



More Than Just Hot Air Lesson Overviews

Lesson 1 – Hot Air Balloon Historical Research

Third Grade CSO's: RLA 3.1.8, 3.1.10, 3.1.14, 3.2.2, 3.2.3, 3.2.4, 3.2.10, 3.2.12, SS 3.5.1, 3.5.4, 3.5.6, SC.3.1.1, 3.1.2, 3.2.2, 3.2.3, 3.3.1, 3.3.2, 3.5.1, 3.6.4, TEC 3.3.1, 3.3.3, 3.5.1.

Skill Areas: Prior knowledge will be activated for the students through a True/False Pretest. The students will research the invention of hot air balloons and parachutes and discuss how history was changed. The students will learn to use information from multiple Internet resources to find answers and write a report. The students will use the correct writing process to complete assignments.

Materials: Pretest on Overhead Transparency with worksheet & answer key, Overhead Projector, Adventures in Air Travel Scavenger Hunt worksheet & answer key, Computer access, Internet access, Creative Writer (optional)

Learner Outcomes: Students will successfully complete the pretest, scavenger hunt, and write a story or article for class newspaper.

Lesson 2 - Parachutes

Third Grade IGO's: P.E.: PE 3.5.1, MA 3.5.1, 3.5.4, TEC 3.3.1, 3.3.2

Skill Areas: The students will understand as the parachute fills with air, it rises to form a canopy above them. The students will understand that the chute permits enough air to escape in order to stabilize the parachute as it slowly descends. The students will demonstrate actions that facilitate communication and cooperation in groups. The students will demonstrate rhythmical, expressive, and creative activities. The students will be able to compare and analyze the collected data.

Materials: regulation size parachute, stop watch, recorded music, flight log worksheets

Learner Outcomes: Students will use a variety of basic and advanced movement forms in the development of motor skills and apply basic and advanced concepts of statistics and data analysis.

Lesson 3

Third Grade CSO's: RLA.3.1.1, SC.3.2.7, SC.3.3.1, SC.3.3.2, SC.3.5.1

Skills Areas: Identify the parts of the balloon using a fill in the blank worksheet and colored pencils. To become familiar with ballooning terms and match correct definitions.

Materials: Overheads, Projector, Overhead Markers, Matching and Fill-in-the-Blank Worksheets, Colored Pencils

Learner Outcomes: The students will work independently to define parts of a balloon with balloon fill-in-the-blank and color each part to distinguish between each of the parts.

Lesson 4 – Hot Air Balloon Flight and Literature Connections

Third Grade CSO's: RLA 3.1.3, 3.1.4, 3.1.7, 3.1.10, 3.1.11, 3.1.14, 3.2.3, 3.2.9, 3.2.10, 3.2.12, SC 3.4.5, 3.4.7. TEC 3.1.2, 3.3.1

Skill Areas: Students will become aware that fictional books contain nonfiction information.

They will identify terms which explain how balloons fly and use these terms to write their own explanations, in paragraph form, using information given in the fictional books and provided in the power point presentation on hot air ballooning.

Materials: Books, Power Point Presentation on Disc, Projection System, Computer Lab Word Processing Software.

Learner Outcomes: Small and large group observations will be made and the completion of a paragraph summary will act as the assessment tool.



Lesson 5 – Hot Air Ballooning and Convection

Third Grade CSO's: SC 3.2.5, 3.3.2, 3.3.3, 3.4.5, 3.4.6, 3.4.7, 3.4.9

Skill Areas: The students will visualize the movement of heat through convection a spiral cut wheel and heat source to see how heat energy can be transferred by convection.

Materials: clay, tape, birthday candles, thread, matches, scissors, aluminum foil, spiral and wheel worksheet.

Learner Outcomes: Students will communicate their understanding by writing a short paragraph caption to display with their hanging convection spiral.

Lesson 6

Third Grade CSO's: SC.3.1.1, SC.3.2.1, SC.3.2.4, SC.3.2.5, SC.3.3.2

Skills Areas: The student will be able to work in a lab environment safely and be able to identify variables that will affect their balloons. They will manipulate these variables in their design and construction of their “experiments.” The students will use the following materials to create a “hot air balloon” that we will test / launch in the classroom.

Materials: Dry Cleaning Bag, Hair Dryer, Tape, Staples, Paper Clips

Learner Outcomes: The students will be working in groups to do a discovery learning activity. They will be using the above materials to design a balloon in the lab setting. This will be a hands-on activity for the students showing lift of Hot Air

Lesson 7

Third Grade CSO's: SC.3.2.1, SC.3.2.7, SC.3.3.2, SC.3.6.2

Skills Areas: The students will engage in decision making activities to design hot air balloons on paper and then take the 3-D version and turn it into a 2-D version. They will need to be able to show what the back side of their balloon looks like even though they are unable to see it in the 3-D version.

Materials: Colored Pencils, Markers, Cameron Balloon Template Series V

Learner Outcomes: The students will work independently to creatively design their own hot air balloon using the template given. A demonstration will be done on the overhead so the students understand how to do this activity. The students must use their own creativity skills and be able to predict what they cannot see on a small Cameron Balloon.

Lesson 8

Third Grade CSO's: SC.3.1.3, SC.3.2.1, SC.3.2.2, SC.3.2.7, SC.3.3.1, SC.3.3.2, SC.3.4.22, SC.3.5.2

Skills Areas: The students will explore occupational opportunities in science and technology.

They will become familiar with basic weather related concepts as they affect issues dealing with ballooning and weather occupations. The students will discuss how weather ties into their everyday lives.

Materials: Information placed on Overhead Transparencies or Worksheets

Learner Outcomes: Students will take notes and enter into large group discussions



Lesson 9 – Wind and Weather

Third Grade CSO's: MA.3.4.10, 3.5.1, 3.5.4, SC.3.2.1, 3.2.4, 3.2.7, 3.3.3

Skill Areas: The students will become familiar with the basic principals of wind. The students will be able to visualize the concept of convection, wind speed, and wind direction by creating simple models. The students will learn to read a thermometer and record temperature and wind direction. The students will become familiar with the Beaufort Scale and measuring wind speed with a basic anemometer.

Materials: Thermometers, Compass, Markers, Cardboard, Paper, Dixie cups, Plastic pop bottles, Straws, Shallow pan with rocks, Straight pins

Learner Outcomes: Students will accurately read thermometers and construct simple weather detecting devices.

Lesson 10

Third Grade CSO's: SC.3.1.1, SC.3.2.1, SC.3.2.2, SC.3.2.3, SC.3.2.4, SC.3.2.5, SC.3.2.6, SC.3.2.7, SC.3.2.8, SC.3.3.1, SC.3.3.2, SC.3.3.3, SC.3.4.5, SC.3.6.2, SC.3.6.4, TEC 3.1.2, 3.3.1.

Skills Areas: The students will manipulate variables of a lab setting properly and safely to engage in a discussion about buoyancy and false lift as it pertains to ballooning. They will also experience a balloon ascension and landing through a web-based hot air balloon simulation.

Materials: Helium filled balloons, twine, paper clips, misc. items found in the classroom. Internet Access.

Learner Outcomes: The students will work in groups of 2 to 3 people to get their helium filled balloon to hover in the air in front of themselves. They will need to add or take away “ballast” to get the right level of buoyancy.

Lesson 11

Third Grade CSO's: SC.3.1.1, SC.3.2.1, SC.3.2.2, SC.3.2.3, SC.3.2.4, SC.3.2.5, SC.3.2.6, SC.3.2.7, SC.3.2.8, SC.3.3.1, SC.3.3.2, SC.3.3.3, SC.3.4.5, SC.3.6.2, SC.3.6.4

Skills Areas: The students will use tissue paper, glue, etc to design in a lab setting a tissue paper balloon that they will launch using a hair dryer to inflate and heat gun to generate heat and lift. They will be able to apply principles of hot air and lift to their balloons.

Materials: Tissue paper, glue sticks, old newspapers, rulers, pencils, hair dryer, heat gun, stapler, marker, scissors

Lesson 12

Third Grade CSO's: SC.3.1.1, SC.3.2.1, SC.3.2.2, SC.3.2.3, SC.3.2.4, SC.3.2.5, SC.3.2.6, SC.3.2.7, SC.3.2.8, SC.3.3.1, SC.3.3.2, SC.3.3.3, SC.3.4.5, SC.3.6.2, SC.3.6.4

Skills Areas: Students will launch tissue paper balloons using a hair dryer to inflate and heat gun to generate heat and lift. They will be able to apply principles of hot air and lift to their balloons.

Materials: tissue paper balloons, hair dryer, heat gun

Learner Outcomes: The students will work in groups to launch balloons.

Lesson 13 - Historical Timeline

Third Grade CSO's: MA.3.5.2, SS.3.5.9, 3.5.10 Students will select and organize historical events in hot-air balloon history and place them in sequential order on a classroom display time line.



Lesson 14 - Art Connection - Coloring Sheets

Students will use basic hot-air balloon templates to create colorful classroom displays.

Lesson 15 - Reading & Measurement - "Balloon Race"

Third Grade CSO's: RLA.3.1.3, 3.1.8, 3.1.13, 3.1.14, MA.3.4.1

Students will read and comprehend informational text and follow directions to complete a measurement activity. They will use a metric ruler to accurately measure to determine the closest three balloons to a target area.

Lesson 16 - Reading Comprehension: Balloon Mail

Third Grade CSO's: RLA.3.1.3, 3.1.4, 3.1.8, 3.1.14, SS.3.5.4, 3.5.6

Students will read and demonstrate their comprehension of information text through multiple choice, cloze, and short answer completion assessment on multiple skill levels.
