Introducing the Parallel Curriculum Model

WORKSHOP #1

Introduction to the Parallel Curriculum Model

Note to Facilitator

To prepare for this workshop, you may wish to review Chapter 1, "The Rationale and Guiding Principles for an Evolving Conception of Curriculum" and Chapter 2, "An Overview of the Parallel Curriculum Model" of *The Parallel Curriculum* by Tomlinson, et al., (2008).

Session Overview

This session begins with the belief system on which the Parallel Curriculum Model (PCM) is based and then introduces each of the four parallels.

Masters

- Teaching-Learning Process
- Assumptions Underlying the Parallel Curriculum Model
- The Parallel Curriculum
- Classroom Scenarios

Session Details

Introduction

- Ask participants to define each of the following terms.
  - ○ Curriculum (e.g., what we teach, what we want students to learn)
  - ○ Model (e.g., a structure or design)
  - ○ Curriculum Model (e.g., a format used to design curriculum)

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- Distribute "Teaching-Learning Process" and read aloud the definition of curriculum.
- Explain the purpose of studying curriculum models. Ask participants to list curriculum models with which they are already familiar (e.g., Understanding by Design, Success for All) and to say what they have found useful about these models.
- Ascending Intellectual Demand (AID) prompt (an optional discussion prompt for participants already operating at a high level of expertise with respect to curriculum models): Should a curriculum model be adapted in its entirety or is it okay to take bits and pieces from a model and integrate them into your own model? (Most model designers prefer that the model be accepted in its entirety or risk being corrupted. Most teachers prefer to use bits and pieces.)
- Ask participants: Why do we need to think differently about curriculum and instruction today than in the past (e.g., student characteristics, amount of information available, theories of multiple intelligence)?

Say: "The authors of *The Parallel Curriculum* state that all curriculum models are based on a belief system. The Parallel Curriculum Model is based on key beliefs or assumptions."

- Display and distribute "Assumptions Underlying the Parallel Curriculum Model." Ask participants to share their reactions to these assumptions.
  - What assumptions surprised them? Did not surprise them?
  - Which are most important to them personally? To their students?
  - To what degree does their current curriculum offer all students such opportunities?

Say: "What we do and what we ask students to do in the classroom delivers a powerful message about what we believe is most important for learners. Good teachers constantly examine and critique their own practices and beliefs. As we study the Parallel Curriculum Model, it will be our job to uncover evidence that this model adheres to its stated belief system and discuss ways in which we might remodel our own units to better incorporate and/or highlight these beliefs."

Teaching and Learning Activities

- Distribute and/or display "The Parallel Curriculum Model," which provides an overview of each of the parallels.

Say: "The authors of *The Parallel Curriculum* suggest that there are (at least) four parallel ways of thinking about course content. These parallels may be seen as formats through which educators can approach curriculum design in the same subject or discipline. These four parallels comprise the basis for the Parallel Curriculum Model."

- Make the point that each of the parallels has its own unique personality. Ask them what seems familiar and/or unfamiliar about each of these parallels.
- Copy and distribute the sheet titled "Classroom Scenarios." Instruct individuals or small groups to read each scenario presented and try to identify the parallel(s) for which it is written. Encourage participants to explain their thinking. Point out that because the PCM assumes that the Core Curriculum is the basis for all other curriculums, the Core Curriculum is always evident in any combination. Parallels attached to each scenario:
  - Scenario #1: Curriculum of Connections, Core Curriculum
  - Scenario #2: Curriculum of Connections, Core Curriculum
  - Scenario #3: Curriculum of Connections, Core Curriculum
  - Scenario #4: Curriculum of Practice, Core Curriculum
  - Scenario #5: Curriculum of Identity, Core Curriculum
  - Scenario #6: All four parallels
- In small groups or as a whole group, engage in a discussion using questions such as:
  - What seems to be the difference between the Curriculum of Connections and the Core Curriculum? How are they alike? (Repeat for other parallels.)
  - Which parallels or aspects of parallels have you experienced as a teacher and/or as a student?

○ What would need to change in your curriculum to put it in alignment with one or more of these parallels? What would be the benefits for students? For you?

○ How might the PCM help us meet the needs of more students more often?

• If participants worked in small groups, invite each group to share highlights of its discussion.

• Encourage participants to come up with a symbol to represent each of the parallels. This symbol can then be used in their own work to indicate where a particular parallel is employed.

Closure/Looking Forward

• Make the following point clear: "Parallel" should not be taken to mean that the formats or approaches must remain separate and distinct in planning or in classroom use. The PCM assumes that teachers may create appropriately challenging curriculum by using any one parallel or a combination of parallels as a framework for thinking about and planning curriculum as shown in the various scenarios.

Say: "If a unit is to be a Parallel Curriculum unit, not only the unit, but all of its component parts must reflect the intent and purposes of the model as a whole or one of its parallels. In the next workshop, we will identify and examine these key components of curriculum.

TEACHING-LEARNING PROCESS

The field of education often uses the term *curriculum* or *curriculum and instruction* to refer to the *purposeful, proactive organization, sequencing, and managing of . . . interactions* across . . . three classroom elements: the *content, the teacher, and the student*. The curriculum, then, is a multifaceted plan that fosters these connections (Tomlinson, et al., 2008, p. 41).
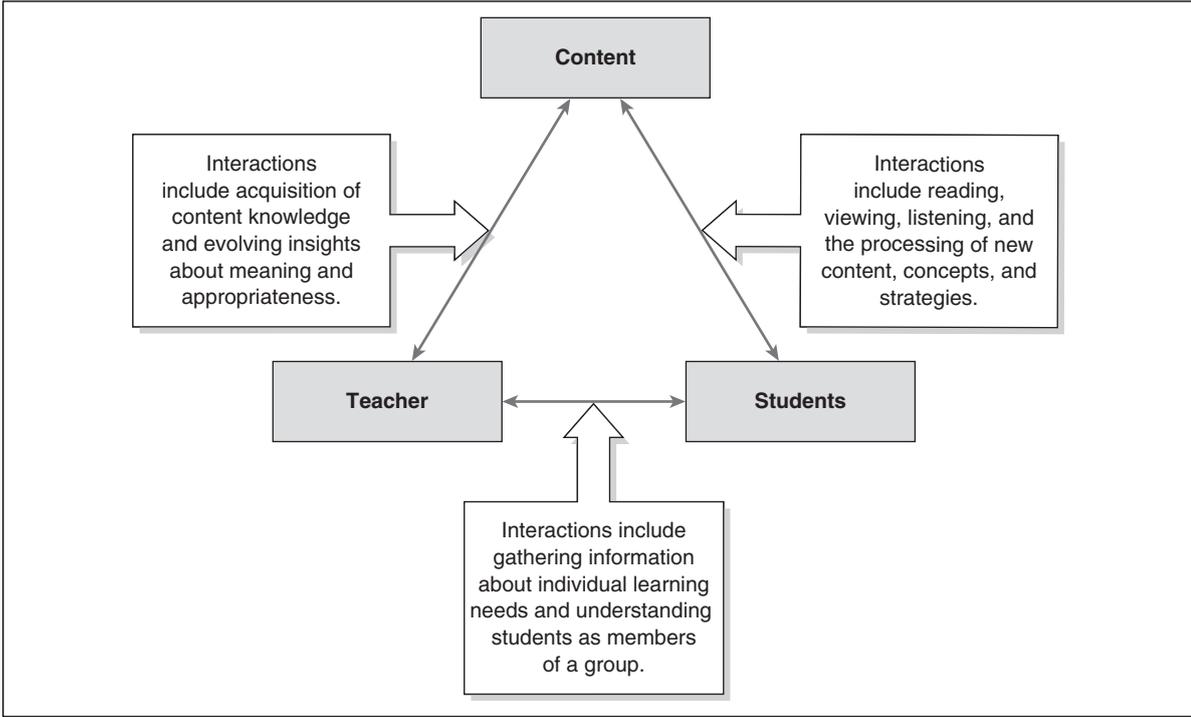
Source: Adapted from Figure 3.1 of *The Parallel Curriculum* (Tomlinson, et al., 2008).

ASSUMPTIONS UNDERLYING THE PARALLEL CURRICULUM MODEL

Curriculum should

- Guide students in mastering key information, ideas, and the fundamental skills of the disciplines.
- Help students grapple with complex and ambiguous issues and problems.
- Guide students in progressing from novice toward expert levels of performance in various subject areas.
- Provide students opportunities for original, creative, and practical work in the disciplines.
- Help students encounter, accept, and embrace challenge.
- Help students uncover, recognize, and apply the significant and essential concepts and principles in each subject area that explain the structure and workings of the discipline, human behavior, and our physical world.
- Help students develop a sense of themselves as well as of their possibilities in the world in which they live.
- Be compelling and satisfying enough to encourage students to persist despite frustration and understand the importance of effort and collaboration.

Source: Adapted from *The Parallel Curriculum* (Tomlinson, et al., 2008, p. 3).

THE PARALLEL CURRICULUM

The Core Curriculum

This parallel reflects the essential nature of a discipline as experts in that discipline conceive and practice the discipline. It is the foundational curriculum that establishes a rich framework of a discipline's key information, skills, concepts, and principles. It is the starting point for all of the parallels in this model.

The Curriculum of Connections

This parallel expands on the Core Curriculum by guiding students to make connections of key concepts and principles within or across disciplines, across times, across cultures or places, or in some combination of those elements.

The Curriculum of Practice

This parallel guides learners in understanding and applying the facts, concepts, principles, and methodologies of the discipline in ways that encourage student growth toward expertise in the discipline. Its purpose is to help students function with increasing skill and confidence in a discipline as professionals and scholars would function.

The Curriculum of Identity

Curriculum developed according to this parallel guides students in coming to understand their own strengths, preferences, values, and commitment by using the key concepts, principles, and skills of contributors and professionals in a field of study. The goal of this parallel is to help students gain a better understanding of both the discipline and themselves.

Adapted from *The Parallel Curriculum* (Tomlinson, et al., 2008) Figures 2.2 to 2.5.

CLASSROOM SCENARIOS

Directions: Read each scenario. Then, match each scenario to the parallel or parallels it seems to reflect: (1) the Core Curriculum; (2) the Curriculum of Connections; (3) the Curriculum of Practice; and/or (4) the Curriculum of Identity. Be ready to explain your thinking.

Scenario #1

After a study of the American Revolution, Mrs. Yee's students scanned a collection of major national newspapers and news magazines for the purpose of identifying contemporary revolutions. Next, students classified their examples as social, political, or economic revolutions. With the teacher's guidance, students then conducted a comparative analysis of the origin and effects of the contemporary revolutions and the American Revolution.

The final outcome defined for the learning experience was for students to apply their discipline-related knowledge and understanding to a present-day conflict. The essential question guiding student work was "How can knowledge of the American Revolution be used to help us understand and respond to revolution in today's world?" Students selected from a variety of contemporary revolutions to which they applied insights about causes of, reactions to, and effects of the American Revolution as a means of thinking about causes of, reactions to, and potential effects of a contemporary cultural change.

Scenario #2

In Mrs. Bernstein's middle school history class, making connections is an ongoing emphasis for all students. Throughout the year, three concepts are used to organize the curriculum: culture, continuity, and diversity. At the end of the second quarter, all students will work with projects that ask them to use these concepts to compare their own culture with that of Russia. Many students will select or develop a family that is similar to theirs but that lives in Russia. The students will then select or develop ways to show how the geography in which the two families live is alike and different. They'll also show how music, technology, religion, and jobs have changed for their own family and for the Russian family in the past twenty-five years. In the end, they'll write about ways in which continuity and diversity are evident in the two cultures over the past two-and-a-half decades. Additionally, each student keeps a journal that relates the three concepts of culture, continuity, and diversity to (1) what students are studying in other classes and (2) the world around them (e.g., music, home, current events, movies, reading).

Scenario #3

Ms. Lance wants to organize and extend expectations for teaching and learning the district's standards. For example, science standards direct that students study living things in their environment. She and her students use the concepts of change and interaction to further organize, explain, clarify, and exemplify the standard. Two of the key principles she introduces are "Change is a result of interactions" and "Interactions can result in change." Her students will take part in an ongoing "mental treasure hunt" to look for evidence within their study of living things that supports these principles. The teacher will use a large wall chart to display student examples and evidence from their study and research. As the year progresses, Ms. Lance will use a second chart to record examples and evidence of the same principles at work in other science topics the students study. The framework also will be useful to guide the work of students who do extended readings in science on topics in which they have particular interest or skill.

Scenario #4

Ms. Harrington's students always work on a long-term, real-world problem as a part of the middle school curriculum that introduces skills and concepts of algebra and geometry. Participation in the problem-solving project also helps students extend and apply previously learned skills in the basic mathematical operations. This year, students will study a traffic problem that became evident at the construction site for a new high school down the highway from their middle school. Working with this problem, the students will function as traffic engineers and use a variety of math skills that draw on their various mathematical strengths and interests. Some of their work will involve collaboration with architects and highway engineers, careful examination of the high school site, data collection, and assessment of the situation.

Scenario #5

In Ms. Mitchell's eleventh grade English class, writing is a centerpiece of the curriculum. All students work to meet certain prescribed writing standards, and all students regularly take part in writing workshops. Students also select a kind of writing for further exploration. Amy selected a genre in which she has a personal interest—short stories and novels. She will address the overarching question, "What does it mean to be a writer?" by studying writers in depth, relevant to her preferred genre. Her reflections will be crafted in her chosen genre. Ultimately, she should have a fuller sense of what it means for others to be writers, but also ways in which the pursuit of writing is (or is not) a good match for her own interests, habits, and perspectives. Amy should also develop insights into ways in which the pursuit of writing might contribute to her own life and ways in which she might contribute to the writing field.

Scenario #6

Beth, a fifth grade student, had a strong ability in reading, thinking, and research. She worked on a special project that began with the concept of "interconnectedness" as it related to the Civil War. In her small town, she discovered a cemetery containing several graves of young women about her age, all of whom died during the Civil War. She pursued the question "In what ways were the lives of young people affected by the Civil War?" As a result, she found an interconnection between disease and the Civil War.

Beth used primary documents at the local courthouse to investigate the young people's graves. Later, she found relatives of the young women still living in her area. Through interviews with these relatives, experts on the Civil War, additional primary documents, and numerous secondary sources, she reconstructed events that dominated the lives of the young women.

She presented her findings in a formal paper to the local historical society where she received encouragement for her work and suggestions for next steps she might take. As her research continued, she translated her findings to a work of historical fiction that she created reflecting the lives of the young women in the graveyard—meeting regularly with professional writers who held scheduled meetings to discuss her work. In the final chapter of her book, she posed discussion questions that might be used in a classroom or book club setting to help teachers or facilitators engage readers in further introspection of her work. Several questions asked readers to make connections, for example: *What were the affects of various wars on young people throughout time and across cultures (e.g., World War II—minority children as victims of the Holocaust and Nazi children; American Revolution—patriots' children and Tories' children)?*

Beth's story was published, as was a reflective piece on a journal she kept throughout the year that captured what she had learned about herself as she worked like a historian and then like a writer of historical fiction. This reflective journal helped Beth to become much more aware of who she was and what she valued through her experiences on this project.

Note: Scenarios #1 through #5 are adapted from *The Parallel Curriculum* (Tomlinson, et al., 2002); Scenario #6 is adapted from the second edition (Tomlinson, et al., 2008).

WORKSHOP #2

The Role of Concepts and Principles in the Parallel Curriculum Model

Note to Facilitator

To prepare for this workshop, you may wish to review Chapter 3 of *The Parallel Curriculum*, "Thinking About the Elements of Curriculum Design" (Tomlinson, et al., 2008). Additional background information may be found in *Understanding by Design* by Grant Wiggins and Jay McTighe (1998) and *Concept-Based Curriculum and Instruction: Teaching Beyond the Facts* by H. Lynn Erickson (2002).

Session Overview

This session introduces eleven components of curriculum design that will form the basis of participants' work with each of the parallels. Because of their importance to the PCM, the session places an emphasis on helping participants gain or refine their understanding of the role of concepts and principles in curriculum design, aspects of the content component.

Masters

- Key Components of Comprehensive Curriculum
- Concepts and Principles
- From Concepts to Principles
- A Comparison of Discipline-Based Concepts With Interdisciplinary Macroconcepts
- Component Jigsaw

Session Details

Introduction

Say: "*The Parallel Curriculum* authors remind us that there is no one right way to design curriculum. There are, however, a number of elements that many curriculum designers address during the process of writing a unit. As we remodel existing curriculum or write new curriculum based on this model, we will pay attention to eleven separate, yet interrelated elements."

- Show "Key Components of Comprehensive Curriculum." Assign pairs or small groups of teachers to one or more components and ask them to define their assigned component(s) and give an example of what the component would look like in their own curriculum.
- Distribute "Key Components of Comprehensive Curriculum" and compare the authors' thoughts to those of participants. Tell participants not to worry about what *AID* refers to—you will explore that concept in later sessions. For now, just tell them it is a kind of differentiation.

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Teaching and Learning Activities

Say: "A distinguishing feature of the PCM is that its curriculum is firmly rooted in the key concepts and principles of a discipline. In a PCM unit, these aspects of the content component are consistently reinforced to maximize learning and retention. They remain in the forefront of every unit and are adapted to match the intent and purposes of the particular parallel(s) upon which a unit is based. In order to design and remodel units that fit the PCM, teachers must therefore have a clear understanding of these terms."

Note to Facilitator

It is vital that participants be able to identify and incorporate concepts and principles into their unit designs. Based on participants' background knowledge and comfort level with these terms, choose one or both of the following activities to help participants gain and refine their understanding of concepts and principles:

Concepts and Principles: Novice Level

- On the whiteboard or overhead, make a two-column chart. Label one column "in" and the other column "out." It will look like this:

IN	OUT

- Lead a game in which you enter words in the "out" column that are *not* concepts and enter words in the "in" column that *are* concepts. Enter words one at a time and pause after each entry to ask participants: "What is the rule that accounts for the entries in the 'in' column? In other words, what do all the entries in the 'in' column have in common?"
- Here are concepts that you might enter in the "in" column: *culture, systems, interdependence, change, adaptation, migration, function, patterns, conflict.* For the "out" column, you might enter any words that are not concepts, such as: *mousepad, Periodic Table, telephone, enjoyment, sisters, American Revolution, animals, Crusades, screen.* Enter as many line items as it takes for participants to guess what the "in" column words have in common.
- Once participants have identified an appropriate rule for identifying concepts, explain that principles state the relationship between two or more concepts. For example: ask participants to identify and underline the concepts in each of the statements below.
  - *Conflicts* arise between *protagonists* and *antagonists*.
  - Two positive *numbers* can be added in either *order*.
  - *Cultures* have *rules* to provide an orderly existence.
  - Members of a *culture* have established *roles*.
  - *Folktales* are a means of sharing religious *beliefs* and *customs*.
  - *Friendship* involves *cooperation*.
  - *Change* may create *conflict*.
  - Distribute "Concepts and Principles." Ask them to work alone or with one or two others to give examples of concepts and principles from their own disciplines.
  - Distribute "A Comparison of Discipline-Based Concepts With Interdisciplinary Macroconcepts" for future reference.

Concepts and Principles: Intermediate Level

- Display "From Concepts to Principles." Ask participants to formulate principles by showing the relationships between two concepts. To do this, they choose concepts from the first column of the handout and use the verbs in the other columns to show relationships. Note that it may be necessary to vary the form of the verb and/or add prepositions for the principle statements to make sense.
- Ask participants to sit in subject-alike groups. Instruct participants to agree on one unit of study that they all teach and identify any content standards associated with the unit.
- Remind participants that some standards have concepts and principles embedded within them. Others refer only to knowledge and/or skills that are (or should be) associated with key concepts and principles. Encourage participants to uncover and identify the key concept(s) and principle(s) in their standards. "A Comparison of Discipline-Based Concepts With Interdisciplinary Macroconcepts" may be helpful in their work.
- If they need an example, share the following fifth grade California social studies content standard examples or examples from your standards documents.
  - ❍ Trace the routes of the major land explorers of the United States, the distances traveled by explorers, and the Atlantic trade routes that linked Africa, the West Indies, the British colonies, and Europe. (Possible concepts: exploration, trade. Possible principle: exploration increases opportunities for trade among disparate peoples.)
  - ❍ Describe the competition among the English, French, Spanish, Dutch, and Indian nations for control of North America. (Possible concepts: nation, conflict. Possible principle: nations compete for resources and power, oftentimes leading to conflict among peoples.)
- Lead a discussion about the value of using concepts and principles to guide a unit of study as opposed to the topics and details listed in many content standards.

Note to Facilitator

Because an understanding of concepts and principles is so integral to this model, we have chosen to focus this workshop on that aspect of content. If you have the time or the need to further investigate some or all of the identified components of curriculum, assign appropriate jigsaw readings from *The Parallel Curriculum*, second edition, pages 41–60. Each teacher or group of teachers could read and become "experts" in one or two components and then share their expertise with those who examined the other targeted components. See "Component Jigsaw" for detailed instructions.

Closure/Looking Forward

Say: "Throughout our work with the parallels, we will focus on ensuring that concepts and principles remain at the forefront of our own and our students' thinking. The following series of workshops will help us examine each of the parallels in more depth. In each session, you will have the opportunity to remodel or design one or more curriculum components to match the intents and purposes of a specific parallel."

Note to Facilitator

In the following workshops, teachers will remodel lessons or a unit they currently teach by applying the characteristics of sound PCM lessons. It may be appropriate for participants to bring the following: (1) district or state standards, curriculum guides, benchmarks, and so on; (2) lesson(s) or unit to be remodeled; (3) materials and resources for the lesson(s) or unit; and, (4) laptops (if they are in the habit of using them).

KEY COMPONENTS OF COMPREHENSIVE CURRICULUM

- Content (including standards)
- Assessments
- Introductory Activities
- Teaching Strategies
- Learning Activities
- Grouping Strategies
- Resources
- Products
- Extension Activities
- Differentiation Based on Learner Need (including AID)
- Lesson and Unit Closure

KEY COMPONENTS OF COMPREHENSIVE CURRICULUM

	Definitions	Exemplary Characteristics
Content (Including Standards)	• What we want students to know, understand, and do as a result of teaching and learning. • Often written as objectives, grade-level expectations, or as broad K–12 standards statements.	• Incorporate concepts, enduring understandings, and the processes and skills used within a discipline. • Provide clarity, power, and authenticity for teachers and students.
Assessments	• Varied tools and techniques that teachers use to determine students' prior knowledge or the extent to which students are learning and applying content goals. • Used to make instructional decisions.	• Diagnostic, aligned with the learning goals, provide a high ceiling, as well as a low baseline, to ensure that all students' learning can be measured. • Used before, during, and after instruction. • Inform instruction.

Introductory Activities	• Sets the stage for a unit.
	• Components may include:
	  ❍ A focusing question;
	  ❍ An assessment to determine students' prior knowledge, interests, and learning preferences;
	  ❍ A teaser or "hook" to motivate students;
	  ❍ Information about the real-world relevance of the goals and unit expectations;
	  ❍ Information about expectations for students; and
	  ❍ Consideration of students' interests in or experiences that connect with the unit topic.
		• Includes many or most of these six elements, as well as an advance organizer that provides students with information that they can use to help assess their acquisition of the unit's learning goals.

Teaching Strategies	• Methods teachers use to support student learning. • Help teachers introduce, explain, demonstrate, model, coach, guide, transfer, or assess learning.	• Closely aligned to research, learning goals, and learner characteristics. • Varied, promote student involvement, and provide support and feedback.
Learning Activities	• Cognitive experiences that help students perceive, process, rehearse, store, and transfer knowledge, understanding, and skills.	• Aligned with the learning goals and efficiently foster cognitive engagement (e.g., analytic, critical, practical, and creative thinking) integrated with the learning goal.
Grouping Strategies	• Varied approaches a teacher can use to arrange students for effective learning in the classroom.	• Aligned with the learning goals. • Varied and change frequently to accommodate students' interests, questions, learning preferences, prior knowledge, learning rate, and zone of proximal development. • Group membership may change frequently.

	Definitions	*Exemplary Characteristics*
Resources	• Materials that support learning during the teaching and learning activities	• Varied in format. • Link closely to the learning goals, students' reading and comprehension levels, and learning preferences.
Products	• Performances or work samples created by students that provide evidence for student learning. • Represent daily or short-term student learning, or provide longer-term, culminating evidence of student knowledge, understanding, and skill.	• Authentic, equitable, respectful, efficient, aligned to standards, and diagnostic. • Often double as assessment tools.
Extension Activities	• Preplanned or serendipitous experiences that emerge from learning goals, local events, and students' interests.	• Provide for student choice. • Relate to the content/standards, are open ended, are authentic, and generate excitement for and investment in learning.
Differentiation Based on Learner Need (Including AID)	• Optimize the match between the curriculum and students' unique learning needs. (One kind of modification represented in the Parallel Curriculum Model is referred to as Ascending Intellectual Demand).	• Closely aligned with the learning goals, research, assessment data, students' prior knowledge, cognitive skills, motivation, interests, learning modes, questions, and product preferences.

Lesson and Unit Closure	• Allows for reflection on the "punch line" of the lesson.
	• Answers questions such as:
	  ❍ What was the point of the lesson?
	  ❍ What are students taking away from it?
	  ❍ What questions remain?
	  ❍ What comes next?
		• Helps students focus on what matters most.
		• Makes explicit ideas that may have been less clear to students during the unit or lesson.

CONCEPTS AND PRINCIPLES

	Definition	*Examples*
CONCEPTS	• Concepts are typically expressed in one word (e.g., *pattern, change, system*), but they can also be expressed by a phrase that acts as one word (e.g., *checks and balances*). • There are subject-specific concepts; for example, *adaptability, organism* for the study of science or *civilization, geography* for the study of social studies. There are also generic or macroconcepts that cut across all disciplines, such as *change, interdependence, movement, system.* • A concept is a general idea or understanding, generalized idea of a thing or a class of things, a category or classification.	• Pattern • Change • System • Movement • Interdependence • Biome • Add your own examples:

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	Definition	Examples
PRINCIPLES	• Principles may be described as fundamental truths, laws, rules, or doctrines that explain the relationship between two or more concepts. • Once again, principles may be discipline specific or transcend disciplines.	(Concepts underlined) • <u>Balance</u> is an important factor in predicting the longevity of a <u>biome</u>. • Forms of <u>government</u> allow for varying amounts of individual <u>freedom</u>. • An artist's use of <u>light</u> changes the rendering of a <u>landscape</u>. • *Conflicts* arise between <u>protagonists</u> and <u>antagonists</u>. • <u>Cultures</u> have <u>rules</u> to provide an orderly existence. • Two positive <u>numbers</u> can be added in either <u>order</u>. • Add your own examples: _____ _____ _____ _____ _____

Source: Adapted from *The Parallel Curriculum* (Tomlinson, et al., 2008) Figure 4.3.

FROM CONCEPTS TO PRINCIPLES

Concepts	Verbs	
Form Function Systems Structure Change Movement Perspective Communities Adaptation Survival Traditions Interdependence Conflict Patterns	• is • are • is . . . to • are . . . to • must • might • must have • might have • may be • might be • has • have	• cause(s) • provide(s) • involve(s) • correlate(s) • consider(s) • reflect(s) • satisfy(ies) • follow(s) • learn(ed) • connect(ed) • consider(ed)

A COMPARISON OF DISCIPLINE-BASED CONCEPTS WITH INTERDISCIPLINARY MACROCONCEPTS

Social Studies Concepts	Science Concepts	Art Concepts	Music Concepts
transportation	evaporation	shadow	scales
government	circulation	light	notation
tributary	fertilization	perspective	rhythm
war	temperature	depth	beat
battle	gravity	hue	percussion
treaty	magnetism	tint	woodwind
commerce	energy	composition	harmony
leader	work	texture	echo
services	matter	line	jazz
goods	homeostasis	dimensionality	timbre
resources	sound	symmetry	resonance
culture	waves	portrait	range
immigration	resonance	media	baritone
poverty	plasticity	abstract	projection
navy	scientific	method	gradiant
explorer	evidence	aesthetic	mood
delta	migration	landscape	pitch
caste	tropism	realism	volume
migration	movement	influence	melody
longitude	pressure	balance	conductor
Language Arts	Health and Physical Education Concepts	Interdisciplinary Macroconcepts	Math Concepts
vowel	touchdown	multiplication	form
stereotype	goal	sum	function
claim	heatstroke	integer	systems
persuasion	dribble	prime number	structure

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Language Arts	Health and Physical Education Concepts	Interdisciplinary Macroconcepts	Math Concepts
hero	drug	ratio	change
conflict	linesman	angles	communities
folktale	cancer	mode	constancy
resolution	fluid	denominations	symbolism
poetry	sprint	symbols	relationships
alliteration	fullback	ray	properties
symbols	sunscreen	perimeter	measurement
syllable	referee	correlation	classes
noun	offense	standard	deviation patterns
preposition	antioxidant	central	tendency
personification	warm-up	order of operations	cycles
skim	point guard	graph	variables
point of view	protein	pie chart	factors
cause and effect	emergency	random	criticism
archetype	accident	symmetry	movement
main idea	conditioning	chaos	perspective

Adapted from *The Parallel Curriculum* (Tomlinson, et al., 2002) Figure 5.5.

COMPONENT JIGSAW

Read

Read your assigned section(s) in *The Parallel Curriculum.* As you read, highlight key points and jot down any questions you have. Be sure you can do the following.

- Provide a definition of the component(s) in your own words.
- Share what the component(s) would look like in your own or another discipline.
- Explain why the component(s) should be included in unit plans. Consider: Is the component "nice to have" or is it imperative? What would happen if the component were not included?

Discuss

Share your thoughts, questions, and examples with others assigned to the same section(s). Be sure you are all in agreement about the component's role in curriculum design.

Share

Regroup so that experts from each of the eleven components are represented in your new group. Take turns teaching the others about your assigned component(s).

Speculate

- How important is it that every unit of study pays attention to each of the eleven components?
- Which components are consistently a part of your own unit design? Which components do you wish to address more fully?
- Consider the four parallels of the PCM: Core, Connections, Practice, Identity. How might the components vary in units devoted to each of the parallels?