

Study Skills

Mindmaps



Highlighting text



Revision cards



Summary notes

Blood and the Circulatory System

Blood transport various substances around the body through the circulatory system. E.g. it carries oxygen and glucose (for respiration) to and from the muscles. So, it's a bit like a party train. But what's it got?

RED BLOOD CELLS

- bi-convex shape
- TRANSPORT OXYGEN
- NO NUCLEUS → can be full to the brim with haemoglobin, which is a special pigment which combines with the one and only oxygen!
- LARGE SURFACE AREA → helps when exchanging oxygen, minerals
- slightly bigger than the dia. diameter of a capillary
- Form IN DIAMETER → forces it to squeeze itself
- get exchange with other things that way
- from the lungs to the rest of the body

WHITE BLOOD CELLS (leucocytes)

- NOT AS MANY AS RBC
- infection from disease causing cells to be specific - pesty cell!
- JOB DESCRIPTION: FIGHT INFECTION
- white produce antibodies to engulf and kill by phagocytosis (eat)
- (invaders are called pathogens)

PLATELETS

- FRAGMENTS OF CELLS
- made from the cytoplasm of larger cells
- THEY STICK!
- for example, when you are cut, they stick to the cut edges, and send out a series of chemical reactions to begin clotting (like dental cement) to damaged area
- LOOKS LIKE FINE BILLYBALLETS!

PLASMA

- PALE YELLOW - MAINLY WATER
- TRANSPORTS: MINERALS, HORMONES, GLUCOSE, AND OTHERS
- and this is 45% cellular
- BLOOD IS 55% PLASMA
- GIVES BLOOD ITS RED COLOR!
- carries waste
- carbon dioxide

But, what even is blood, like, who does she think she is?

Tissue. That's who she is. She ain't no organ. She's a group of many cells working together to carry out a function. Like

① **TRANSPORT** → carries glucose + oxygen to muscles
→ carries waste products away from muscles
* also transports urea to be removed from the body (fyi, urea is removed by urine produced in the kidneys and urea itself is made in the liver)

② **DEFENCE** → WBCs respond to invading pathogens (little devils) by producing antibodies (yay!) or by phagocytosis of pathogens (double yay!)

The Double Circulatory System

what exactly does a 'double circulatory system' mean? Well, for one circuit of the body, a red blood cell has to be pumped through the heart twice.

① The first circuit pumps deoxygenated blood to the lungs to get oxygen, then it goes 'back home' to the pumping station (the heart).

② The second circuit pumps oxygenated blood to the body, where it gives up its blood and returns to the pumping station deoxygenated, where the cycle begins again.

Latin Terms

- PULMONARY = LUNGS
- HEPATIC = LIVER
- RENAL = KIDNEY

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Health

Revision techniques - the good, the OK and the useless

By Deborah Cohen
Health Check, BBC World Service

🕒 18 May 2013 | [Health](#)



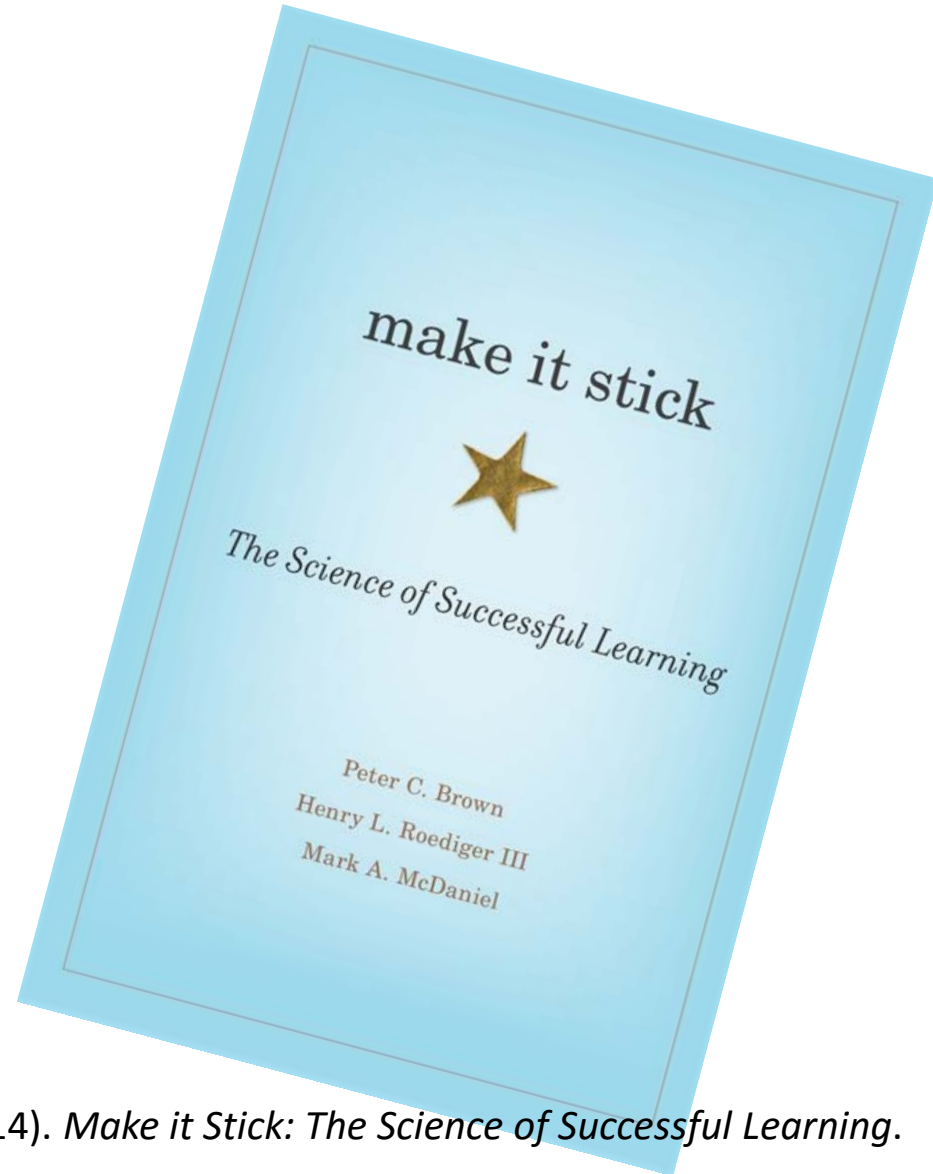
<http://www.bbc.co.uk/news/health-22565912>

Table 2: Effectiveness of ten learning techniques, from Dunlosky et al (2013)

High utility	Practice testing	Self-testing or taking practice tests on material to be learned
	Distributed ('spaced') practice	Implementing a schedule of practice that spreads out study activities over time
	Elaborative interrogation	Generating an explanation for why an explicitly stated fact or concept is true
Moderate utility	Self-explanation	Explaining how new information is related to known information, or explaining steps taken during problem solving
	Interleaved practice	Implementing a schedule of practice that mixes different kinds of problems, or a schedule of study that mixes different kinds of material, within a single study session
	Summarization	Writing summaries (of various lengths) of to-be-learned texts
	Highlighting	Marking potentially important portions of to-be-learned materials while reading
Low utility	Keyword mnemonic	Using keywords and mental imagery to associate verbal materials
	Imagery use for text learning	Attempting to form mental images of text materials while reading or listening
	Rereading	Restudying text material again after an initial reading

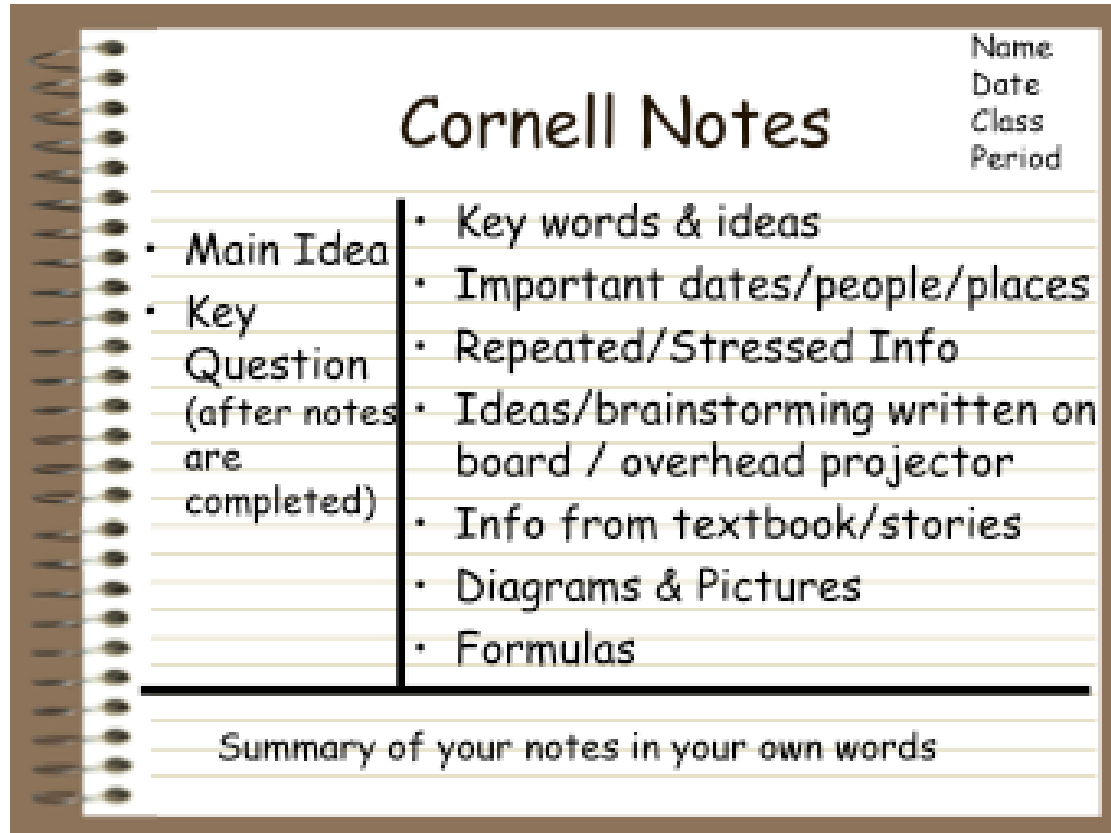
Dunlosky, J., Rawson, K. A., Marsh, E. J., Nathan, M. J., & Willingham, D. T. (2013). Improving students' learning with effective learning techniques: Promising directions from cognitive and educational psychology. *Psychological Science in the Public Interest*, 14(1), 4-58.

“Memory plays a central role in our ability to carry out complex cognitive tasks, such as applying knowledge to problems never before encountered and drawing inferences from facts already known. New insights into how memory is encoded, consolidated, and later retrieved have led to a better understanding of how we learn. Grappling with the impediments that make learning challenging leads both to more complex mastery and better retention of what was learned”.



Brown, P. C., Roediger III, H. L., & McDaniel, M. A. (2014). *Make it Stick: The Science of Successful Learning*. Harvard University Press.

Cornell notes



Some tips

- Syllabus and check lists
- Low stakes testing
- Use exam questions
- Self testing
- “Spaced” practice
- Cornell notes
- When using mindmaps, revision cards and summary notes link to exam questions and self testing