

The
Mississippi
Trunk

Fourth Grade

University of Mississippi
National Science Foundation

NMGK-8
North Mississippi GK-8 Program



December 2005

The Mississippi Trunk - Fourth Grade

To the Teachers:

Welcome to the Mississippi Trunk for Fourth Grade! This collection of activities and accessory materials is brought to you by the North Mississippi GK-8 Program sponsored by the National Science Foundation. The trunk contains a myriad of activities divided up into six sections. Each section begins with a brief introduction to provide background information. Whenever possible, the activities are created to be inquiry-based with student driven discussion and implementation. For those teachers in Lafayette Elementary School and Oxford Elementary School, the trunk comes with many supplies. If you teach in Mississippi, a list of the educational frameworks is provided along with the activities that cover those frameworks. We hope this helps you as you formulate lesson plans. The elementary fellows have thoroughly enjoyed putting this trunk together. Through the implementation of this project, we hope that you and your students garner a further appreciation for the distinct environment that we now know as Mississippi.

Have fun and best of luck,

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Mississippi Math Frameworks

1. Explore and discover properties and relationships of number patterns.
 - a. Recognize, describe, and extend a given pattern.
 - b. Analyze a given pattern and generate a similar pattern.
 - c. Use variables and open sentences to solve problems with the four basic operations.
 - Champion Trees
2. Explore concepts of two and three-dimensional geometry.
 - a. Construct two and three-dimensional geometric figures with concrete materials.
 - Shaping Up Mississippi
 - b. Identify, describe, classify, and compare two and three-dimensional geometric shapes, figures, and models.
 - Geometrically Speaking
 - c. Investigate transformational results of slides, flips, and turns.
 - Shaping Up Mississippi
 - d. Identify and model points, lines (including parallel, perpendicular, and intersecting lines), line segments, and rays.
 - Geometrically Speaking
 - e. Recognize right, acute, and obtuse angles.
 - Shaping Up Mississippi

- f. Define and label the following parts of a circle: center, radius, diameter, and chord and explore the meaning of circumference of a circle.
- *Geometrically Speaking*
 - *Champion Trees*
- g. Identify congruent and symmetrical figures.
- *Shaping Up Mississippi*
- h. Investigate geometric concepts using interactive materials and resources.
- *Shaping Up Mississippi*
 - *Champion Trees*
3. Develop the process of measurement and the concepts related to units of measurement.
- a. Measure a given object to the nearest fourth of an inch.
- *Mississippi's Geologic Past*
 - *My City Map*
 - *Geometrically Speaking*
 - *Champion Trees*
 - *To Bloom or Not to Bloom?*
 - *Framing Frenzy*
- b. Select, use, compare, and convert within the appropriate standard (English and metric) system of measurement.
- *Geometrically Speaking*
- c. Determine the perimeter and areas (grid areas) of appropriate standard and nonstandard geometric figures.
- *Geometrically Speaking*

- d. Identify the attributes of length, weight, capacity, mass, volume, time, and temperature using English and metric units of measurement.
 - Geometrically Speaking
 - e. Calculate and solve problems with elapsed time.
 - Some Assembly Required
4. Explore probability and the process of data analysis and predictions.
- a. Collect, organize, and interpret data, using bar graphs, circle graphs, line graphs, pictographs, charts, tables, and tally charts.
 - Flowing Falling Water
 - Framing Frenzy
 - Some Assembly Required
 - Mudslide Mania
 - What Color is Your Air?
 - b. Formulate and solve problems that involve data analysis and prediction.
 - Framing Frenzy
 - Some Assembly Required
 - Mudslide Mania
 - c. Investigate the concepts of probability.
5. Estimate and use mental computation to solve mathematical problems.
- a. Estimate sums, differences, products, and quotients using a variety of techniques.
 - My City Map

- b. Determine whether estimated answers are reasonable and units are appropriate.
 - Champion Trees
 - To Bloom or Not to Bloom?
 - c. Estimate and use mental computation to solve real-life problems where exact answers are not required.
 - My City Map
6. Identify numerical relationships with whole numbers, decimals, and fractions.
- a. Read and write six-digit whole numbers, decimal numbers through hundredths, and fractions.
 - Dividing the Mississippi River
 - Framing Frenzy
 - Owning Your Own Company in Mississippi
 - b. Order and compare six-digit whole numbers, decimal numbers through hundredths, and fractions with denominators of twelve or less.
 - Dividing the Mississippi River
 - c. Round whole numbers to one hundred thousand and round decimal numbers through hundredths.
 - d. Identify, draw, and model equivalent fractions.
 - Framing Frenzy
 - e. Using real-life objects, represent, draw, and explain the relationships between fractions and decimals.
 - Framing Frenzy

- f. Utilize a variety of multimedia and technology resources to explore numerical relationships.
7. Utilize the four basic operations for whole numbers and the addition and subtraction of decimals and fractions.
- a. Add and subtract six-digit whole numbers with and without regrouping.
- *Owning Your Own Company in Mississippi*
 - *What Color is Your Air?*
- b. Add and subtract decimals to tenths and hundredths.
- *Geometrically Speaking*
 - *Owning Your Own Company in Mississippi*
- c. Multiply whole numbers by one-digit multipliers, and divide by one-digit divisors, with and without remainders.
- *My City Map*
 - *Dividing the Mississippi River*
 - *Flowing Falling Water*
 - *Owning Your Own Company in Mississippi*
 - *Mudslide Mania*
- d. Model and identify factors and multiples of whole numbers to one hundred.
- e. Add, subtract, multiply, and divide money amounts.
- *Rescuing Resources*
 - *Some Assembly Required*
 - *Owning Your Own Company in Mississippi*

f. Count change to \$10.00.

- *Owning Your Own Company in Mississippi*

g. Explore the four basic operations through appropriate multimedia resources.

- *Some Assembly Required*
- *Owning Your Own Company in Mississippi*

h. Add and subtract fractions with like and unlike denominators.

- *Dividing the Mississippi River*

i. Apply problem-solving techniques to solve one and two-step problems involving the basic operations.

- *My City Map*
- *Dividing the Mississippi River*
- *Some Assembly Required*
- *Owning Your Own Company in Mississippi*

Mississippi Science Frameworks

1. Investigate the ability of living things to adapt to their environment.
 - a. Compare food chains and food webs.
 - River Creatures
 - b. Compare and contrast adaptations necessary for animals and plants to survive in different habitats.
 - Endangered Species of Mississippi
 - Plant Food
 - Animal Adaptations
2. Explore the interactions of components in living systems.
 - a. Identify parts and basic functions of various body systems (circulatory, respiratory, digestive, skeletal and nervous systems).
 - Celebrate (In)Vertebrates
 - b. Analyze the circulatory system.
 - c. Group animals as invertebrates or vertebrates.
 - Celebrate (In)Vertebrates
 - d. Explore the four requirements necessary for photosynthesis.
 - Plant Food
 - e. Compare and contrast flowering and non-flowering plants.
 - To Bloom or Not to Bloom?

3. Communicate an understanding of the interaction of bodies in the solar system.
 - a. Explain why the apparent size of an object depends on its distance from the observer.
 - Champion Trees
 - b. Describe the interaction between the Earth, Sun, Earth moon, and planets of the solar system.
 - Constellation Consternation
 - c. Describe the apparent motion of constellations in the night sky (east to west throughout the night, east to west throughout the year).
 - Constellation Consternation
4. Identify and describe the visual and telescopic appearance of planets and moons.
 - a. Locate and identify planets as bright, shining bodies that move in front of the background of constellations.
 - b. Explain the nature of telescopes as devices that collect light and enlarge the apparent size of distant objects to reveal otherwise unseen features.
 - c. Describe the physical features of the moon (craters, plains, mountains) and the planets.

5. Discover the effects of external forces on the Earth surface.
 - a. Describe how external forces including heat, wind and water affect the Earth's surface.
 - Exploring Oxbow Lakes
 - Mudslide Mania
 - b. Using maps, students identify watershed and run-off patterns of local areas.
 - Where's the Watershed?
 - Exploring Oxbow Lakes
 - c. Group landform examples by the forces that may have created them.
 - Exploring Oxbow Lakes
6. Explore changes that occur in the Earth atmosphere.
 - a. Analyze and predict the weather using the thermometer, anemometer, rain gauge, barometer and hygrometer.
 - Meteorology Madness
 - b. Recognize and collect data of extreme weather conditions.
 - Meteorology Madness
7. Discover how environmental concerns relate to the hydrosphere, lithosphere, and atmosphere.
 - a. Describe ways to protect the air we breathe.
 - b. Recognize the need for conservation of water resources.
 - Rescuing Resources

- Where's the Watershed?
 - Flowing Falling Water
 - River Creatures
- c. Discuss the ways man can protect and manage organisms in the environment.
- River Creatures
 - Endangered Species of Mississippi
 - Bio-Bingo
8. Investigate the changes in the states of matter.
- a. Observe that matter occupies space and has mass and volume.
- States of Mississippi
- b. Demonstrate transformations of the states of matter.
- States of Mississippi
- c. Explore and classify physical and chemical changes.
9. Examine the different forms of energy.
- a. Differentiate energy as potential or kinetic energy.
- Flowing Falling Water
- b. Identify and explore forms of energy such as heat, sound, light, or electricity.
- c. Demonstrate the use of the sun as an energy source.

10. Develop the process of measurement and the concepts related to units of measurement.
 - a. Measure a given object using specified scientific measurement (English and/or metric).
 - My City Map
 - Farming Frenzy
 - Geometrically Speaking
 - b. Select, use, compare and convert within the appropriate standard (English and metric) system of measurement.
 - Geometrically Speaking
 - c. Identify the attributes of length, weight, capacity/volume, mass, time and temperature using English and metric units of measurement.
 - Geometrically Speaking
 - d. Calculate and solve problems with elapsed time.
 - Some Assembly Required