Lesson: Instrument Experimentation
5th Grade
STANDARDS: California

2. Plants and animals have structures for respiration, digestion, waste disposal, and transport of materials. As a basis for understanding this concept:

    a. Students know how blood circulates through the heart chambers, lungs, and body and how carbon dioxide (CO_2) and oxygen (O_2) are exchanged in the lungs and tissues.
    b. Students know plant and animal cells break down sugar to obtain energy, a process resulting in carbon dioxide (CO_2) and water (respiration).

5.0 Connecting and Applying What Is Learned in the Visual Arts to Other Art Forms and Subject Areas and to Careers.

5.1 Students apply what they learn in the visual arts across subject areas. They develop competencies and creative skills in problem solving, communication, and management of time and resources that contribute to lifelong learning and career skills. They also learn about careers in and related to the visual arts.
5.2 Identify and design icons, logos, and other graphic devices as symbols for ideas and information.

Science: Experimentation with Instruments

Motivation: Ask students to make a list of everything they do with breath. Remind them they do more than just breathing. Ask them to think about their daily activities. One example is blowing on a hot drink to cool it off.

Group Activity: Tell students that many instruments involve breathing. Watch *Trumpet Techniques* and *Tricks on the Trumpet* under *The Trumpet* in the e-presentation *Jazz* by Wynton Marsalis. While they watch, ask them to pay attention to how Marsalis uses breath. Also tell them to write down the three steps to producing sound on the trumpet. Ask them to hypothesize how Marsalis made the animal sounds in *Tricks on the Trumpet*. If possible, give students kazoos or other wind instruments to experiment with. Ask them to pay attention to how they make sounds.

Independent Activity: Remind students of how gas exchange occurs in the lungs. Have them draw diagrams of how Marsalis produced sound using a trumpet. Have them show gas exchange occurring in the lungs, when the diaphragm lifts, and ask them how all the parts of the body Marsalis uses receive oxygen. Remind them that oxygen is not just

used in breath, and that every motion Marsalis makes requires ATP from blood and oxygen. Have them trace the path of the blood through the body parts Marsalis uses. If time permits, have them draw or fill in similar diagrams of themselves when they produced these noises.