

Traveling Through Air
Finding Out About Heated Air
Teacher Notes for Grades K-2

Main Objectives

- Finding out about heat
- Knowing that heat is a source of energy
- Knowing that heat rises
- Finding out about hot air balloons

Historical Information

The hot air balloon was the very first invention that lifted people up into the sky. In 1783, Joseph and Etienne Montgolfier, French brothers, first ascended in a hot air balloon and flew across Paris, France, much to the dismay of everyone on the ground.

The history of flight is a fascinating subject. You may wish to extend this area of students' learning through library and Internet research.

Cross-Curricular Learning Objectives

Math

- Developing measuring skills

Science

- Finding out that hot air rises
- Finding out that heat has energy
- Finding out that there are many sources of heat

Technology

- Making a hot air balloon
- Developing a design for a hot air balloon
- Working as a team to construct a hot air balloon
- Working from instructions

Language Arts

- Developing effective communication skills in a variety of settings
- Expanding listening and speaking vocabularies including following oral directions, asking for clarifications and explanations of words and ideas, and using words that reflect a growing range of interest and knowledge.
- Applying knowledge of how print is organized and read
- Demonstrating comprehension of non-fiction

History/Social Science

- Describing significant achievements of important scientists and inventors

Materials, Tools & Equipment

Materials, tools, and equipment required to complete the activities in this book are listed below.

Activity 1: Finding Out About Heat

shallow dark container	water
thermometer	photocopies of spiral template
thin thread	clear tape
scissors	

Activity 2: Experimenting With Rising Heat

thin plastic bag	clear tape
hair blow dryer	

Challenge: Hot Air Balloon

thin plastic bag	thread
modeling clay	clear tape
hair blow dryer	

Supplemental Materials:

General classroom art supplies such as crayons, markers, and construction paper may be made available to students at the teacher's discretion.

Resources

You will need photographs of hot air balloons. Download and print photographs and illustrations for classroom display and student learning resources.

Vocabulary

energy	heat	expand	source	friction
exposed	volcanoes	lava	erupt	temperature
fuel	surface	observe	volume	area
density	counterweight			

Evaluation

Students will be able to demonstrate their understanding of the following:

- That heat is a source of energy
- That heat rises
- That heat is essential to life
- That energy is what makes things happen
- How hot air balloons work
- How to plan and construct a hot air balloon
- How to work from instructions

Students may demonstrate their knowledge through teacher questioning, observation, and written work.

Ask students to record what they have found out through drawings. Write down what they can tell you. Add their ideas and what they have learned into a class book.

Teacher Preparation

- The teacher should lead all activities.
- Demonstrations and discussions can take place with the whole class.
- All practical work should be with groups of 2 to 4 students.
- Students should wear aprons for all practical work.
- Safety glasses must be used whenever students are involved in cutting, drilling, or sanding activities.