

Connecting Science Concepts to Language, Literacy, and Math Concepts

From Building Structures with Young Children by Ingrid Chalufour and Karen Worth.

(St. Paul, MN: Redleaf Press, 2004)

CONNECTIONS BETWEEN INQUIRY SKILLS AND OUTCOMES IN OTHER DOMAINS

<div> <div>LANGUAGE</div> <div>→</div> <div>and</div> <div>SCIENCE</div> <div>↓</div> </div>	Shows progress in understanding and following simple and multistep directions.	Shows increasing abilities to understand and use language to communicate information, experience, ideas, feelings, opinions, questions, and so on.	Progresses in abilities to initiate and respond appropriately in conversation and discussions with peers and adults.	Links new learning experiences and vocabulary to what is already known about a topic.
Explores/questions —Engages in open-ended explorations; forms questions that guide actions.		✓	✓	
Begins to investigate —Engages in simple investigations to extend observations, test predictions, and pursue questions.	✓	✓	✓	✓
Collects data —Uses senses, varied tools, and simple measures to gather data.	✓	✓		
Records and represents experience —Describes and records experiences and information through a variety of means, including two- and three-dimensional representation, charts, and movement.		✓		✓
Synthesizes and analyzes data from experiences —Sees patterns in data and relationships among experiences; makes reasonable predictions, explanations, and generalizations based on experience.		✓	✓	✓
Uses language to communicate findings —Develops increased vocabulary and ability to communicate observations and ideas.		✓	✓	✓
Collaborates —Shares materials, tasks, and ideas; collaborates in joint investigations.		✓	✓	

CONNECTIONS BETWEEN INQUIRY SKILLS AND OUTCOMES IN OTHER DOMAINS (CONT'D)

<div style="text-align: center;"> LITERACY <i>and</i> SCIENCE </div>	Progresses in abilities to retell and dictate stories from books or experiences, act out stories in dramatic play, and predict what will happen next in a story.	Develops an understanding that writing is a way of communicating for a variety of purposes.	Begins to represent stories and experiences through pictures, dictation, and play.	Experiments with a growing variety of writing tools, such as pencils, crayons, and computers.
Explores/questions —Engages in open-ended explorations; forms questions that guide actions.				
Begins to investigate —Engages in simple investigations to extend observations, test predictions, and pursue questions.	✓			
Collects data —Uses senses, varied tools, and simple measures to gather data.		✓		✓
Records and represents experience —Describes and records experiences and information through a variety of means, including two- and three-dimensional representation, charts, and movement.	✓	✓	✓	✓
Synthesizes and analyzes data from experiences —Sees patterns in data and relationships among experiences; makes reasonable predictions, explanations, and generalizations based on experience.	✓	✓	✓	✓
Uses language to communicate findings —Develops increased vocabulary and ability to communicate observations and ideas.	✓	✓	✓	✓
Collaborates —Shares materials, tasks, and ideas; collaborates in joint investigations.				

CONNECTIONS BETWEEN INQUIRY SKILLS AND OUTCOMES IN OTHER DOMAINS (CONT'D)

<div style="text-align: center;"> MATHEMATICS → <i>and</i> SCIENCE ↓ </div>	Begins to recognize, describe, compare, and name common shapes and their parts and attributes.	Increases understanding of directionality, order, positions of objects, and words (<i>up, down, over, under, top, bottom, and so on</i>).	Enhances abilities to recognize, duplicate, and extend simple patterns using a variety of materials.	Increases abilities to match, sort, put in a series, regroup, and compare objects according to one or two attributes (such as shape or size).	Shows progress in using standard and nonstandard measures for length and area of objects.	Participates in creating and using real and pictorial graphs.
Explores/questions —Engages in open-ended explorations; forms questions that guide actions.						
Begins to investigate —Engages in simple investigations to extend observations, test predictions, and pursue questions.				✓	✓	✓
Collects data —Uses senses, varied tools, and simple measures to gather data.	✓	✓		✓	✓	✓
Records and represents experience —Describes and records experiences and information through a variety of means, including two- and three-dimensional representation, charts, and movement.	✓	✓		✓	✓	✓
Synthesizes and analyzes data from experiences —Sees patterns in data and relationships among experiences; makes reasonable predictions, explanations, and generalizations based on experience.	✓	✓	✓	✓		✓
Uses language to communicate findings —Develops increased vocabulary and ability to communicate observations and ideas.	✓	✓				
Collaborates —Shares materials, tasks, and ideas; collaborates in joint investigations.						