



Academies of Loudoun Prep 7-8 Syllabus

Course Goals

1 Understanding the Admissions Process

Students learn about the application process for the Academies of Loudoun (ACL), including the STEM Thinking Skills Test and Writing Assessment.

2 STEM Thinking Skills Test

Students learn about and practice with sample items based on the STEM Thinking Skills Test, an assessment they will take as part of the admissions process, and practice solving problems in the areas of algebra, spatial relations, science, and tech logic.

3 Writing Assessment

Students spend significant time practicing personal statements and writing about their experience and background in math, science, and technology.

4 Reflection

Students identify and evaluate their strengths and areas of growth as test-takers over the course of the class.

Course Topics

1 Out-of-the-Box Algebra

Students prepare for this section of the STEM Thinking Skills Test by learning to come up with elegant solutions to algebraic and arithmetic problems that might otherwise seem difficult and time-consuming.

2 Spatial-Relational Thinking

Students prepare for this section of the STEM Thinking Skills Test by learning to recognize and predict spatial relationships, geometric progressions, and effective organization of objects for engineering and design related purposes.

3 Scientific Thinking

Students prepare for this section of the STEM Thinking Skills Test by learning to determine possible relationships between a set of provided facts and to determine which observations would count as reasonable evidence for or against competing hypotheses.

4 Tech Logic

Students prepare for this section of the STEM Thinking Skills Test by learning to identify the logical structures and organizational plans in written text, diagrams, and mathematical functions.

5 Essay Writing

Students learn how to respond to writing prompts commonly encountered on magnet school admissions exams, and they give and receive peer feedback to hone their critical evaluation skills.

6 Timed Writing

Students learn how to efficiently work under time constraints and write organized, grammatical, informative essays.

7 Prompt Analysis

Students learn how to narrow down the topic of a prompt to an idea that can be explained in the time they are given.

8 Sentence Variety

Students work on varying their sentences to improve the quality of their essays. Students also work on improving diction, or effective word choice.

9 Revision

Students learn how to look back over their writing to find mistakes and correct them efficiently.

Course Schedule

Day 1

STEM Thinking Skills Pretest

Students take a practice test with sample items based on the STEM Thinking Skills Test.

Writing Assessment Pre-Test

Students spend 60 minutes answering three written prompts to on the topic of STEM and why they want to attend ACL.

Icebreakers

Students get to know one another.

Course Introduction

Review the syllabus and introduce the course.

Loudoun ACL Overview

Students learn about the application process for the Loudoun ACL, including the STEM Thinking Skills Test and Writing Assessment.

STEM Thinking Skills Test Overview

Students learn about the STEM Thinking Skills Test, an assessment they will take as part of the admissions process.

Day 2

Test Review

Students review their STEM Thinking Skills Tests and note areas of strength and areas of growth.

Test Taking Strategies

Students learn how to study and prepare for the ACL application process, including strategies to combat test anxiety and how to develop a personal study plan.

Peer Review

Students spend 20 minutes reviewing each other's writing.

Out of the Box Algebra Instruction

Students prepare for this section of the STEM Thinking Skills Test by practicing coming up with elegant solutions to problems that might otherwise seem difficult and time-consuming.

Reflection

Students reflect on their learning from the day's lessons.

Day 3

Reflective Journal Prompts

Students warm up by responding to daily journal prompts about the ACL and their experiences in STEM fields.

Spatial Relational Thinking Instruction

Students prepare for this section of the STEM Thinking Skills Test by learning to recognize and predict spatial relationships through the use of manipulables and creative thinking.

Writing Instruction

Students learn how to respond to writing prompts commonly encountered on magnet school admissions exams, and they give and receive peer feedback to hone their critical evaluation skills.

Reflection

Students reflect on their learning from the day's lessons.

Day 4

Reflective Journal Prompts

Students warm up by responding to daily journal prompts about the ACL and their experiences in STEM fields.

Scientific Thinking Instruction

Students prepare for this section of the STEM Thinking Skills Test by responding to evaluative and inferential questions based on narrative scientific scenarios.

Writing Instruction

Students learn how to respond to writing prompts commonly encountered on magnet school admissions exams, and they give and receive peer feedback to hone their critical evaluation skills.

Reflection

Students reflect on their learning from the day's lessons.

Day 5

Reflective Journal Prompts

Students warm up by responding to daily journal prompts about the ACL and their experiences in STEM fields.

Tech Logic Instruction

Students prepare for this section of the STEM Thinking Skills Test by learning to identify the logical structures and organizational plans in written text, diagrams, and mathematical functions.

Writing Instruction

Students learn how to respond to writing prompts commonly encountered on magnet school admissions exams, and they give and receive peer feedback to hone their critical evaluation skills.

Reflection

Students reflect on their learning from the day's lessons.

Day 6

STEM Thinking Skills Progress-Test

Students take a practice test with sample items based on the STEM Thinking Skills Test.

Test Review

Review responses to STEM Thinking Skills Progress Test

Writing Instruction

Students learn how to respond to writing prompts commonly encountered on magnet school admissions exams, and they give and receive peer feedback to hone their critical evaluation skills.

Reflection

Students reflect on their learning from the day's lessons.

Day 7

Reflective Journal Prompts

Students warm up by responding to daily journal prompts about the ACL and their experiences in STEM fields.

Peer Review

Students spend 20 minutes reviewing each other's writing.

Out of the Box Algebra Instruction

Students prepare for this section of the STEM Thinking Skills Test by practicing coming up with elegant solutions to problems that might otherwise seem difficult and time-consuming.

Spatial Relational Thinking Instruction

Students prepare for this section of the STEM Thinking Skills Test by learning to recognize and predict spatial relationships through the use of manipulables and creative thinking.

Reflection

Students reflect on their learning from the day's lessons.

Day 8

Reflective Journal Prompts

Students warm up by responding to daily journal prompts about the ACL and their experiences in STEM fields.

Scientific Thinking Instruction

Students prepare for this section of the STEM Thinking Skills Test by responding to evaluative and inferential questions based on narrative scientific scenarios.

Writing Instruction

Students learn how to respond to writing prompts commonly encountered on magnet school admissions exams, and they give and receive peer feedback to hone their critical evaluation skills.

Reflection

Students reflect on their learning from the day's lessons.

Day 9

Tech Logic Instruction

Students prepare for this section of the STEM Thinking Skills Test by learning to identify the logical structures and organizational plans in written text, diagrams, and mathematical functions.

STEM Thinking Skills Post-Test

Students take a practice test with sample items based on the STEM Thinking Skills Test.

Writing Assessment Post Test

Students spend 60 minutes answering three written prompts to on the topic of STEM and why they want to attend ACL.

Day 10

Reflective Journal Prompts

Students warm up by responding to daily journal prompts about the ACL and their experiences in STEM fields.

Test Review

Students review their STEM Thinking Skills Tests and note areas of strength and areas of growth.

Writing Assessment Post Test Review

Students review their final responses to the Post Test.

End of Course Reflection

Students reflect on their learning throughout the course and set goals for future preparation for the ACL admissions process.

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