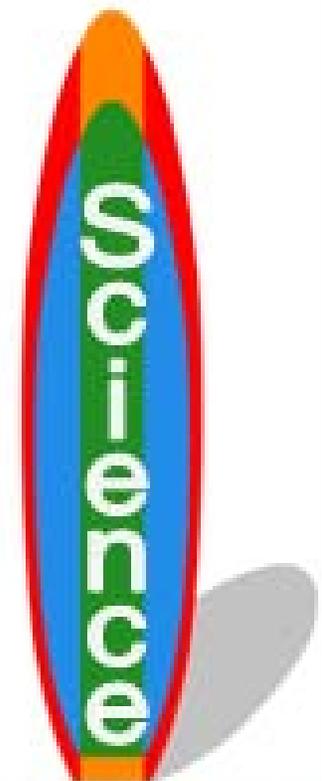




# Ready, Set, Go Mission Possible



## MIDDLE SCHOOL



Curriculum and Instruction  
Division of Mathematics, Science, & Advanced Academic Programs

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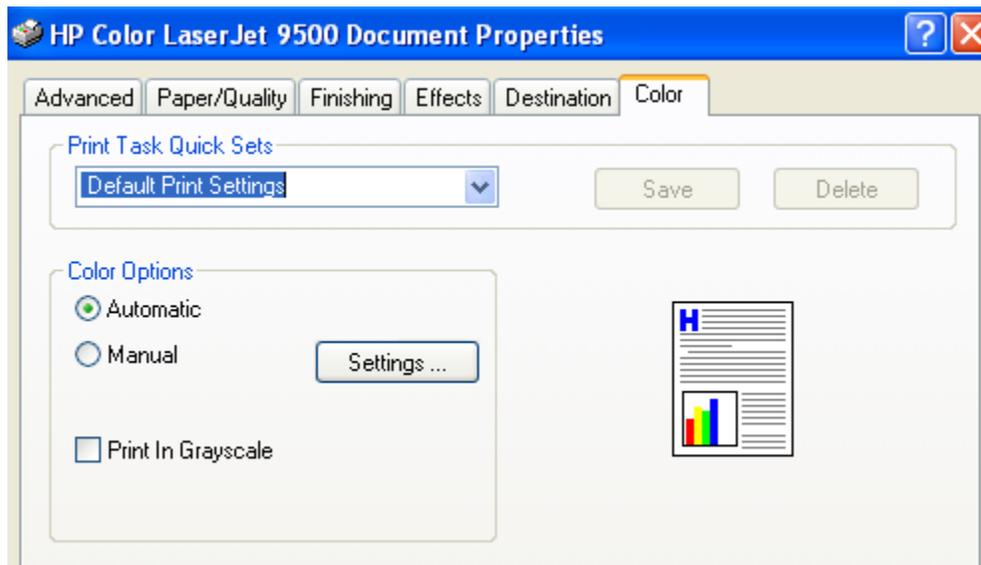
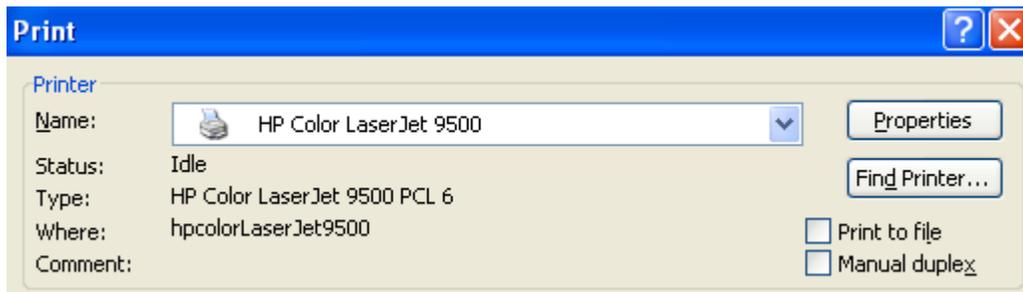
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Welcome to the Miami-Dade County Public School's Summer Fun packets. These fun activities are designed to help promote learning throughout the summer break. The activities are divided by grade levels and curriculum content – Social Studies, Science, Mathematics, and Reading/Language Arts. Educational web-links are also included with all packets. Please be sure to supervise your child while they are using the internet.

In addition to the fun packets, it is strongly recommended that you encourage you child to continue to read at least 30 minutes each day. Support for reading includes: Barnes & Nobles' *Summer Reading Journal* <http://bn.com/summerreading> and Miami-Dade Public Library's *Wild About Reading Summer Reading Adventure* <http://www.mdpls.org>. In addition, *Ticket to Read* is available through the Student Portal: <http://www.dadeschools.net/students/students.htm>.

In an attempt to conserve paper and ink, if you wish to print these activities, they are combined using a little space as possible and no color except for the links on this page and this note. If you wish to avoid printing in color, please select "Print in grayscale" on your printer's properties/color tab located on the "Print" screen. See the figures below.



**TITLE: Pitcher Perfect Water**

**DESCRIPTION:**

There is a very limited supply of fresh water available for people to use. However, we need and use water in our everyday lives. This could become a problem if we overuse or pollute this fresh water supply.

Research water sources in your area and how they are used in your home and community. Make a poster that shows your results. Display your poster for your family.

Learn more about water conservation with the American Museum of Natural History's [Be a Water Saver](#).

Grade Level	Big Idea	Your Mission
Grade 6	1: The Practice of Science	Explain how the scientific evidence gathered about water usage involved creativity.  What explanation for water usage in the family and/or community fits the evidence found regarding water sources and their use?
Grade 7	17: Interdependence	Describe how water is a limiting factor. <ul style="list-style-type: none"><li>• How does this affect the:<ul style="list-style-type: none"><li>○ ecosystem</li><li>○ native populations</li></ul></li></ul>
Grade 8	4: Science and Society	Explain how your poster presentation can be used to inform decision-making about water usage at the community, state, national, and international levels.

## TITLE: A Traveler's Log of a Young Scientist's Journey

### DESCRIPTION:

Journaling is a favorite pastime for many people. Travelers often keep records of their journeys through their writings, recording the people places and discoveries they have made along the way. Often, these traveler's logs help researchers many years down the road to uncover and understand the past.

Write a travel log entry about a nature walk or trip you have taken this summer. Use your knowledge of science to explain some of the features of the land that you saw.

Grade Level	Big Idea	Your Mission
Grade 6	6: Earth Structures	Describe and give examples of ways in which Earth's surface is built up and torn down by: <ul style="list-style-type: none"><li>• weather</li><li>• animals (people, dogs, ants, etc.).</li></ul> Erosion and deposition go hand-in-hand. Identify evidence of: <ul style="list-style-type: none"><li>• <a href="#">erosion</a> (movement of loosened or weathered material from one area to another)</li><li>• <a href="#">deposition</a> (building up of eroded rock particles)</li></ul>
Grade 7	6: Earth Structures	Identify the impact that humans have had on the area observed, such as: <ul style="list-style-type: none"><li>• urbanization (buildings)</li><li>• deforestation</li><li>• erosion</li><li>• air and water quality</li><li>• changing the flow of water</li></ul>
Grade 8	3: The Role of Theories, Laws, Hypotheses, and Models	Describe the type of model (representation) that could be used to demonstrate the features of the land that were discovered on the nature walk or trip.

## TITLE: So, Why Isn't It Called Moseley's Table of Elements?

Adapted from Glencoe Science, Florida Science Grade 8

### DESCRIPTION:

The modern day Periodic Table of Elements is arranged according to atomic number. Elements with similar properties are organized in columns called groups or families. Along the horizontal rows known as periods, the properties of the elements change gradually.

Research the contribution that Henry G. Moseley made to the development of the modern periodic table of elements. Research the background and work of this scientist. Write your findings in the form of an interview and give the questions to family members for them to interview you as Moseley.

Learn more about the Periodic Table of Elements with the American Museum of Natural History [Atomic Mobile](#) activity.

Grade Level	Big Idea	Your Mission
Grade 6	2: The Characteristics of Scientific Knowledge	Describe how the periodic table of elements is an example of scientific knowledge being open to change as new elements were found.
Grade 7	1: The Practice of Science	Experiments involve variables that are identified and controlled, but science does not always investigate with experiments. <ul style="list-style-type: none"><li>• How is the development of the periodic table a type of scientific investigation that is not an experiment?</li></ul>
Grade 8	8: Properties of Matter	Describe the patterns that exist in the periodic table of elements (i.e., arrangement and grouping).

## TITLE: You Have a Scientist’s Eye

### DESCRIPTION:

Take a walk around your home (inside or outside). Look carefully at the surroundings. You can even take a picture of something that gets your attention. Ask a question about something that you observe that seems to be a problem. Think about how you can change what you observe to make it different or better. Use appropriate references and research to get background information on your observation. Plan and carry out a scientific investigation on the problem. Be sure to include observations, collect, organize, and interpret your data in charts, tables and/or graphics. Analyze the information and make predictions of how the problem would be different if you changed something about what you observed.

Create a poster or booklet with your problem, steps to solve the problem, and graphics that demonstrate how you went about solving the problem. Showcase your work to your family and friends and defend your conclusion.

Grade Level	Big Idea	Your Mission
Grade 6	6: Earth Structures 7: Earth Systems and Patterns 11: Energy Transfer and Transformations 12: Motion of Objects 13: Forces and Changes in Motion 14: Organization and Development of Living Organisms	Develop your problem statement from a sixth grade topic: <ul style="list-style-type: none"><li>• Land Formations as a Result of Weather</li><li>• Weather</li><li>• Potential and Kinetic Energy</li><li>• Forces on Objects</li><li>• Motion of Objects</li><li>• Cells, Tissues, Organs, Systems, Organisms</li></ul>
Grade 7	6: Earth Structures 10: Forms of Energy 11: Energy Transfer and Transformations 17: Interdependence	Develop your problem statement from a seventh grade topic: <ul style="list-style-type: none"><li>• Rock Cycle</li><li>• Impact of Humans on Earth</li><li>• Energy Transfer</li><li>• Heat Energy and Temperature Change</li><li>• Interaction of Organisms in the Environment</li></ul>
Grade 8	8: Properties of Matter 9: Changes in Matter 18: Matter and Energy Transformations	Develop your problem statement from an eighth grade topic: <ul style="list-style-type: none"><li>• Density of Different Objects</li><li>• Physical and Chemical Changes</li><li>• Photosynthesis</li><li>• Law of Conservation of Mass and Energy</li></ul>

## TITLE: The Environment Needs You!

### DESCRIPTION:

The terms reduce, reuse, recycle are used quite frequently to make people aware of conserving natural resources. Often people discard items that can be reused and/or recycled.

Identify objects around your home and/or community that are commonly thrown away. Research which items are reusable and/or recyclable and create a small poster that can be placed near the trash bin educating families not to trash it, recycle it. Keep a log of how many trash bags or how much garbage is dumped and try to decrease it by half or more before the end of the summer by reducing, reusing and recycling. Learn more about the benefits of recycling with [Making a Difference](#) highlights at the [American Museum of Natural History](#).

Grade Level	Big Idea	Your Mission
Grade 6	1: The Practice of Science	Scientific investigations should be replicable (able to be done again, in the same way). Explain why it would be important to be able to replicate this investigation with students in other: <ul style="list-style-type: none"><li>• Communities</li><li>• States</li><li>• Countries</li></ul>
Grade 7	1: The Practice of Science	Explain how this scientific investigation was not an experiment.  What scientific knowledge was gained from this investigation?
Grade 8	4: Science and Society	How can you use the information gathered in your scientist's log to influence decision-makers of the benefits of reducing, reusing, recycling in the: <ul style="list-style-type: none"><li>• Community</li><li>• State</li><li>• National</li><li>• International level</li></ul>

**TITLE: The Inventor in You**

**DESCRIPTION:**

Inventions come about because there is a need for something. You need to get an estimated weight of your favorite food that is sold by the pound. There are no traditional scales available for you to use. However, you can build a measuring device using only objects found around your house.

Here are some sites to get you started: [Make a scale from office supplies](#)

<b>Grade Level</b>	<b>Big Idea</b>	<b>Your Mission</b>
Grade 6	13: Forces and Changes in Motion	Identify and describe where the following occur in your measuring device: <ul style="list-style-type: none"><li>• unbalanced forces</li><li>• change in the direction of motion of one of the objects</li></ul>
Grade 7	11: Energy Transfer and Transformations	Identify and describe the types of energy transfers occurring in your measuring device.
Grade 8	1: The Practice of Science	Have a friend or family member replicate your measuring device design.

**TITLE: The Circle of Life**

**DESCRIPTION:**

All living things are interdependent on each other and their surroundings. Take a walk and find a place where you can sit comfortably to observe living things in their environment for about 30 minutes, uninterrupted. Record all that you observe. Include living things interacting with each other and the non-living parts of the environment. Research the scientific terms for living things and non-living things.

Learn about the importance of variety in an environment with the American Museum of Natural History's [Biodiversity: Everything Counts!](#)

<b>Grade Level</b>	<b>Big Idea</b>	<b>Your Mission</b>
Grade 6	15: Diversity and Evolution of Living Organisms	Group the living things in the environment by their shared characteristics.
Grade 7	17: Interdependence	Identify the producers, consumers and decomposers in the selected environment.  Draw/sketch and describe the roles and relationships among the producers, consumers and decomposers in this environment.
Grade 8	9: Changes in Matter	Describe the following changes occurring in the environment: <ul style="list-style-type: none"><li>• Physical</li><li>• Chemical</li></ul>

**TITLE: Pass It On**

**DESCRIPTION:**

Traits are inherited from generation to generation. Observe some of your physical traits that you inherited from your parents and their parents before them and so on. Gather as many family pictures as you can and determine which traits were inherited from which side of your family. Conduct research on which inherited traits are dominant and which ones are recessive. Predict which traits will be expressed in your children, if your spouse had the same traits as you. How would your children look if your spouse had different traits?

Learn more about genetics at the American Museum of Natural History's [Gene Scene](#).

<b>Grade Level</b>	<b>Big Idea</b>	<b>Your Mission</b>
Grade 6	14: Organization and Development of Living Organisms	Research the different systems of the human body: <ul style="list-style-type: none"><li>• Digestive</li><li>• Respiratory</li><li>• Circulatory</li><li>• Reproductive</li><li>• Excretory</li><li>• Immune</li><li>• Nervous</li><li>• Musculoskeletal</li></ul> Identify the system that is responsible for passing traits from one generation to the next
Grade 7	16: Heredity and Reproduction	Explore the impact of the following on the individual and society: <ul style="list-style-type: none"><li>• Genetic engineering</li><li>• Cloning</li><li>• Artificial selection</li></ul>
Grade 8	1: The Practice of Science	Explain a method that could be used to develop a scientific explanation as to why a child may have a physical trait that is not shown in his/her parents.

## Federal and State Laws

The School Board of Miami-Dade County, Florida adheres to a policy of nondiscrimination in employment and educational programs/activities and strives affirmatively to provide equal opportunity for all as required by law:

**Title VI of the Civil Rights Act of 1964** - prohibits discrimination on the basis of race, color, religion, or national origin.

**Title VII of the Civil Rights Act of 1964**, as amended - prohibits discrimination in employment on the basis of race, color, religion, gender, or national origin.

**Title IX of the Educational Amendments of 1972** - prohibits discrimination on the basis of gender.

**Age Discrimination in Employment Act of 1967 (ADEA)**, as amended - prohibits discrimination on the basis of age with respect to individuals who are at least 40.

**The Equal Pay Act of 1963**, as amended - prohibits gender discrimination in payment of wages to women and men performing substantially equal work in the same establishment.

**Section 504 of the Rehabilitation Act of 1973** - prohibits discrimination against the disabled.

**Americans with Disabilities Act of 1990 (ADA)** - prohibits discrimination against individuals with disabilities in employment, public service, public accommodations and telecommunications.

**The Family and Medical Leave Act of 1993 (FMLA)** - requires covered employers to provide up to 12 weeks of unpaid, job-protected leave to "eligible" employees for certain family and medical reasons.

**The Pregnancy Discrimination Act of 1978** - prohibits discrimination in employment on the basis of pregnancy, childbirth, or related medical conditions.

**Florida Educational Equity Act (FEEA)** - prohibits discrimination on the basis of race, gender, national origin, marital status, or handicap against a student or employee.

**Florida Civil Rights Act of 1992** - secures for all individuals within the state freedom from discrimination because of race, color, religion, sex, national origin, age, handicap, or marital status.

Veterans are provided re-employment rights in accordance with P.L. 93-508 (Federal Law) and Section 295.07 (Florida Statutes), which stipulates categorical preferences for employment.

Revised 9/2008