

ORDERLINESS

Australian Supplement to the Character First Education Curriculum

I Will:

- Pick up after myself
- Keep my work and play areas clean and neat
- Put things back where they belong
- Use things only for their intended purpose
- Return lost things to their rightful owner



Definition

Arranging myself and my surroundings to achieve the greatest efficiency

Illustrations

Despite their small size, magnetic termites are one of the most fascinating insects living on the tropical savannahs of the Australian Top End. They could never survive on their own – they need each other in order to function effectively. See the nature story about how orderliness ensures the survival of the whole colony.

As the commander of the entire Australian Imperial Forces on the Western Front during World War I, John Monash had to be decisive and strategic in order to get the most out of his soldiers. The history story emphasises the great lengths he went to structure his army to be effective on the battlefield.

Orderliness in Nature

THE MAGNETIC TERMITE



To many an eye, the tropical savannahs of the Northern Territory seem wild and untamed, hundreds of kilometres of dry, grassy scrub. However, those who take the time to explore this unique part of Australia will find one of nature's wonders—the Magnetic Termite.

Scattered across the arid plains of the far Northern Territory are large grey, vertical slabs penetrating the flat landscape that look like old gravestones. With several hundred of these mud sculptures sprinkled across the plains, it can look very much like a remote cemetery.

They are not gravestones, but rather, they are the mounds of the magnetic termite. These fascinating structures, some reaching five metres in height, are built and maintained by thousands of tiny, blind termites. Not only do these tiny insects construct their vertical mud nest, they also build it to be perfectly air conditioned and able to withstand the harsh elements of the savannah.

If it weren't for the termites' incredible orderliness, these insects would perish very quickly in the harsh, hot climate. Several different factors contribute to the success of the magnetic termite.

Perfectly Heated

First of all, the magnetic termite's mound is perfectly constructed and aligned on a north-south axis. These grey, plate-shaped mounds are built to catch the first of the early morning sun on their eastern sides. At midday, when the sun is at its hottest, the mounds aren't cooked in the heat. As the sun warms the eastern face of the mound in the morning, the termites move to the eastern side of their mounds that warms rapidly. They will then move into the warmer inner core of the mound as the evening chill sets in.

Magnetic termites are small and very vulnerable to temperature change. When the sun heats the eastern face of the mound, the inner temperature rises to about 30 degrees Celsius. Then as the sun moves overhead, the face will stop heating and very, very slowly start to cool. In fact, the mound will cool so slowly that it will almost stay at a constant temperature the whole night.

Termites need a warm, stable environment in which to work, otherwise they will perish. The skin of a termite is very thin, and any sudden temperature change can have grave consequences. It is very important that, when

magnetic termites build their nest, they construct it to heat and cool just right.

Perfectly Built

We've seen how magnetic termites maintain the heat in mounds, but let's look at how they build their nests to stay just right. A colony of magnetic termites will build their nest out of saliva and their own waste. When this hardens, it becomes a rock solid structure that can withstand the harshest conditions.

The most amazing thing about a magnetic termite mound is that they are aligned on an exact north-south axis, apparently in line with the magnetic field. While the termites construct their nest, they have to take into careful consideration the local shade and the wind conditions. Correctly aligned mounds will thrive, while poorly designed nests will eventually perish. Even if the angle of the nest is out slightly, the temperature will not maintain the termite-friendly 30 degrees, resulting in the death of the colony.

Not only do the termites have to build their nests to maintain the right heat, but they also have to build them to stand up to the harsh weather conditions of the Northern Territory savannah. In the dry season, temperatures can soar to 40 degrees and then drop to below freezing at night. While most desert-dwelling termites burrow underground, Magnetic termites face heavy rain and potential flooding during the wet season. Often the ground can remain gummy with water until June, so living underground wouldn't work.

That is why the enormous towers of the magnetic termite are constructed to stand firm, able to stay both cool and warm during the dry season, and also stay standing during the flooding of the wet season. Some gigantic termite mounds have been observed to last over 100 years!

When the Overland Telegraph was being constructed in 1872, the top of one termite tower had to be removed because it interfered with the wires! At this stage, it must have been several decades old, and when it was checked again in 1935, 60 years later, it was still thriving! Over time, as the mounds decay and are eroded by weather, the material broken down by the termites eventually returns to the soil, replacing the nutrients back to the earth.

Without the orderliness of north-south axis, and strong building, the magnetic termite could never survive in the outback. Now let's

look at how the colonies live and function.

Perfectly Organised

In a termite colony, there can be up to two million individuals! The termites have an organised social structure called a caste system to help keep the colony functioning smoothly. Their nest functions a bit like a miniature city, with the king and queen producing eggs at the bottom, all the dead termites are buried at the top of the nest, and all the other workers busily working in the middle or outside of the nest.

At the top of the caste system there is the King and Queen termites, whose primary job is to reproduce. The Queen has an enlarged abdomen for her egg production, and she'll lay all the eggs for the nest.

Immature nymphs develop into workers, soldiers or reproductive termites. At certain times of the year, there is a small minority of termites with wings called *alates*. These are reproductive ants that fly out from the nest to start their own colonies, although very few survive the flight.

Then there are the worker ants. They cannot reproduce and are totally blind. Their responsibility is to gather the food for the colony and repair the nest. Worker termites make up the bulk of the colony, although they haven't yet developed into full grown adults. They are still "children" in the termite colony. In our world it would be as if the

bulk of the work was by blind, muscular 11 year olds! It is truly astonishing that although they are totally blind, they are able to function perfectly and build the huge nests.

To put that into perspective, a cathedral mound standing five metres tall built by five millimetre insects would be equivalent to humans constructing a skyscraper over a kilometre high and stretching over several blocks! Worker termites are apparently able find their way around by using the magnetic field as their guide, even though they're blind!

The last type of termite in the caste system is the soldier ant whose job it is to protect the nest. They, too, cannot reproduce, but are strongly-built for their important task. When they are nymphs developing, they will develop either large pincers or a pointed snout that can squirt out an unpleasant acid at attackers. Neither the worker nor the soldier termite develops eyes or fully coloured skin, yet they are essential to the running of the termite colony.

Without orderliness, the magnetic termite would die out in the Northern Territory savannah. Termites that keep a productive, smooth-running nest are able to survive. Do you keep your room orderly? Do you have an orderly closet or school desk? Remember to keep your surroundings clean, neat and ordered, so you can be as orderly and productive as a termite.

Orderliness in Australian History

War on the Western Front

Ka-boom! Ka-boom! The sound of rapid gun fire and shouts of allied soldiers rang in John Monash's ears. However, the only sound he heard now was the steady drizzle of rain, as he sat within the high walls of the Couturelles mansion in France,

quickly stooped to gather them up.

Did you spot the "I will"? John picked up after himself.

John stroked his dark moustache. "In order to succeed, it's important that we keep the

soldiers work areas as clean and neat as possible," he said.

One of his staff glanced at him in disbelief. "How is that possible? Our men are fighting in mud up to their knees, General!"

John nodded. "I know," he said, "but we can't neglect the wellbeing of our soldiers."

John started to gather as much information about living conditions on the front lines as he could.

He could be the most successful battle planner in the world, but everyone

would stand to lose if the soldiers were underfed and



sick.

"A change of uniform and regular baths help keep the men in shape," said the officers John met with. "Receiving letters and parcels from home helps boost morale, too."

John nodded and scribbled notes in his notebook. "Planks of wood could be cut to form makeshift footpaths over the muddy ground," he observed.

In John's view, keeping living areas clean and tidy was just as

The Western Front (shown in red), snaking through western Europe.



1917.

John Monash was Brigadier-General of the Australian Imperial Force (AIF) on the Western Front, who were working with the Allies to defeat the Central Powers. The Australian troops needed an organised leader to forge through the gruesome conflict.

The long, rectangular table that Monash and his staff surrounded was covered in maps and battle plans. As they discussed troop movements, some maps fluttered to the floor. John

Australian troops (Anzacs) on a Western Front battlefield. Wooden 'pathways' where built over the muddy ground.



important as fighting.

Did you spot the “I will”? John kept his men’s work areas clean and neat.

Under John’s leadership, there were 150,000 troops between the ages of 18 and 40.

“We only have a certain number of men,” he said to his team.

“We must make wise decisions and be strategic with each company.”

Did you spot the “I will”? John carefully planned to deploy the soldiers strategically for their intended purpose of defending.

As leader of the Australian troops, there were hundreds of details that John needed to consider.

“We have to get back to the basics of warfare,” he told his HQ staff. Do the soldiers have enough food and water? Latrines? Sandbags? Shovels? How many men have we lost? Any ideas for replacements? Those were just some of the details that had to be considered.

“Keeping the war equipment safe is an essential part of the war,” John continued. “We don’t want enemy spies to catch a hint of where our supplies are kept.”

John used local farmhouses and barns to store war resources. He saw the importance of keeping things where they belonged.

Did you spot the “I will”? John saw the need of putting things where they belonged.

Monash was always open to the ideas of others and was ready to change if someone had a better way. He listened to all information available and studied his detailed war maps daily. When he came up with an idea for battle, he put it before his HQ staff to get their opinion.

John never attempted anything rashly. He hated the unknown and was horrified at the idea of sending troops forward with only a vague idea of enemy lines. He made sure that he used all his supplies as efficiently as he could, returning all provisions to their rightful owners.

Did you spot the “I will”? John returned all the supplies to the fighting men.

John Monash faithfully led the AIF to the end of the Great War in November 1918. Now, there were over 160,000 Australian troops to send home, so John wrote a book called *“The Demobilisation of the AIF”*, which explained how to send the soldiers home in an orderly way. For those waiting for passage, he sent them to “school”, giving them business and trade

courses. This gave



John Monash is featured on the \$100 note.

each of the men a chance to contribute to Australian life when they arrived home.

Monash’s orderliness prevailed when he returned to Melbourne and was asked to undertake the enormous project of constructing a power grid to service the state of Victoria. This was the first of many engineering projects he worked on.

For John Monash, orderliness was evident in every part of his life, whether in war or project construction, on Australian shores or further afield. He is regarded as one of the greatest military leaders Australia has ever seen.



Battlefields of the Western Front are now fields of poppies to commemorate the brave troops who died.

Project Ideas

Language

Poems require rhythm and orderliness. Write couplet, limerick or poem on an aspect of orderliness, such as the magnetic termite, John Monash or the Anzac soldiers.

Maths

Orderliness is *everything* in maths. Study the order of operations such as BIMDAS (Bracket, indices, multiplication, division, addition and subtraction) to emphasise this point.

Study the history of calendars and time, as related to orderly.

Science and Technology

Take a closer look at nest-building termites in Australia. Build your own termite mound out of modelling clay.

Study clocks. How do they help us keep orderly? Have a range of different clocks - e.g. mantel clock, digital, wind up, travel clock, etc.



Society and Environment

Study the history of the production line. How is orderliness pivotal to mass production?

Do a study on Sir John Monash and his troops on the Western Front in Europe. On a map of Europe, mark where major battles involving Australian soldiers were fought.

Health

Professional athletes spend hours in disciplined training and ordered schedules. Study different Olympic sports and research athletes from these sports.

The Arts

Make a calendar out of construction paper, with each picture exemplifying an aspect of orderliness - e.g. setting the table, a tidy room, a clock, etc. Make a schedule for your day.



Discuss time signatures. How does that keep a musician orderly? Analyse the difference between a *symphony* and a *cacophony*.

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In which country were the Allied soldiers fighting?

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How many Australian soldiers were fighting?

In what year did the Great War end? _____

How did John Monash demonstrated ORDERLINESS:

1. _____

2. _____

How can YOU show orderliness...

At school?

At home?



The Orderly General

ORDERLINESS

Arranging myself and my surroundings to achieve the greatest efficiency.

