Language of the Discipline

Task Starters

What words are specific to the work in this discipline?

What tools are used by the experts in this discipline?

What are the origins of new terms in this discipline?

Related Thinking Skills

- identify/list/define the terms
- prioritize (the most important terms)
- identify relationships (among the terms)
- categorize the terms or tools
- judge with criteria (the specificity of the terms)
- distinguish appropriateness of usage of the terminology
- determine relevance

LANGUAGE OF THE DISCIPLINE REFERS TO:

terminology

nomenclature

lexicon

tools of the discipline

combinations and patterns of terms

jargon, idiom

signs and symbols

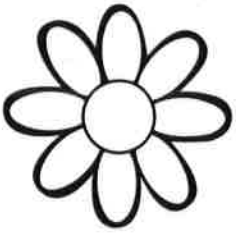
figures of speech

eponyms and neologisms of the discipline

Language of the Disciplines—A Sample List

Language Arts	Math	Social Studies	Science
descriptive words	terms, signs & symbols of math areas	terms of geography, history, government, sociology, etc.	matter, energy, heat motion, forces
interpretation of vocabulary	algebraic terms	characteristics, features, elements	scale, structure
style	variables, functions,	facts, evidence, chronology, statistical data	heredity
onomatopoeia, alliteration	operations	social development, class struggle, conflict models (historical, theoretical)	interdependence
terminology of dialects	axioms & theories		space, time, relativity
plot	metric and US measurements		atoms, molecules, elements, particles, quarks
theme	dispersion of data		theories, laws, principles
			gravitation, electromagnetism
			diversity

Details



Task Starters

What details define _____?

Which details are more important than others and what is your evidence of this?

What distinguishes this from other things?

What are its attributes?

What features characterize this?

Related Thinking Skills

- describe (the details)
- prioritize (the most important details)
- note ambiguity (among the details)
- categorize/classify (the details)
- identify relationships (among the details)
- determine relevance
- sequence the details
- select details to determine bias or absence of bias

DETAILS ARE:

clues

facts

features

data

ideas

traits

items

parts

particulars

specifics

elements

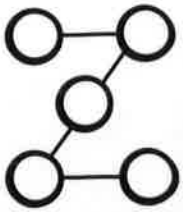
factors

attributes

Details within the Disciplines—A Sample List

Language Arts	Math	Social Studies	Science
characters	numbers	documents	features
setting	factors	time	characteristics
description	points	location (space/place)	time
connotation	lines	people	atoms/molecules
informative writing	curves	events	cells
	algorithms	context	parts
		cause/effect	

Patterns



Task Starters

Describe the patterns you find.

How do you evaluate a pattern's importance to what you are studying?

How does one pattern compare to another?

Identify the primary patterns and the secondary patterns.

How are patterns and details related?

Related Thinking Skills

- describe (the patterns)
- define cause and effect
- prioritize (the most important patterns)
- categorize/classify (patterns)
- identify relationships (among the patterns)
- determine relevance
- sequence (the pattern parts)
- judge with criteria (the importance of a pattern)

PATTERNS ARE:

predictive

able to be replicated

cycles

motifs

repetitive

made up of details

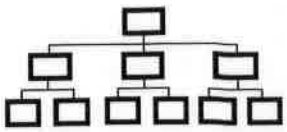
person-made and natural designs

recurring elements

Patterns within the Disciplines—A Sample List

Language Arts	Math	Social Studies	Science
plot patterns	number lines	patterns of types of documents	dna
conflict	geometric patterns	time lines	periodic table
literary problems	problem-solving	great times=great people or vice versa	biological symmetries
patterns of good vs. "bad"characters	probability	pattern of past/present/future	pattern of past/present/future
writing patterns	polynomials		molecules
	order of operations		crystals
	algorithms		solar system, universe
	standard measurements		

Rules



Task Starters

Describe the rules.

Identify the implicit and explicit rules.

How do you evaluate rules' efficiency and validity?

How are rules related to patterns and details?

Compare structural rules and procedural rules.

Related Thinking Skills

- describe (the rules)
- Identify relationships (among rules)
- categorize/classify (rules)
- prioritize (the most important rules)
- differentiate fact from opinion and fact from fantasy and conjecture
- determine relevance
- judge with criteria (the importance of a set of rules)

RULES ARE:

standards

related to structure

authoritative directions for conduct or procedure

usual courses of action or behavior

statements of truth (all or most of the time)

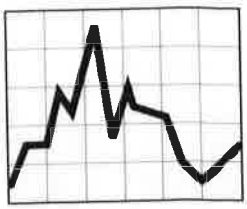
methods

organizational elements

Rules within the Disciplines—A Sample List

Language Arts	Math	Social Studies	Science
genres	the rules of: problem solving operations computation	supporting evidence	scientific method
grammar, punctuation	almost everything in arithmetic, geometry and algebra	primary documents & sources	measurement
word usage	ratios	developing big ideas or generalizations	data collection
rules of style	accuracy	political science/ government/economics	data interpretation
poetry		cultural mores	systems
proofreading			chemical reactions
matching writing to purpose			

Trends



Task Starters

Describe the trends.

Identify the causes and results of a trend.

How do you evaluate a trend's importance to what you are studying?

How are trends related to patterns?

How (and when) does a fad become a trend?

Related Thinking Skills

- describe
- compare and contrast
- Identify relationships (among trends)
- categorize/classify (trends)
- prioritize (the most important rules)
- determine relevance
- judge with criteria (the importance of a trend)
- prove with evidence (the influence of a trend)

TRENDS ARE:

general directions

tendencies

current styles

drifts

influences

changes over time

Trends within the Disciplines—A Sample List

Language Arts	Math	Social Studies	Science
historical fiction	application of math principles & procedures	cultural trends	research trends
nonfiction	tools and machines of measurement	trends of different eras	financial support
character types	data collection and representation	voter patterns	environmental trends
spelling & punctuation		exploration	space exploration
word usage		environmental awareness	genome project and its implications
favorite authors and genres		government	health trends

Unanswered Questions ???

Task Starters

Describe the unknown details or stimuli for the event.

Identify the origins of an unanswered question.

How do you evaluate an unanswered question's importance?

How do you determine if, in fact, a question is unanswered?

Which areas of science or human behavior can you connect with unanswered questions?

Related Thinking Skills

- describe/state (an unanswered question)
- note ambiguity
- distinguish fact from fiction and opinion
- formulate questions
- problem solving
- identify missing information
- test assumptions
- prove with evidence (the importance or validity of an unanswered question)

AN UNANSWERED QUESTION IS:

a puzzle

a conundrum

unsolved

an unknown

something unexplained

a dilemma

doubtful or uncertain

Unanswered Questions within the Disciplines—A Sample List

Language Arts	Math	Social Studies	Science
anonymous authors	equations	evidence discoveries	experimentation
pen names	historical math problems	an individual's influence on history	ethical implications
author's message	unforeseen relationships	cause & effect	the future
author's motivation	nanoseconds & other special measurements	the future	solutions to current problems (greenhouse gases, uses of cloning, etc.)
personal likes/dislikes	organization of data	missing steps of an historical development	unintended consequences
character types		ancient civilizations	

Ethics

Task Starters

Describe the ethical issues you find.

How did or does an ethical issue affect the information you are studying?

Why are there different ethical issues in different times and places?

What are some universal ethics or values?

How do ethics get developed?

How does a culture teach or transmit its ethics?

Related Thinking Skills

- determine bias
- prioritize (the most important ethical issues)
- identify relationships (among the ethical issues)
- determine relevance
- judge with criteria (the ethical issue)
- distinguish fact from opinion or fantasy
- test assumptions

ETHICS ARE (OR ARE FOUND IN):

controversies

dilemmas

biases

prejudices

decision-making

principles of "right" behavior

a set or theory of moral values

philosophies, metaphysics

professional rules or standards

value-laden ideas

Ethics within the Disciplines—A Sample List

Language Arts	Math	Social Studies	Science
plot dilemmas	misleading statistics	human conflicts/rights	experimental bias
conflicts, controversies	problem-solving techniques	migrations/immigration	concilience
patterns of good vs. "bad" characters	interpretation/application of solutions	biases/prejudices	dna issues: cloning, stem cells, etc.
plagiarism	logic, probability	laws/justice	disagreements among experts
media: editorials, political cartoons, bias	applied mathematics	dissent	"good" vs "bad" research
		propaganda	

Big Idea

Task Starters

List the evidence needed to support a big idea.

How do you evaluate a big idea's importance to what you are studying?

How does working with big ideas help you learn new knowledge?

How are patterns, trends, and rules related to big ideas?

Related Thinking Skills

- describe (the big idea)
- infer a big idea from supporting evidence/information
- categorize/classify big ideas
- identify relationships (among big ideas)
- determine relevance
- judge with criteria (the importance of a big idea)

BIG IDEAS ARE:

generalizations

related to many instances

developed from many facts

overarching

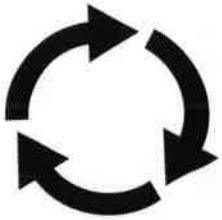
related to global or universal themes

principles, laws, theories

Big Ideas within the Disciplines—A Sample List

Language Arts	Math	Social Studies	Science
literary themes	math principles, laws	origins	laws, theories, principles
implicit and explicit content	accuracy	cultures	energy
poetry	systems	migration	gravity
conflict	validity	exploration	waves
critical analysis	scale & structure	innovation	light
		power/conflict	change
			scale & structure

Over Time



Task Starters

Describe the past, present and possible future related to this issue or topic.

Identify a time that this issue or topic was different.

How does knowing things over time affect what we learn?

How is history being made every day? How does this help us predict the future?

Related Thinking Skills

- describe the topic over time
- judge with criteria
- identify relationships of a topic and different time periods
- determine relevance of knowing this topic over time
- differentiate fact from opinion (over time)

OVER TIME MEANS:

looking at past, present, future

applying something historic to present knowledge

predicting something based on present knowledge

applying from the past to the present

noting change

Over Time within the Disciplines—A Sample List			
Language Arts	**Math**	**Social Studies**	**Science**
setting historical relevance historical authenticity science fiction biographies historical fiction time setting of nonfiction writing	interpretation of data problem solving related to time time measurement origins history of math disciplines & subjects	history, archaeology issues of importance past, present, future big ideas of history and today time within cultures contributions	time as related to scientific rules formulas, e.g., s =d/t effects of time on living & nonliving things scientific innovation climate, meteorology geology change

Multiple Perspectives

Task Starters

Describe the multiple perspectives on an issue or topic.

Identify a different point of view and explain it.

How does point of view affect what we learn?

What perspectives do experts have?

When is your perspective different from others? Why?

Related Thinking Skills

- describe (the perspectives)
- prioritize (the most important perspectives)
- identify relationships (among perspectives)
- determine relevance of various points of view
- judge with criteria (the various points of view)

MULTIPLE PERSPECTIVES ARE:

different points of view

ways of seeing and reporting things

often dependent on time & place

different slants

affected by roles and responsibilities

Multiple Perspectives within the Disciplines—A Sample List

Language Arts	Math	Social Studies	Science
characterization	interpretation of data	perspectives of different experts	perspectives of different experts
views of good & "bad" characters	representation of data	"Who is telling the history?"	points of view on problems & issues
nonfiction points of view	statistics & point of view	historical roles	applications of "new" science
persuasive writing	charts, graphs	multicultural studies	environmental perspectives
editorials	geometric constructions	interpreting evidence	ethical issues

Across Disciplines

Task Starters

Describe a topic's place in more than one discipline or subject area.

Sort information you are studying into several disciplines.

How is "across disciplines" related to "multiple perspectives"?

How do experts in a discipline learn from experts in other disciplines?

What is concilience (and who is E.O. Wilson)?

Related Thinking Skills

- describe the topic in terms of different disciplines
- prioritize various subject areas' importance to the topic
- identify relationships (among information from different disciplines)
- judge with criteria (the various points of view)
- compare & contrast info (from various disciplines)

ACROSS DISCIPLINES MEANS:

multidisciplinary

interdisciplinary

connections among disciplines

touching on many subjects at once

Across Disciplines (Interdisciplinary)—A Sample List

Language Arts	Math	Social Studies	Science
biographies, autobiographies	geometry-architecture	cultural advances in science & the arts	origins of laws, principles, theories
journals, diaries, letters	art-maps	patterns, traits, products of an era	communicating research findings
writing related to a discipline	operations-computation-agriculture-business	human behavior & society as expressed in math, science & art	quantities, measurements and tools of the disciplines
reading within a discipline	economics	intersection of disciplines affecting humans (phytogeography, sociometry, bioclimatology)	intersection of disciplines: geobotany, biophysics, ecogeography, geochemistry, etc.
	money-banking-credit		
	data collection & analysis		
	interest-taxation		