

Teaching Guide:

Philip Pullman's *His Dark Materials*

Student Level: Year 9 and up

Learning Objectives

- Develop a deeper understanding of Pullman's core literary themes and preoccupations
- Engage with the artistic use of scientific theories and ideas in fiction
- Engage with artistic use and reinterpretation of earlier source material in modern fiction
- Develop confidence in tackling dense and detailed prose in an academic setting
- Practice close reading

Readings to prepare outside of class: *Northern Lights*, the first book in the *His Dark Materials* series, is around 350-400 pages in most editions. Depending on students' age and reading level, it can be done in four weeks of classes or assigned as holiday reading. Students who enjoy *Northern Lights* can be encouraged to read the rest of the trilogy outside of class or over a holiday to prepare for further classes. *Northern Lights* is not well-suited to being read in excerpts; in a pinch, students can read chapters 1-2 (an introduction to Lyra as a character, to daemons, and to Dust) and chapters 10-11 (Lyra's encounter with Iorek Byrnison) to engage with some of the text's interesting features and themes.

Accordingly, detailed discussion questions are provided for *Northern Lights*. Shorter lists of discussion questions are provided for *The Subtle Knife* and *The Amber Spyglass*, focusing on major themes.

Narrative Summary of *His Dark Materials*

Northern Lights

Lyra Belacqua is an orphan living at Jordan College, Oxford, in a world similar to but also different from our own: the Reformation never happened, John Calvin became Pope, the Church (called the Magisterium) wields incredible social and political power, technology remains at an early twentieth century level, and all people have daemons – thinking, speaking animal manifestations of their souls.

Lyra sneaks into the Jordan College Retiring Room to see her uncle, the explorer and researcher Lord Asriel, and unexpectedly witnesses the Master of the College trying to poison him. Warning Asriel privately about the poison, Lyra secretly watches the lecture he gives the scholars, in which he mentions a mysterious elementary particle called Dust, shows pictures demonstrating that Dust is attracted to adults and not children, offers images of a city in the sky, and then produces the frozen head of a previous researcher, Stanislaus Grumman. Shortly thereafter, a rumour about child-kidnappers makes its way to Oxford; these mysterious kidnappers are known by everyone as the Gobblers, and Oxford

children start to disappear, including Lyra's best friend, the kitchen boy Roger Parslow. Before Lyra can effectively raise the alarm, she is distracted by a beautiful socialite and professed Northern explorer, Mrs. Coulter, who adopts Lyra with the permission of the Master – who secretly gives Lyra a device called an alethiometer, and warns her not to tell anyone of its existence. The Master says the alethiometer has told him that Lyra has a great task to do, but must accomplish it without knowing what she's doing, and that she will be responsible for a great betrayal.

While living with Mrs. Coulter in London, Lyra discovers she has a capacity for violence and cruelty, and at a glittering party hosted in Mrs. Coulter's flat, she learns that Mrs. Coulter is in charge of the Gobblers – the General Oblation Board, a project funded by the Magisterium. Lyra flees the flat, is nearly abducted, and finds safety with the gyptians, a nomadic, canal-boat community familiar to her from her time in Oxford. The gyptians, led by Lord John Faa and his advisor Farder Coram, organise an expedition to rescue the children kidnapped by the Gobblers, who have been taken to the far north. Lyra learns that Asriel and Mrs. Coulter are in fact her parents, and begins to learn to read the alethiometer, which uses a set of enigmatic symbols to provide answers to any question Lyra asks of it. Once in the north, Lyra recruits the armoured bear lorek Byrnison and his aeronaut colleague Lee Scoresby to the cause. The gyptians liaise with the northern witch clans, and we learn that Lyra is the subject of a prophecy among the witches, that she will bring about the end of destiny.

On their way to Bolvangar, the location of the General Oblation Board's facility, Lyra finds a boy called Tony Makarios and discovers what the Gobblers are doing to children: cutting their daemons away from them, in a process called intercision. Lyra is captured during a skirmish between the gyptians and Skraeling child-abductors and taken to Bolvangar, where she finds Roger, frees the sick and ghostly daemons of the severed children, and nearly experiences intercision herself, stopped by the arrival of Mrs. Coulter, who explains to Lyra that intercision is meant to stop children from experiencing troubling adult emotions (though it also severs them from curiosity, creativity, and interest in the world around them). The gyptians attack Bolvangar with the help of Lee, lorek, and the witch clan of Farder Coram's former lover, Serafina Pekkala, and Lyra helps all the children escape. Lyra falls from Lee Scoresby's balloon during an attack by cliff ghaists and lands in Svalbard, the territory of the armoured bears. Lyra deceives the unlawful bear king, Iofur Raknison, into allowing the rightful king, lorek Byrnison, into coming to Svalbard and facing him in single combat. lorek defeats Iofur and takes Lyra to her father, who has been imprisoned in Svalbard on the Magisterium's orders.

Asriel has continued his research, and while he at first seems horrified to see Lyra, he quickly changes his reaction. He tells her that the Church thinks Dust is the evidence of original sin, and that it must be prevented from affecting humans as they grow up. He tells her he plans to go to the city in the sky, which is another universe. Asriel seizes Roger, takes him up to the highest point in Svalbard, and severs him from his daemon, creating a bridge between the universes. Mrs. Coulter arrives but does not stop Asriel from leaving, and the two embrace passionately. Lyra decides that if these adults, who have done such harm, want to destroy Dust, it must be good rather than evil, and she follows Asriel across the bridge, intending to stop him from destroying Dust at its source.

The Subtle Knife

Lord Asriel's bridge leads Lyra to the world of Cittàgazze, a Mediterranean-like city in which there are no adults, because it is full of creatures called Spectres, who are invisible to children but visible to adults (or, in Lyra's world, those whose daemons no longer change form). The Spectres feed on some vital life force in adults, rendering them alive but soulless and daemon-less, indifferent to everything around them. In Cittàgazze she meets a boy from our world, Will Parry, who has found a window in his Oxford leading to Cittàgazze. Will is fleeing his world because he accidentally killed a man: two men have been repeatedly coming to his house looking for letters his missing father, the explorer John Parry, wrote to his mother, who is currently suffering from an unspecified mental illness, and when Will finds the letters himself, he accidentally kills one of the men making his escape. Will and Lyra become uneasy allies to find out more about Will's father, and about Dust.

Meanwhile, Serafina Pekkala finds out that Lord Asriel means to make war on God – also known as the Authority. Asriel means to bring about the end of the Authority's, and the Church's, tyrannical rule over human souls. Lee Scoresby goes to look for the scientist and shaman Stanislaus Grumman (who is alive, despite Asriel's deception), who knows of a weapon Lord Asriel will require to win the war against the Authority.

Will and Lyra go to Will's Oxford in their quest. Lyra finds a physicist, Dr. Mary Malone, who studies dark matter. Mary used to be a nun, but left the church; her most recent discovery is that dark matter particles seem to be conscious, and cluster around humans, and around objects that humans have made or altered, though no other scientists believe her results. Lyra deduces that dark matter is Dust, and, using Mary's computer, demonstrates an ability to communicate with them: she concentrates hard enough that the machine that detects Dust starts creating pictures like the symbols on the alethiometer. Mary begins to suspect that Dust somehow interfered in human evolution. Meanwhile, Will discovers that his father probably found a window into another world in the Arctic.

Lyra returns to Will's Oxford without him to talk to Dr. Malone, but is picked up by the unsavoury Sir Charles Latrom, who steals her alethiometer. Sir Charles informs both children that he will give them the alethiometer back if they bring him a knife from the Torre degli Angeli in Cittàgazze. In a fight over the knife between Will and a Cittàgazze man who is trying to take it from its bearer, Giacomo Paradisi, Will wins the knife but loses two fingers. Giacomo explains that this is the sign of the bearer of the 'subtle knife', and that the knife now belongs to Will. He shows Will how to use the knife to cut windows into other worlds. Will and Lyra use the knife to steal the alethiometer back from Latrom, who is really Lord Boreal from Lyra's world.

Lee Scoresby discovers that Stanislaus Grumman is actually John Parry, who is trying to find the bearer of the subtle knife. Mary Malone finds a way to talk to dark matter particles with her computer: they inform her that they are Dust, but more specifically, they are angels, beings of pure consciousness, who interfered in human evolution as revenge against the tyranny of the Authority, and made humans creative, curious, inventive, and wilful. They tell her she has to find Will and Lyra and 'play the serpent.' She finds the window, and sets out on her quest.

Serafina Pekkala and her witches find Will and Lyra, and travel with them toward the bridge to Lyra's world, hearing reports of the fortress Lord Asriel has

built as a base to challenge the Authority, filled with angels and beings of many worlds who have joined him to fight for liberty.

Lee and John sail into Cittàgazze, with forces of the Church pursuing them. Lee makes a crash landing and, pinned down, holds off the soldiers of the Church so John can escape and find the knife bearer. Lee kills all the soldiers of the Church but dies in the process. Serafina Pekkala goes to help him, but arrives too late.

Mrs. Coulter and Lord Boreal have pursued Lyra and the witches, and Mrs. Coulter captures a witch and tortures her with a Spectre until she reveals the prophecy about Lyra: Lyra is the new Eve, and she will 'fall' again, and bring more Dust into the world. Mrs. Coulter resolves that this will not happen. Meanwhile, Will encounters and fights a strange man, who eventually discovers he is the knife bearer and tells him to bring the knife to Lord Asriel because it is the only weapon that can kill the Authority. Will doesn't want the knife and doesn't want to kill with it, but the man tells him not to deny his own nature. Will and the man, who is John Parry, recognise each other briefly before a witch who had been in love with John kills him, then herself. When Will returns to the camp, he discovers that all the witches have been overcome by Spectres and Lyra has been kidnapped. Two male angels have arrived to bring him to Lord Asriel, but he refuses to abandon Lyra.

The Amber Spyglass

Mrs. Coulter is hiding Lyra in a cave in the Himalayas in her own world, keeping her asleep by means of a drug. Lyra dreams she is in the world of the dead, which is a relentlessly dark and indifferent place, speaking to Roger, who is suffering greatly. She vows to free him. Will remains with the two angels, Balthamos and Baruch, who are passionately in love and have been romantically bound to each other for thousands of years; their love is condemned by the Authority, the Church, and the Kingdom of Heaven. Will insists that he'll only go with them if they help him find Lyra. On their way, they are attacked and nearly killed by a high angel called Metatron. Balthamos explains to Will that angels are made of Dust. The Authority was not the creator of the universe, but one of the first angels. He desired power, and lied to the younger angels, saying that he created them. A female angel who valued wisdom found out the truth, and was banished along with legions of angels who served her. Balthamos and Baruch, and the other angels joining Lord Asriel, still follow this first rebellious female angel. The Authority tried constantly to tighten his grip on humanity, using deceit, war, and brute force, but is now old and remains within a crystal coffin in the Clouded Mountain, also known as the Kingdom of Heaven, and Metatron is his regent who rules in his place.

Baruch decides to go to Lord Asriel, while Balthamos stays with Will. Baruch is assaulted by Metatron's angels on his way to the Adamant Tower but manages to tell Lord Asriel that Metatron now rules the Mountain and thinks the Church has not gone far enough: he wants to intervene directly in human lives to end all rebellion against his rule, suppress human curiosity entirely, and make all the worlds obedient. Before he can fully explain, Baruch dies. Lord Asriel dispatches Gallivespians, tiny human spies who ride dragonflies, to find Will and Lyra and aid them. It is also revealed that Lord Asriel and his allies reject the idea of the Kingdom of Heaven: they want to build a Republic of Heaven, where everyone lives freely.

Meanwhile, the Consistorial Court meets to discuss Lyra's identity as the new Eve, and dispatch an assassin, Father Gomez, to follow Mary Malone and kill

Lyra before she can fall. Mary has found her way to the world of the *mulefa*, intelligent beings with trunks and claws that they use to insert into wheel-like seedpods and move around. The mulefa can see Dust, and absorb it through seedpod oil, because a female mulefa 33,000 years ago listened to the advice of a snake and achieved intelligent consciousness. Mary uses the seedpod tree sap to make an amber mirror or spyglass that helps her see Dust. The vast stream of Dust moving through the sky is no longer falling down into the mulefa world and on the trees, and the trees are dying.

Balthamos feels Baruch's death and is thrown into a paroxysm of grief, but still helps Will; they find Iorek Byrnison, and together discover the cave. Mrs. Coulter tells Will that she is keeping Lyra there asleep to protect her from the Church, but Will thinks she's lying, and they use the knife to free Lyra. Mrs. Coulter's face reminds Will of his own mother's, and he accidentally breaks the knife. They are rescued by the Gallivespians, while Lord Asriel's forces battle the Consistorial Court and Mrs. Coulter is captured, but escapes.

Iorek Byrnison mends the knife. Will and Lyra decide to go to the world of the dead, to find Roger and Will's father, accompanied by the Gallivespians Tialys and Salmakia. They discover that a person's death follows them invisibly throughout life, and eventually takes them to the world of the dead. Only the dead can cross the river that leads into their world, and in order to get there, all of them must abandon their daemons. Lyra has to leave Pantalaimon on the riverbank, and Will's invisible daemon is torn out of his heart. The world of the dead is a prison camp built by the Authority, guarded by harpies who remind the dead of all their terrible actions, and the promise of heaven is a lie. Will and Lyra decide they must free the dead, and promise the harpies that in payment, all the dead will have to tell them stories of their lives when they come to the valley of death, and if they can tell stories of full lives, they will get to pass through to a window that Will will open.

The Consistorial Court arrests Mrs. Coulter, intending to sever her from her daemon to create a bomb that will destroy Lyra, but Mrs. Coulter escapes again and is taken away by Lord Asriel. The bomb seeks out Lyra in the world of the dead, but she evades it with the help of Will and the ghosts of Lee and John Parry; instead it creates a vast abyss. They still manage to lead the dead to freedom, and the ghosts dissolve into atoms in the natural world.

Metatron brings the Clouded Mountain to the Adamant Tower, and the great battle begins. Metatron is trying to find Lyra and Will's lost daemons to control them. Asriel reveals to Mrs. Coulter that he never wanted to destroy Dust, but to save it, and Mrs. Coulter joins him. Together, Mrs. Coulter and Lord Asriel attack Metatron and drag him into the abyss the bomb created. Lyra and Will stumble on the Authority's glass coffin and free him, and he dissolves like the dead. Lyra and Will find their daemons, and escape to the mulefa world, which is where the window from the world of the dead is located. One of the ghosts tells Mary to 'tell them stories', and Mary tells Will and Lyra stories about love and sexual awakening. She realises that Dust began leaking out of the world approximately when the subtle knife was created.

Lyra realises that she is in love with Will, and confesses it to him; they kiss. Father Gomez is prevented from killing them by Balthamos, who kills Gomez and then dies, Baruch's name on his lips. Dust ceases to flow out of the universe and instead begins to rain down into it again, nourishing the trees, thanks to Lyra's

awakening, but she loses the ability to read the alethiometer. Will and Lyra's daemons return to them, with the news that the holes cut in the universe by the subtle knife allow Dust to leak out of the universe and create Spectres, who are the opposite of Dust. The angel Xaphania arrives to tell Will and Lyra that all the windows must be closed, and they must each return to their own worlds or they will die. If they live full lives, they can generate enough Dust to make up for one open window – the window for the dead. Will and Lyra intentionally touch each other's daemons in a gesture of love, which sets their daemons' final forms.

Lyra and Will promise to each go to the Oxford Botanical Gardens in their own worlds once a year, to remember each other. They separate, and Will breaks the knife. In the Botanical Gardens, Lyra and Pantalaimon decide to spend their lives relearning the secrets of the alethiometer, and building the Republic of Heaven in their own world.

Discussion Questions and Points

Northern Lights

Part One

1. What is a daemon? How do you know? Why can children's daemons change and adults' can't? What do daemons tell us about characters in *NL*? What is Lyra's relationship with Pantalaimon like?
2. What kinds of power do Lord Asriel and Mrs. Coulter wield? What are the similarities and differences in the ways they manipulate, persuade, and command people?
3. What is the church like in this world? What are we to make of 'Pope John Calvin'? Why isn't there a Jesus in the Magisterium's version of religion?
4. What are the ways in which Lyra's Oxford and London differ from ours? What storytelling opportunities do these changes afford? What attitudes to women seem to prevail in this world?
5. What are the gyptians like? Is Pullman engaging with stereotypes in his depiction of a Romani-like community?
6. What do we make of the instance of violence between the golden monkey and Pantalaimon? What does it tell us about Mrs. Coulter? What information about all the main characters do we learn at the party in Mrs. Coulter's flat?
7. What is Lyra's relationship to lying and truth like?
8. What kind of parent figures does Lyra have in this book? What do they each provide for her and deny her?

Part Two

9. Why does Pan try to 'pull' away from Lyra?
10. Iorek Byrnison says his armour is like his daemon. What does he mean? What is human and inhuman about the armoured bear?
11. What kinds of heroes do we meet in *NL*? Why cowboys, explorers, witches, and bears?
12. Why can Lyra read the alethiometer without study? What does Iorek Byrnison's analogy about his inability to be tricked tell us? What is the connection to the aurora?
13. How does Pullman's world-building serve to make the discovery of Tony Makarios so upsetting? What are severed people like, and why? Why is Tony's

behaviour different from the nurses at Bolvangar? What do the effects of intercision tell us about Pullman's ideas of personhood, humanity, and wholeness?

14. Why is it so shocking and horrifying when the scientists touch Pantalaimon?
15. Why does Mrs. Coulter stop them from performing an intercision on Lyra, if she thinks it's so vitally important?
16. With the information that we have so far, why do you think the Magisterium and Bolvangar scientists are so intent on severing children? What do you think Dust is?

Part Three

17. What powers do witches have in this world? How do witches fit with the attitudes towards and opportunities available to women elsewhere in the world? What is Serafina Pekkala like?
18. Why does Iofur Raknison's desire to be human make him weak? How is Lyra uniquely able to manipulate him? What are the 'two kinds of beardom'?
19. What do we learn from Santelia? Do we, the readers, learn things Lyra doesn't pay attention to?
20. Given what we learn about Dust, what do you think of it? What does it 'do' for people? Why does Pullman connect original sin on the one hand to signs of curiosity, creativity, and adulthood on the other? What is he trying to say about Church and Christian doctrine? Should we stop 'innocence changing into experience'? Do we trust Lyra's instinct that Dust is, in fact, good?
21. What is Lyra's relationship to her parents like in these final chapters? What is their relationship like to each other? If they are so different – and incapable of being together – why do they feel so passionately about each other?
22. Why does Asriel's bridge require this particular sacrifice? What is Pullman telling us?

The Subtle Knife

1. What are Spectres? Why do they only attack adults and not children? What do they have to do with Dust, and why are their effects similar to intercision?
2. What is Will and Lyra's relationship like in this book? Why does Lyra have to learn to obey Will – is it fair? Does it make sense?
3. What coping skills for navigating the world have Will and Lyra each learned from their experiences? How do their coping mechanisms complement one another?
4. What do we learn about Dust from Lyra's time in Oxford – the skulls in the Pitt Rivers Museum, her ability to make Mary's computer show images from the alethiometer, and Mary's conversation with the angels? Given what we know about Dust, what is Pullman trying to tell us about human nature, free thought, human evolution, and the Biblical Fall of Man?
5. What is useful about the parallel between Dust and dark matter? How does Pullman use scientific theory to furnish his books with valuable literary symbolism?
6. Why does Will have to lose two fingers to wield the subtle knife?
7. Why can Mrs. Coulter control Spectres?
8. What do we make of Will's single encounter with his father? Why does it matter that his father is the one able to heal his wound? How does this moment fit with

- other coming-of-age narratives you've encountered? How does it compare with Will's other moment of 'initiation' in this book, the winning of the subtle knife?
9. What does it mean that Lyra is the 'second Eve' and 'mother of us all'? What do we think she is going to have to do? If Lyra is Eve, who is Adam, and what does that mean? What is the significance of the Fall of Man in Pullman's literary universe?

The Amber Spyglass

1. Metaphorically and practically, why is Mrs. Coulter keeping Lyra in a drugged sleep?
2. Whose side is Marisa Coulter on? How can we trace her arc through this book? Why does she switch sides? Does her final sacrifice, together with Asriel, redeem either one of them for their actions?
3. Is Lord Asriel a hero? What does it mean to rebel against the Authority?
4. What does the explanation of the Kingdom of Heaven, the tyranny of the Authority, and the work of the regent Metatron tell us about Pullman's attitudes toward religion? What is he trying to assert? Does it matter that this explanation comes to us through Balthamos and Baruch, and that they are lovers?
5. What breaks the knife?
6. What literary resonances can we find in the world of the dead? Can we make productive comparisons with *The Aeneid*, *The Odyssey*, or *Inferno*? What sort of relationship does this world have to traditional depictions of Christian Heaven and Hell? Why do you have to leave your daemon behind?
7. Why do the harpies decide to give the dead passage to return to the universe in exchange for stories? Why do stories matter in this book? Why does lying fail Lyra at this crucial juncture?
8. Why do you think Pullman included the poignant and uncomfortable moment in which Lyra and Will free the pitiful Authority from his glass coffin and allow him to die? Why is he so pathetic? Why must he die?
9. Why do Pan and Kirjava abandon Will and Lyra in the mulefa world?
10. What do the mulefa get right about their relationship to Dust?
11. What does Mary do when she 'plays the serpent'? Why is it important that she tells Will and Lyra her own story, and what do we learn about Mary, about religion, and about love from that story?
12. How do Will and Lyra 'fall' and why does it restore the universe and redirect the flow of Dust?
13. Why can Lyra no longer read the alethiometer intuitively?
14. Do you like the ending? Do you agree with it? Why are Lyra and Will separated? Should they be? Why does Pullman insist we can't live in other worlds and that windows between them must be closed?
15. What is the Republic of Heaven? What does that concept mean?

Further Reading and Writing Exercises:

Pullman and Milton

Pullman first encountered *Paradise Lost* as a secondary school student and was thrilled by Milton's depiction of Satan as an articulate, compelling rebel with individualistic and republican values. Students should read the following excerpts:

Satan's speeches to the devils, Book I ll. 84-124, 242-263 ('O how fallen ... Tyranny of Heaven', 'Is this the region ... than serve in heaven'), Satan crossing the chaotic abyss between Hell and Earth, Book II ll. 890-950 ('Before their eyes ... or flies'; note this section contains Pullman's selected epigraph for *HDM*), and Sin and Death building a bridge over the abyss, Book II ll. 1024-55 ('Sin and Death amain ... he hies'). More advanced students, or classes with more time to spend on the poem, can also look at Raphael's account of creation in Book VII (especially 'Heaven opened wide ... recorded the Third Day', ll. 205-338). Students should look for phrases and ideas they recognise from *His Dark Materials*, and address the following questions: Is Satan right to insist on the power of the mind? Is it right that it is 'better to reign in Hell than serve in Heaven'? How does Satan understand himself, his rebellion against God, and his current circumstances? Do you find Satan compelling? Why do you think Pullman used the phrase 'his dark materials to create more worlds' from Satan's flight over the abyss to title his trilogy? Can we compare Sin and Death's bridge between worlds to Lord Asriel's? Is Raphael's account of creation like the Bible's? What are all these feminized natural elements doing here? What do we make of the 'golden compasses' (the American title of *Northern Lights* and a phrase used to describe the alethiometer) used in designing the created world? For this last, students can look at William Blake's print 'The Ancient of Days', which shows Urizen, embodiment of law and restriction, setting a golden compass to measure and constrain the universe.

Pullman and Blake

Pullman took inspiration from William Blake's invented cosmology and his attitudes toward organised religion and free thought in crafting the universe of *His Dark Materials*. Students can find a working summary of Blake's mythology and list of central characters on the Tate Britain website (<https://www.tate.org.uk/art/artists/william-blake-39/blakes-characters>). Blake's verse collection *Songs of Innocence and of Experience* is accessible to students of all ages. The poems are short and so the whole collection can be read, or students can focus on the six 'Lost and Found' poems, the pairing of 'The Lamb' in *Innocence* and 'The Tyger' in *Experience*, and especially 'The Garden of Love' in *Experience*. (If students read only one poem of Blake's in conjunction with *Northern Lights*, it should be 'Garden of Love'.) Older or more advanced students can also engage with his 'Proverbs of Hell' in *The Marriage of Heaven and Hell*. Students should be encouraged to look up images of the poems online, as Blake printed and illuminated the text of each poem as part of an elaborate symbolic illustration. Students should read these poems and consider: What moral is Blake trying to convey in each text? What portrait of the world do these texts paint? What ideas here (especially about organised religion, morality, free thought, and human relationships) can also be found in Pullman? Students can do this work individually, in small groups, or as class presentations.

The Science of His Dark Materials

Pullman makes extensive use of ideas drawn from astrophysics in *His Dark Materials*. In small groups, students should choose a relevant scientific topic that appears in the series to research. Good options include: the aurora borealis; dark matter; the Many Worlds Interpretation; quantum mechanics more broadly,

including the famous Schrödinger's Cat thought experiment; and natural selection and evolution. Students should make a class presentation on their chosen topic, with the goal of explaining to their classmates both how the science works and how Pullman uses scientific facts to create literary symbolism in *His Dark Materials*. For example, what does the 'real' dark matter tell us about Dust? How does Pullman use the Many Worlds Interpretation to enhance his narrative?

Resources for Teachers and Advanced Students

- Millicent Lenz with Carole Scott, *His Dark Materials Illuminated: Critical Essays on Philip Pullman's Trilogy* (Wayne State University Press, 2005).
- Mary and John Gribbin, *The Science of Philip Pullman's His Dark Materials* (Hodder, 2005, rev. 2017).
- Philip Pullman, 'The Republic of Heaven', *The Horn Book*, 3 November 2001, accessible at <https://www.hbook.com/?detailStory=the-republic-of-heaven>.
- Pullman's interview with Huw Spanner for *Third Way* magazine, 13 February 2002, accessible at <http://www.spannermedia.com/interviews/Pullman.htm>.
- Useful Oxford Fantasy podcasts: the episodes 'Philip Pullman's His Dark Materials', 'Philip Pullman: Lyra's Oxford, Bodleian Library Masterclass', and 'The Stories of Lewis Carroll, J. R. R. Tolkien, and Philip Pullman', all available at <https://writersinspire.org/themes/fantasy-literature>.