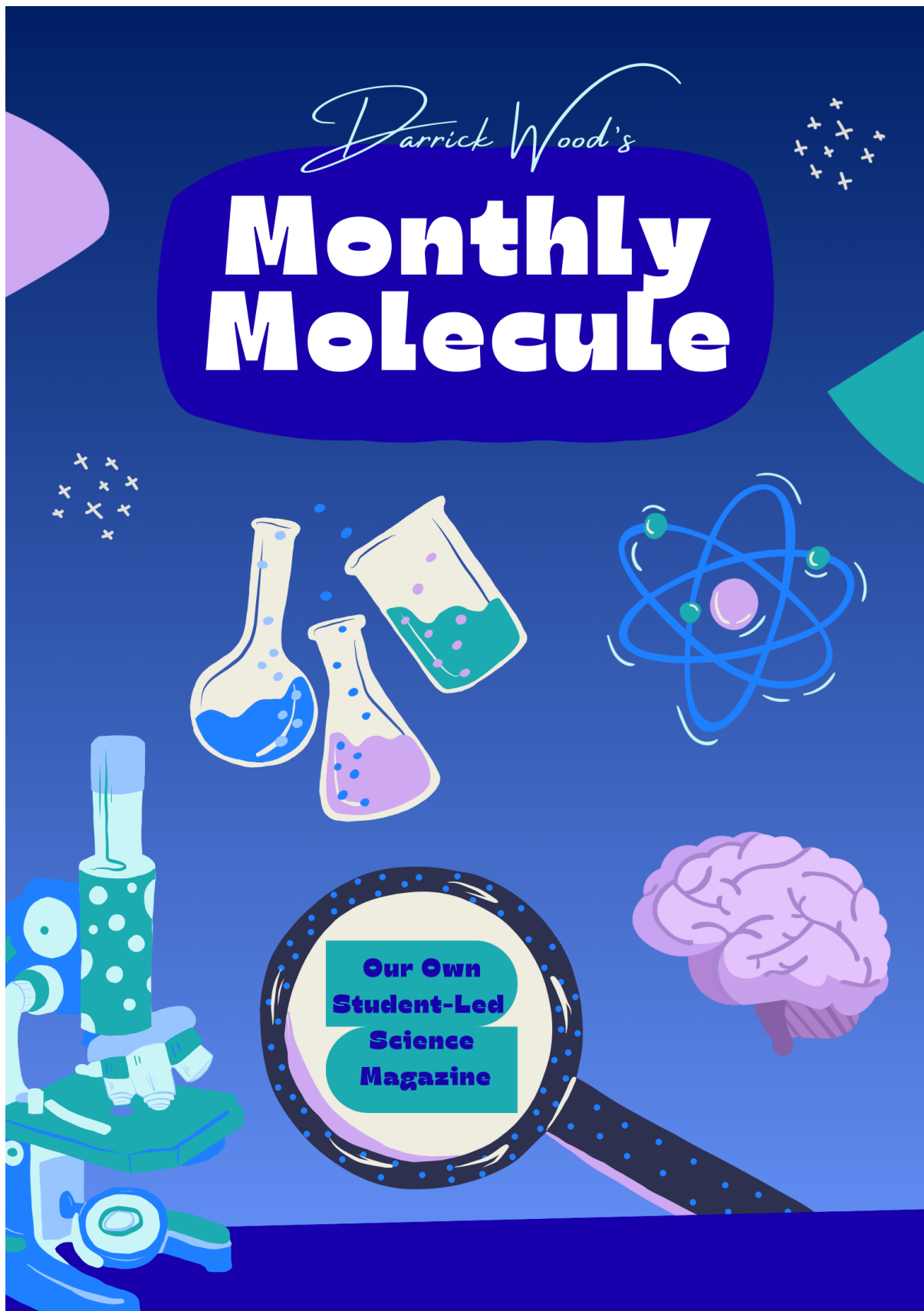


Darrick Wood's

Monthly Molecule



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Edited by Cara Taylor 12KEA

Cover by Chloe Ancaja 12ABE

Would you like to write for the monthly molecule?

We are still welcoming people to join us in making the school science magazine. Whether you'd like to write interesting articles, make fun games or give great recommendations, the molecule has a place for you!

The neuroscience of procrastination and decision-making

By Mahiya Sahay 10YC

Have you ever delayed something you didn't feel like doing? Did you make the decision to not do it? Most people do.

But why? Why do they decide to just not do it? Why do they keep procrastinating? To understand it, we need to focus on two main groups of the brain. The limbic system and the prefrontal cortex.

The limbic system is the emotional driver behind your decisions. It is a group of interconnected brain structures that help regulate your emotions and behaviour. The amygdala is a key feature of the limbic system. It is almond shaped, and highly responsible for processing information, and other things like your learning and memory. It plays a key role in the survival focused area of the limbic system. It detects danger and flares up the fight or flight instincts. Additionally, it influences decision making by processing emotions and memories.



The prefrontal cortex helps with attention-span, planning, self-control, adjusting to situations, reasoning, problem-solving and decision-making. It helps you prioritize long-term goals over short-term gratification. When presented with a decision, the prefrontal cortex considers all the pros and cons and other possible options.

It also takes into account any relevant information stored in our long-term memory and combines it with the present data. This shows how the brain prefers safety and familiarity instead of going into uncharted waters. We think we are consciously making decisions when in reality, our brain is

tricking us into choosing the more secure option because it has past information and experience about it. Personal biases can influence us and cause us to ignore the crucial facts.

Decision making is a complex cognitive process that involves evaluating options, weighing consequences and benefits, and ultimately selecting a course of action.

Some decisions are made by either your mind or your heart. Some decisions are not made by you alone, but are influenced by an array of external factors, including the views of society, cultural values, and environmental cues. Interactions with others shape our decision-making processes. A positive impact would be a friend supporting and emphasizing with whatever you eventually choose. A negative impact would be having to bend your own views to fit with others or giving into peer pressure.



We all also make the decision to procrastinate. Whether it be a task to complete or a decision to make. There are many reasons why a person procrastinates. Procrastination is closely linked to a person's personality.

Perfectionists procrastinate because the brain feels the unease of making a mistake or creating imperfect work. So, they choose to avoid it all together. It then turns into a cycle. After someone has procrastinated once, impending feelings of guilt and failure linger. They escape those feelings by seeking short-term comfort once again.

People with ADHD (Attention Deficit Hyperactivity Disorder) do it because a part of the ADHD brain shows reduced activity, making it harder to plan and resist distractions.

Some people may have low levels of dopamine (the “feel good” hormone in your body). They won’t have much willpower to do any work, and that can make tasks feel overwhelming or unimportant.

When you procrastinate, it is like a battle between the prefrontal cortex and the limbic system. The prefrontal cortex struggles to override the limbic system’s emotional impulses.

A big notion related to procrastination is temporal discounting. Temporal discounting is the human tendency to prefer immediate rewards sooner than future benefits. It explains why people tend to devalue rewards or consequences that are far in the future. Instead, many individuals feel more gratified in small pleasures of the moment. The limbic system dominates when immediate rewards are available, in contrast to the prefrontal cortex being involved with future benefits.

The Secret Science of Scent: How Smell Shapes Our World

By Jasveer Thind, Year 12

Have you ever walked past a bakery and suddenly felt hungry or happy? Or smelt something that instantly reminded you of a memory from years ago? This isn't a coincidence — it's because of how powerful our sense of smell is. Smell plays a huge role in how we experience the world, even though we don't always think about it.

How Smell Works

Smell begins in the **nose**, where there are tiny sensors called **receptors**. These receptors can detect small molecules floating in the air. Different receptors respond to different smells. When a smell is detected, a signal is sent to the brain, especially to an area called the **olfactory bulb**.

What makes smell special is that these signals are closely linked to parts of the brain that control **emotions and memories**. This explains why a smell can suddenly make you feel emotional or remind you of a specific moment in your life.

Scientists estimate that humans can recognise **over a trillion different smells**, although people often experience the same smell differently depending on things like genetics or past experiences.



Why Smell Is Important

Smell is not just about enjoyment — it is also important for **survival**. Many animals rely on smell to find food, sense danger, or communicate with others. Humans use smell to notice things like smoke from a fire or food that has gone off.

Smell also has a big effect on **taste**. If you block your nose while eating, food often tastes much less flavourful, showing how closely smell and taste are connected.

Smell in Everyday Life

Smell is used in many areas of science and industry. **Perfume designers** use chemistry and biology to create scents that make people feel relaxed or confident. **Food scientists** carefully design smells to improve flavour and make food more appealing.

Some shops even use scent on purpose — for example, adding a gentle smell of vanilla or coffee to make customers feel comfortable and want to stay longer.

The Future of Smell Science

Scientists are still learning more about how smell works. In some cases, changes in a person's sense of smell can be an early sign of medical conditions such as **Parkinson's disease or Alzheimer's**.

There is also growing interest in **electronic noses**, which are machines designed to detect smells. These could be used to find gas leaks, detect spoiled food, or even help doctors diagnose illnesses by analysing someone's breath.

Fun Fact

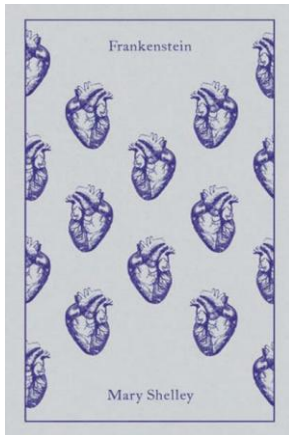
The smell of freshly cut grass is actually a chemical signal released by plants when they are damaged. Nearby plants can detect this smell and prepare themselves for danger — almost like plants warning each other.



Smell is more than just one of our senses. It connects our brains, emotions, and environment in a powerful way. Next time you notice a smell, it's worth remembering just how much science is happening behind the scenes.

Recommendations

Frankenstein by Mary Shelley



Frankenstein is a classic novel written about Victor Frankenstein and his unnamed creature. Although a recent Netflix film has been released in 2025, the original tale was first anonymously published in 1818 as one of the first science fiction novels. -Casey Joel 12AHE

Hitler's DNA: Blueprint of a Dictator

Hitler's DNA: Blueprint of a Dictator is a documentary on Channel 4 about the DNA analysis of the Adolf Hitler's blood. It explains the fascinating research by geneticists that sheds light on the infamous Nazi leader's heritage, health and behaviour. - Cara Taylor 12KEA



Stranger Things: The First Shadow



Stranger Things: The First shadow is a sci-fi horror West End stage production. It takes place in Hawkins, Indiana in 1959, acting as a prequel to the Netflix series Stranger Things, with characters such as Henry Creel, Joyce and Hopper. The show has stunning immersive visuals and is a real treat for any Stranger Things fans. -Cara Taylor 12KEA

Creativity and arts

Psychology: Beyond Feelings

Poem by Sharon Agbugui 12HHC

Dismissed as mere feelings and emotions
yet reflecting our inner script
rewriting of memories we once lived

Yet it shapes our world
through perception's frame
Never the full truth
Only painted illusions

Yet neurones fire in a second
Serotonin, Dopamine, both excitatory
electrical whispers
determining our state of mind

Yet thousands of approaches
All tug at human choices
Why do I obey?
Why do I conform?
But still dismissed as mere feelings and emotions

Games

Wordsearch

Made by Zachary Fernando 12KEA

Biology - PHOTOSYNTHESIS

A	A	E	I	T	Y	E	O	C	S	N	R	H	G
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REACT
CHLOROPHYLL
LEAVES
TEMPERATURE
DIFFUSION
ROOTS
OXYGEN
GLUCOSE
GREEN
CARBONDIOXIDE
ABSORB
PHOTOSYNTHESIS
ENDOTHERMIC
PLANT
STEM
SUNLIGHT
WATER
STOMATA
ENERGY

CAN YOU FIND ALL 20?!