Enduring Understanding: The brain is the control center of the body. The numerous sections of the brain carry out specific tasks that function in maintaining homeostasis.
Essential Questions: What are the major parts of the brain?

SC.912.L.14.26: Identify the major parts of the brain on diagrams or models.
Bellwork

- Examine the diagrams below. Do you think this is a survivable injury? Why or why not? Please explain.
## External Features of the Brain

<table>
<thead>
<tr>
<th>Structure</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cerebral hemispheres</strong></td>
<td>Largest part of the brain. Large paired structures, divided into left and right hemispheres</td>
</tr>
<tr>
<td><strong>Cerebellum</strong></td>
<td>Means “little brain” Smaller structure under the base at the back of the brain</td>
</tr>
<tr>
<td><strong>Brainstem</strong></td>
<td>Extending from the base of the brain; this continues into the spinal cord, made up of the pons and medulla oblongata</td>
</tr>
</tbody>
</table>
External Features of the Brain

- Cerebrum
- Cerebellum
- Brain stem
<table>
<thead>
<tr>
<th>Brain Stem Region</th>
<th>Structure</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pons</td>
<td>Top region of the brain stem</td>
<td>Relays signals between cerebrum and cerebellum. Helps control breathing rate</td>
</tr>
<tr>
<td>Medulla Oblongata</td>
<td>Beneath the pons, lower portion of the brainstem. Connects to the spinal cord.</td>
<td>Relays signals between the brain and the spinal cord. Helps control blood pressure, heart rate, and breathing rate</td>
</tr>
</tbody>
</table>
What does the light blue shaded organ refer to in the below diagram?

- Cerebrum
- Medulla oblongata
- Pons
- Spinal cord
- Cerebellum
What does the green shaded organ refer to in the below diagram?

- Cerebrum
- Medulla oblongata
- Pons
- Spinal cord
- Cerebellum
## Lobes of the Brain

<table>
<thead>
<tr>
<th>Structure</th>
<th>Function and other notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Frontal lobe</strong></td>
<td>conscious thought, behavior, emotion, planning, personality, organizing, problem solving. Most uniquely human of all the brain structures. Front of the brain</td>
</tr>
<tr>
<td><strong>Parietal lobe</strong></td>
<td>Integrations of sensory information from primary sensory areas → perception, arithmetic, spelling, manipulation of objects. Middle top of the brain.</td>
</tr>
<tr>
<td><strong>Temporal lobe</strong></td>
<td>Senses of smell and sound, as well as processing of complex stimuli like faces and scenes, memory, understanding language. Temple region.</td>
</tr>
<tr>
<td><strong>Occipital lobe</strong></td>
<td>Sense of sight</td>
</tr>
<tr>
<td></td>
<td>Extreme back of the brain</td>
</tr>
</tbody>
</table>

![Diagram of brain lobes](image_url)
Based on the diagram, damage to which of the following lobes would result in hallucinations?

- Frontal
- Parietal
- Temporal
- Occipital
Based on the diagram, damage to which of the following lobes would result in mood changes and/or social differences?

- Frontal
- Parietal
- Temporal
- Occipital
So did this man survive?
YES!

You’ll learn more about Phineas Gage’s chilling tale is for homework tonight!

http://www.youtube.com/watch?v=FrULrWRlGBA
Brain Cap Activity: Step 1

- Mark the lobes we discussed on your cap with a permanent marker. Be sure to include the cerebellum.
Brain Cap Activity: Step 2

- Map the functional areas as seen in the diagram below with different colored permanent markers. The brain is both anatomically and functionally segregated. Different functions are located in particular regions of each lobe.
Brain Cap Activity: Step 3

- Wear and share!
- Extra credit for students who teach their parent or friend about the brain and then email me a picture of them wearing your cap!