

Evaluating sources

Stage 5

Overview

Learning intention

Students will learn to identify and evaluate the accuracy and validity of a statement in a range of texts.
Students will explore credibility and validity of sources.

Syllabus outcomes

The following teaching and learning strategies will assist in covering elements of the following outcomes:

- EN5-1A: responds to and composes increasingly sophisticated and sustained texts for understanding, interpretation, critical analysis, imaginative expression and pleasure
- EN5-5C: thinks imaginatively, creatively, interpretively and critically about information and increasingly complex ideas and arguments to respond to and compose texts in a range of contexts.

[NSW English Syllabus K-10 2012](#)

Success criteria

The following Year 9 NAPLAN item descriptors may guide teachers to co-construct success criteria for student learning.

- identifies the effect of a sentence in an information text
- evaluates the accuracy of statements using information from a speech
- evaluates the accuracy of statements using information from a text
- evaluates the accuracy of statements using information from an information text
- evaluates the presence of information in a persuasive text
- evaluates the presence of information in the orientation for a narrative

National Literacy Learning Progression guide

Understanding Texts (UnT9-UnT11)

Key: C=comprehension P=process V=vocabulary

UnT9

- reads and views complex texts (see *Text complexity*) (C)
- evaluates text features for relevance to purpose and audience (C)
- analyses the use of language appropriate to different types of texts (e.g. compare the use of pun in imaginative and persuasive texts) (C)

UnT10

- applies and articulates criteria to evaluate the language structures and features for relevance to purpose and audience (C)
- evaluates the reasoning and evidence in a persuasive text (C)
- recognises when ideas or evidence have been omitted from a text to position the reader (C)

UnT11

- analyses the credibility and validity of primary and secondary sources (C)
- judiciously selects and synthesises evidence from multiple texts to support ideas and argument (C)
- evaluates the social, moral and ethical positions taken in texts (C)
- identifies subtle contradictions and inconsistencies in texts (P)

[National Literacy Learning Progression](#)

Evidence base

- Centre for Education Statistics and Evaluation (2017). [Effective reading instruction in the early years of school](#), literature review.
- Oakhill, J., Cain, K. & Elbro, C. (2015). Understanding and teaching reading comprehension: A handbook. Routledge.
- Quigley, A. (2020). Closing the reading gap. Routledge.
- Scarborough, H.S. (2001). Connecting early language and literacy to later reading (dis)abilities: Evidence, theory and practice. In S. Neuman & D. Dickson (Eds.), Handbook for research in early literacy (pp. 97-110). New York, NY: Guilford Press.

Alignment to system priorities and/or needs: [Five priorities for Literacy and Numeracy](#), [NSW Department of Education Strategic Plan](#), [School Excellence Policy \(nsw.gov.au\)](#).

Alignment to School Excellence Framework: Learning domain: Curriculum, Teaching domain: Effective classroom practice and Professional standards

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Teaching strategies

Task	Appendices
What is fact and what is opinion?	Appendix 1 – Evaluating information
Conspiracy theories – Fact or fiction	
Arguing your case	
Bias and bias by omission	Appendix 2 – Identifying bias in texts Appendix 3 - Identifying bias guide

Where to next?

- Text structure and features
- Author bias and perspective
- Audience and purpose

Overview of teaching strategies

Purpose

These literacy teaching strategies support teaching and learning from Stage 2 to Stage 5. They are linked to NAPLAN task descriptors, syllabus outcomes and literacy and numeracy learning progressions.

These teaching strategies target specific literacy and numeracy skills and suggest a learning sequence to build skill development. Teachers can select individual tasks or a sequence to suit their students.

Access points

The resources can be accessed from:

- NAPLAN App in Scout using the teaching strategy links from NAPLAN items
- NSW Department of Education literacy and numeracy [website](#).

What works best

Explicit teaching practices involve teachers clearly explaining to students why they are learning something, how it connects to what they already know, what they are expected to do, how to do it and what it looks like when they have succeeded. Students are given opportunities and time to check their understanding, ask questions and receive clear, effective feedback.

This resource reflects the latest evidence base and can be used by teachers as they plan for explicit teaching.

Teachers can use classroom observations and assessment information to make decisions about when and how they use this resource as they design teaching and learning sequences to meet the learning needs of their students.

Further support with [What works best](#) is available.

Differentiation

When using these resources in the classroom, it is important for teachers to consider the needs of all students, including [Aboriginal](#) and EAL/D learners.

EAL/D learners will require explicit English language support and scaffolding, informed by the [EAL/D enhanced teaching and learning cycle](#) and the student's phase on the [EAL/D Learning Progression](#).

Teachers can access information about [supporting EAL/D learners](#) and [literacy and numeracy support](#) specific to EAL/D learners.

Learning adjustments enable students with disability and additional learning and support needs to access syllabus outcomes and content on the same basis as their peers. Teachers can use a [range of adjustments](#) to ensure a personalised approach to student learning.

[Assessing and identifying high potential and gifted learners](#) will help teachers decide which students may benefit from extension and additional challenge. [Effective strategies and contributors to achievement](#) for high potential and gifted learners helps teachers to identify and target areas for growth and improvement. A [differentiation adjustment tool](#) can be found on the High potential and gifted education website.

Using tasks across learning areas

This resource may be used across learning areas where it supports teaching and learning aligned with syllabus outcomes.

Literacy and numeracy are embedded throughout all syllabus documents as general capabilities. As the English and mathematics learning areas have a particular role in developing literacy and numeracy, NSW English and Mathematics syllabus outcomes aligned to literacy and numeracy skills have been identified.

Text selection

Example texts are used throughout this resource. Teachers can adjust activities to use texts which are linked to their unit of learning.

Further support with text selection can be found within the [National Literacy Learning Progression](#) Text complexity appendix.

The [NESA website](#) has additional information on text requirements within the NSW English syllabus.

Teaching strategies

What is fact and what is opinion?

1. Two truths and a lie: Teacher poses two true pieces of information and one untruth; students determine which they think is the lie and justify why. Students can play this in small groups. Reinforce purpose of activity: we are always evaluating what we see and hear and we need to particularly do this with information presented to us in the media.
Additional tasks: Students can view the [Dove beauty campaign](#) or [McDonald's behind the scenes](#) of advertisements. Discuss the importance of seeing the behind the scenes clips as well as why these companies may have decided to make them. Teachers should check the site's appropriateness.
2. Students are given a topic to pretend to be an expert on – this can be written or verbal. Review compositions and draw out key elements that students used to portray themselves as experts. Discuss: what makes a text trustworthy? Discuss key ideas: anyone can compose content on the internet, not everyone is an expert on the subject in which they write and we need to be alert to this.
3. *Venn diagram:* Teacher leads a discussion on the differences between fact and opinion. Students add ideas into a Venn diagram to determine similarities and differences. Using this information, design a set of criteria to determine fact from opinion.
4. Students use a nonfiction text that has elements of both informative and persuasive text features and colour-code what is fact and what is opinion (refer to [Appendix 1 – Evaluating information](#)). Students identify 5 key points from each text and find evidence to support each point.

Conspiracy theories – Fact or fiction

1. Read the article 'One Giant... lie? Why so many people still think the moon landings were fake.' By Richard Godwin (2019) on The Guardian website.
(Refer to <https://www.theguardian.com/science/2019/jul/10/one-giant-lie-why-so-many-people-still-think-the-moon-landings-were-faked>)
Alternative task: Students can be given a section of the text to summarise and share.
2. Identify three sources from the Internet that support the different perspectives of the moon landing. Evaluate each source using the 'Source comparison tool' which can be accessed via the link 'Become an Online Sleuth' on the Google Digital Literacy Citizenship Curriculum page. (<https://ikeepSAFE.org/google-digital-literacy-citizenship-curriculum/>) This document, produced by Google and iKeepSafe, contains valuable information and activities that support students in developing awareness around evaluating web sources and staying safe online.
3. Discuss what people should look for when finding websites that are credible. Using a relevant website, the teacher models how to gather evidence and review a site for credibility and reliability.
4. Using their web evaluation document 'Scavenger Hunt Record Sheet' (refer to the Google Digital Literacy Citizenship Curriculum page. (<https://ikeepSAFE.org/google-digital-literacy-citizenship-curriculum/>), students write an evaluation of the most accurate source, providing evidence for their reasoning.

Variation: teacher models how to scaffold an evaluation for students to use for their own compositions.

Arguing your case

1. Students are given a controversial topic linked to current unit of learning.
2. Each student finds one source that corroborates their viewpoint and checks that it is reliable by evaluating it using the Scavenger Hunt record sheet (refer to the Google Digital Literacy Citizenship Curriculum page. (<https://ikeepSAFE.org/google-digital-literacy-citizenship-curriculum/>)).
3. Students present their case in a one-minute persuasive speech using evidence from their source.

Bias and bias by omission

1. Teacher leads discussion to explain bias; an argument or discussion, to favour one side or viewpoint by ignoring or excluding conflicting information; a prejudice against something. Bias by omission; to choose to leave out crucial facts or information that would contradict the point that the author is trying to communicate. That is, to omit some of the facts to influence the reader.
2. Brainstorm a range of synonyms for bias and arrange on a word cline. Words could include: prejudice, influence, slant, load, sway, subjective, one-sided, weight, predispose, distort, skew, bend, partisan, preference, twist, warp, angle, bigoted, blinkered, partial and twist. This could be scaffolded by providing a list of target vocabulary, including verbal or written definitions, and placing the first items on the cline with students, some of whom may not be familiar with either clines or the target vocabulary.
3. *Fact or opinion:* Students use a concept linked to current unit of learning to create a bank of facts, each written on sticky notes and displayed around the room. Students are then given a sticky note to add an opinion next to any facts around the classroom. Discuss vocabulary differences with facts versus opinion.
4. *Conscience Alley:* Students line up in two lines facing each other. One line takes the opposing perspective to the other. Students 'fire off' opinions or facts showing evidence of their bias. Discuss what tools and strategies were used (formal language, emotive language, generalisations, vocabulary choices, omitting information, using experts, using statistics, rhetoric and so on.)
5. *Spin doctors:* Students are given a concept such as 'Voting should not be compulsory' or 'Cats must be kept inside to protect wildlife'. In small groups, students create a short text to demonstrate whether they support the idea or not, or if they will take an objective stance. The group members share with the class their short response. The class decides whether they are taking a negative, positive or neutral stance, and which tools they have used to illustrate this bias.
6. Students identify bias through a text comparison using [Appendix 2 – Identifying bias in texts](#) or using two texts linked to the current unit of learning. Students use [Appendix 3 - Identifying bias guide](#) to help gather evidence. Compare with a partner to see if there were any differences and why this might be so.

Additional task

1. Students use information that they gathered in Task 3 to write a 100-200 word opinion piece, like that seen in [Appendix 2 – Identifying bias in texts](#). Teachers may model this written response and provide formative feedback to students as they undertake the task.
2. Students swap their completed opinion piece with a peer. Each student then completes the table at [Appendix 3 - Identifying bias guide](#) for the work that their peer has produced to provide feedback.
3. Students consider the feedback given and incorporate it into their ongoing learning.

Appendix 1

Evaluating information

Miller-Jones, J. (Curtin University) & Mandel, I. (Monash University) February 19, 2021. 'The heaviest stellar black hole in our galaxy is even more massive than we thought.' The Conversation.

The heaviest stellar black hole in our galaxy is even more massive than we thought

When one of us (Ilya Mandel) started grad school at the California Institute of Technology 20 years ago, he was greeted with a series of bets hanging on the wall outside the office of his PhD advisor, Kip Thorne.

One bet from 1974 was a wager with theoretical physicist Stephen Hawking, on whether an observed galactic X-ray source known as “Cygnus X-1” was actually a black hole feeding on hot gas.

Hawking bet it wasn't, as a consolation prize in case black holes turned out not to exist (since this would mean a lot of the work he had done would be wasted).

At the time, black holes were exclusively theoretical predictions of Albert Einstein's theory of general relativity: singularities in the fabric of space-time that prevented anything (including light) from escaping.

By 1990, astronomers were convinced Cygnus X-1, a binary star system, indeed hosted a black hole. Hawking conceded his bet against Thorne.

Three decades later, Cygnus X-1 is a gift that keeps on giving. In a paper published today in [Science](#), our team reports the Cygnus X-1 black hole is heavier than previously thought, weighing about 21 times the mass of the Sun.

This makes it the heaviest stellar black hole — formed from the collapse of a star — ever detected without the use of gravitational waves. As it turns out, perhaps in line with a black hole not wanting to divulge its secrets, Cygnus X-1 still contains many mysteries.

Updated measurements from it are forcing us to revise our understanding of the most massive stars — particularly the rate at which they lose mass in stellar winds.

Introducing Cygnus X-1

Cygnus X-1 is located inside the Milky Way about 7,200 light years from Earth. It comprises what we now know to be a black hole in a 5.6-day orbit around a massive supergiant companion star.

Some of the gas blown off the surface of the star by its strong stellar wind is captured by the black hole. The gas spirals in towards the black hole, forming what's known as an “accretion disk”.

Powerful jets (the contents of which are [still debated](#)) are also launched outwards from near the black hole, travelling close to the speed of light.

We wanted to measure the mass of the black hole. But to do so, we first needed to know how far away it was from Earth.

How do you weigh a black hole?

As Earth moves around the Sun, we see Cygnus X-1 from different vantage points. It appears to move back and forth very slightly against stationary background objects, in an effect we call “parallax”.

The amount of this tiny motion lets us calculate the distance between us and Cygnus X-1. But for an accurate measurement, we also had to take into account the orbital motion of the black hole around its companion star.

With [a network of radio telescopes](#), we mapped out the black hole's orbit, with a positional accuracy the equivalent of localising an object on the Moon to within ten centimetres.

By using our distance to Cygnus X-1 and the brightness and temperature of the star, we computed the size of the star. With this knowledge and the measured motion of the star during its orbit around the black hole, we could determine the black hole's mass.

It is almost 50% more massive than [previously thought](#), with a mass that's 21 times that of the Sun.

Why do we care about its mass?

Seeing a stellar remnant this heavy in our own galaxy offers insight into how much mass stars can lose to stellar winds. In general, the larger and more luminous a star is, the faster its rate of mass loss.

Some stars lose the equivalent of an Earth's mass of gas (or more) each day. Mass is lost faster if the star has a high concentration of heavy elements, particularly iron.

Black holes are created when massive stars collapse in on themselves. Thus, the heaviest black holes are expected to form from the deaths of massive stars with the lowest iron concentrations, as these would have retained the most mass up until death.

The current iron concentration in our Milky Way galaxy suggests even stars that weigh hundreds of times the mass of the Sun at birth could lose enough of it to leave behind a fairly pedestrian remnant — only a few times the mass of the Sun.

Now, finding a black hole with a mass that's 21 times the Sun's tells us these stellar winds can't be that strong, after all. So it means we need to slightly retune our models of how stars lose mass through their winds.

Likely not a gravitational wave source

Cygnus X-1 is also interesting because it could potentially be a frame from a film showing the formation of pairs of black holes, which later merge to produce [gravitational-wave signals](#).

These waves can be observed using advanced instruments, such as the Laser Interferometer Gravitational-wave Observatory (LIGO) in the United States.

According to our new measurements, the star in Cygnus X-1 weighs more than 40 times the mass of the Sun. It's therefore massive enough to one day form a black hole in its own right.

However, while it's tempting to say Cygnus X-1 provides a link between pairs of stars and merging black holes, that would come with its own challenges.

For example, as described in [a companion paper](#) to our Science paper, published in the *Astrophysical Journal*, the Cygnus X-1 black hole is spinning on its own axis almost as rapidly as general relativity allows.

By comparison, the merging black holes in LIGO sources have far slower spins. This suggests the pathway by which those black holes formed may have been somewhat different.

In [another companion paper](#) we argue Cygnus X-1 won't make a gravitational-wave source because, after the collapse of the companion star, the resulting two black holes would be too far apart to merge.

Still, many questions remain regarding the history and the formation of Cygnus X-1, as well as its future. There may be a few more bets to be made and resolved, yet.

Full text with images: <https://theconversation.com/au/topics/stellar-evolution-1146>

Appendix 2

Identifying bias in texts: text comparison

Text 1	Text 2
<p>‘Coles says these toys promote healthy eating. I say that’s rubbish’ by Carla Liuzzo, 2020. Published in <i>The Conversation</i>.</p> <p>As a parent, I find it so frustrating to take my children shopping, reusable bags in hand, only to be offered plastic toys at the checkout. It’s an incredibly confusing message to be sending kids. And it seems Coles is confused too.</p> <p>Last year the company stated it wants to be “Australia’s most sustainable supermarket”. But with last week’s relaunch of “Stikeez” – yet another plastic collectables range off the back of their Little Shop promotion – Coles is showing dogged commitment to unsustainable marketing.</p> <p>Stikeez are 24 plastic characters (plus four rare ones) in the shape of fruit and vegetables, aimed at encouraging kids to eat healthy food.</p> <p>After petitions against previous plastic “mini” campaigns by Coles and Woolworths, Coles will make the Stikeez characters returnable in store for recycling.</p> <p>But this misses the point. Coles is generating waste needlessly in the first place. Surely it’s time to move beyond plastic freebies as a way of boosting sales?</p> <p>Irresponsible marketing</p> <p>We have a waste problem in this country. Australians are the third highest producers of waste per person, after the US and Canada. Some councils are having to stockpile plastic, there’s a federal plan to phase out exporting waste overseas and we have high rates of contamination of recyclables.</p>	<p>‘Coles launches ‘Stikeez’ campaign to get kids eating fruit and veg’ by Veronika Hleborodova, 2019. Published in <i>canstarblue.com.au</i></p> <p>Move over Little Shop, there’s a new collectables craze at Coles – Stikeez!</p> <p>After the supermarket chain’s wildly successful Little Shop campaign last winter, featuring miniature versions of 30 popular grocery staples such as Weet-Bix, Vegemite, Milo and Nutella, followed by a Christmas edition in December, Coles is at it again.</p> <p>This time around the promotion focuses on healthy eating, partnering with the Healthy Kids Association in an effort to influence kids to eat more fresh produce.</p> <p>From Wednesday, February 13, customers can receive one free ‘Stikeez’ for every \$30 spent in Coles stores, online, or at Coles Express.</p> <p>With 24 Stikeez to collect, shoppers can expect to pay a minimum of \$720 for the full set.</p> <p>...</p> <p>“It’s a really great campaign, which is celebrating fruit and veg and bringing them to life, so that kids and their parents can be encouraged to eat more fruit and veggies.”</p>
<p>Author profile:</p> <p>Carla Liuzzo</p> <p>Senior Lecturer, School of Business, Queensland University of Technology</p> <p>Carla Liuzzo does not work for, consult, own shares in or receive funding from any company or organisation that would benefit from this article, and has disclosed no relevant affiliations beyond their academic appointment</p> <p>Full text with images: https://theconversation.com/coles-says-these-toys-promote-healthy-eating-i-say-theyre-rubbish-131667</p>	<p>Author profile:</p> <p>Veronika Hleborodova is a Canstar Blue journalist covering health, home and lifestyle. She has a double degree in Media & Communication and Business from the Queensland University of Technology and enjoys keeping up with latest tech-savvy trends to help Australian consumers stay ahead of the curve. Whether it’s the latest news on supermarkets and collectables or exploring brand new innovations within the appliance space such as smart features and Wi-Fi connectivity, Veronika’s aim is to ensure consumers are getting value for their money.</p>

Appendix 3

Identifying bias guide

Biased information will attempt to change your mind or view on a concept; it is important to recognise these attempts in texts.

Compare texts 1 and 2 for evidence of bias

Bias evidence	Text 1	Text 2
Language <ul style="list-style-type: none">• Formal language• Hyperbole• Emotional language• Generalisations or sweeping statements• Does the vocabulary create a positive or negative impression?• Is there high modality?		
Content <ul style="list-style-type: none">• Does it contain facts?• Does it contain opinions?• Is the tone positive or negative?• Omitted information?• What other information is needed?• One sided?• Non-objective view of alternative perspective?		
Other considerations <ul style="list-style-type: none">• What do you know about the author?• Experts - who are they?• Profit – who is profiting financially from this text?• Political leanings?• What will the author gain from this text?		
Your opinion:	.	.
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