



Helping Students Navigate Academic Vocabulary Across Subject Areas

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Session Handout

Session Roadmap

A Look at Disciplines

- What are disciplines?
- Why does being 'in' a discipline affect how we read and write?

Supports for Students

- What are some ways we can support students?
- What can we do in practice?

Language: A Problem

- How does language change in function across disciplines?
- How can we help students navigate language?

We're on the Right Track

- Aligned with research
- And our new Ministerial Order

Subject areas = Disciplines

(because that's what they are)
(and it's less confusing this way)

Disciplines	Teachers	Students
<ul style="list-style-type: none">• include phenomena, theories, and methods• are discourse communities who agree on questions to ask and answer and what constitutes legitimate evidence• have specific ways of knowing and doing• have specific ways of reading and writing and thinking	<ul style="list-style-type: none">• are disciplinarians who encourage students to participate in the unique discourses of their subject• explicitly teach specialized literacy practices to enable students to navigate, use, and contribute to ways of knowing, speaking, writing, and doing in the discipline.	<ul style="list-style-type: none">• are expected to learn and navigate how to read, write and think within a discipline• are not just learning the language and perspectives of one single discipline; they're learning multiple disciplines simultaneously• are often learning multiple languages simultaneously• need support and tools in order to be successful

Functions of Language

Academic content becomes more formalized and complex as students advance. Patterns of language in disciplinary texts:

- Are not deliberate barriers
- Are functional and enable the accumulation of knowledge
- Enable students to develop cognitive constructs about the knowledge a field accumulates and creates
- Enable students to engage with the discipline

Language: A Problem

“...but as one moves across from one subject to another, language is likely to be functioning in rather different ways.”

English Language Arts	Science
<p>The Little Mermaid</p> <p>Scene - URSULA'S Lair</p> <p>ARIEL enters and is hung up in the garden of souls</p> <p>URSULA</p> <p>Come in. Come in, my child. We mustn't lurk in doorways - it's rude. One might question your upbringing. Now, then. You're here because you have a thing for this human. This, er, prince fellow. Not that I blame you - he is quite a catch, isn't he?</p> <p>ARIEL nods and looks hopeful</p> <p>URSULA</p> <p>Well, angelfish, the solution to your problem is simple. The only way to get what you want is to become a human yourself.</p> <p>ARIEL</p> <p>Can you do that?</p> <p>URSULA</p> <p>My dear, sweet child... that's what I do! It's what I live for, to help unfortunate merfolk, like yourself. Poor souls with no one else to turn to.</p> <p>(The Little Mermaid, Doug Wright, 1988, Based on the Hans Christian Andersen story and the Disney film produced by Howard Ashman & John Musker)</p>	<p>Describing Concentration</p> <p>One of the properties of a solution is its concentration. Concentration is a description of the amount of solute compared to the amount of solvent in a solution.</p> <p>We can describe the concentration of a solution qualitatively:</p> <ul style="list-style-type: none"> - Unsaturated means that more solute could still be dissolved in the solvent. - Saturated means that the maximum amount of solute has been dissolved in a solvent. - Supersaturated means that the solvent has been affected in a way that it is able to dissolve more solute than it could under standard conditions. <p>Because concentration is a ratio, we can also describe concentration quantitatively. For example, if 300 g of solute is dissolved in 500 mL of solvent we could record the solution's concentration as 300 g / 500 mL.</p> <p>Analysis:</p> <p>Describe the concentration of each sugar solution in this investigation, both qualitatively and quantitatively.</p> <p>Solution 1:</p> <p>Solution 2:</p> <p>Solution 3</p>




Math	Social Studies
<p>A tree is 3.9 m tall and casts a shadow along the ground. The sun's rays make an angle of depression of 52°. How long is the shadow of the tree, rounded to the nearest tenth?</p> <p>Your solution should include:</p> <ul style="list-style-type: none"> • a labeled diagram • any formulas or equations used • all work needed to get the answer • a brief description of the strategy used to solve the problem. 	<p>Corporate Citizenship</p> <p>Transnational corporations, whose operations span national boundaries, are in key positions to find solutions to important global challenges. They often have the expertise and financial resources to make a difference. Many businesses, for example, have developed corporate citizenship statements that mention a commitment to promoting sustainable development, human rights, and community involvement. These corporations understand that these actions not only help build public goodwill and investor confidence, but also create a working environment that is rewarding for employees.</p> <p>(Exploring Globalization, Gardner and Lavold, 2007, p. 363)</p>

When teaching students to READ in your discipline:	When teaching students to WRITE in your discipline:	When teaching students to THINK in your discipline:
<ul style="list-style-type: none"> • Rely less on generic reading strategies and more on discipline-specific practices • Model expert reading - how should you be approaching the text? What specific things are you reading for? • Challenge students to think critically about what they are reading; think like a disciplinarian 	<ul style="list-style-type: none"> • Avoid generic or formulaic writing processes - they may not work for your discipline • Be as authentic as possible with writing assignments • Think about non-linguistic representations as part of overall disciplinary writing = where do schematics, drawings, symbols, etc. fit in with writing? 	<ul style="list-style-type: none"> • Point out distinctions in how texts are written and read in different disciplines • Use a phenomenological approach (examine first-hand the "stuff" of the discipline. This is the notion of "authenticity" in learning) • Set the expectation that they acquire and relate/retell (and potentially produce) disciplinary knowledge in disciplinary-specific ways
<ul style="list-style-type: none"> • How is language functioning? • How are students 'approaching' the text? • What are they reading for? • How should they read this? • What kinds of disciplinary thinking/reading are they doing? 		

“We need to help students become aware of how language works within disciplines and give them the tools they need to navigate differences.”

Halliday, M.A.K. (2007). Some thoughts on language in the middle school years. In J.J. Webster (Ed.), *Language and education* (Vol. 9, pp. 49–62). London: Continuum

Polysemic Tier 2 Academic Vocabulary

		Teach	Sample Words / Phrases	Example
 Tier 3	Disciplinary Vocabulary Discipline-specific words; infrequently used academic words used in context	✓	Mitochondria, authoritarianism, parody, algorithm, isosceles, metamorphic	<ul style="list-style-type: none"> During the latter half of the Cretaceous period, Earth underwent drastic geologic changes resulting in the extinction of all nonavian dinosaurs. Linguistics is the systematic study of how language works.
 Tier 2	Academic Vocabulary Words that frequently appear in a range of academic texts	✓	Examine, authority, establish, ideology, preliminary, detect, substantiate, economy	<ul style="list-style-type: none"> In academic language, the word “observe” would be used rather than the word “watch”. Eg: “Observe how the sugar is dissolved in the solution.” “Evaluate the source text for potential bias.”
 Tier 1	Operational / Foundational Words Basic words that are part of everyday language	✗	Read, run, come, write, paragraph, textbook, classroom, car, cellphone	<ul style="list-style-type: none"> You can use a calculator to help you with the math question. You will need to write a paragraph for this assignment. Can you please bring me a cup of coffee?

Cross-Disciplinary Vocabulary Graphic Organizer

Target Word			
Subject-specific meanings for this word			
Context (Use it in a context-relevant sentence)			
Why the word is important in these subjects			
Visual representation of the word			

Cross-Disciplinary Vocabulary Graphic Organizer

Target Word

SCALE

Subject-specific meanings for this word

Music	Math	Science	Physical Education and Wellness
A scale is a series of eight tones (octave) organized into ascending or descending pitches.	Scale is a ratio that shows a proportional relationship between an actual object and its model (or the inverse, the relationship between a model and the actual object).	In science, scale can refer to: <ul style="list-style-type: none"> A measurement tool or referent The build-up of material; a residue The level at which something takes place Parts of certain animals (rigid plating) 	Scale refers to the ability to climb or clamber up or over an object such as a block or a wall. A scale refers to a body shape in gymnastics or dance in which one leg is stood on and the other is held off the ground.

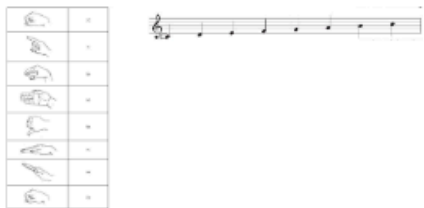








Context (Use it in a context-relevant sentence)

A major scale starts on Do and ends on Do above it. A pentatonic scale has five notes: Do, Re, Mi, So and La	The illustration is a 1:3 scale of the actual object. This means that each unit in the illustration represents three units in the actual object. So the illustration is smaller than the object.	Please weigh your materials on the scale . There is a build up of scale from this reaction. What scale was the earthquake? The snake's skin has many scales .	You will need a lot of agility and strength in order to scale this wall. Your gymnastics routine should include a knee- scale or a Y- scale body position.
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Why the word is important in these subjects

Music written in a major or minor scale can establish a mood or feeling for the piece.	Scale is used in proportional drawing and can be used on a graph when representing a many-to-one correspondence.	The concept of scale is important in science as it represents ways to measure one thing in relation to another, as in using standard units of measurement such as weight, time, and temperature. Scale also refers to the aggregation of materials.	It is a physical skill; being able to scale a wall or block can be a measure of strength and agility. Scales are a way to build balance and body awareness.
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Visual representation of the word

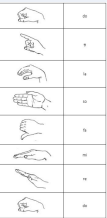







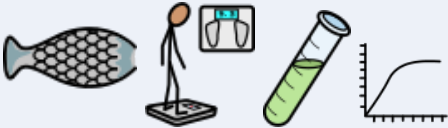
	<p>A scale of 3:1 means the size of 3 units of the actual object would represent 1 unit in the model.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>Actual object</p>  </div> <div style="text-align: center;"> <p>Model</p>  </div> </div>	<div style="display: flex; justify-content: space-around; align-items: center;">    </div> <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 10px;">  </div>	<div style="display: flex; justify-content: space-around; align-items: center;">   </div>
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Target Word

Subject	Subject-specific meaning for this word	Here's how it's used in a context-relevant sentence	Why this word is important in this subject	Here's a visual representation of the word

Target Word

SCALE

Subject	Subject-specific meaning for this word	A context-relevant sentence	Why this word is important in this subject	Here's a visual representation of the word				
Music	A scale is a series of eight tones (octave) organized into ascending or descending pitches.	A major scale starts on Do and ends on Do above it. A pentatonic scale has five notes: Do, Re, Mi, So and La	Music written in a major or minor scale can establish a mood or feeling for the piece.	 				
Math	Scale is a ratio that shows a proportional relationship between an actual object and its model (or the inverse, the relationship between a model and the actual object).	The illustration is a 1:3 scale of the actual object. This means that each unit in the illustration represents three units in the actual object. So the illustration is smaller than the object.	Scale is used in proportional drawing and can be used on a graph when representing a many-to-one correspondence.	<p>A scale of 3:1 means the size of 3 units of the actual object would represent 1 unit in the model.</p> <table style="width: 100%; text-align: center;"> <tr> <td style="width: 50%;">Actual object</td> <td style="width: 50%;">Model</td> </tr> <tr> <td></td> <td></td> </tr> </table>	Actual object	Model		
Actual object	Model							
								
Science	In science, scale can refer to: <ul style="list-style-type: none"> • A measurement tool or referent • The build-up of material; a residue • The level at which something takes place • Parts of certain animals (rigid plating) 	Please weigh your materials on the scale . There is a build up of scale from this reaction. What scale was the earthquake? The snake's skin has many scales .	The concept of scale is important in science as it represents ways to measure one thing in relation to another, as in using standard units of measurement such as weight, time, and temperature. Scale also refers to the aggregation of materials.					
Physical Education and Wellness	Scale refers to the ability to climb or clamber up or over an object such as a block or a wall. A scale refers to a body shape in gymnastics or dance in which one leg is stood on and the other is held off the ground.	You will need a lot of agility and strength in order to scale this wall. Your gymnastics routine should include a knee- scale or a Y- scale body position.	It is a physical skill; being able to scale a wall or block can be a measure of strength and agility. Scales are a way to build balance and body awareness.	