

The image shows the cover of a spiral-bound notebook. The cover is a light beige or tan color with a fine, woven texture. A silver metal spiral binding is visible along the left edge. The text is printed in a dark brown or black serif font, centered on the cover. The text reads: "ESSENTIAL ACADEMIC LEARNING REQUIREMENTS FOR SEVEN SCI-MA-TECH UNITS".

**ESSENTIAL
ACADEMIC
LEARNING
REQUIREMENTS**

FOR SEVEN

SCI-MA-TECH

UNITS

BUBBA'S TOWER

READING

- 1.2 Use vocabulary (word meaning) strategies to comprehend text.
- 1.3 Build vocabulary through wide reading.
- 1.4 Apply word recognition skills and strategies to read fluently.
- 2.4 Think critically and analyze author's use of language, style, purpose, and perspective in informational and literary text.
- 3.1 Read to learn new information.
- 3.2 Read to perform a task.

WRITING

- 1.1 develop concept and design
develop a topic or theme; organize written thoughts with a clear beginning, middle, and end; use transitional sentences and phrases to connect related ideas; write coherently and effectively
- 1.2 use style appropriate to the audience and purpose
use voice, word choice, and sentence fluency for intended style and audience
- 1.3 apply writing conventions
know and apply correct spelling, grammar, sentence structure, punctuation, and capitalization
- 2.1 write for different audiences
- 2.2 write for different purposes
such as telling stories, presenting analytical responses to literature, persuading, conveying technical information, completing a team project, explaining concepts and procedures
- 2.3 write in a variety of forms
including narratives, journals, poems, essays, stories, research reports, and technical writing

BUBBA'S TOWER

WRITING

3.1 prewrite

generate ideas and gather information

3.2 draft

elaborate on a topic and supporting ideas

3.3 revise

collect input and enhance text and style

3.4 edit

use resources to correct spelling, punctuation, grammar, and usage

3.5 publish

select a publishing form and produce a completed writing project to share with chosen audience

4.1 assess own strengths and needs for improvement

analyze effectiveness of own writing and set goals for improvement

4.2 seek and offer feedback

COMMUNICATION

1.1 focus attention

1.2 listen and observe to gain and interpret information

1. check for understanding by asking questions and paraphrasing

2.3 use effective delivery

adjust speaking strategies for a variety of audiences and purposes by varying tone, pitch, and pace of speech to create effect and aid communication

BUBBA'S TOWER

MATHEMATICS

- 1.1 understand and apply concepts and procedures from number sense
number and numeration, computation, and estimation
- 1.2 understand and apply concepts and procedures from measurement
attributes and dimensions, approximation and precision, and systems and tools
- 1.3 understand and apply concepts and procedures from geometric sense
shape and dimension, and relationships and transformations
- 1.4 understand and apply concepts and procedures from probability and statistics
probability, statistics, and prediction and inference
- 1.5 understand and apply concepts and procedures from algebraic sense
relations and representations, and operations
- 2.1 investigate situations
by searching for patterns and exploring a variety of approaches
- 2.2 formulate questions and define the problem
- 2.3 construct solutions
by choosing the necessary information and using the appropriate mathematical tools
- 3.1 analyze information
from a variety of sources; use models, known facts, patterns and relationships to validate thinking
- 3.2 predict results and make inferences and make conjectures based on analysis of problem situations
- 3.3 draw conclusions and verify results
support mathematical arguments, justify results, and check for reasonableness of solutions
- 4.1 gather information
read, listen, and observe to access and extract mathematical information
- 4.2 organize and interpret information
- 4.3 represent and share information
share, explain, and defend mathematical ideas using terms, language, charts, and graphs that can be clearly understood by a variety of audiences

BUBBA'S TOWER

MATHEMATICS

5.1 relate concepts and procedures within mathematics

recognize relationships among mathematical ideas and topics

5.2 relate mathematical concepts and procedures to other disciplines

identify and apply mathematical thinking and notation in other subject areas

5.3 relate mathematical concepts and procedures to real-life situations

understand the connections between mathematics and problem solving skills used every day at work and at home

SCIENCE

1.1 Properties: Understand how properties are used to identify, describe, and categorize substances, materials, and objects; and how characteristics are used to categorize living things.

1.2 Structures: Understand how components, structures, organizations, and interconnections describe systems.

1.3 Changes: Understand how interactions within and among systems cause changes in matter and energy.

2.1 Investigating Systems: Develop the knowledge and skills necessary to do scientific inquiry.

2.2 Nature of Science: Understand the nature of scientific inquiry

3.1 Designing Solutions: Apply knowledge and skills of science and technology to design solutions to human problems or meet challenges.

3.2 Science, Technology and Society: Analyze how science and technology are human endeavors, interrelated to each other, to society, and to the workplace and the environment.

ART

3.3 Develops personal aesthetic criteria to communicate artistic choices

MOUSE TRAP CARS

READING

- 1.2 Use vocabulary (word meaning) strategies to comprehend text.
- 1.3 Build vocabulary through wide reading.
- 3.1 Read to learn new information.
- 3.2 Read to perform a task.

WRITING

- 1.1 develop concept and design
develop a topic or theme; organize written thoughts with a clear beginning, middle, and end; use transitional sentences and phrases to connect related ideas; write coherently and effectively
- 1.2 use style appropriate to the audience and purpose
use voice, word choice, and sentence fluency for intended style and audience
- 1.3 apply writing conventions
know and apply correct spelling, grammar, sentence structure, punctuation, and capitalization
- 2.1 write for different audiences
- 2.2 write for different purposes
such as telling stories, presenting analytical responses to literature, persuading, conveying technical information, completing a team project, explaining concepts and procedures
- 2.3 write in a variety of forms
including narratives, journals, poems, essays, stories, research reports, and technical writing
- 3.1 prewrite
generate ideas and gather information
- 3.2 draft
elaborate on a topic and supporting ideas
- 3.3 revise
collect input and enhance text and style
- 3.5 publish
select a publishing form and produce a completed writing project to share with chosen audience

MOUSE TRAP CARS

WRITING

- 4.1 assess own strengths and needs for improvement
analyze effectiveness of own writing and set goals for improvement
 - 4.2 seek and offer feedback
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COMMUNICATION

- 1.1 focus attention
- 1.2 listen and observe to gain and interpret information
- 1.3 check for understanding by asking questions and paraphrasing
- 3.1 use language to interact effectively and responsibly with others
- 3.2 work cooperatively as a member of a group
- 3.3 seek agreement and solutions through discussion
- 4.2 seek and offer feedback
seek and use feedback to improve communication; offer suggestions and comments to others

MATHEMATICS

- 1.1 understand and apply concepts and procedures from number sense
number and numeration, computation, and estimation
- 1.2 understand and apply concepts and procedures from measurement
attributes and dimensions, approximation and precision, and systems and tools
- 1.3 understand and apply concepts and procedures from geometric sense
shape and dimension, and relationships and transformations
- 1.4 understand and apply concepts and procedures from probability and statistics
probability, statistics, and prediction and inference
- 1.5 understand and apply concepts and procedures from algebraic sense
relations and representations, and operations
- 2.1 investigate situations
by searching for patterns and exploring a variety of approaches
- 2.2 formulate questions and define the problem

MOUSE TRAP CARS

MATHEMATICS

2.3 construct solutions

by choosing the necessary information and using the appropriate mathematical tools

3.1 analyze information

from a variety of sources; use models, known facts, patterns and relationships to validate thinking

3.2 predict results and make inferences and make conjectures based on analysis of problem situations

3.3 draw conclusions and verify results

support mathematical arguments, justify results, and check for reasonableness of solutions

4.1 gather information

read, listen, and observe to access and extract mathematical information

4.2 organize and interpret information

4.3 represent and share information

share, explain, and defend mathematical ideas using terms, language, charts, and graphs that can be clearly understood by a variety of audiences

5.1 relate concepts and procedures within mathematics

recognize relationships among mathematical ideas and topics

5.2 relate mathematical concepts and procedures to other disciplines

identify and apply mathematical thinking and notation in other subject areas

5.3 relate mathematical concepts and procedures to real-life situations

understand the connections between mathematics and problem solving skills used every day at work and at home

MOUSE TRAP CARS

SCIENCE

- 1.1 **Properties:** Understand how properties are used to identify, describe, and categorize substances, materials, and objects; and how characteristics are used to categorize living things.
- 1.2 **Structures:** Understand how components, structures, organizations, and interconnections describe systems.
- 1.3 **Changes:** Understand how interactions within and among systems cause changes in matter and energy.
- 2.1 **Investigating Systems:** Develop the knowledge and skills necessary to do scientific inquiry.
- 2.2 **Nature of Science:** Understand the nature of scientific inquiry
- 3.1 **Designing Solutions:** Apply knowledge and skills of science and technology to design solutions to human problems or meet challenges.
- 3.2 **Science, Technology and Society:** Analyze how science and technology are human endeavors, interrelated to each other, to society, and to the workplace and the environment.

ART

- 1.1 Understands arts concepts and vocabulary
- 1.2 Develops arts skills and techniques
- 2.1 Applies a creative process in the arts:
 - **Conceptualizes** the context or purpose
 - **Gathers** information from diverse sources
 - **Develops** ideas and techniques
 - **Organizes** arts elements, forms, and/or principles into a creative work
 - **Reflects** for the purpose of elaboration and self evaluation
- 3.1 Uses the arts to express and present ideas and feelings
 - 3.2 Uses the arts to communicate for a specific purpose
- 4.2 Demonstrates and analyzes the connections between the arts and other content areas

MEASUREMENT

MATHEMATICS

- 1.1 understand and apply concepts and procedures from number sense
number and numeration, computation, and estimation
- 1.2 understand and apply concepts and procedures from measurement
attributes and dimensions, approximation and precision, and systems and tools
- 1.3 understand and apply concepts and procedures from geometric sense
shape and dimension, and relationships and transformations
- 1.5 understand and apply concepts and procedures from algebraic sense
relations and representations, and operations
- 2.1 investigate situations
by searching for patterns and exploring a variety of approaches
- 3.1 analyze information
from a variety of sources; use models, known facts, patterns and relationships to validate thinking
- 3.2 predict results and make inferences and make conjectures based on analysis of problem situations
- 3.3 draw conclusions and verify results
support mathematical arguments, justify results, and check for reasonableness of solutions
- 4.1 gather information
read, listen, and observe to access and extract mathematical information
- 4.2 organize and interpret information
- 4.3 represent and share information
share, explain, and defend mathematical ideas using terms, language, charts, and graphs that can be clearly understood by a variety of audiences
- 5.1 relate concepts and procedures within mathematics
recognize relationships among mathematical ideas and topics
- 5.3 relate mathematical concepts and procedures to real-life situations
understand the connections between mathematics and problem solving skills used every day at work and at home

SKETCHING

COMMUNICATION

1.1 focus attention

1.2 listen and observe to gain and interpret information

1.3 check for understanding by asking questions and paraphrasing

2.1 communicate clearly to a range of audiences for different purposes

2.5 effectively use action, sound, and/or images to support presentations

4.1 assess strengths and need for improvement

assess own and others' communication strengths and needs and set goals for improvement

4.2 seek and offer feedback

seek and use feedback to improve communication; offer suggestions and comments to others

MATHEMATICS

1.3 understand and apply concepts and procedures from geometric sense

shape and dimension, and relationships and transformations

3.1 analyze information

from a variety of sources; use models, known facts, patterns and relationships to validate thinking

ART

1.1 Understands arts concepts and vocabulary

1.2 Develops arts skills and techniques

2.1 Applies a creative process in the arts:

- **Conceptualizes** the context or purpose
- **Gathers** information from diverse sources
- **Develops** ideas and techniques
- **Refines** work based on feedback

3.2 Uses the arts to communicate for a specific purpose

3.3 Develops personal aesthetic criteria to communicate artistic choices

GAME PROJECT

READING

- 2.1 Demonstrate evidence of reading comprehension.
- 2.2 Understand and apply knowledge of text components to comprehend text.
- 2.3 Expand comprehension by analyzing, interpreting, and synthesizing information and ideas in literary and informational text.
- 2.4 Think critically and analyze author's use of language, style, purpose, and perspective in informational and literary text.
- 3.2 Read to perform a task.

WRITING

- 1.1 develop concept and design
 - develop a topic or theme; organize written thoughts with a clear beginning, middle, and end; use transitional sentences and phrases to connect related ideas; write coherently and effectively*
- 1.2 use style appropriate to the audience and purpose
 - use voice, word choice, and sentence fluency for intended style and audience*
- 1.3 apply writing conventions
 - know and apply correct spelling, grammar, sentence structure, punctuation, and capitalization*
- 2.1 write for different audiences
- 2.2 write for different purposes
 - such as telling stories, presenting analytical responses to literature, persuading, conveying technical information, completing a team project, explaining concepts and procedures*
- 3.1 prewrite
 - generate ideas and gather information*
- 3.2 draft
 - elaborate on a topic and supporting ideas*
- 3.3 revise
 - collect input and enhance text and style*
- 3.4 edit
 - use resources to correct spelling, punctuation, grammar, and usage*
- 3.5 publish
 - select a publishing form and produce a completed writing project to share with chosen audience*
- 4.1 assess own strengths and needs for improvement
 - analyze effectiveness of own writing and set goals for improvement*
- 4.2 seek and offer feedback

GAME PROJECT

COMMUNICATION

- 1.1 focus attention
- 1.2 listen and observe to gain and interpret information
- 1.3 check for understanding by asking questions and paraphrasing
- 2.1 communicate clearly to a range of audiences for different purposes
- 2.4 use effective language and style
use language that is grammatically correct, precise, engaging and well-suited to topic, audience, and purpose
- 2.5 effectively use action, sound, and/or images to support presentations
- 4.1 assess strengths and need for improvement
assess own and others' communication strengths and needs and set goals for improvement
- 4.2 seek and offer feedback
seek and use feedback to improve communication; offer suggestions and comments to others

MATHEMATICS

- 1.1 understand and apply concepts and procedures from number sense
number and numeration, computation, and estimation
- 1.2 understand and apply concepts and procedures from measurement
attributes and dimensions, approximation and precision, and systems and tools
- 1.3 understand and apply concepts and procedures from geometric sense
shape and dimension, and relationships and transformations
- 2.1 investigate situations
by searching for patterns and exploring a variety of approaches
- 2.3 construct solutions
by choosing the necessary information and using the appropriate mathematical tools
- 3.1 analyze information
from a variety of sources; use models, known facts, patterns and relationships to validate thinking
- 4.1 gather information
read, listen, and observe to access and extract mathematical information
- 4.2 organize and interpret information
- 4.3 represent and share information
share, explain, and defend mathematical ideas using terms, language, charts, and graphs that can be clearly understood by a variety of audiences
- 5.1 relate concepts and procedures within mathematics
recognize relationships among mathematical ideas and topics

GAME PROJECT

ART

1.1 Understands arts concepts and vocabulary

1.2 Develops arts skills and techniques

2.1 Applies a creative process in the arts:

- **Conceptualizes** the context or purpose
- **Gathers** information from diverse sources
- **Develops** ideas and techniques
- **Refines** work based on feedback

3.2 Uses the arts to communicate for a specific purpose

3.3 Develops personal aesthetic criteria to communicate artistic choices

ELECTRICITY

READING

- 1.2 Use vocabulary (word meaning) strategies to comprehend text.
- 2.3 Expand comprehension by analyzing, interpreting, and synthesizing information and ideas in literary and informational text.
- 3.2 Read to perform a task.

COMMUNICATION

- 1.1 focus attention
- 1.2 listen and observe to gain and interpret information
- 1.3 check for understanding by asking questions and paraphrasing
- 2.1 communicate clearly to a range of audiences for different purposes
- 2.3 use effective delivery
 - adjust speaking strategies for a variety of audiences and purposes by varying tone, pitch, and pace of speech to create effect and aid communication*
- 2.4 use effective language and style
 - use language that is grammatically correct, precise, engaging and well-suited to topic, audience, and purpose*
- 3.1 use language to interact effectively and responsibly with others

MATHEMATICS

- 1.1 understand and apply concepts and procedures from number sense
 - number and numeration, computation, and estimation*
- 1.2 understand and apply concepts and procedures from measurement
 - attributes and dimensions, approximation and precision, and systems and tools*
- 1.5 understand and apply concepts and procedures from algebraic sense
 - relations and representations, and operations*
- 2.2 formulate questions and define the problem
- 2.3 construct solutions
 - by choosing the necessary information and using the appropriate mathematical tools*

ELECTRICITY

MATHEMATICS

3.1 analyze information

from a variety of sources; use models, known facts, patterns and relationships to validate thinking

3.2 predict results and make inferences and make conjectures based on analysis of problem situations

3.3 draw conclusions and verify results

support mathematical arguments, justify results, and check for reasonableness of solutions

4.1 gather information

read, listen, and observe to access and extract mathematical information

4.3 represent and share information

share, explain, and defend mathematical ideas using terms, language, charts, and graphs that can be clearly understood by a variety of audiences

5.1 relate concepts and procedures within mathematics

recognize relationships among mathematical ideas and topics

5.2 relate mathematical concepts and procedures to other disciplines

identify and apply mathematical thinking and notation in other subject areas

5.3 relate mathematical concepts and procedures to real-life situations

understand the connections between mathematics and problem solving skills used every day at work and at home

SCIENCE

1.3 Changes: Understand how interactions within and among systems cause changes in matter and energy.

2.1 Investigating Systems: Develop the knowledge and skills necessary to do scientific inquiry.

2.2 Nature of Science: Understand the nature of scientific inquiry

3.1 Designing Solutions: Apply knowledge and skills of science and technology to design solutions to human problems or meet challenges.

3.2 Science, Technology and Society: Analyze how science and technology are human endeavors, interrelated to each other, to society, and to the workplace and the environment.

ELECTRICITY

ART

1.2 Develops arts skills and techniques

2.1 Applies a creative process in the arts:

- **Develops** ideas and techniques
- **Organizes** arts elements, forms, and/or principles into a creative work
- **Refines** work based on feedback

Co2 CARS

READING

- 1.1 Use word recognition skills and strategies to read and comprehend text.
- 1.2 Use vocabulary (word meaning) strategies to comprehend text.
- 1.3 Build vocabulary through wide reading.
- 1.4 Apply word recognition skills and strategies to read fluently.
- 2.1 Demonstrate evidence of reading comprehension.
- 2.2 Understand and apply knowledge of text components to comprehend text.
- 3.1 Read to learn new information.
- 3.2 Read to perform a task.

WRITING

- 1.1 develop concept and design
 - develop a topic or theme; organize written thoughts with a clear beginning, middle, and end; use transitional sentences and phrases to connect related ideas; write coherently and effectively*
- 1.2 use style appropriate to the audience and purpose
 - use voice, word choice, and sentence fluency for intended style and audience*
- 1.3 apply writing conventions
 - know and apply correct spelling, grammar, sentence structure, punctuation, and capitalization*
- 2.1 write for different audiences
- 2.2 write for different purposes
 - such as telling stories, presenting analytical responses to literature, persuading, conveying technical information, completing a team project, explaining concepts and procedures*
- 3.1 prewrite
 - generate ideas and gather information*
- 3.2 draft
 - elaborate on a topic and supporting ideas*
- 3.3 revise
 - collect input and enhance text and style*

Co2 CARS

WRITING

3.4 edit

use resources to correct spelling, punctuation, grammar, and usage

3.5 publish

select a publishing form and produce a completed writing project to share with chosen audience

4.1 assess own strengths and needs for improvement

analyze effectiveness of own writing and set goals for improvement

4.2 seek and offer feedback

COMMUNICATION

1.1 focus attention

1.2 listen and observe to gain and interpret information

1.3 check for understanding by asking questions and paraphrasing

2.1 communicate clearly to a range of audiences for different purposes

2.4 use effective language and style

use language that is grammatically correct, precise, engaging and well-suited to topic, audience, and purpose

2.5 effectively use action, sound, and/or images to support presentations

MATHEMATICS

1.1 understand and apply concepts and procedures from number sense

number and numeration, computation, and estimation

1.2 understand and apply concepts and procedures from measurement

attributes and dimensions, approximation and precision, and systems and tools

1.3 understand and apply concepts and procedures from geometric sense

shape and dimension, and relationships and transformations

2.1 investigate situations

by searching for patterns and exploring a variety of approaches

2.2 formulate questions and define the problem

3.1 analyze information

Co2 CARS

from a variety of sources; use models, known facts, patterns and relationships to validate thinking

3.2 predict results and make inferences and make conjectures based on analysis of problem situations

3.3 draw conclusions and verify results

support mathematical arguments, justify results, and check for reasonableness of solutions

4.1 gather information

read, listen, and observe to access and extract mathematical information

4.2 organize and interpret information

5.1 relate concepts and procedures within mathematics

recognize relationships among mathematical ideas and topics

5.2 relate mathematical concepts and procedures to other disciplines

identify and apply mathematical thinking and notation in other subject areas

5.3 relate mathematical concepts and procedures to real-life situations

understand the connections between mathematics and problem solving skills used every day at work and at home

Co2 CARS

SCIENCE

1.2 Structures: Understand how components, structures, organizations, and interconnections describe systems.

1.3 Changes: Understand how interactions within and among systems cause changes in matter and energy.

2.1 Investigating Systems: Develop the knowledge and skills necessary to do scientific inquiry.

2.2 Nature of Science: Understand the nature of scientific inquiry

3.1 Designing Solutions: Apply knowledge and skills of science and technology to design solutions to human problems or meet challenges.

3.2 Science, Technology and Society: Analyze how science and technology are human endeavors, interrelated to each other, to society, and to the workplace and the environment.

ART

2.1 Applies a creative process in the arts:

- **Gathers** information from diverse sources
- **Develops** ideas and techniques
- **Refines** work based on feedback
- **Presents** work to others

3.2 Uses the arts to communicate for a specific purpose

3.3 Develops personal aesthetic criteria to communicate artistic choices

A spiral-bound notebook with a textured, light brown cover. The notebook is oriented vertically, with the silver spiral binding on the left side. The cover has a dark brown border. In the center of the cover, the words "THE" and "END" are printed in a large, black, serif font, stacked vertically.

THE
END