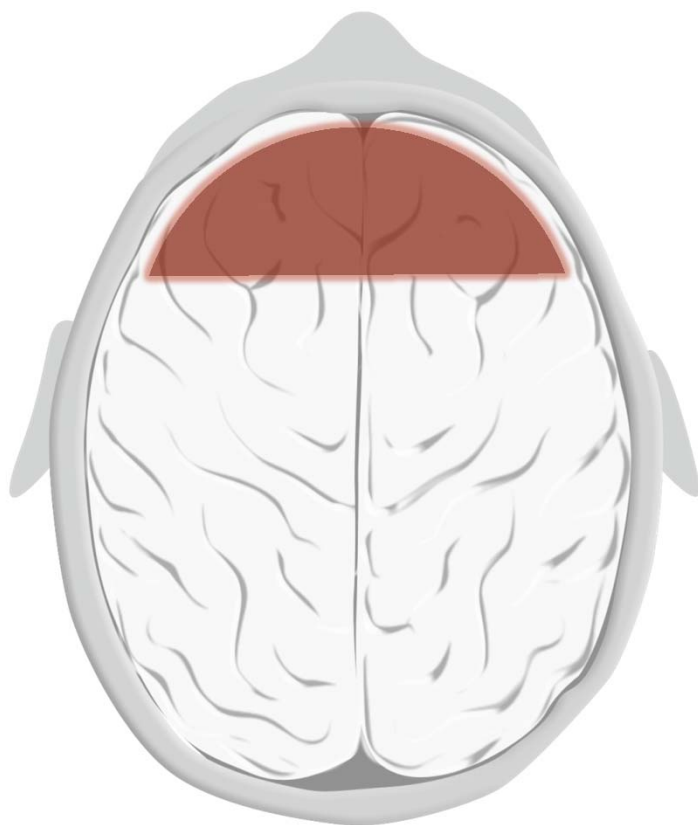
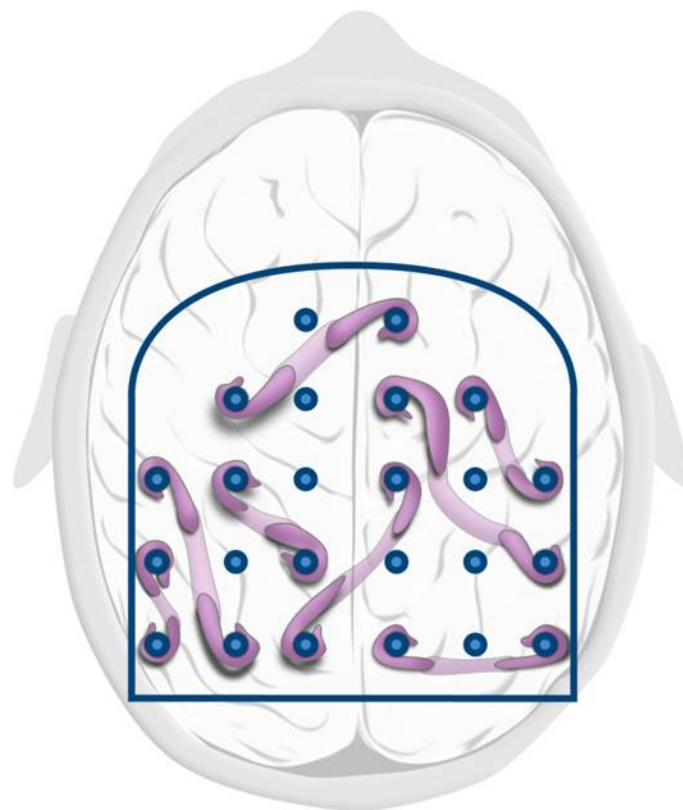
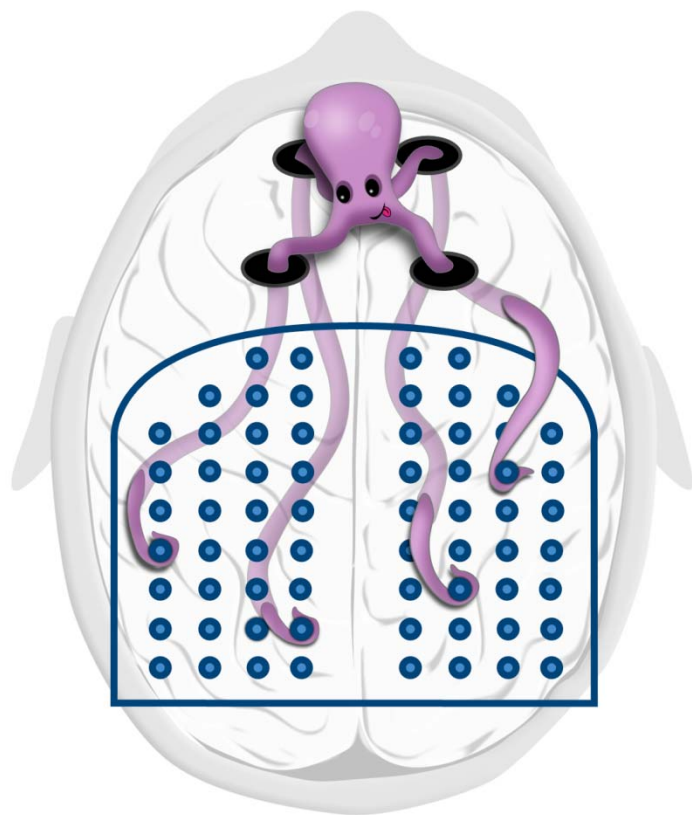


# What is a chunk?

Barbara Oakley, PhD, PE

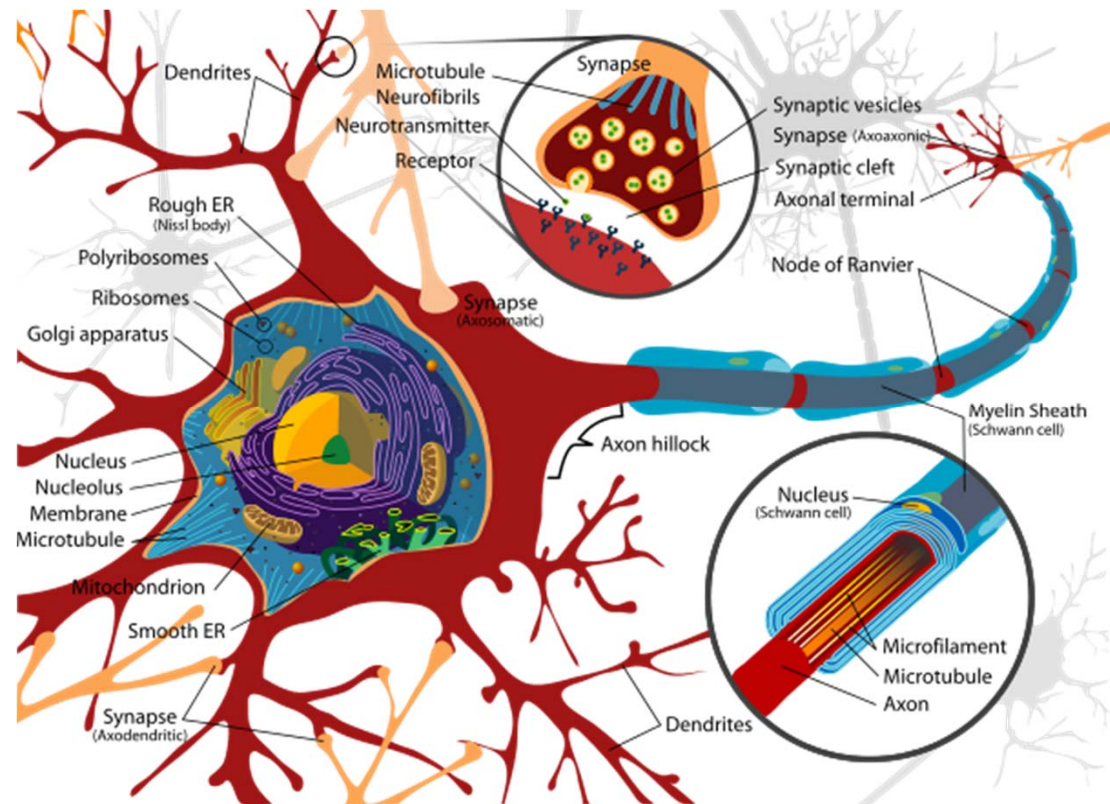


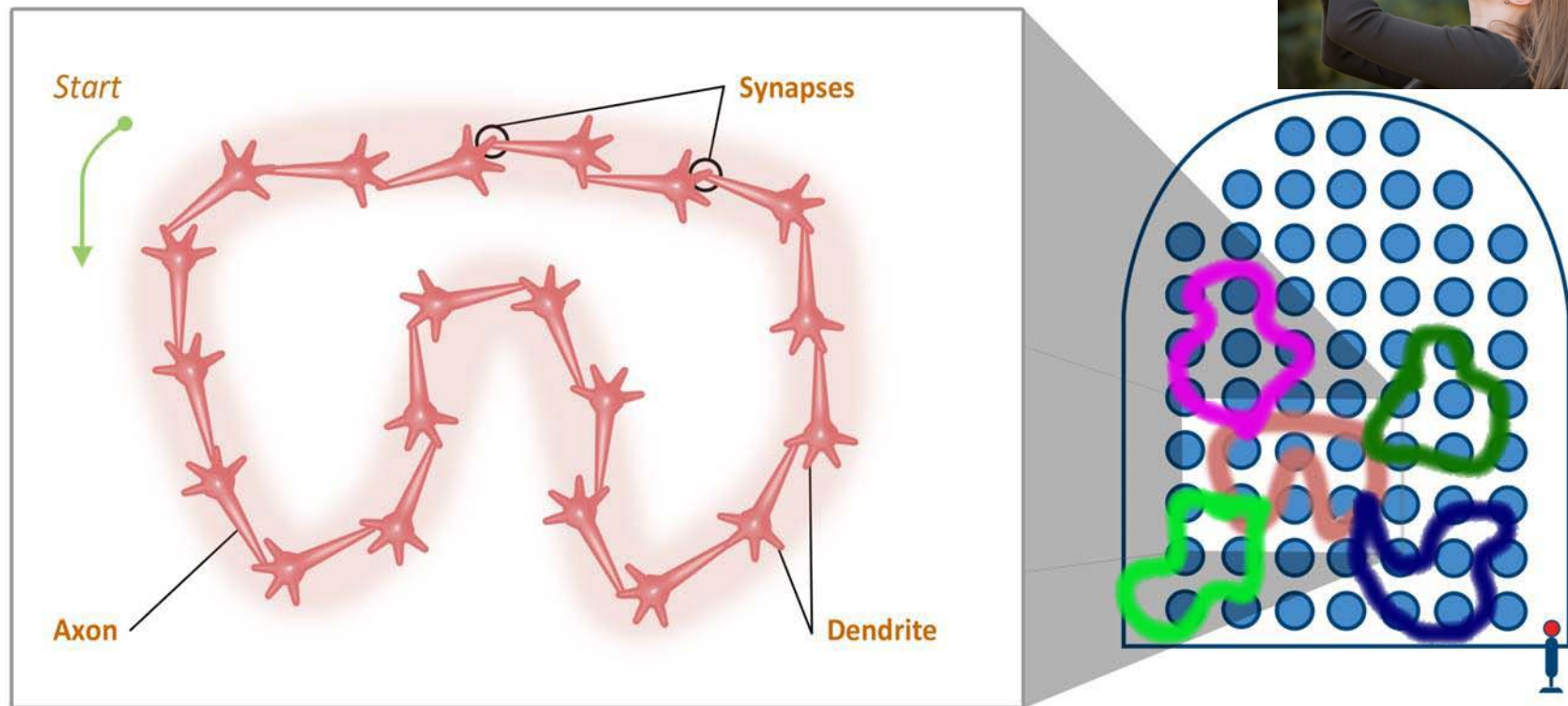




\_\_\_\_\_

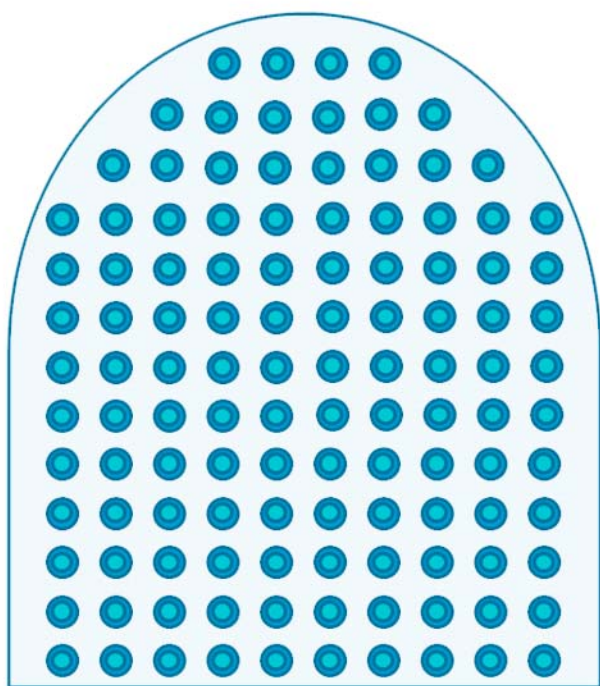
(write the letters here that appear  
on the screen....)













### **Relevant Readings**

- Beilock, S. (2010). *Choke*. NY: Free Press.
- Ericsson, K. A. (2009). *Development of Professional Expertise*. NY: Cambridge University Press.
- Gobet, F., & Clarkson, G. (2004). Chunks in expert memory: Evidence for the magical number four... or is it two? *Memory*, 12(6), 732-747.
- Gobet, F., Lane, P. C. R., Croker, S., Cheng, P. C. H., Jones, G., Oliver, I., & Pine, J. M. (2001). Chunking mechanisms in human learning. *Trends in Cognitive Sciences*, 5(6), 236-243.
- Guida, A., Gobet, F., Tardieu, H., & Nicolas, S. (2012). How chunks, long-term working memory and templates offer a cognitive explanation for neuroimaging data on expertise acquisition: A two-stage framework. *Brain and Cognition*, 79(3), 221-244. doi: 10.1016/j.bandc.2012.01.010
- Nyhus, E., & Curran, T. (2010). Functional role of gamma and theta oscillations in episodic memory. *Neuroscience and Biobehavioral Reviews*, 34(7), 1023-1035. doi: 10.1016/j.neubiorev.2009.12.014

### **Image Credits**

- Neurons image <http://en.wikipedia.org/wiki/Neuron>
- 4 slots of working memory and cerebral cortex © Kevin Mendez and Barbara Oakley, 2014
- Defense Language Institute logo, [http://en.wikipedia.org/wiki/Defense\\_Language\\_Institute](http://en.wikipedia.org/wiki/Defense_Language_Institute)
- Octopus of attention and diffuse tentacles, images © Kevin Mendez, 2014
- Pinball images © Kevin Mendez and Barbara Oakley, 2014
- Puzzle images © Kevin Mendez and Philip Oakley, 2014
- Neurons firing together © Kevin Mendez, 2014
- Clip art courtesy Microsoft Corporation

### **Music Credits**

- Ashley Hall free music [http://www.ashleyhallmusic.com/MP3/Lead\\_Kindly\\_Light.mp3](http://www.ashleyhallmusic.com/MP3/Lead_Kindly_Light.mp3)