

# IN THE AIR

**Tools for Learning About Airborne Toxics Across the Curriculum**

**K-3** EDUCATION MODULE

**Developed By:**  
Missouri Botanical Garden's  
EarthWays Center

[www.intheair.org](http://www.intheair.org)





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# IN THE AIR

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## Foreword

Most students will never be scientists or engineers. If we truly want the full spectrum of students and adults to gain greater understanding about air pollution and airborne toxics, using this knowledge to affect daily decisions, then we need to meet them in their non-science interest areas. *In The Air: Tools for Learning About Airborne Toxics Across the Curriculum* uses the multi-disciplinary breadth of education – reading and communication arts, mathematics, social studies, science, art, etc. – to explore how our individual and collective behaviors produce airborne toxics. The airborne toxics information used as the basis in the modules is from the perspective of the U.S. Environmental Protection Agency, the funder of this project.

The origin of these materials came from the discovery that there was very little available to help people understand airborne toxics. Activities on acid rain or climate change were easily found, but not on airborne toxics. The St. Louis Community Air Project and the North Side (St. Louis) Clean Air Project were looking for ways to help their communities understand and manage airborne toxics. Educational material goals were to increase knowledge about air pollution (as it related to airborne toxics) and to make connections between behaviors and air quality. They had no access to appropriate materials. New materials had to:

- be low/no-cost and be usable across all age and skill levels (Kindergarten through Adult);
- use engaging multi-disciplinary activities aligned with current educational needs and standards;
- be designed to be effectively used for environmental education, meaning to be fair, accurate, action oriented, instructionally sound, useable, of appropriate depth and with an emphasis on skill building;
- emphasize how one's choices impact human health and include connections among air, water and soil.

A specialized science education is not needed to understand the concepts presented in these modules. Users will be able to understand and take specific actions to improve their air quality. We developed accessible and appropriate materials containing activities for all grade levels, formatted into the following modules: K-3, 3-6, 6-8, 9-12 and Adult. All materials have been correlated to National and Missouri education standards. The North American Association for Environmental Education's *Environmental Education Materials: Guidelines for Excellence* were used to ensure the modules met the guidelines to be well-rounded environmental education materials. We established an extensive review process using four review panels: EPA science specialists, non-EPA science specialists, formal and non-formal educators, and community members. We greatly appreciate the 69 individuals who assisted in the review process. Visit [www.intheair.org](http://www.intheair.org) where you may download all materials for free as well as provide comments and suggestions for future additions. For more information about the modules you may also call 314-577-0220.


Each module has: A) Teacher's Guide with a Module Overview, Goals, and Correlations; B) Pre- and Post-Activities; C) Core Activity—the primary activity for the module; D) One to five Connecting Activities—activities that supplement the concepts in the Core Activity, but they also stand alone as individual activities; E) Appendix—background information on airborne toxics such as key terms, risk assessment information, and a brief history on clean air efforts in the U.S.; F) Further reading and research references; G) Evaluation form.

Modules are coordinated so that all activities complement one another. The entire module may be implemented in the classroom as a unit, or you may choose to do just individual activities from one or more units as each group has different needs, interests and abilities.

Our greatest appreciation goes to the writers of these materials, Margaret Lilly and Eleanor Hall. Their creativity, incredible writing abilities and excellent understanding of the educational needs of all ages along with their belief in educating in this topic is what enabled these modules to be the exceptional materials they are today. Thank you, Margaret and Ellie.

Certainly a final thanks is due to those who choose to use *In The Air: Tools for Learning About Airborne Toxics Across the Curriculum* with their students. Without you, this excellent work goes nowhere. Each educator has the power to make a difference!

Glenda Abney, Missouri Botanical Garden  
Marcus G. Rivas, U.S. Environmental Protection Agency  
Project Managers  
December, 2004



Dear Educators,

Humans are increasingly altering Earth's land, water, and atmosphere on local, regional, and global levels. We all need to understand that our actions do impact our living planet. *In The Air: Tools for Learning About Airborne Toxics Across the Curriculum* addresses how individual actions specifically alter the air, which in turn affects other aspects of our environment including the soil, the water, and all plants and animals. Coupled with this understanding, the lessons in *In The Air* provide tools to better manage behaviors that can be implemented where we live – in our local towns and cities and in our homes. I encourage you to utilize these excellent materials with the students and adults you work with.

We've enjoyed working on this project with the fine staff at the U.S. EPA. With your help, the information and ideas in these materials will make a difference to people of all ages. Thank you for your efforts. What a great way to start making a positive and long lasting impact, educating others.

Sincerely,  
Peter H. Raven  
Director  
Missouri Botanical Garden

Dear Educators,

The U.S. Environmental Protection Agency (U.S. EPA) and its partners have developed a new set of educational materials. These educational materials will help us all improve our personal health and become better stewards of the environment. Healthier air, cleaner water, and better protected lands describe our mission. *In The Air: Tools for Learning About Airborne Toxics Across the Curriculum* will enable us all to be more deliberate in our choices and behaviors for improved personal health and a better environment. The decisions we make regarding products we use and how we use them make lasting impacts on air quality. The learning and behavior changes that will result after presenting the activities in these modules will make a positive and long-lasting difference in your students.

We appreciate your interest in these exciting and effective materials. Without your help, these outstanding modules developed by the staff of Missouri Botanical Garden and U.S. EPA wouldn't reach the intended audience. As an educator who uses these materials, you also are a critical part of this project. Thank you for using *In The Air: Tools for Learning About Airborne Toxics Across the Curriculum*.

Sincerely,  
James B. Gulliford  
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# "In The Air" MODULE MATRIX

[www.intheair.org](http://www.intheair.org)



CORE & CONNECTING ACTIVITIES		MAIN SUBJECT AREAS	DESCRIPTION OF ACTIVITY
<b>6-8 Module</b>	Core Activity: Puppet Show "Gloomy-Doomy Go Away!"	Health, Science, Language Arts, Fine Arts	Students participate in a puppet show to learn about the importance of clean air for personal health and safety.
	Pre-Activity #1 "Dirty Air Cards"	Health, Science	Students learn about some sources of air pollution.
	Pre-Activity #2 "Making Puppets"	Fine Arts	Students make puppets.
	Connecting Activity #1 "Clean Air /Dirty Air Worksheet"	Health, Science	Students identify cleaner air choices.
	Connecting Activity #2 "Clean Up on Gloomy-Doomy"	Health, Science	Students match polluting situations with alternative actions.
	Connecting Activity #3 "Now You See It, Now You Don't"	Health, Science	Students use their senses in identifying a potential "pollutant".
	Core Activity: Chapter Book "Matt Tackles Air Toxics"	Health, Language Arts, Science	Students read a chapter book in which a group of students explore the sources of pollution within their community and learn what choices people make to protect their air. Connecting activities are integrated within the story.
	Connecting Activity #1 "Now You See It, Now You Don't"	Health, Science	Students use their senses in identifying a potential "pollutant".
	Connecting Activity #2 "Pee Yew! Is That You?"	Health, Language Arts, Math, Science, Social Studies	Students conduct a mapping activity that demonstrates the affect of wind on airborne pollution and the pervasiveness of mobile source pollution while reinforcing the concept that we all share the same air. "Town Hall Meeting" skit allows students to examine how environmental issues interplay with other economic and social issues.
	Connecting Activity #3 "In A Shroud Of Smoke"	Fine Arts, Language Arts, Social Studies	Students analyze editorial cartoons from the 1930's to learn about an historic pollution event in St. Louis that impacted our nation's clean air efforts. Students develop their own editorial cartoon to draw attention to a current environmental issue that is important to them.
<b>3-6 Module</b>	Core Activity: Classroom Game "Cleaner Air Everywhere"	Health, Language Arts, Science, Social Studies	Students compete in a classroom game that demonstrates the impact of governmental and individual decisions on our environmental quality and pocketbook.
	Connecting Activity #1 "Pee Yew! Is That You?"	Health, Language Arts, Math, Science, Social Studies	Students conduct a mapping activity that demonstrates the affect of wind on airborne pollution and the pervasiveness of mobile source pollution while reinforcing the concept that we all share the same air. "Town Hall Meeting" skit allows students to examine how environmental issues interplay with other economic and social issues.
<b>K-3 Module</b>	Core Activity: Chapter Book "Matt Tackles Air Toxics"	Health, Language Arts, Science	Students read a chapter book in which a group of students explore the sources of pollution within their community and learn what choices people make to protect their air. Connecting activities are integrated within the story.
	Connecting Activity #1 "Now You See It, Now You Don't"	Health, Science	Students use their senses in identifying a potential "pollutant".



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# “In The Air” MODULE MATRIX

CORE & CONNECTING ACTIVITIES		MAIN SUBJECT AREAS		DESCRIPTION OF ACTIVITY
6-8 Module (cont.)	Connecting Activity #2 “Are Household Chemicals Safe?”	Health, Science		Students learn how to read a warning label and conduct a classroom investigation to determine if less hazardous cleaning products do an effective job.
	Connecting Activity #3 “Tiptoe Through the Toxics”	Health, Math, Science, Social Studies		Students construct a large grid in a gymnasium, large classroom or outdoor area throughout which several “pollutants” are scattered and mapped illustrating deposition. A watershed is then configured into the results.
9-12 Module	Core Activity: “Constructing a Continuum of Commonly Held Beliefs About the Magnitude of Airborne Toxics”	Health, Science, Social Studies		Students construct a continuum of common beliefs about the seriousness of airborne toxics. Strong emphasis is placed on social themes including scientific ethics, corporate integrity, and personal responsibility. Connecting Activities examine the five belief statements in more detail. A creative arts pre/post activity is used as an assessment tool.
	Connecting Activity #1 Belief: “The Magnitude and Urgency of Airborne Toxics Problems Have Been Greatly Overstated”	Health, Science, Social Studies		Students examine reasons for the differences of opinions about the seriousness of airborne toxics. In the process students study the ways scientists gather and interpret data and make predictions based on their findings.
	Connecting Activity #2 Belief: “Why Worry About Airborne Toxics? What You Don’t Know Won’t Hurt You”	Health, Language Arts, Science, Social Studies		Students explore why people want to know about some unpleasant situations but not others. Students will look at the how the media can influence their ideas about personal risk.
	Connecting Activity #3 Belief: “Airborne Toxics Are a Nuisance, But They Seriously Affect Only a Few People”	Health, Science, Social Studies		Students review the hydrologic cycle and are introduced to the need for a multi-media (air water, soil) approach to pollution control.
	Connecting Activity #4 Belief: “Airborne Toxics Are a Serious Problem, But I’m Not Responsible”	Fine Arts, Health, Science, Social Studies		Students work in teams, to complete a “degree of accountability” worksheet. Examples of personal accountability are reinforced in a short humorous skit.
	Connecting Activity #5 Belief: “Airborne Toxics Are a Critical Problem; However, the Effects May Be Remediable”	Health, Language Arts, Science, Social Studies		Students work in small groups to learn about current efforts being made to improve air quality and reduce pollution by government, environmental organizations and individuals. After the presentation of their findings to the class, students draw conclusions as to the validity of this belief statement.
	Core Activity: “Detox Your Domicile” Home Improvement Skit	Fine Arts, Health, Science, Social Studies,		Adults participate in a simulated home tour presented in a home improvement show format. Moving from room to room, participants will learn the economics, health concerns, and social responsibility issues relating to airborne toxics within our homes. Participants will leave with tools and strategies for improving their personal and community environments.

# IN THE AIR

## IN THE AIR

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## Teacher's Guide

K-3 EDUCATION MODULE



MISSOURI  
BOTANICAL  
GARDEN



# IN THE AIR

## K-3 Teacher's Guide

### MODULE OVERVIEW

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By preparing and viewing a puppet show, students learn how air gets dirty and that we can have cleaner air if everyone helps make it so. Three Connecting Activities are associated with the puppet show to demonstrate simple facts about air pollution and pollution prevention. Everyone—even young children—can help make the air cleaner by being informed and by making personal choices that result in cleaner air.

Students from higher grades are recruited to present the puppet show, providing opportunities for students of different ages to interact. The upbeat, sometimes whimsical, script is designed to make the necessary points about air pollution without causing anxiety in young minds. The script also allows the audience to interact with the show at various times. Suggestions for making puppets, theaters, scenery, and props are included.

### MODULE GOALS

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- To present basic facts about air pollution to young children in ways that avoid causing undue anxiety
- To emphasize that having clean air is everyone's responsibility
- To assure students that something can be done to clean up dirty air, and that they can help

### MODULE OBJECTIVES

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**At the completion of this module, students will be able to do the following:**

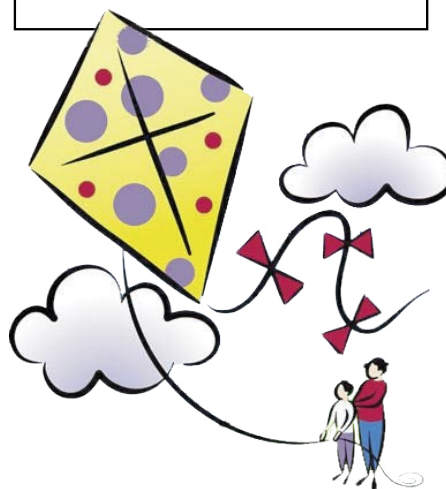
- Name two things people do everyday that makes the air dirty.
- State two actions they can personally take to help make the air cleaner.
- Tell why having clean air is important to people who have breathing problems such as asthma.
- Relate that pollutants may or may not be easy to detect by our human senses.

#### Preparation Time:

One to three hours will be needed to read the Teacher's Guide and to integrate connecting activities.

#### Presentation Time:

Time required varies depending on activities chosen.



### Important Notes to Teachers About This Module

#### A MULTIDISCIPLINARY APPROACH

This module consists of a core activity and three Connecting Activities that incorporate lessons from different disciplines including personal health, communication arts, science, fine arts, and social studies.

#### AGE CAPABILITIES FOR CORE ACTIVITY

Presentation of the puppet show itself demands greater motor and vocabulary skills than most K-3 students have developed. You will need to recruit older students to present the show, perhaps as a special project for a language arts class or a school club. Make the most of the relationship between older and younger students by involving them in a simple social event.

#### TIME CONSTRAINTS

In their daydreams, writers conjure up visions of stress-free educators happily teaching every precious word of their manuscripts to fascinated students. In real life, however, they know that such a scenario is an extreme form of wishful thinking. This module on airborne toxics, therefore, is designed to fit many different circumstances and time frames. Each part of the module is designed to stand alone. The following are suggestions for modifying the module without sacrificing the previously stated goals.



**Most Time:** Put on the puppet show (Core Activity) and do the Connecting Activities as presented in the module. If feasible, share the load by team-teaching with others outside your area of expertise.

**Less Time:** Have students act out the puppet show script in the classroom, or omit one or more of the Connecting Activities.

**Least Time:** Omit the puppet show, but use one or more of the connecting activities about dirty and clean air. If you choose this option, teach Pre-Activity #1 to give students the necessary background for carrying out the Connecting Activities. Read the Core Activity puppet show script "Gloomy Doomy Go Away." Additional background information can be found in the appendix at the end of the module.

-----  
**Note:** Another time-saving option: With the exception of Sammy Smokestack you may substitute other hand puppets for the cast of the puppet show and simplify the backgrounds.



## Correlation with National Education Standards Summary

A brief description of the standards numbered below is included following the chart.

### FINE ARTS

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SOURCE: Consortium of National Arts Education Associations

<http://www.education-world.com/standards/national/arts/index.shtml>

PRE ACTIVITY	CORE ACTIVITY	CONNECTING ACTIVITY - 1	CONNECTING ACTIVITY - 2	CONNECTING ACTIVITY - 3
"Dirty Air Cards" "Making Puppets"	"Puppet Show: Gloomy-Doomy Go Away!"	"Clean Air /Dirty Air Worksheet"	"Clean Up on Gloomy-Doomy"	"Now You See It, Now You Don't"
Pre-Activity #2 NA-T. K-4 .2 NA-VA. K-4 .1 .2	NA-T. K-4 .2 .3 NA-VA. K-4 .1 NA-VA. K-4 .2			

### HEALTH

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SOURCE: American Cancer Society

<http://www.education-world.com/standards/national/nph/index.shtml>

PRE ACTIVITY	CORE ACTIVITY	CONNECTING ACTIVITY - 1	CONNECTING ACTIVITY - 2	CONNECTING ACTIVITY - 3
Pre-Activity #1 NPH-H. K-4 .1 .2 .3 .4 .6	NPH-H. K-4 .1 .3 .4 .6	NPH-H. K-4 .1 .2 .3 .4 .6	NPH-H. K-4 .1 .2 .3 .4 .6	NPH-H. K-4 .1 .3

### LANGUAGE ARTS

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SOURCE: National Council of Teachers of English

[http://www.education-world.com/standards/national/lang\\_arts/index.shtml](http://www.education-world.com/standards/national/lang_arts/index.shtml)

PRE ACTIVITY	CORE ACTIVITY	CONNECTING ACTIVITY - 1	CONNECTING ACTIVITY - 2	CONNECTING ACTIVITY - 3
Pre-Activity #1 NL-ENG. K-12 .4	NL-ENG. K-12 .3 .4	NL-ENG. K-12 .4 .5	NL-ENG. K-12 .4	

### SCIENCE

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SOURCE: National Academies of Science

<http://www.education-world.com/standards/national/science/index.shtml>

PRE ACTIVITY	CORE ACTIVITY	CONNECTING ACTIVITY - 1	CONNECTING ACTIVITY - 2	CONNECTING ACTIVITY - 3
Pre-Activity #1 NS. K-4 .1 a, b NS. K-4 .4 a, b NS. K-4 .6 a, b, c	NS. K-4 .1 a, b NS. K-4 .4 a, b NS. K-4 .6 a, b, c	NS. K-4 .1 a, b NS. K-4 .4 a, b NS. K-4 .6 a, b, c	NS. K-4 .1 a, b NS. K-4 .4 a, b NS. K-4 .6 a, b, c	NS. K-4 .1 a, b NS. K-4 .6 a, b, c

### Correlation with National Education Standards- (cont.)

#### SOCIAL SCIENCES

SOURCE: National Council for the Social Sciences (NCSS)  
<http://www.ncss.org/>

Center for Civic Education  
[http://www.education-world.com/standards/national/soc\\_sci/index.shtml](http://www.education-world.com/standards/national/soc_sci/index.shtml)

National Geographic Society  
<http://www.nationalgeographic.com/xpeditions/standards/>

PRE ACTIVITY "Dirty Air Cards" "Making Puppets"	CORE ACTIVITY "Puppet Show: Gloomy-Doomy Go Away!"	CONNECTING ACTIVITY - 1 "Clean Air /Dirty Air Worksheet"	CONNECTING ACTIVITY - 2 "Clean Up on Gloomy-Doomy"	CONNECTING ACTIVITY - 3 "Now You See It, Now You Don't"
Pre-Activity #1 NSS-G. K-12 .5 a, b, c	NSS-G. K-12 .5 a, b, c NSS-C. K-4 .5 d	NSS-G. K-12. 5 a, b, c NSS-C. K-4 .5 d	NSS-G. K-12 .5 a, b, c NSS-C. K-4 .5 d	

#### TECHNOLOGY

SOURCE: International Society for Technology in Education (ISTE)  
<http://www.education-world.com/standards/national/technology/index.shtml>

PRE ACTIVITY	CORE ACTIVITY	CONNECTING ACTIVITY - 1	CONNECTING ACTIVITY - 2	CONNECTING ACTIVITY - 3
	NT. K-12 .2 a, b			

#### FINE ARTS

- NA-T.K-4 .2: Students imagine and clearly describe characters, their relationships, and their environments.
- NA-T.K-4 .3: Students use variations of locomotor and non-locomotor movement and vocal pitch, tempo, and tone for different characters.
- NA-VA.K-4 .1: Students use different media, techniques, and processes to communicate ideas, experiences, and stories; Students use art materials and tools in a safe and responsible manner.
- NA-VA.K-4 .2: Students use visual structures and functions of art to communicate ideas.

#### HEALTH

- NPH-H.K-4 .1: Students will comprehend concepts related to health promotion and disease prevention.
- NPH-H.K-4 .2: Students will demonstrate the ability to access valid health information and health-promoting products and services.
- NPH-H.K-4 .3: Students will demonstrate the ability to practice health-enhancing behaviors and reduce health risks.
- NPH-H.K-4 .4: Students will analyze the influence of culture, media, technology, and other factors on health.

## HEALTH - (CONT.)

- NPH-H.K-4 .6: Students will demonstrate the ability to use goal-setting and decision making skills to enhance health.

## LANGUAGE ARTS

- NL-ENG.K-12 .3: EVALUATION STRATEGIES  
Students apply a wide range of strategies to comprehend, interpret, evaluate, and appreciate texts. They draw on their prior experience, their interactions with other readers and writers, their knowledge of word meaning and of other texts, their word identification strategies, and their understanding of textual features (e.g., sound-letter correspondence, sentence structure, context, graphics).
- NL-ENG.K-12 .4: COMMUNICATION SKILLS  
Students adjust their use of spoken, written, and visual language to communicate effectively with a variety of audiences and for different purposes.
- NL-ENG.K-12 .5: COMMUNICATION STRATEGIES  
Students employ a wide range of strategies as they write and use different writing process elements appropriately to communicate with different audiences for a variety of purposes.

## SCIENCE

- NS.K-4 .1: SCIENCE AS INQUIRY  
As a result of activities in grades K-4, all students should develop:
  - a. Abilities necessary to do scientific inquiry
  - b. Understanding about scientific inquiry.
- NS.K-4 .4: EARTH AND SPACE SCIENCE  
As a result of activities in grades K-4, all students should develop an understanding of:
  - a. Properties of earth materials
  - b. Changes in earth and sky.
- NS.K-4 .6: PERSONAL AND SOCIAL PERSPECTIVES  
As a result of activities in grades K-4, all students should develop an understanding of:
  - a. Personal health
  - b. Changes in environments
  - c. Science and technology in local challenges.

## SOCIAL SCIENCES

- NSS-G.K-12 .5: ENVIRONMENT AND SOCIETY  
As a result of activities in grades K-12, all students should:
  - a. Understand how human actions modify the physical environment
  - b. Understand how physical systems affect human systems
  - c. Understand the changes that occur in the meaning, use, distribution, and importance of resources.
- NSS-C.K-4 .5 ROLES OF THE CITIZEN  
What are the roles of the citizen in American democracy
  - d. What are important responsibilities of Americans?

## TECHNOLOGY

- NTK-K-12 .2: SOCIAL, ETHICAL AND HUMAN ISSUES
  - a. Students understand the ethical, cultural, and societal issues related to technology
  - b. Students practice responsible use of technology systems, information, and software.

### Correlation with Missouri "Show-Me" Standards

#### MISSOURI ASSESSMENT PROGRAM: FOUR PERFORMANCE STANDARDS & SIX KNOWLEDGE STANDARDS

SOURCE: Show-Me Standards and the Missouri Assessment Program,  
Missouri Department of Elementary and Secondary Education, 1998.  
<http://www.dese.mo.gov/standards>

<b>PRE ACTIVITY</b> #1 "Dirty Air Cards" #2 "Making Puppets"	<b>CORE ACTIVITY</b> "Puppet Show: Gloomy-Doomy Go Away!"	<b>CONNECTING ACTIVITY - 1</b> "Clean Air /Dirty Air Worksheet"	<b>CONNECTING ACTIVITY - 2</b> "Clean Up on Gloomy-Doomy"	<b>CONNECTING ACTIVITY - 3</b> "Now You See It, Now You Don't"
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#### PERFORMANCE STANDARDS

<b>Goal 1.</b> Gather and Analyze Information	Pre #1 6, 10 Pre #2 6, 8	6, 10	6, 10	6, 10	2
<b>Goal 2.</b> Communicate Effectively	Pre #1 1 Pre #2 1, 5	1, 5	1	6	
<b>Goal 3.</b> Solve Problems	Pre #1 1	1	1	1	
<b>Goal 4.</b> Make Decisions	Pre #1 1, 7 Pre #2 1	1, 7	1, 7	1, 7	1, 4, 7

#### KNOWLEDGE STANDARDS

<b>#1.</b> Communication Arts	Pre #1 6 Pre #2 6	6	6	6	1
<b>#2.</b> Fine Arts	Pre # 2 1	1			
<b>#3.</b> Health/Physical Education	Pre #1 5, 6	3, 5, 6	5, 6	5, 6	5
<b>#5.</b> Science	Pre #1 8	5, 8	8	8	8
<b>#6.</b> Social Studies		6			

## PERFORMANCE STANDARDS

*Students will demonstrate within and integrate across all content areas the ability to*

### **GOAL #1 - Gather & Analyze Information**

- #2. Conduct research to answer questions and evaluate information and ideas.
- #6. Discover and evaluate patterns and relationships in information, ideas, and structures.
- #8. Organize data, information and ideas into useful forms (including charts, graphs, outlines) for analysis or presentation.
- #10. Apply acquired information, ideas, and skills to different contexts as students, workers, citizens, and consumers.

### **GOAL #2 - Communicate Effectively**

- #1. Plan and make written, oral, and visual presentations for a variety of purposes and audiences.
- #5. perform or produce works in the fine and practical arts.
- #6. apply communication techniques to the job search and to the workplace.

### **GOAL #3 - Solve Problems**

- #1. Identify problems and define their scope and elements.

### **GOAL #4 - Make Decisions**

- #1. Explain reasoning and identify information used to support decisions.
- #4. Recognize and practice honesty and integrity in academic work and in the workplace
- #7. Identify and apply practices that preserve and enhance the safety and health of self and others.

## KNOWLEDGE STANDARDS

*Students in Missouri public schools will acquire a solid foundation which includes knowledge of:*

### **COMMUNICATION ARTS**

- #1. Speaking and writing standard English (including grammar, usage, punctuation, spelling, capitalization).
- #6. Participate in formal and informal presentations and discussions of issues and ideas.

### **FINE ARTS**

- # 1. Become acquainted with process and techniques for the production, exhibition, or performance of one or more of the visual or performed arts.

### **HEALTH / PHYSICAL EDUCATION**

- #3. Diseases and methods for prevention, treatment and control.
- #5. Methods used to assess health, reduce risk factors, and avoid high risk behaviors (such as violence, tobacco, alcohol and other drug use).
- #6. Consumer health issues (such as the effects of mass media and technologies on safety and health).

### **SCIENCE**

- #5. Processes (such as plate movement, water cycle, air flow) and interactions of earth's biosphere, atmosphere, lithosphere and hydrosphere.
- #8. Impact of science, technology and human activity on resources and the environment.

### **SOCIAL STUDIES**

- #6. Relationships of the individual and groups to institutions and cultural traditions.

