Exploring your brain!

My five-minute report is on "the brain."

Of course, it's difficult to explain the complexities of the brain in just five minutes, but to begin, the brain is part of the central nervous system.

I'll pause for a few moments, so you all can finish writing that down.

Splash!
April 22, 2012
What are we doing today?

• Who are we?
• Brainstorming
• Introducing your brain
• Cool things we like about the brain
  - Sensation
  - Memory
  - Attention
• Real human and animal brains!
Introducing Your Brain
What does your brain do?
What can go wrong?
What's a Brain Made Of?

100 billion neurons!

Even MORE glia
The Neuron

- Input
- Processing
- Output
- Communication
How Does the Brain Work?
The Action Potential - how a message gets passed inside a cell from the dendrites to the axon; all or nothing - there either IS a message or there IS NOT
Chemical Signals: Analog

**Synapse** - where the axon of one cell passes its message on to the dendrites of another cell using neurotransmitters.

![Diagram of a synapse](image)

- **Action potential** (electrical signal)
- **Neurotransmitters** (chemical signal)
- **Synapse**
From Sensation to Action

Your nervous system is like a relay race - passing on messages from one neuron to another, going from sensation to action.
Your Brain is Specialized

- **Frontal lobe**: Reasoning and planning, Emotions, Personality
- **Parietal lobe**: Attention, Touch
- **Occipital lobe**: Vision
- **Temporal lobe**: Memory, Hearing
- **Cerebellum**: Motor coordination, Balance
On to more cool brain stuff!

- Interactive Demos
  1. Sensation
  2. Memory
  3. Attention
And now the best part!

- Brain stations
  1. Whole human brains
  2. Human brain slices
  3. Animal brains
What is one cool new thing about the brain that you learned today?

Thanks!