Grades 6-8
SCIENCE
Framework for FORMATIVE/CLASSROOM Instruction and Assessment
Productive Domains of **Speaking and Writing**

The Pennsylvania English Learner (EL) Overlays assist educators in developing instructional units, lessons, or activities that are meaningful and comprehensible for English learners, and are aligned with Pennsylvania's *EL Differentiation Protocol*.

The EL Overlays illustrate the dynamic process of adapting instruction and assessment based on the English language proficiency of students. These are models that exemplify adaptations for select instructional contexts and provide resources to extend this process to other instructional units. Key features of the Overlays are Model Performance Indicators (MPIs) which differentiate and scaffold instruction per ELP level by adjusting the language function and instructional support.

The EL Overlays are organized by: 1) content area, 2) grade cluster, and 3) language domain (Productive/productive).

Each **Productive** Overlay contains:

Page 1: Introduction

Page 2: Example Speaking Differentiation with Model Performance Indicators (MPIs)

Page 3: Example Writing Differentiation with Model Performance Indicators (MPIs)

Page 4: Productive Performance Indicator (PI) Builder

Page 5: Differentiation Template

Speaking Differentiation with Model Performance Indicators (MPIs)

ELD Standard 4: English learners communicate information, ideas, and concepts necessary for academic success in Science.

Content Standard(s): 3.1.7.A7. Compare life processes (e.g. growth, digestion) at the organism level with life processes at the cellular level.

Concepts:

- All living things are made up of cells, which is the smallest unit that can be said to be alive.
- An organism may consist of one single cell (unicellular) or many different numbers and types of cells (multicellular).

Competencies: Conduct investigations to provide evidence that living things are made of cells and cells can be differentiated.

Key Use of Academic Language (KUALA): Students at all levels of English proficiency will produce **EXPLANATIONS**.

Academic Language Components		
Discourse	**Sentence**	**Word**
Scientific explanation (introduction; steps of processes; conclusion)	One similarity/difference between [subject 1] and [subject 2] is …. [Subject 1] and [subject 2] are similar because they both…. [Subject 1] and [subject 2] are rather different because while [subject 1] has _____, [subject 2] has _____.	unicellular multicellular digestion

ELP Level 1 Entering MPI	ELP Level 2 Emerging MPI	ELP Level 3 Developing MPI	ELP Level 4 Expanding MPI	ELP Level 5 Bridging MPI
Sequence the steps of the investigation that provide evidence that livings things may be unicellular or multicellular the using picture-supported graphic organizer with a partner	Sequence the steps of the investigation that provide evidence that livings things may be unicellular or multicellular the using picture-supported graphic organizer	Present the results of an investigation that provide evidence that livings things may be unicellular or multicellular using a visually supported graphic organizer	Present the results of an investigation that provide evidence that livings things may be unicellular or multicellular using a graphic organizer	Present the results of an investigation that provide evidence that livings things may be unicellular or multicellular using student notes

Writing Differentiation with Model Performance Indicators (MPIs)

ELD Standard 4: English learners communicate information, ideas, and concepts necessary for academic success in Science.

Content Standard(s): S8.B.3.1 Explain relationships among organisms (e.g. producers/consumers, predator/prey) in an ecosystem.

Concepts: In any ecosystem, organisms and populations with similar requirements for food, water, oxygen, or other resources may compete with each other for limited resources, access to which consequently constrains their growth and reproduction.

Competencies: Analyze data to provide evidence for the impact of resource availability on organisms and populations in an ecosystem.

Key Use of Academic Language (KUALA): Students at all levels of English proficiency will produce **EXPLANATIONS**.

Academic Language Components		
Discourse	**Sentence**	**Word**
Scientific Poster illustrating relationships and data graphs	____ is related to ____ because… As _____ increases/decreases , we see _____	producers/consumers predator/prey keystone species camouflage ecosystem

ELP Level 1 Entering MPI	ELP Level 2 Emerging MPI	ELP Level 3 Developing MPI	ELP Level 4 Expanding MPI	ELP Level 5 Bridging MPI
Label a visually-supported map comparing the availability of resources using a word bank	Make a graph comparing the availability of resources with the organism population in a given area	Report the impact of scarcity of food on organisms in a region using a variety of sources using a graphic organizer with a partner	Report the impact of scarcity of food on organisms in a region using a variety of sources using a graphic organizer	Report the impact of scarcity of food on organisms in a region using a variety of sources

Building Productive Performance Indicators (PIs) to differentiate and scaffold instruction per ELP level by adjusting the **language function** and **instructional support**.

1) **Language Function** how students will process language during a Productive activity to demonstrate attainment of the ELD and content standard.

The language of **RECOUNTS**		The language of **EXPLANATIONS**		The language of **ARGUMENTS**		The language of **DISCUSSIONS**	
Arrange	Name	Apply	Identify	Compare	Express	Answer	Initiate
Brainstorm	Order	Chart	Illustrate	Compose	Extract	Ask	Participate in
Categorize	Paraphrase	Classify	Interpret	Confirm	Interpret	Associate	Present
Compose	Reenact	Compare	Narrate	Connect	Justify	Compare	Recommend
Construct	Repeat	Compose	Note	Construct	Negotiate	Confirm	Reflect on
Copy	Replicate	Contrast	Organize	Critique	Respond to	Converse	Request
Cross check	Restate	Define	Present	Defend	Restate	Discuss	Respond to
Draw	Retell	Describe	Role play	Define	Suggest	Edit	Revise
Find	Rewrite	Develop	Show	Elaborate		Give	Use
Follow directions	Select	Express	Summarize			Indicate	
Label	Sequence	Follow	Tell				
List	Share	directions	Trace				
Locate	State	Generalize					
Make	Take notes						

2) **Content Stem** - Selected focus of grade-level curricular lesson/activity for all students which remains consistent across all ELP levels: _____

3) **Instructional Support** - Scaffolds to accompany explicit instruction with multiple opportunities for student response and feedback decreasing in degree from ELP level 1 to level 5.

ELA Sensory Supports		ELA Graphic Supports	ELA Interactive Supports
Acting/Reader's Theater	Read Aloud	Cloze Paragraphs/Sentences	Bilingual/Picture Dictionaries
Audio Books	Regalia	Gallery Walk	Internet/Software Programs
Felt/Magnetic Figures	Role Play	Graphic Organizer	Jigsaw Activities
Illustrations/Photographs	Songs/Chants	Illustrated Word/Phrase Banks or Walls	Pairs/Triads/Small Groups
Manipulatives	Total Physical	Information Chunking	Teacher Modeling/Monitoring
Pantomime	Response (TPR)	Rubrics	Use of L1
	Videos	Study Guides/Guided Notes	
		Written Objectives	

Differentiation Template

ELD Standard 4: English learners communicate information, ideas, and concepts necessary for academic success in Science.

Content Standard(s):

Concepts:

Competencies:

Key Use of Academic Language (KUALA): Students at all levels of English proficiency will _____.

Academic Language Components		
Discourse	**Sentence**	**Word**

ELP Level-specific PIs	ELP Level 1 Entering	ELP Level 2 Emerging	ELP Level 3 Developing	ELP Level 4 Expanding	ELP Level 5 Bridging
Include: **1) Language Function** **2) Content Stem (consist across all levels)** **3) Instructional Support(s)** *Language functions and instructional supports can be selected from Page 4, or supplied by the educator.*					