



THE SECRET SCIENCE OF MAGIC

Teachers Notes

Written by Melissa Keil

Published by Hardie Grant Egmont in April 2017

SUMMARY

Joshua is good at magic tricks, ignoring his homework, and not thinking about life after year twelve. He's not so good at talking to Sophia, the genius in his class whom he's had a crush on for years. But with their time together in high school running out, he has to do something about it, soon – because if he's learned one thing, it's that timing is everything.

Sophia is smart enough to know that geniuses like her can end up as socially inept recluses. In fact, maybe she's halfway there already, what with the panic attacks and her best (and only) friend Elsie drifting away. All Sophia can do is seek refuge in what she understands best: maths, science, logic. But there's no logical explanation for the odd, almost magical things happening around her. And there are some things no amount of study can prepare you for...

The Secret Science of Magic is a rich and layered novel that explores, with insight and playfulness, all the complexities of love – romantic love, friendship, familial bonds, self-respect, passion and ambition. Joshua and Sophia take the reader on a journey into the difficult but magical heart of relationships.

Sophia is a wonderful female character – a genius questioning her place in the world, feeling increasingly isolated by confusing social interactions. She sees herself as different but she's grappling with very human questions: *Am I normal? To what extent should I conform? What's with the dipshit who's always smiling at himself? How do I deal with falling in love?* There is much to love in Sophia, and there is much to generate class discussion. What do we lose when we conform? What do we lose when we don't?

Joshua is wonderfully likeable, and flawed, too. He realises that magic tricks might get the attention of a girl, and real intimacy doesn't take timing – it takes time. Intimacy requires us to take personal risks, to listen. This is where the real magic is: in authentic connections between people, in our ability to love someone while allowing them autonomy.

The novel asks students to think about how their identities are shaped, and the balance between conformity and autonomy. It asks them to consider the complicated nature of sibling bonds. There is great scope for discussions about fate, science, the future, brothers and sisters, the scientific mysteries of the world, the explainable and the inexplicable.

All this, and it's a page-turner written in gorgeous prose. It's a perfect novel for class study.



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ABOUT THE AUTHOR

Melissa Keil is a writer, children's editor and compulsive book-buyer. She has lived in Minnesota, London and the Middle East, and currently resides in her home town of Melbourne. She was the inaugural winner of the Ampersand Prize, Hardie Grant Egmont's ground-breaking award for debut novelists. Her first two books – *Life in Outer Space* and *The Incredible Adventures of Cinnamon Girl* – have been published all around the world and were each shortlisted for a number of prizes, including the Children's Book Council Book of the Year Award, the Prime Minister's Literary Awards and the Centre for Youth Literature's Gold Inky.



READING JOURNAL

The characters in *The Secret Science of Magic* are preoccupied by questions that might also preoccupy many teenagers. As you read the novel, keep a reading journal. Note your thoughts on the text, and your reactions to the subjects discussed.

PRE-READING ACTIVITIES

The main characters in *The Secret Science of Magic* often comment that they don't feel 'normal' but they face issues that may also concern you.

Before reading the text, make a list of issues – personal, political, social, economic or environmental – that most concern you. Number your issues in order of importance. Discuss your ordering and the reasons for your choices.

Study the front cover, and reflect on the title.

- Predict three themes that might arise in the novel.
- The layout of covers and font variation provide readers with an initial impression of a text. Why might the designer have chosen this particular font? What can you predict about the text from the layout of the graphics? How has the designer used the graphics to mirror the title?



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In the novel, the characters question many things. As a class, discuss the questions/statements below.

- Do you believe in love at first sight?
- Do you believe that opposites attract?
- Do you believe that humans have control over their fates?
- Write a definition of 'normal' human behaviour. Is there such a thing as 'normal'?
- If you think there is, do you fall inside or outside this definition?
- Do you believe in karma?
- If you do believe in it, do you think your karma is in good shape?
- Of what are you most afraid?
- Do you believe in magic?
- What's one thing you would *unknow* if you could?
- What's one mystery you would love solved?
- What's one mystery you would love to remain unsolved?

READING ACTIVITIES

As you read the novel, answer the following questions in your reading journal. Find the meanings of the vocabulary words listed for each chapter and create a glossary in the back of your journal.



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No performer should attempt to bite off red-hot iron unless he has a good set of teeth. – Harry Houdini

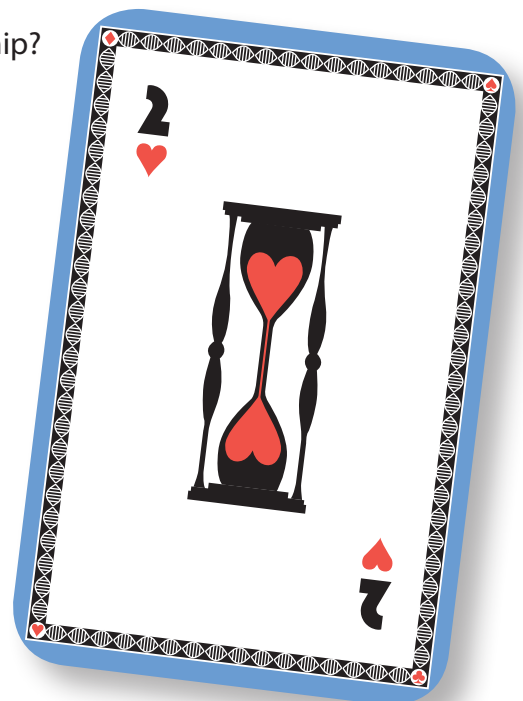
Vocabulary: deduce, somnambulism, reverently.

1. Write a paragraph about a time when you experienced 'a giant, karmic arse-kicking.'
2. What does the reader learn about the narrator in this chapter?
3. How does the narrator view Sophia?

The uncertainty principle

Vocabulary: cerebellum, arbitrary, prodigy.

1. What does this chapter reveal about Sophia?
2. What does the chapter reveal about Elsie and Sophia's friendship?
3. How does Sophia describe the narrator of the first chapter?
4. Describe what Sophia finds in her pencil case.





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The paradox of time travel

Vocabulary: paradox, conundrum, haven, nemesis.

1. What's a paradox? As a class, brainstorm some examples.
2. Why can't Sophia resist talking to Toby?
3. What kind of person might need their bedroom to be an 'isolation chamber'? What does Sophia's bedroom reveal about her character?
4. Why does Sophia need to talk to Perelman?
5. "Like so many of my kind, the prevailing opinion is that he is both brilliant and batshit crazy." What famous person would you meet, if you could? How would you define 'your kind'?
6. This chapter shows the differences between Sophia and Elsie. List three differences. Why, do you think, are they such good friends?

The theory of gravitation

Vocabulary: behemoth, taciturn, venerated, Planck time, fugue, cumbersome.

1. Do some research: can you find what painting the T-shirt on page 31 is referencing?
2. Why does Elsie leave Sophia alone?
3. Who is Joshua? Why does he need Sophia to give him some backup?
4. What strange thing happens at the end of the chapter?



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There is nothing worse than good magic at the wrong time. – David Roth

Vocabulary: prestidigitation, analogy, stoically, guileless, peripheral, intangible, ju ju.

1. Note the difference between the start of Joshua's chapters and the start of Sophia's chapters. How does this help the reader to distinguish between narrators?
2. Why does Joshua hate David Copperfield?
3. Describe Amy in three words.
4. What's the Hollingworth Reformation trick?
5. What's hinted at happening between Jasper and Amy?
6. 'Camilla the Chanteuse'. What's a chanteuse?
7. What advice does Camilla give Joshua?
8. How is Sophia like magic to Joshua?

The laws of thermodynamics

Vocabulary: perturbed, inadvertently, talisman, corporeal, ornate, discordant, cacophony.

1. What's a bootstrap paradox? What is Bayes' theorem? What is thermodynamics?
2. Do you have a talisman? If so, what is it? Discuss with the class.
3. Why is the chapter titled *The laws of thermodynamics*?



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The magnetic moments of elementary particles

Vocabulary: harangued, tenuous, sardonic, sequestering, enigmatically, fissure, incredulous.

1. Sophia is overlooking 'a few very relevant variables in this chapter'. Explain to Sophia what is going on with Elsie and with Joshua. What variables is she missing?

The extra dimensions in string theory

Vocabulary: string theory, Cartesian plane, parametrical, diatribe, evocative, syntax, axiom.

1. Predict what might happen in the next chapter.

The eccentric orbits of binary stars

Vocabulary: eccentric, orbit, binary stars, erratic, ambiguous variable, segues, nebulous, innocuous, menagerie.

1. Joshua is planning a surprise for Sophia. What would be the best surprise someone could plan for you?
2. How might the watch-band be symbolic of Sophia and Elsie's friendship?
3. What's your opinion of Joshua and his behaviour? Explain your answer.
4. Elsie loves romantic comedies. Make a list of your top five TV programs or top five films.
5. How would you advise Sophia to 'bridge the divide' between her and Elsie?
6. In what ways do you think you're eccentric?



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Caught in the difficulty of mystifying, magicians forget that the first role of the artist is to communicate a beautiful idea. – Teller

Vocabulary: vortex, Hades, masochistic, askance, ambivalent, palpable, balk.

1. How would you describe Joshua's role in his family? How would you describe your role within your family?
2. What career would you recommend for Joshua?
3. List three ways in which Joshua and Sophia are alike.
4. Sophia thinks she's different to everyone – not normal. Name something you and Sophia have in common.

The causality principle

Vocabulary: causality, parameters, vigilant, disembodied.

1. Why might pinpointing when Perelman's 'downward spiral' began be so important to Sophia?
2. Why did Sophia become quiet? What did she realise?
3. Predict what will happen at the party. Share your prediction with a partner.

The multiverse conjecture

Vocabulary: conjecture, rudiments, recoils, coalesce, rouse, pristine, emanates, anachronistic, ambidextrous, precocious.

1. Do you think it's too simple to state that Toby hates Sophia? How and why are sibling relationships complicated?



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The mechanics of being joined at the face

Vocabulary: gesticulating, extricate, catalyst, obtuse, reminiscent, marauding, beguiling, invoke, dilapidated.

1. Joshua fits in at the party. Where do you feel you fit in?
2. Choose one word to describe Camilla.
3. Discuss with the class what we learn about Joshua and Sophia in this chapter.
4. In pairs, make a list of what you consider to be the five biggest mysteries of the universe. Now, make a list of what you see as the five biggest mysteries of high school.
5. Re-read the kiss scene. What does visceral mean? Why does Sophia run away from Joshua?
6. Were your predictions about the party correct? Discuss with a partner.

The exclusion principle

Vocabulary: excavating, ephemera, articulating, vernacular, philematology, osculologists, errant, catatonic, hyperbole.

1. What is Gabriel's Horn paradox?
2. As a class, discuss Elsie's reaction. Do you think her anger is justified? Why or why not?

The observation of black holes

Vocabulary: vivisected, soliloquies, innate, malleable, perfunctory.

1. Sophia dismisses romantic comedies. However, Elsie loves them. Lots of people love them. Discuss what this genre offers people.



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2. What's your opinion of Sophia's parents? Give reasons for your answer.
3. Writers make deliberate choices when deciding what to include or exclude in their stories. Why might the author have put more emphasis on siblings than parents?
4. Sophia thinks retreat from life is the only option. Write a letter stating your position on this.

Good timing is invisible. Bad timing sticks out a mile. – Tony Corinda

Vocabulary: morbid, sibilants, incredulously, genial, convulsively.

1. Do you agree that Sophia doesn't need anybody? Support your answer with evidence from the text.

The proof of dark matter

Vocabulary: garbled, ostensibly, monologue, osmosis, ambience.

1. Explain why the chapter is called 'The proof of dark matter'.

For those who believe, no explanation is necessary. For those who do not, none will suffice. – Joseph Dunninger

Vocabulary: turbulent, comatose, asinine, epiphany.

1. Make a list for Joshua of ways to lessen the pain of a broken heart.
2. Explain the realisation that Joshua comes to about himself. What role has misdirection played in his life?



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The illusion of spacetime

Vocabulary: swathe, inexorably, petulant, obliterated, inferences, equivocate, redundant.

1. Do you agree that Mrs Heller has nothing to teach Sophia? Discuss your answer, and your reasons for reaching that conclusion.
2. What does this chapter reveal about Toby?

The potential of free particles

Vocabulary: proximity, fugue, asphyxiated, morose, insipid.

1. Explain the relevance of the chapter title.

Before there can be wonders, there must be wonder. – David Copperfield

Vocabulary: epoch.

1. Make a prediction: why does Joshua need the lights?

The limits of the observable universe

Vocabulary: succinctly, permutation, equilibrium, entopic.

1. Do you think people have to be perfectly matched to be happy?
2. What's your opinion of Joshua's trick? Why is it symbolic?



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The duality principle

Vocabulary: duality, unperturbed, abate.

1. Write a paragraph about a time when you really sucked at something – and it didn't matter.

Be natural and use your head. – Dai Vernon

Vocabulary: bereft, impassive, acclimatise, eliciting, levitation.

1. Make a list of mysteries you don't need to solve.

The expanding universe

Vocabulary: skeptical, corral, proffered.

1. List the ways in which Sophia's world has expanded during the novel.

THEME

A theme is a main idea that occurs in a piece of literature. Themes in literature are effective because readers can relate to them. They show what people have in common.

1. What things do you have in common with Sophia, Joshua and Elsie?



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Below are just some of the themes explored in *The Secret Science of Magic*:

- Family/sibling relationships
 - Friendship
 - Regret
 - Love
 - Ambition
 - Hope
 - Courage
 - Difference and 'normality'
 - Change
 - Conflict
 - Identify
2. In pairs, choose one theme. Find one event and three quotes in the book that illustrates your theme.
 3. As a class, discuss what you consider to be the main theme of this novel. As you discuss which theme you consider to be the main one, support your view with examples/quotes from the text.

Discuss your view on the following questions:

- How do we form our identities?
- Who defines 'normal'?
- When should an individual ignore the mores of society or a particular group in order to be true to himself or herself?
- When should a person conform?



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CHARACTER

Choose three main characters and fill out the profile below on them:

Name:

Age:

Nickname:

Physical description:

Emotional characteristics:

Key moments of change and quotes to illustrate this change:

Create a separate Pinterest board for Joshua, Sophia and Elsie. The aim is to illustrate the differing passions of each character.

Discuss your view on the following questions/statements:

- There's no such thing as normal.
- Sophia has more to learn than anyone in the novel. Do you agree?
- The real magic for the characters in the novel is learning to be themselves. Do you agree?
- The novel shows, through Sophia's journey, that people need each other. We cannot survive alone.

SETTING

Melissa Keil has a wonderful ability to evoke setting and atmosphere. On page 15 she writes, 'I've lived in Melbourne my whole life but the weather still freaks me out; blue-sky mornings that descend into gusty grey by lunch, as if the city itself is suffering from some chronic mood disorder.'

- How has she created the feel of the city? (Alliteration, metaphor, personification, use of adjectives.)



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There are wonderful descriptions of bedrooms in the novel. Bedrooms, as Melissa Keil shows, tell us a lot about a character. Descriptions of personal space are a great way to *show* in writing.

- Choose one character in the novel and find a description of his or her bedroom.
- What do we learn about the character, based on this room? (Consider what we learn about their interests, but also their emotional landscape.)
- What literary techniques has the author used to evoke the setting?
- Create a character and describe her or his bedroom. Remember the aim is to reveal a character.

LITERARY TECHNIQUES

Humour

Make a list of the TV shows that make you laugh. Can you explain to the class why they make you laugh?

There are many literary devices that create humour, such as pun, surprise, exaggeration, slapstick and sarcasm. Which techniques are employed in the following quote? 'Without careful, precise timing, a magician will end up dropping his cards, or, you know, sawing his own legs off.' (p 2)

- Find some more examples of humour in the novel and name the technique being used.
- Why might an author use humour in a novel about a serious topic? Do you like to write with humour? Why or why not?

Metaphor

Sophia's chapter titles function as metaphors. They're symbolic of her life. Make a list of Sophia's chapter titles and explain why the author has chosen each one.

"So the best advice you can offer me is from the toilet?' I take the pencil from her. 'Is that supposed to be a metaphor for my life?'"



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Make up a list of metaphors for your life. To do this, you need to compare your life to something – positive or negative. Some examples have been done for you.

- Every door I tried today was locked. It felt like a metaphor for my life.
- My life is a toilet.
- My life is 'an expanding universe'.

Alliteration

Find three examples of it in the book.

- Write a paragraph where you use as much alliteration as possible.
- Now, read it aloud. Is it too much? Why or why not?
- Cut out some of your alliteration so the sentences that are important have emphasis.
- Read your second version to the class.

Neologisms

Standard Australian English continues to evolve. Melissa Keil uses words that have been in the language for centuries, while drawing on words that have recently entered the language.

- Use a dictionary to write a definition of the term 'neologism'.
- Can you find some newly coined words in the novel? (skeezy, fem-bot)
- In pairs, brainstorm a list of other neologisms.



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- Choose three neologisms from your list. Using your general knowledge, write definitions for them. Share these words and definitions with the class.
- As a class, make a list of the reasons why language changes. Consider things such as technology, culture, gender or generational change.

WRITING ACTIVITIES

Personal/ Reflective

Write a personal essay about a conflict you had with a friend. Explore how you resolved it. If you didn't resolve it, explore how that made you feel.

Write an essay titled 'The most awesomely perfect thing to have happened in the history of everything' (p 301) OR, write a personal essay titled 'The most awesomely *un*perfect thing to have happened in the history of everything'.

Write a descriptive piece about one of your siblings. Or, write a piece about a family member.

Write a letter to your past self. What advice would you give?

'Because I may be hopeless at life in general, but *this* thing, I can do.' (p 25) Write a piece about something you can do.

Imaginative

Write a story called 'The Uncertainty Principle'. Or, choose another chapter title from *The Secret Science of Magic* and write a story with that title.

Write a story about a magic trick gone wrong.



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Write a story that starts with 'Just me and my nemesis. Alone in the dark.' (p 293)

Write a story titled 'The Awkwardness Olympics.' (p 16)

Persuasive Writing/Informative

Write a letter to the editor arguing that 'normal' is a dangerous word.

Write a biographical piece on Grigori Perelman, providing information on his personal and professional life.

DRAMA ACTIVITIES

- In groups, choose a scene from the book and write it as a script. Perform your play to the class.
- Write a monologue as Sophia's parents, exploring the changes they have seen in Sophia over the past year.

DISCUSSION QUESTIONS

"Like, so far we've spent most of our years in buildings like this, and for what? What are we supposed to be equipped for when we're spat out at the other end?" (p 284)

People should accept their limitations. Do you agree? Why or why not? Is this what the novel shows?

'Odd what a little variation in light can do to something so familiar.' (p 288) Discuss in relation to the novel.



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If you could know the future, would you know it? Why or why not?

'There is a difference between knowing the name of something, and knowing something.'
(p 207) How does *The Secret Science of Magic* explore this idea?

'Did he ever find someplace where he belonged, other than inside an equation?' (p 216)
The Secret Science of Magic is about more than finding a place to belong. It's about making connections. Discuss.

The Secret Science of Magic explores the most magical thing of all: relationships. Discuss.

'The why is much more interesting' (p 93). Discuss in relation to the novel.

COMPARISON TEXTS

Novels

Bowler, Tim. *Game Changer*, Oxford University Press, United Kingdom, 2015 (social anxiety, siblings, finding solace in passions).

Haddon, Mark. *The Curious Incident of the Dog in the Night-time*, Random House Children's Publishers, United Kingdom, 2003 (difference, Autism, social anxiety).

Williamson, Lisa. *The Art of Being Normal*, Telegraph Books, United Kingdom, 2015 (self-worth, belonging, friendship).

Wood, Fiona. *Wildlife*, Pan Macmillan, Australia, 2013 (friendship, belonging, love, family).

Film

The Imitation Game, 2014 (geniuses, belonging, friendship, self-worth, love).