

The purpose of this lesson is to teach students how ventilation systems are used to provide quality air in the indoor environment.

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

OBJECTIVE(S)

The student will be able to identify key information from a video resource using an advanced organizer (bingo).

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, 6-12 science

ESTIMATED TIME LENGTH

1 class period

LESSON PROCEDURES

The lesson is designed to be used with the [EPA's IAQ Tools for Schools Action Kit](#). You must have the [IAQ TfS Taking Action & Ventilation Basics Video](#) (see Materials section) to implement this lesson.

1. Distribute **Ventilation Video Bingo Cards** (see Materials section) to students, direct them to cut and paste slips to make their card.
2. Have students work in small groups to familiarize themselves with questions on the bingo card.
3. Introduce and show [*IAQ Tfs Taking Action & Ventilation Basics Video*](#) (15 min.) Ask the students to complete the bingo card during the video. Try to get a coverall bingo.
4. After the video have a class discussion and ask students share their answers.

*If you choose, give prizes to bingo winners with correct answers. Offer different prizes for the first person that gets a traditional bingo, postage stamp bingo, picture frame bingo, and leading up to the grand prize for coverall bingo.

MATERIALS

Ventilation Video Bingo Cards—one per student (see IAQ Lesson 5 Supplement_Ventilation Video Bingo Cards.doc), bingo markers, [*IAQ Tfs Taking Action & Ventilation Basics Video*](#) from the [*EPA's IAQ Tools for Schools Action Kit*](#), prizes (optional)

**To order EPA's Indoor Air Quality Tools for Schools (IAQ Tfs) Action Kit or any of the supplemental materials found in the Kit, contact IAQ INFO at 800-438-4318 or visit <http://www.epa.gov/iaq/schools/actionkit.html>.*

GROUPING

whole class, small group, independent

ASSESSMENT

Collect and evaluate the bingo cards for accuracy.

MODIFICATIONS/EXTENSIONS

Have students make predictions about the answers to the questions on the bingo card before watching the video. Invite a maintenance/HVAC technician or custodian to the classroom to talk to the students.

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
- 6: Students apply knowledge of language structure, language conventions (e.g., spelling and punctuation), media techniques, figurative language, and genre to create, critique, and discuss print and nonprint texts
- 7: Students conduct research on issues and interests by generating ideas and questions, and by posing problems. They gather, evaluate, and synthesize data from a variety of sources (e.g., print and nonprint texts, artifacts, people) to communicate their discoveries in ways that suit their purpose and audience
- 8: Students use a variety of technological and information resources (e.g., libraries, databases, computer networks, video) to gather and synthesize information and to create and communicate knowledge
- 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

RESOURCES

- [EPA's IAQ Tools for Schools Action Kit](#) (3rd Edition)