

Thinking and Academic Success Skills Framework

Kindergarten – Grade 5

Montgomery County Public Schools

Purpose:

The Thinking and Academic Success Skills Framework provides the rationale, research base, and scope and sequence of Thinking and Academic Success Skills (TASS) standards and indicators that form the nucleus of integrated instruction. Content indicators from the Curriculum Frameworks are wrapped around the TASS indicators in this document to provide a rich instructional experience. The indicators in this document are not intended to be taught in isolation or separate from the content of the Curriculum Frameworks, consequently this document is designed as a map of TASS indicators for curriculum and assessment planners and is not a prominent feature of the EIC for daily instructional planning. The individual indicators from this document are the integrated focus of each week's instruction and are a prominent feature of the EIC. While not designed as an instructional planning tool, this document is an important part of professional development for users of the EIC.

MCPs Thinking and Academic Success Skills Framework Rationale and Research Base

The Montgomery County Public Schools (MCPS) Thinking and Academic Success Skills Framework identifies and defines critical and creative thinking skills as well as academic success skills that permeate instruction in all content areas of the MCPs Pre-K–5 Integrated Curriculum. This framework incorporates the research for the primary talent development model successfully implemented in MCPs elementary schools with the Program of Assessment, Diagnosis, and Instruction (PADI). Primary talent development nurtures, identifies, and documents the skills necessary for success in accelerated and enriched instruction. Developing critical and creative thinking skills reveals the strengths and talents of more students both in daily classroom instruction and during the system process for Student Instructional Program Planning and Implementation. Providing students with explicit instruction in critical and creative thinking skills and opportunities to develop academic success skills while learning content, helps students understand how they learn. Making students aware of how they learn prepares them for lifelong learning.

Critical thinking involves being objective and open-minded while thinking carefully about what to do or what to believe, based on evidence and reason. When thinking critically students apply accepted principles. Critical thinking is not a generic set of skills or processes to be developed independent of content and context. Rather if it is to take central place in the curriculum, critical thinking must be seen as a way of teaching the curriculum. (Case, R. 2005). Critical thinking consists of seeing both sides of an issue, being open to new evidence that disconfirms your ideas, making reasoned judgments, demanding claims be backed by evidence, deducting and inferring conclusions from available facts, and solving problems. (Willingham, D. 2007) Critical thinking involves examining possibilities carefully, fairly, and constructively—focusing thoughts and actions by analyzing, synthesizing, and evaluating possibilities, refining and developing the most promising possibilities, ranking or prioritizing options and choosing certain options. (Treffinger, D. 2008)

Creative thinking involves putting facts, concepts, and principles together and demonstrating a novel way of seeing or doing things. During creative thinking students may disregard accepted principles. Creativity involves fluency, flexibility, elaboration and originality of thought. Creative thinking is essential for success in a competitive global environment; contributes to meaning, integrity and satisfaction in career and life; helps people become effective, autonomous and competent in dealing with many people and situations; and, it increases the range of situations, goals and challenges with which people can deal successfully. (Treffinger, D. 2008) Critical thinking without creativity leads to mere skepticism and negativity, and creativity without critical thought leads to mere novelty. When students develop their rational, critical capacities, they develop their creative capacities and when students develop their creative capacities, they develop their critical capacities. (Paul, R. and Elder, L., 2006)

Research on academic success skills has shown that when students are able to defer short-term gratification for long-term gain, when they collaborate with others, and when they take responsibility for their learning, they are able to function at a higher level. In classrooms in which students have opportunities to develop academic success skills and learn how they learn, all students are able to achieve at higher levels. Academic success depends on student attitudes and behaviors that enable them to reach their full potential in academic settings. These attitudes and behaviors include collaboration, intellectual risk taking, effort/ motivation/persistence, and metacognition. In classrooms where opportunities to develop academic success skills exist, everyone is able to accomplish more. Academic success skills promote behaviors that lead to deeper learning and greater achievement. (Partnership for 21st Century Skills, 2007)

This framework identifies the specific critical and creative thinking skills as well as academic success skills that are at the core of instruction for the MCPs Pre-K–5 Integrated Curriculum. In the integrated curriculum, students learn critical and creative thinking skills and develop academic success skills while they are learning content skills and processes. The thinking skills and academic success skills are the threads that weave the content skills and processes together. Making connections among concepts increases the possibility that students will be able to recall those concepts and transfer them to new learning. When students are aware of how they are learning, they are better prepared to learn in any new situation. With the wealth of information that is becoming increasingly available in the 21st century, it is essential that all students not only learn academic content but have the opportunity to know how to keep learning.

MCPS Thinking and Academic Success Skills Glossary

Academic Success Skills:

Academic success involves possessing attitudes and behaviors that enable students to reach their full potential in academic settings. Some examples of academic success skills are:

- Collaboration—Working effectively and respectfully to reach a group goal.
- Effort/Motivation/Persistence—Working diligently and applying effective strategies to achieve a goal or solve a problem; continuing in the face of obstacles and competing pressures.
- Intellectual Risk Taking—Accepting uncertainty or challenging the norm to reach a goal.
- Metacognition—Knowing and being aware of one's own thinking and having the ability to monitor and evaluate one's own thinking.

Creative Thinking Skills:

Creative thinking involves putting facts, concepts, and principles together in new ways and demonstrating a novel way of seeing or doing things. During creative thinking students may disregard accepted principles. Some examples of creative thinking skills are:

- Elaboration—Adding details that expand, enrich, or embellish.
- Flexibility—Being open and responsive to new and diverse ideas and strategies and moving freely among them.
- Fluency—Generating multiple responses to a problem or an idea.
- Originality—Creating ideas and solutions that are novel or unique to the individual, group, or situation.

Critical Thinking Skills:

Critical thinking involves being objective and open-minded while thinking carefully about what to do or what to believe, based on evidence and reason. During critical thinking students deeply question and apply accepted principles. Some examples of critical thinking skills are:

- Analysis—Breaking down a whole into parts that may not be immediately obvious and examining the parts so that the structure of the whole is understood.
- Evaluation—Weighing evidence, examining claims, and questioning facts to make judgments based upon criteria.
- Synthesis—Putting parts together to build understanding of a whole concept or to form a new or unique whole.

MCPS Thinking and Academic Success Skills Indicators

Critical Thinking Skills	Creative Thinking Skills	Academic Success Skills
<p>1.0 Analysis</p> <ul style="list-style-type: none"> 1.1 Identify and describe attributes. 1.2 Compare by identifying similarities and differences. 1.3 Sort and classify into categories. 1.4 Identify and describe patterns and the relationships within patterns. 1.5 Identify relationships among parts of a whole. 1.6 Infer and explain meaning to make sense of parts. 	<p>4.0 Elaboration</p> <ul style="list-style-type: none"> 4.1 Enhance thoughts, ideas, processes, or products by adding details. 4.2 Demonstrate thoughts, ideas, processes, or products by using different forms of communication. 4.3 Combine or add to thoughts, ideas, processes, or products. 	<p>8.0 Collaboration</p> <ul style="list-style-type: none"> 8.1 Demonstrate active listening and empathy in communicating with group members. 8.2 Solicit and respect multiple and diverse perspectives to broaden and deepen understanding. 8.3 Demonstrate teamwork by working productively with others. 8.4 Define and identify steps to reach a group goal. 8.5 Identify and analyze options for sharing responsibility to reach a group goal. 8.6 Demonstrate the characteristics of both a group leader and a group member. 8.7 Support group decisions with criteria.
<p>2.0 Evaluation</p> <ul style="list-style-type: none"> 2.1 Rank options based on criteria. 2.2 Select and test possible alternatives. 2.3 Justify a choice or solution based on criteria using evidence and reason. 2.4 Question facts and claims. 2.5 Determine the credibility of information and claims. 2.6 Determine how to use conflicting information. 	<p>5.0 Flexibility</p> <ul style="list-style-type: none"> 5.1 Maintain openness by considering new and diverse ideas and multiple perspectives. 5.2 Select and use multiple resources. 5.3 Move freely between new information and prior knowledge. 5.4 Adapt and use information and multiple strategies to seek clarity. 5.5 Demonstrate adaptability by changing ideas, questions, resources, or strategies when presented with evidence. 	<p>9.0 Effort/Motivation/Persistence</p> <ul style="list-style-type: none"> 9.1 Demonstrate strategies to achieve a goal or solve a problem. 9.2 Self-assess effectiveness of strategies and redirect efforts to achieve a goal or obtain a solution to a problem. 9.3 Identify an achievable, yet challenging goal. 9.4 Identify and describe the outcome of a goal. 9.5 Identify the components of goal-setting. 9.6 Develop and demonstrate a sequenced program of action to achieve a goal or solve a problem.
<p>3.0 Synthesis</p> <ul style="list-style-type: none"> 3.1 Organize parts to form a new or unique whole. 3.2 Integrate ideas, information, and theories to invent or devise a solution. 3.3 Formulate generalizations by examining parts and putting them together. 	<p>6.0 Fluency</p> <ul style="list-style-type: none"> 6.1 Generate many ideas. 6.2 Represent and describe ideas or solutions in a variety of ways. 6.3 Generate ideas using multiple strategies. 6.4 Ask questions in a variety of ways. 	<p>10.0 Intellectual Risk Taking</p> <ul style="list-style-type: none"> 10.1 Adapt and make adjustments to meet challenges when seeking solutions. 10.2 Demonstrate willingness to accept uncertainty by sharing ideas, asking questions, or attempting novel tasks. 10.3 Challenge self and others to advance skill level.
	<p>7.0 Originality</p> <ul style="list-style-type: none"> 7.1 Create a new idea, process, or product using multiple and varied formats. 7.2 Plan and formulate a new, unique, or alternative solution to a problem or situation. 7.3 Transform an idea, process, or product into a new form. 	<p>11.0 Metacognition</p> <ul style="list-style-type: none"> 11.1 Examine one's own thoughts and ideas to identify background knowledge. 11.2 Explain thinking processes. 11.3 Self-monitor strategies to assess progress and apply new thinking. 11.4 Seek clarification and adapt strategies to attain learning task/outcome.

MCPS Thinking and Academic Success Skills Scope and Sequence of Indicators

Students should be able to demonstrate the skills identified at each grade level as well as those identified at previous grade levels.

	Kindergarten	Grade 1	Grade 2	
Critical Thinking	1.0 Analysis	1.1 Identify and describe attributes. 1.2 Compare by identifying similarities and differences. 1.3 Sort and classify into categories. 1.4 Identify and describe patterns and the relationships within patterns.	1.1 Identify and describe attributes. 1.2 Compare by identifying similarities and differences. 1.3 Sort and classify into categories. 1.4 Identify and describe patterns and the relationships within patterns. 1.5 Identify relationships among parts of a whole.	1.3 Sort and classify into categories. 1.4 Identify and describe patterns and the relationships within patterns. 1.5 Identify relationships among parts of a whole. 1.6 Infer and explain meaning to make sense of parts.
	2.0 Evaluation			
	3.0 Synthesis	3.1 Organize parts to form a new or unique whole.	3.1 Organize parts to form a new or unique whole. 3.2 Integrate ideas, information, and theories to invent or devise a solution.	3.1 Organize parts to form a new or unique whole. 3.2 Integrate ideas, information, and theories to invent or devise a solution.
	4.0 Elaboration			
Creative Thinking	5.0 Flexibility			5.1 Maintain openness by considering new and diverse ideas and multiple perspectives. 5.2 Select and use multiple resources. 5.3 Move freely between new information and prior knowledge.
	6.0 Fluency	6.1 Generate many ideas. 6.2 Represent and describe ideas or solutions in a variety of ways.	6.3 Generate ideas using multiple strategies. 6.4 Ask questions in a variety of ways.	6.3 Generate ideas using multiple strategies. 6.4 Ask questions in a variety of ways.
	7.0 Originality	7.1 Create a new idea, process, or product using multiple and varied formats. 7.2 Plan and formulate a new, unique, or alternative solution to a problem or situation. 7.3 Transform an idea, process, or product into a new form.	7.1 Create a new idea, process, or product using multiple and varied formats. 7.2 Plan and formulate a new, unique, or alternative solution to a problem or situation. 7.3 Transform an idea, process, or product into a new form.	

MCPS Thinking and Academic Success Skills Scope and Sequence of Indicators

	Kindergarten			Grade 1			Grade 2							
Academic Success	8.0 Collaboration	8.1 Demonstrate active listening and empathy in communicating with group members.	8.2 Solicit and respect multiple and diverse perspectives to broaden and deepen understanding.	8.3 Demonstrate teamwork by working productively with others.	8.1 Demonstrate active listening and empathy in communicating with group members.	8.2 Solicit and respect multiple and diverse perspectives to broaden and deepen understanding.	8.3 Demonstrate teamwork by working productively with others.	8.3 Demonstrate teamwork by working productively with others.	8.4 Define and identify steps to reach a group goal.	8.5 Identify and analyze options for sharing responsibility to reach a group goal.	8.6 Demonstrate the characteristics of both a group leader and a group member.			
		9.0 Effort/ Motivation/ Persistence	9.1 Demonstrate strategies to achieve a goal or solve a problem.	9.2 Self-assess effectiveness of strategies and redirect efforts to achieve a goal or obtain a solution to a problem.	9.1 Demonstrate strategies to achieve a goal or solve a problem.	9.2 Self-assess effectiveness of strategies and redirect efforts to achieve a goal or obtain a solution to a problem.	9.3 Identify an achievable, yet challenging goal.	9.4 Identify and describe the outcome of a goal.	9.1 Demonstrate strategies to achieve a goal or solve a problem.	9.2 Self-assess effectiveness of strategies and redirect efforts to achieve a goal or obtain a solution to a problem.	9.3 Identify an achievable, yet challenging goal.	9.4 Identify and describe the outcome of a goal.		
		10.0 Intellectual Risk Taking	10.1 Adapt and make adjustments to meet challenges when seeking solutions.	10.2 Demonstrate willingness to accept uncertainty by sharing ideas, asking questions, or attempting novel tasks.	10.1 Adapt and make adjustments to meet challenges when seeking solutions.	10.2 Demonstrate willingness to accept uncertainty by sharing ideas, asking questions, or attempting novel tasks.	10.3 Challenge self and others to advance skill level.	10.1 Adapt and make adjustments to meet challenges when seeking solutions.	10.2 Demonstrate willingness to accept uncertainty by sharing ideas, asking questions, or attempting novel tasks.	10.3 Challenge self and others to advance skill level.	10.1 Adapt and make adjustments to meet challenges when seeking solutions.	10.2 Demonstrate willingness to accept uncertainty by sharing ideas, asking questions, or attempting novel tasks.	10.3 Challenge self and others to advance skill level.	
11.0 Metacognition	11.1 Examine one's own thoughts and ideas to identify background knowledge.	11.2 Explain thinking processes.	11.1 Examine one's own thoughts and ideas to identify background knowledge.	11.2 Explain thinking processes.	11.3 Self-monitor strategies to assess progress and apply new thinking.	11.4 Seek clarification and adapt strategies to attain learning task/outcome.	11.1 Examine one's own thoughts and ideas to identify background knowledge.	11.2 Explain thinking processes.	11.3 Self-monitor strategies to assess progress and apply new thinking.	11.4 Seek clarification and adapt strategies to attain learning task/outcome.	11.1 Examine one's own thoughts and ideas to identify background knowledge.	11.2 Explain thinking processes.	11.3 Self-monitor strategies to assess progress and apply new thinking.	11.4 Seek clarification and adapt strategies to attain learning task/outcome.

MCPs Thinking and Academic Success Skills Scope and Sequence of Indicators
 Students should be able to demonstrate the skills identified at each grade level as well as those identified at previous grade levels.

	Grade 3	Grade 4	Grade 5	
Critical Thinking	1.0 Analysis	1.4 Identify and describe patterns and the relationships within patterns. 1.5 Identify relationships among parts of a whole. 1.6 Infer and explain meaning to make sense of parts.		
	2.0 Evaluation	2.1 Rank options based on criteria. 2.2 Select and test possible alternatives. 2.3 Justify a choice or solution based on criteria using evidence and reason.	2.2 Select and test possible alternatives. 2.3 Justify a choice or solution based on criteria using evidence and reason. 2.4 Question facts and claims. 2.5 Determine the credibility of information and claims.	2.3 Justify a choice or solution based on criteria using evidence and reason. 2.4 Question facts and claims. 2.5 Determine the credibility of information and claims. 2.6 Determine how to use conflicting information.
	3.0 Synthesis		3.2 Integrate ideas, information, and theories to invent or devise a solution. 3.3 Formulate generalizations by examining parts and putting them together.	3.2 Integrate ideas, information, and theories to invent or devise a solution. 3.3 Formulate generalizations by examining parts and putting them together.
Creative Thinking	4.0 Elaboration	4.1 Enhance thoughts, ideas, processes, or products by adding details. 4.2 Demonstrate thoughts, ideas, processes, or products by using different forms of communication.	4.3 Combine or add to thoughts, ideas, processes, or products.	4.3 Combine or add to thoughts, ideas, processes, or products.
	5.0 Flexibility		5.2 Select and use multiple resources. 5.4 Adapt and use information and multiple strategies to seek clarity.	5.5 Demonstrate adaptability by changing ideas, questions, resources, or strategies when presented with evidence.
	6.0 Fluency			
7.0 Originality	7.1 Create a new idea, process, or product using multiple and varied formats. 7.2 Plan and formulate a new, unique, or alternative solution to a problem or situation. 7.3 Transform an idea, process, or product into a new form.			

MCPS Thinking and Academic Success Skills Scope and Sequence of Indicators

	Grade 3	Grade 4	Grade 5
Academic Success	<p>8.3 Demonstrate teamwork by working productively with others.</p> <p>8.4 Define and identify steps to reach a group goal.</p> <p>8.5 Identify and analyze options for sharing responsibility to reach a group goal.</p> <p>8.6 Demonstrate the characteristics of both a group leader and a group member.</p>	<p>8.2 Solicit and respect multiple and diverse perspectives to broaden and deepen understanding.</p> <p>8.5 Identify and analyze options for sharing responsibility to reach a group goal.</p> <p>8.7 Support group decisions with criteria.</p>	<p>8.2 Solicit and respect multiple and diverse perspectives to broaden and deepen understanding.</p> <p>8.5 Identify and analyze options for sharing responsibility to reach a group goal.</p> <p>8.7 Support group decisions with criteria.</p>
	<p>9.0 Effort/ Motivation/ Persistence</p> <p>9.3 Identify an achievable, yet challenging goal.</p> <p>9.4 Identify and describe the outcome of a goal.</p> <p>9.5 Identify the components of goal-setting.</p> <p>9.6 Develop and demonstrate a sequenced program of action to achieve a goal or solve a problem.</p>	<p>9.3 Identify an achievable, yet challenging goal.</p> <p>9.4 Identify and describe the outcome of a goal.</p> <p>9.5 Identify the components of goal-setting.</p> <p>9.6 Develop and demonstrate a sequenced program of action to achieve a goal or solve a problem.</p>	<p>9.5 Identify the components of goal-setting.</p> <p>9.6 Develop and demonstrate a sequenced program of action to achieve a goal or solve a problem.</p>
	<p>10.0 Intellectual Risk Taking</p> <p>10.1 Adapt and make adjustments to meet challenges when seeking solutions.</p> <p>10.2 Demonstrate willingness to accept uncertainty by sharing ideas, asking questions, or attempting novel tasks.</p> <p>10.3 Challenge self and others to advance skill level.</p>	<p>10.1 Adapt and make adjustments to meet challenges when seeking solutions.</p> <p>10.2 Demonstrate willingness to accept uncertainty by sharing ideas, asking questions, or attempting novel tasks.</p> <p>10.3 Challenge self and others to advance skill level.</p>	<p>10.1 Adapt and make adjustments to meet challenges when seeking solutions.</p> <p>10.2 Demonstrate willingness to accept uncertainty by sharing ideas, asking questions, or attempting novel tasks.</p> <p>10.3 Challenge self and others to advance skill level.</p>
<p>11.0 Metacognition</p>	<p>11.2 Explain thinking processes.</p> <p>11.3 Self-monitor strategies to assess progress and apply new thinking.</p> <p>11.4 Seek clarification and adapt strategies to attain learning task/outcome.</p>	<p>11.3 Self-monitor strategies to assess progress and apply new thinking.</p> <p>11.4 Seek clarification and adapt strategies to attain learning task/outcome.</p>	<p>11.3 Self-monitor strategies to assess progress and apply new thinking.</p> <p>11.4 Seek clarification and adapt strategies to attain learning task/outcome.</p>

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