

The purpose of this lesson is to develop an understanding for the meaning of vocabulary words during a study or unit about Indoor Air Quality (IAQ).

TOPIC(S)		COMPOSITION OF AIR		DEFINING THE INDOOR ENVIRONMENT
EFFECTS OF INDOOR AIR POLLUTION ON OCCUPANTS		SOURCES OF INDOOR AIR POLLUTION		MOVEMENT OF AIR Natural and mechanical airflow (HVAC)
IDENTIFYING INDOOR ENVIRONMENT POLLUTANTS		SOLVING INDOOR ENVIRONMENT PROBLEMS (Preventing and Fixing)	√	VOCABULARY-Integrates most or all of the preceding topics

OBJECTIVE(S)

The students will be able to demonstrate an understanding of vocabulary words by using the words to create an ABC book.

SCIENCE/HEALTH STANDARD CORRELATIONS

National Science Education Standards, Science Content Standards

6.1 Science as Inquiry

- Levels K-12: Abilities necessary to do scientific inquiry, Understanding about scientific inquiry

6.6 Science in Personal and Social Perspectives

- Levels K-4: Personal Health; Changes in environments
- Levels 5-8: Personal Health; Populations, resources, and environments, Natural hazards
- Levels 9-12: Personal and community health; Environmental quality; Natural and human-induced hazards

Mid-continent Research for Education and Learning (McREL), Science Standards

Earth and Space Sciences 1.1, 1.4, 1.5 and Physical Sciences 8.1, 8.3, 8.5

**See "Curriculum Connections" section for standards that apply to other content areas.*

SUGGESTED GRADE BAND

3-5, 6-8 science

ESTIMATED TIME LENGTH

6 class periods

LESSON PROCEDURES

- Place art supplies (see Materials section) in a central location in the classroom.
- Display several ABC books in a special area in the room. See Resources section for links to book lists.
- Collect reference materials and place them in a central location in the classroom (encyclopedias, dictionaries, thesauruses, [EPA's IAQ Tools for Schools Action Kit](#), articles and books about IAQ). Post a list of IAQ web sites,

- also post sites related to the reference sites, such as www.dictionary.reference.com/. See Resources section for suggested IAQ websites.
4. Select two sample ABC books for a read aloud. Make sure one of the books has simple text and is geared towards younger children, and the other book has more text and additional information geared towards older children.
 5. Read the two ABC books to the class. Have a class discussion about the differences between the books. Discuss the purpose accomplished by both books. Discuss what can be learned from both types of books.
 6. Place students in small groups and give them time to explore a few of the other ABC books. Ask them to have a small group discussion about the characteristics of the ABC books. (Give students 10 -15 minutes to explore and discuss).
 7. As a whole class, make a list on chart paper of ABC book characteristics.
 8. Tell the students that they will be making their own ABC books with vocabulary words for IAQ. They will use each word in context and illustrate it in their ABC books. They can choose the style of writing for their book. For example, they may choose to write poems or rhymes, jokes, list facts, or make charts.
 9. As a class, develop a rubric to evaluate the finished product based on the characteristics and parts of ABC books. In the rubric, include necessary skills such as using a dictionary.
 10. As a class, create a timeline for completion of the project. Post the rubric and timeline on chart paper in the front of the room.
 11. Independently, have students identify an IAQ word or concept phrase to use for each letter of the alphabet using the attached **ABC Book Planning Sheet** (see Materials section). Students can use any of the reference materials, IAQ materials, or websites for assistance during this phase. If students are having difficulty finding words that start with letters like "X", they can use a word that has the letter or the sound that the letter makes somewhere within the word. (For example the word exit for the letter "X").
 12. Approve their **ABC Book Planning Sheet** before moving on to the rough draft.
 13. Students write a rough draft of the ABC book using the **ABC Book Rough Draft Planning Packet** (see Materials section).
 14. Approve their **ABC Book Rough Draft Planning Packet** before moving on to the final draft.
 15. Students create the final draft and bind their ABC books using the paper and art materials of their choice.
 16. Have the students share their books by reading them aloud to a small group of classmates. Display the books in the classroom.

MATERIALS

IAQ Vocabulary List (see IAQ Lessons 14-21 Supplement_Vocabulary List.doc), **ABC Book Planning Sheet**—one per student (see IAQ Lesson 14 Supplement_ABC Book Planning Sheet.doc), **ABC Book Rough Draft Planning Packet**—one per student (see IAQ Lesson 14 Supplement_ABC Book Rough Draft Planning Packet.doc), pencils, heavy weight paper (cardstock or construction) in various sizes and colors, various art supplies and craft scissors, various book binding supplies (hole punches, ribbon, string, etc.).

GROUPING

whole class, small group

ASSESSMENT

Teacher can use the rubric created by the class to evaluate the completed project. Students can self assess using the rubric as well. Teacher can observe during the project for participation during the small group activity and whole class discussion about ABC book characteristics.

MODIFICATIONS/EXTENSIONS

Have the students work in small groups or with partners to create the ABC books. Find an elementary school class to partner with, loan the ABC books to them. Use the computer to publish the ABC books or create online interactive ABC books. Have the ABC books displayed at the school or local library.

Short on time? Since time is so precious, if you are not able to implement this entire lesson, try these activities:

- Assign each student a letter and complete the alphabet book as a class, by having each student create a page.

CURRICULUM CONNECTIONS

Reading and Language Arts, International Reading Association and National Council of Teachers of English Standards, Standards for the English Language Arts

- 4: Students adjust their use of spoken, written, and visual language (e.g., conventions, style, vocabulary) to communicate effectively with a variety of audiences and for different purposes.
- 5: 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
- 12: Students use spoken, written, and visual language to accomplish their own purposes (e.g., for learning, enjoyment, persuasion, and the exchange of information)

Social Studies, Center for Civic Education, National Standards for Civics and Government

- Content Standard K-12, V: What are the Roles of the Citizen in American Democracy? /What are important responsibilities of Americans?

Health, American Alliance for Health, Physical Education, Recreation and Dance (AAHPERD), National Health Education Standards

- Health Education Standard 1, Grades PK-12: Students will comprehend concepts related to health promotion and disease prevention

Technology, International Society for Technology in Education (ISTE), National Educational Technology Standards Project (NETS)

- Performance Indicators 3-5
9: Determine when technology is useful and select the appropriate tool(s) and technology resources to address a variety of tasks and problems. (5, 6)
- Performance Indicators 6-8
5: Apply productivity/multimedia tools and peripherals to support personal productivity, group collaboration, and learning throughout the curriculum. (3, 6)
8: Select and use appropriate tools and technology resources to accomplish a variety of tasks and solve problems. (5, 6)
- Performance Indicators (9-12)
5: Use technology tools and resources for managing and communicating personal/professional information (e.g., finances, schedules, addresses, purchases, correspondence). (3, 4)
8: Select and apply technology tools for research, information analysis, problem solving, and decision making in content learning. (4, 5)

RESOURCES

- [EPA's IAQ Tools for Schools Action Kit, \(3rd Edition\), Reference Guide, Appendix M, Pages 79-84](#)
- http://www.education-world.com/a_books/books065.shtml
- <http://www.suelebeau.com/abcbooks.htm>
- <http://dictionary.reference.com>
- <http://www.epa.gov/schools/>