)

Location:

Post central gyrus.

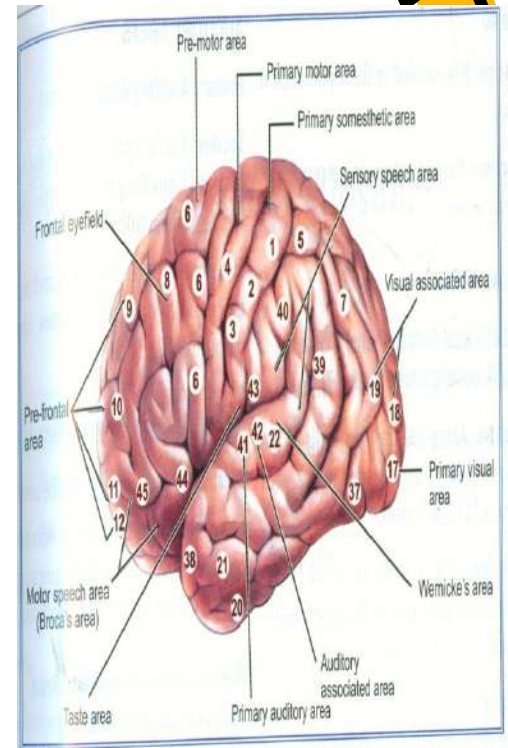
Extension:

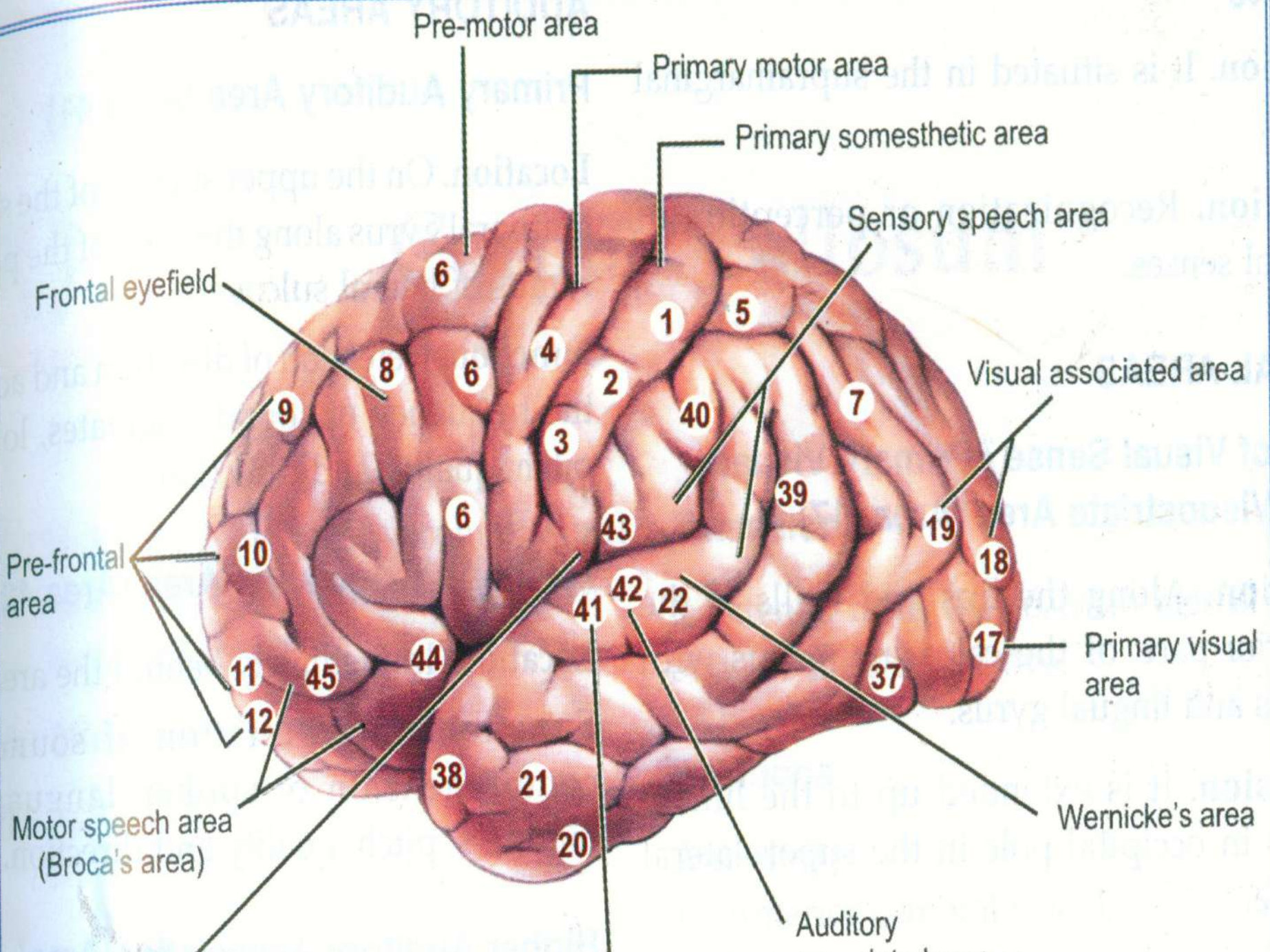
Extend to medial surface at paracentral lobule.

Arrangement:

Above downward

In cerebral hemisphere of opposite side.





Functions:

1. **Localisation**, analysis, discrimination .
awareness of posture, movement and changes in equilibrium .
2. Area 3 receives cutaneous sensation of **touch pressure , position .**
3. Area 1, receives cutaneous and **joint** sensation
4. Area 2 receives **deep sensation** from muscle joint
5. Sensory area from paracentral lobule receive sensation of **distention of bladder and rectum**
6. Lower part of post central gyrus acts as a **taste** receptive center.



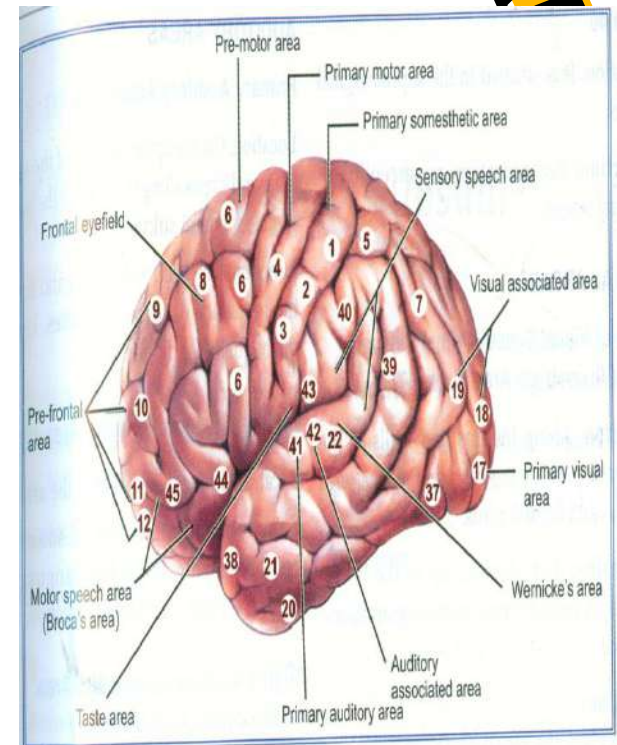
Secondary supplementary somesthetic area

Location:

Posterior ramus of lateral sulcus + lower part of post and precentral gyrus.

Function:

Receives cutaneous sensation esp. pain



Somesthetic association area (area 5,7,40)

Area 5,7

Location:

Superior parietal lobule, behind post central gyrus.

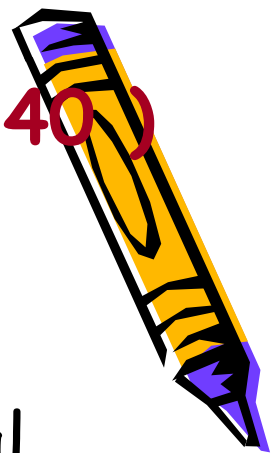
Area 40:

Location:

Supramarginal gyrus

Function:

Recognition or perception of general sense.



Visual area :

Primary visual area = area of visual sensation

Area 17

Location;

Posterior part of **calcarine sulcus**, cuneus and lingual gyrus

Function:

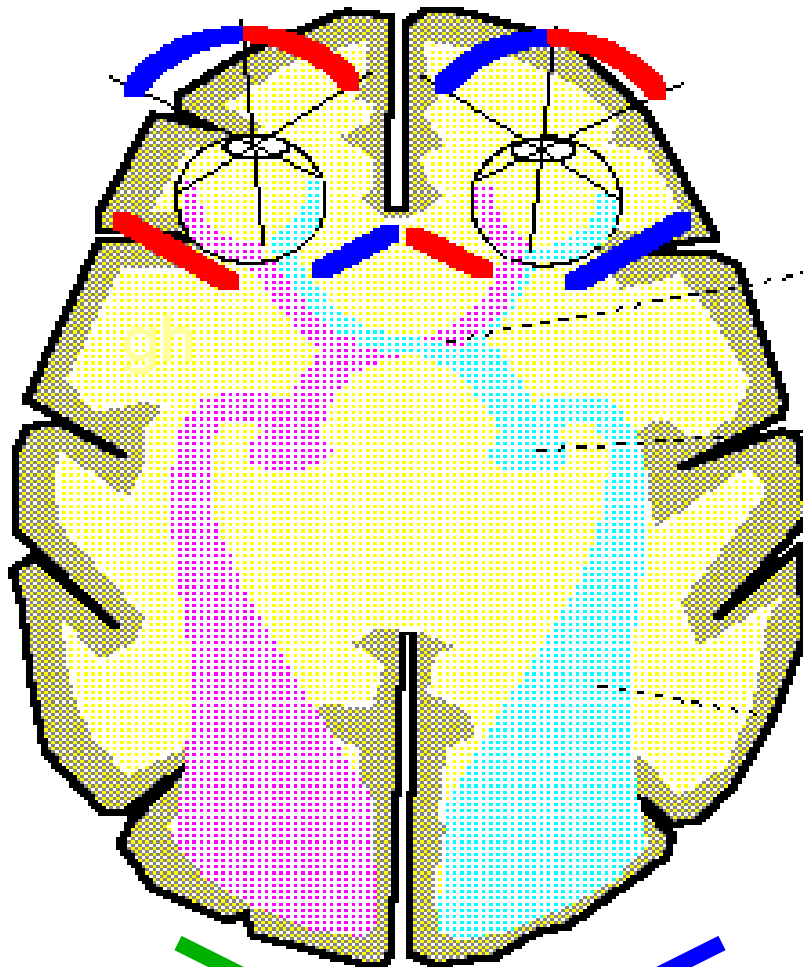
1. receives visual sensation from $\frac{1}{2}$ of each retina of same side.
2. recognition of size, shape, colour, transparency, motion, etc.



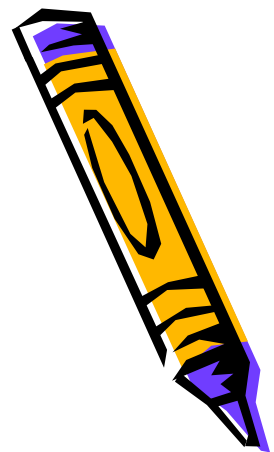
Optic Chiasma

left

right



Chiasma
opticum



Visual association area = visuopsychic
area = **area (18.19)**

Location:

medial and lateral surface of **occipital lobe**

surrounding primary visual area .

Function:

1. recognition of objects by comparing present impression with past visual experience.

help to judge the distance.



Higher visual association area (area 39)

Location:

Angular gyrus of inferior parietal lobule.

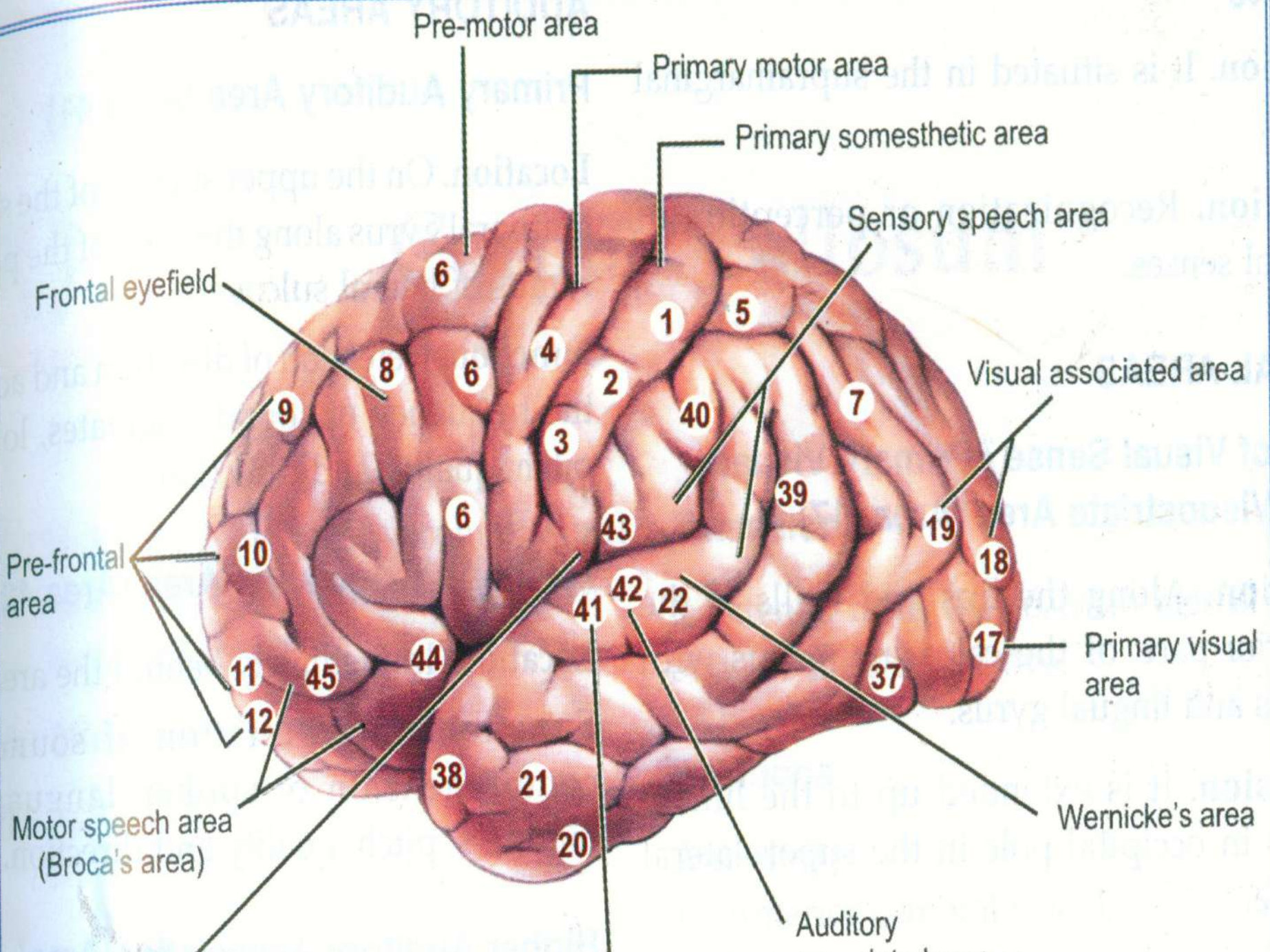
Function:

Recognize the written word.

Lesion:

Lesion in area 39 lead to **word blindness** even when written by the person himself.





Auditory area

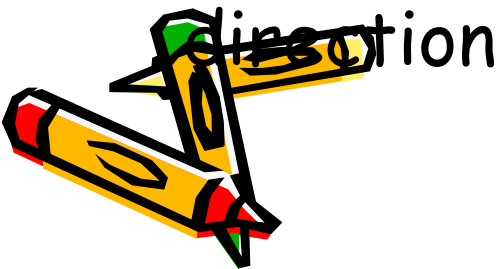
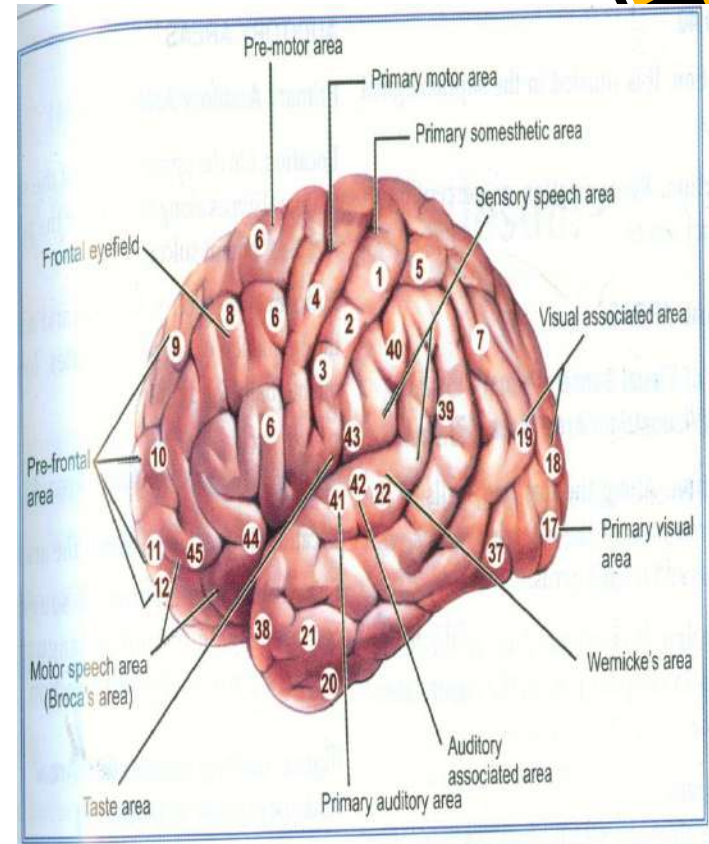
Primary auditory area (area 41)

Location:

superior temporal gyrus
along the floor of
lateral sulcus,

Function:

detection of direction and
the frequency of sounds
loudness, pitch quality and
direction



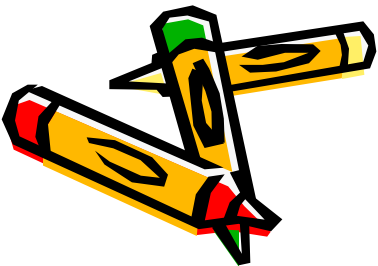
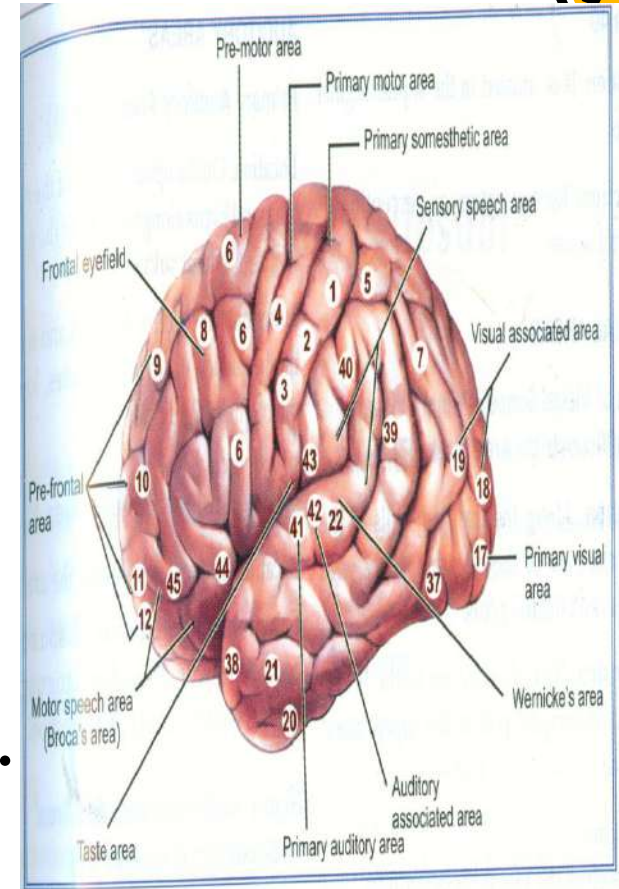
Auditory association area (area 42)

Location:

Behind area 41

Function:

Interpretation of sounds
and comprehension of
spoken language
like loudness , pitch



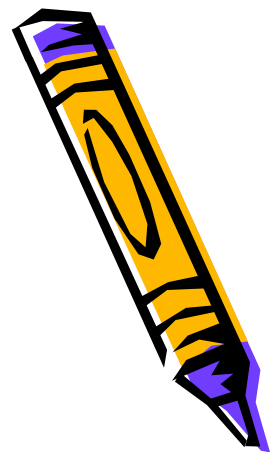
Higher auditory association area =
Audiopsychic area (Area 22)
= Wernickes area

Location:

Superior temporal gyrus behind area
41,42

Function:

Interpretion of sounds, its origin and
differentiation with past experience



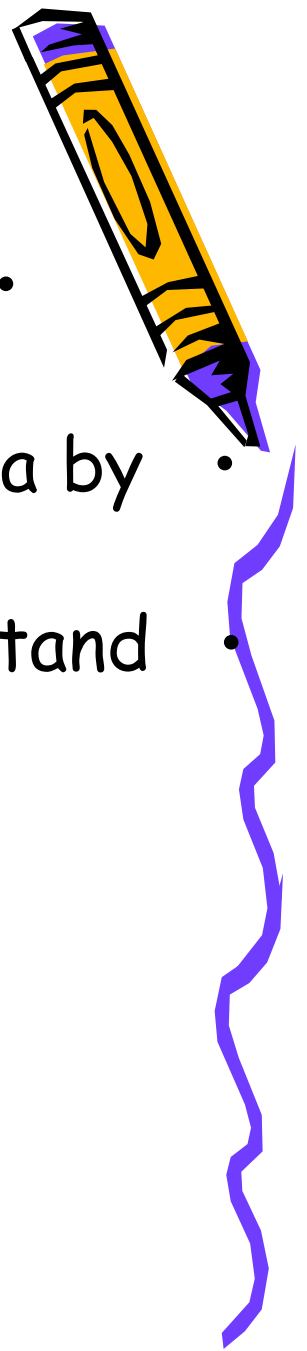
Wernicke's Area

In 1967 Karl Wernicke noticed damage to another region of the cortex.

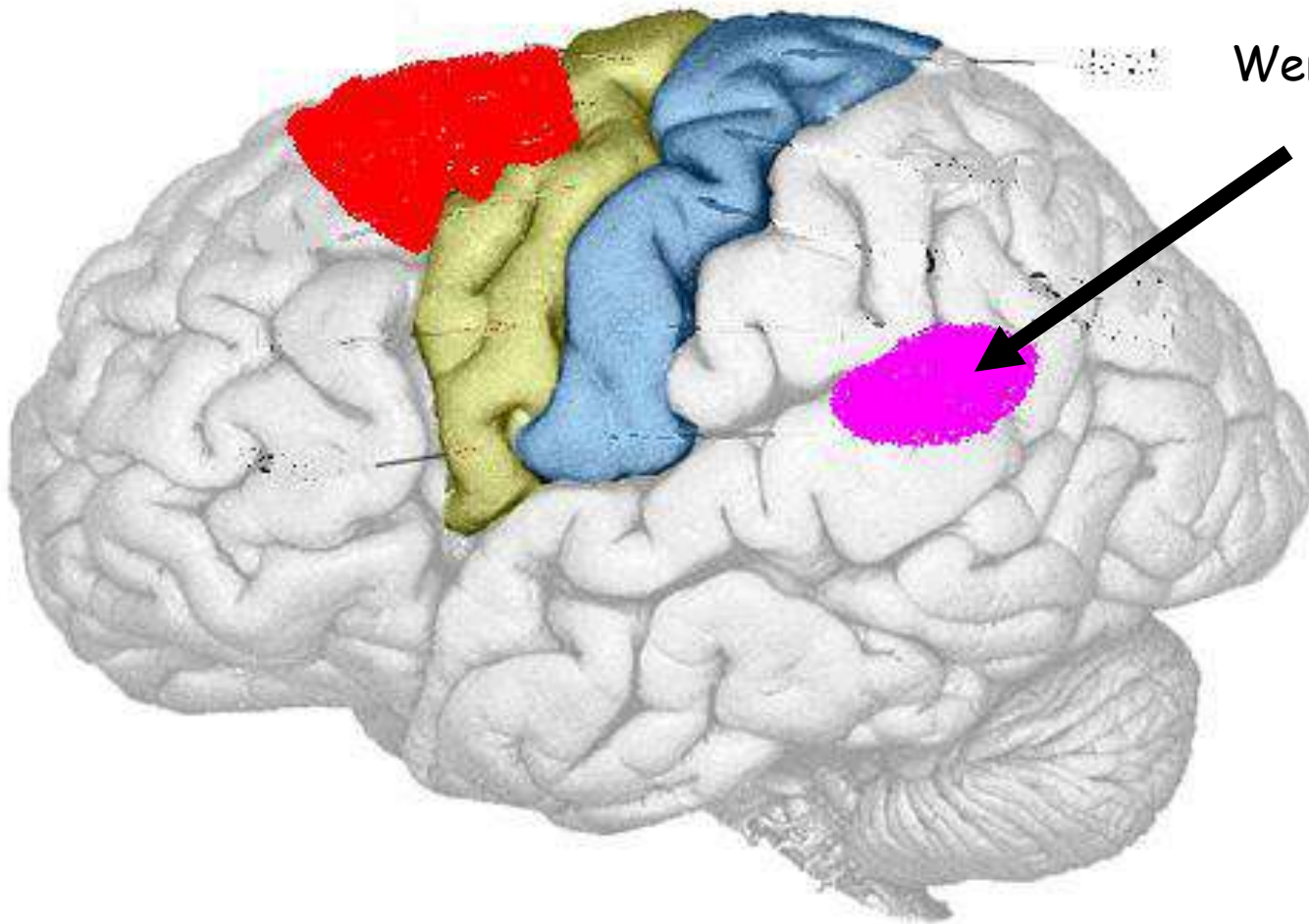
Wernicke's area is connected to Broca's area by a bundle of nerve fibres.

If this was damaged the patient can understand language but cannot repeat words.

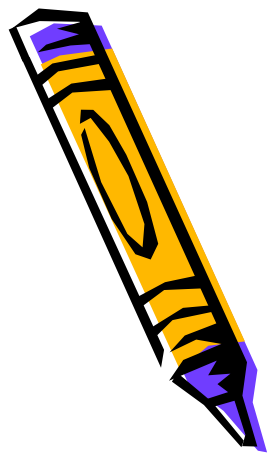
So Wernicke's area is concerned with understanding language. Broca's area is concerned with controlling the muscles that produce speech



Wernicke's Area



Wernicke's area



Speech area:

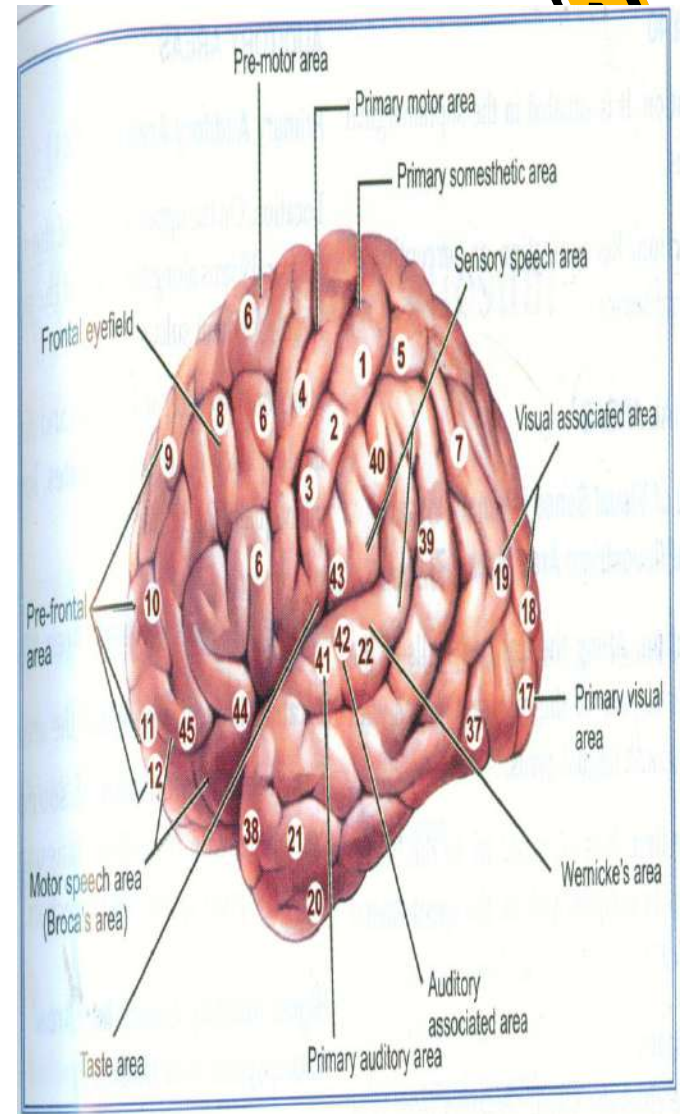
Sensory speech area(39)

Location:

angular gyrus of superior parietal lobule,

Function

recieve the input from hearing ,vision , touch and proprioception.



motor speech area = Broca's area
(Area 44 and 45)

Location:

Inferior frontal gyrus

pars triangularis = area 44

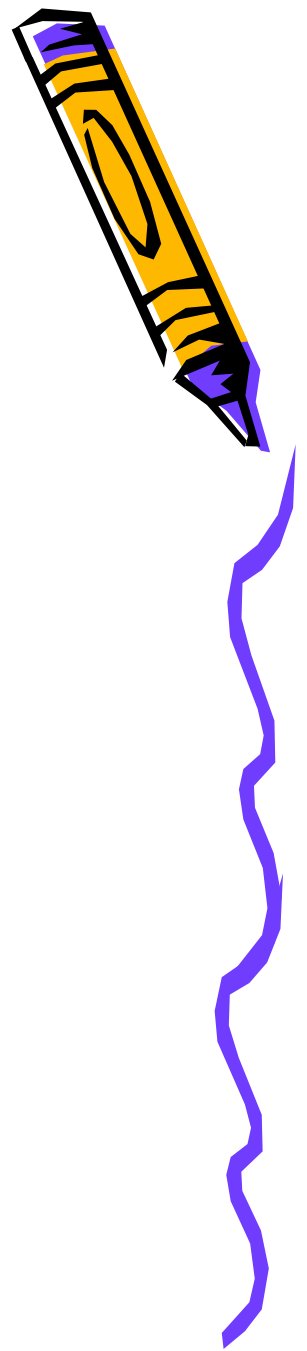
Pars opercularis = area 45

Function:

1. Play role in movement of tongue
, larynx

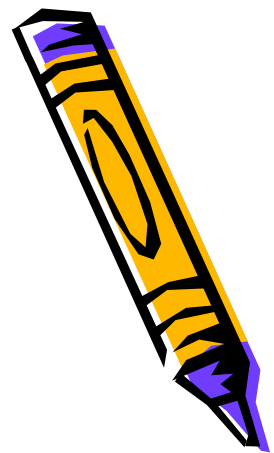
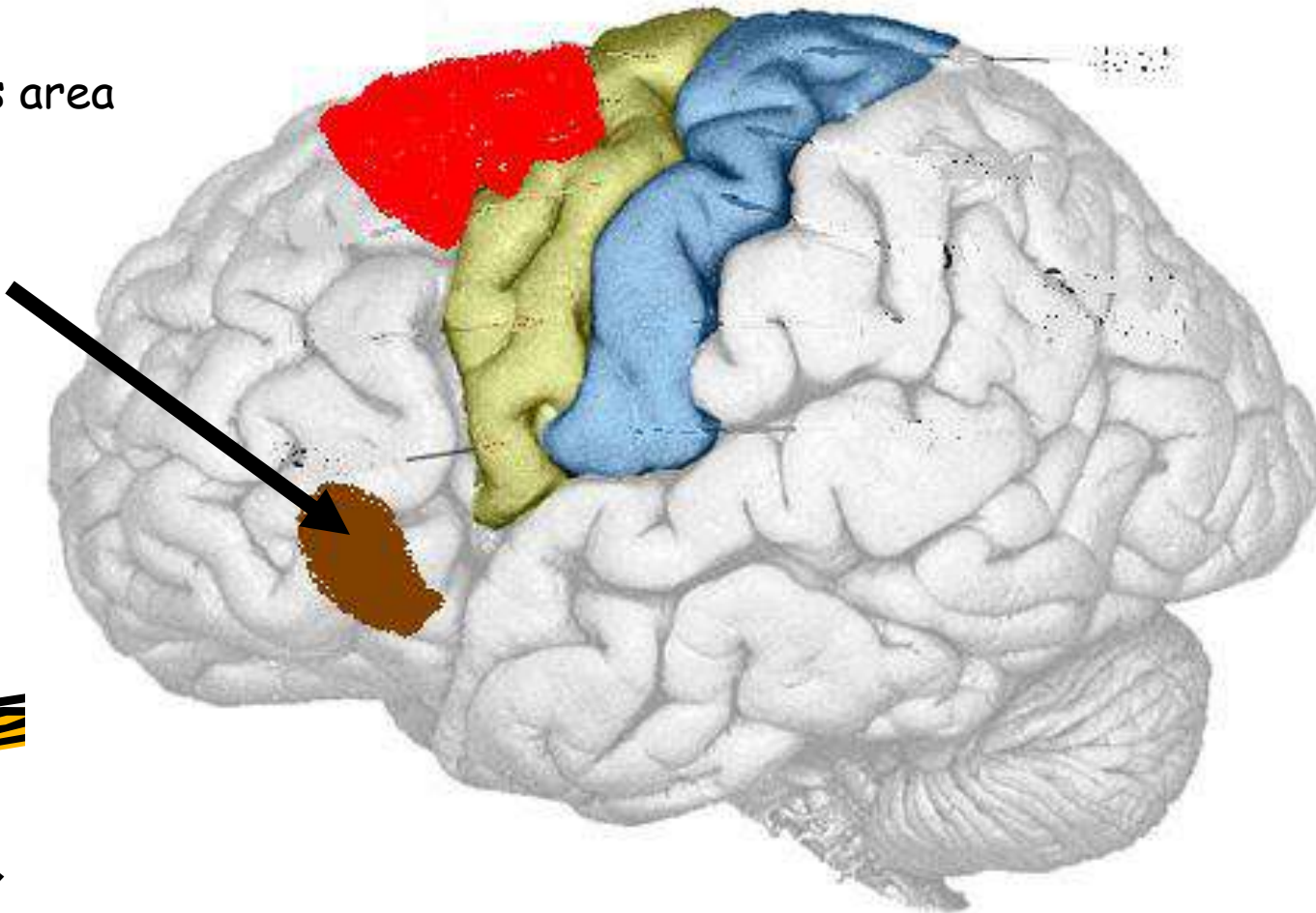
and lips

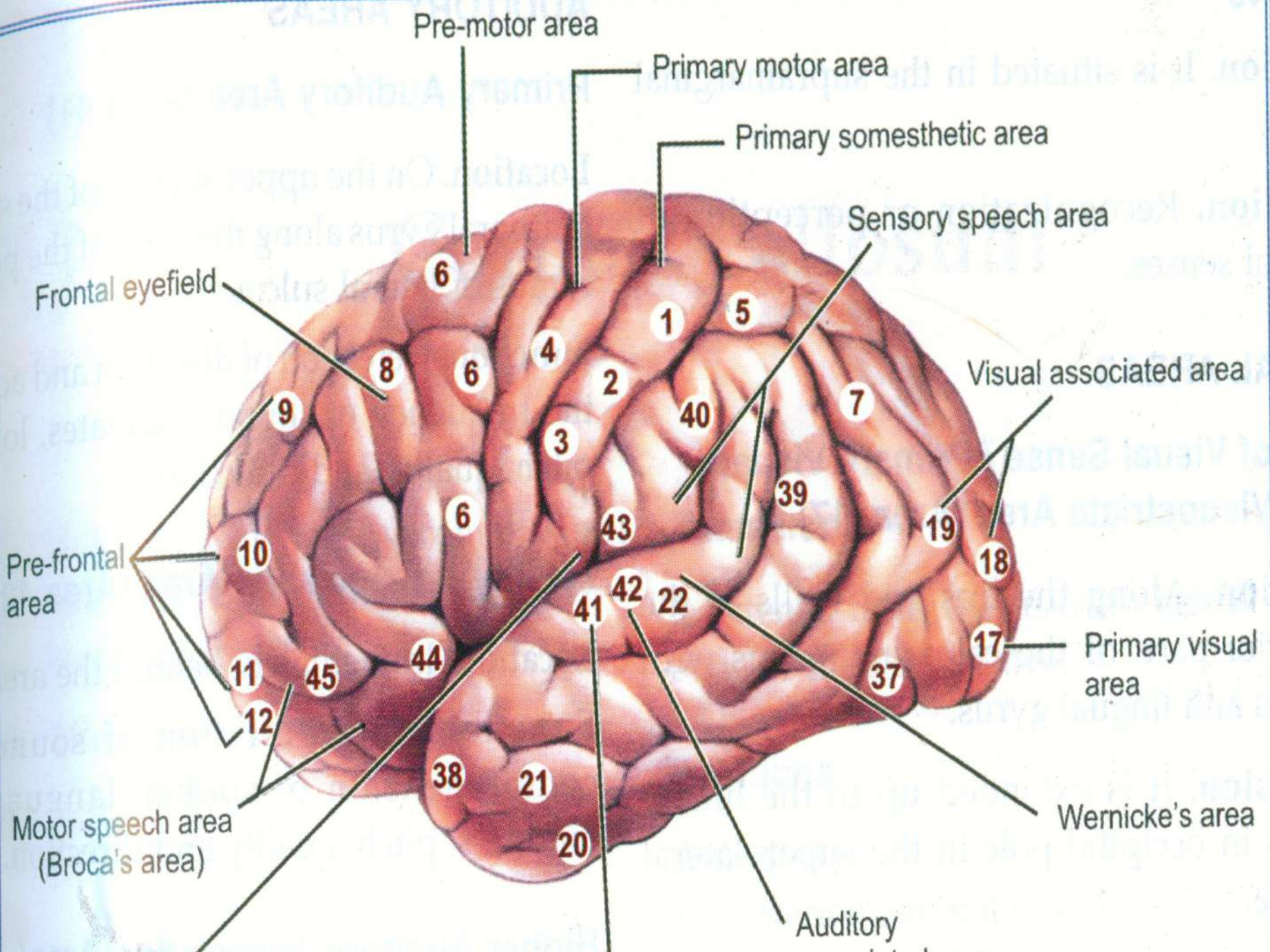
2. coordinates movement of spoken
speech



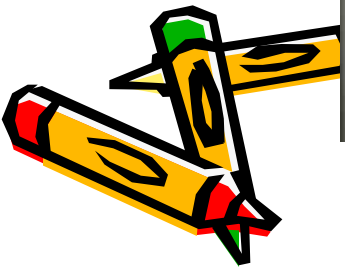
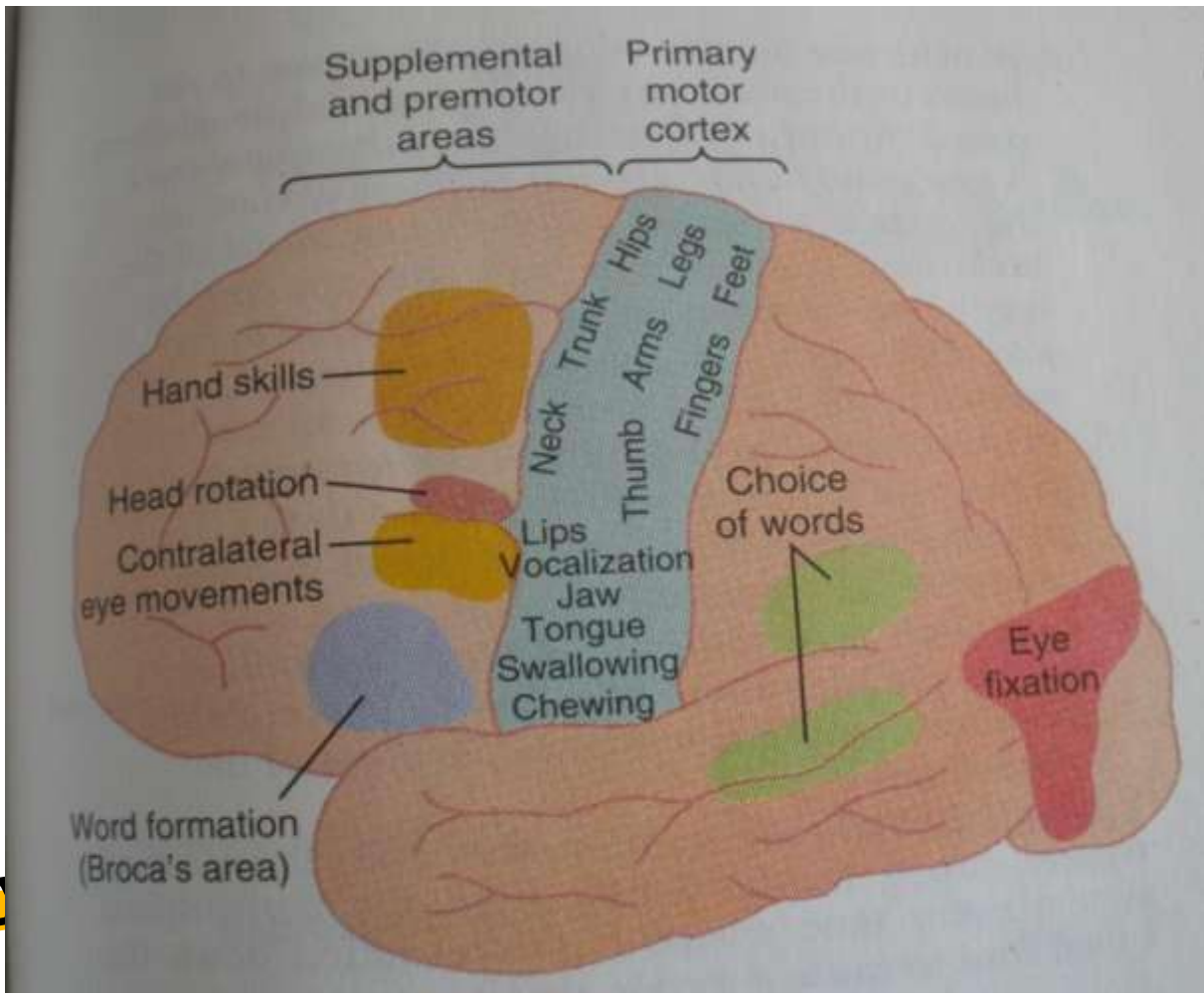
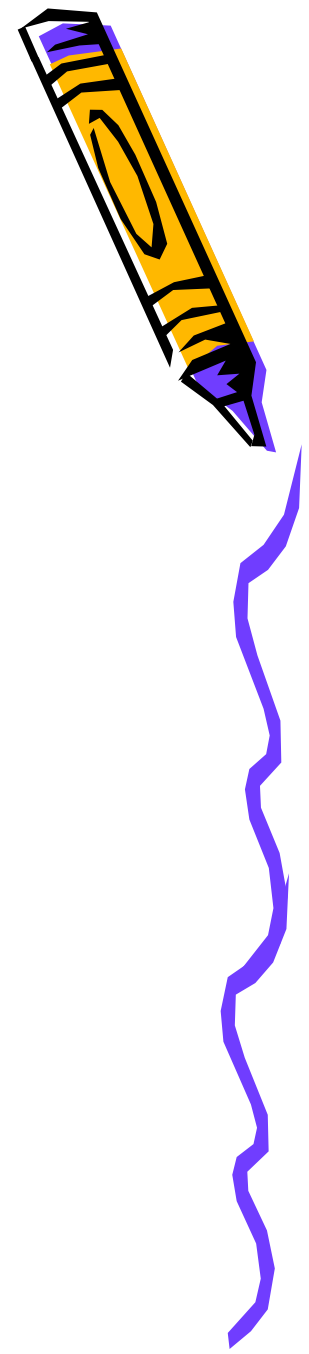
Broca's Area

Broca's area

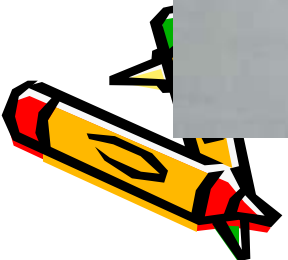
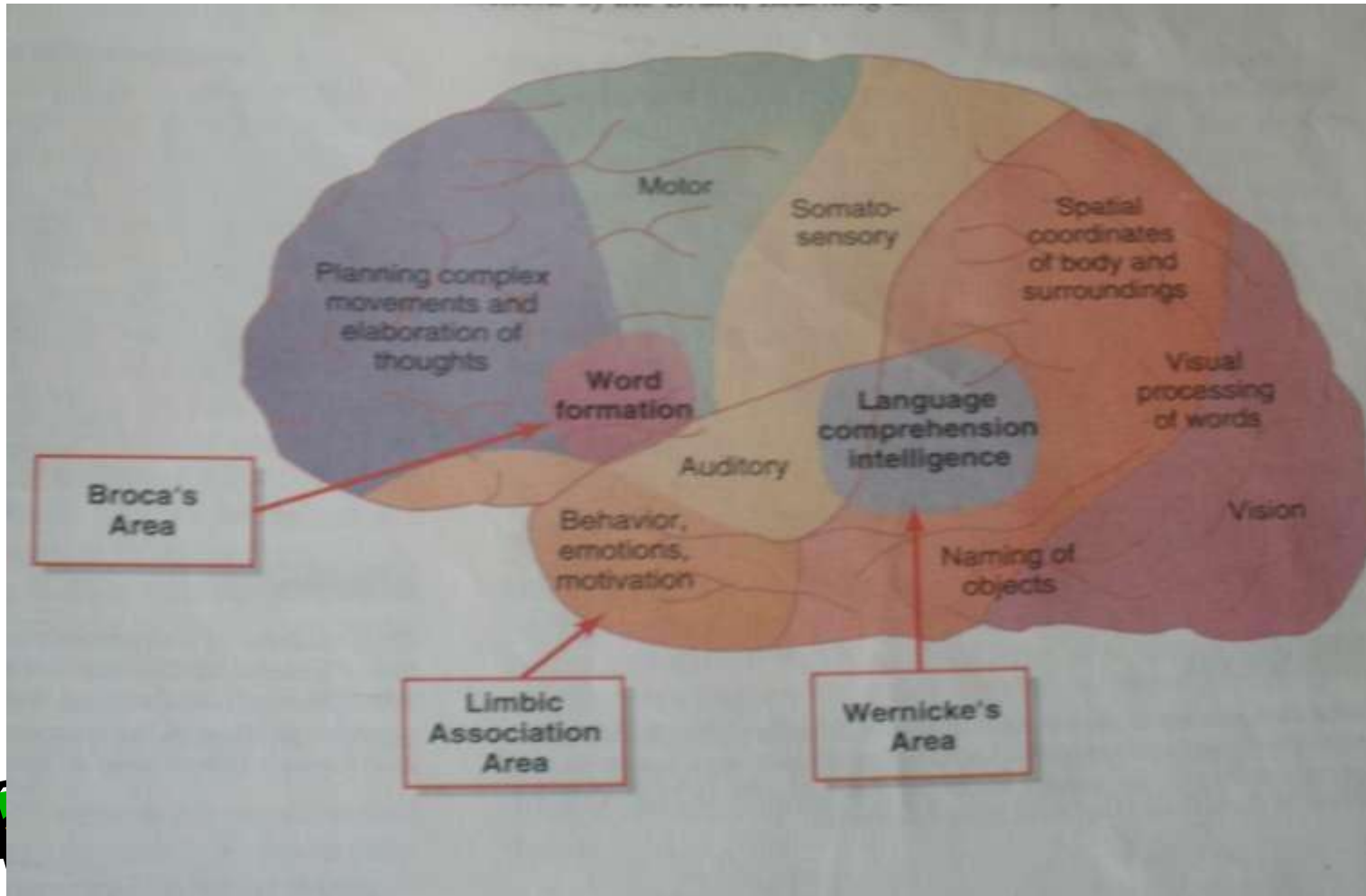




MOTOR AREAS



ASSOCIATION AREAS



Taste area

Lower end of post central gyrus. •

Vestibular area •

Near post central gyrus. •

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