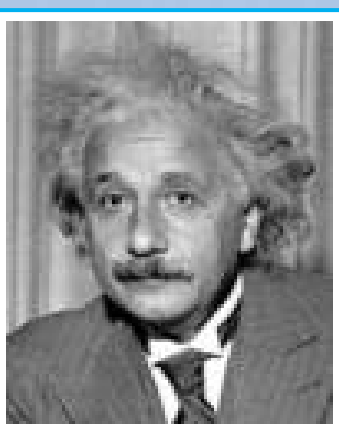
Sir Isaac Newton

Louis Pasteur



Albert Einstein

A SCIENCE Winter Inquiry

Grade 2

Winter 2011-2012

Miami-Dade County Public Schools
Curriculum & Instruction

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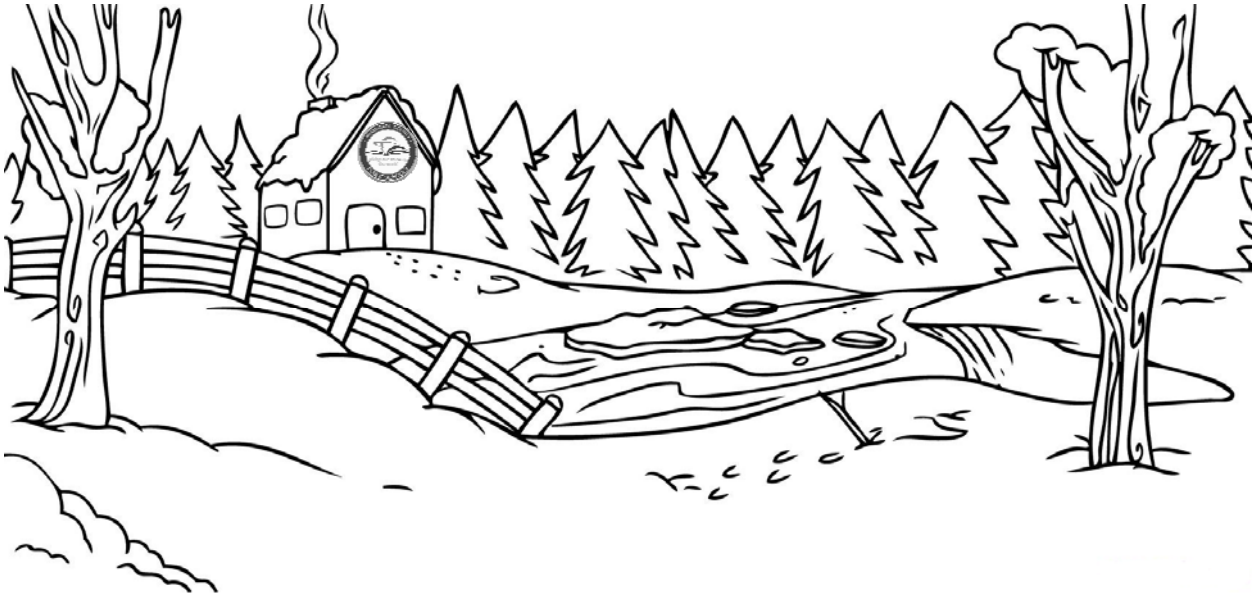

WELCOME TO *A SCIENCE WINTER INQUIRY LAND*

The activities and reading passages in this packet were selected to allow young people to experience the relevancy of science in a fun and engaging way. As they navigate through these activities, they will realize that science is not limited to the classroom but that it is in their everyday lives. Science can be done away from school and can explain many of the phenomena encountered in life. Additionally, each activity addresses a specific Next Generation Sunshine State Standards benchmark. Targeted benchmarks are identified at the end of each activity.

Included as part of this packet, is a link to the Miami-Dade County Public Schools Student Portal *Beyond the Bell* technology activities. Individualized student learning paths have been designed based on FCAT scores and are aligned to the District's Pacing Guides. These online activities are supplemental and, as such, are not to be assigned or graded. All online activities are provided as a resource to both parents and students to engage learning using technology. Please log on just as you do at your school.

Included as part of this packet, is a link to the Miami-Dade County Public Schools Student Portal. Log on to this site and go to Links to Learning for additional online activities. These online activities are supplemental and, as such, are not to be assigned or graded. All online activities are provided as a resource to both parents and students to engage learning using technology. Please log on just as you do at your school.

http://www.dadeschools.net/students.asp

Enjoy!

Activities

Children learn by doing, by trying new ideas and challenging old ones. This doesn't just happen in school. You can help your children learn by providing them with safe, interesting learning experiences in a supportive atmosphere.

The activities that follow are designed for you to use with your child at home and in the community. The activities are intended to show your child that science plays a part in many everyday activities and that it is used in many places and environments. They also show that learning science doesn't require expensive equipment and complicated experiments.

Safety First
Read through each activity before you try it with your child. Adult supervision is important especially with any of the activities that involve heat, chemicals or sharp instruments.

Also make sure that your child understands any safety precautions that may be necessary for these—or any—science activities. In particular, you should:

- Teach your child not to taste anything without your supervision;
- Insist that he wear goggles whenever something could splash, burn, or shatter and endanger his eyes;
- Teach them to follow warnings on manufacturers' labels and instructions for toys and science kits;
- Keep toxic or other dangerous substances out of the reach of your child;
- Teach them what he can do to avoid accidents; and
- Teach them what to do if an accident occurs.

http://www.ed.gov/pubs/parents/Science/Home.html

Who Where They?

Sir Isaac Newton was a physicist, mathematician, astronomer, alchemist, and natural philosopher. He is best known for his explanation of Universal Gravitation and the three laws of motion. He was also able to prove that the reason of both the motion of objects on Earth and of celestial bodies is controlled by the same Neutral laws. These findings would make a revolutionary change in the development of science. His invention of the reflecting telescope was his great contribution in optics.

Louis Pasteur was a French chemist and microbiologists and one of the most famous and influential contributors in medical science. He is remembered for his remarkable breakthroughs in the causes and preventions of diseases supported by his experiments on the germ theory of disease. He also created the first vaccine for rabies and anthrax. Pasteur also invented the method of “pasteurization”, where harmful microbes are stopped from causing sickness in food.

Albert Einstein is the greatest scientist of the twentieth century and the most notable physicist of all time. He was born in Germany but eventually migrated to America to take a teaching position at Princeton University. It is told that he had a learning disability in his childhood. He could not talk till he was three and could not read till he was eight. Despite such problems, in 1921 he became the noble prize winner for his contributions to Physics. His *Theory of Relativity* is considered a revolutionary development of Physics.

Bugs!

Children can improve their understanding of the natural world and their classification skills by observing bugs

Background

Bugs do what they do to survive. They're constantly looking for food. Bugs can be both helpful and harmful. Termites, for example, have a bad reputation because they destroy houses by eating the wood. But termites have a good side, too. In a forest, they break down dead trees, which keep the forest floor from becoming too cluttered.

What You Need

Books about insects and spiders—preferably with photographs

What to Do

- With your child, search your home and neighborhood for bugs. Look for bugs:
    - around your front door
    - in cracks in the sidewalk
    - in gardens
    - at picnic areas
    - on lights
    - in corners of rooms
- With your guidance, help your child to identify each type of bug that you find, such as ants, spiders, beetles, crickets, bees, flies, butterflies, mosquitoes, moths, wasps or ladybugs.
- If you find ants, point out that ants work together as a community. Have your child observe, for example, what an ant does when it finds a bit of food. Explain that when an ant finds food, it doesn't eat it on the spot. It runs back to the hill to "tell" the other ants. As it runs, it leaves a trail that the other ants can smell. These ants can then find the food by smelling their way along the trail.
- Find out about spiders:
    - Why do spiders spin webs?
    - What are webs made of?
    - How many pairs of legs do they have?
- Help your child to think of other ways that she might classify the bugs—for example, by color or by size or by whether they have wings or antennae.

Benchmark: SC.2.N.1.1 (Next Generation Sunshine State Standards) Raise questions about the natural world, investigate them in teams through free exploration and systematic observations, and generate appropriate explanations based on those explorations.

Sounds

The poem below is all about sounds. While reading it, think of all the sounds that you hear. After reading the poem, complete the short activity on the following page.

Sounds
By: Paula Nelson-Shokar

Shhhhhhhhhhh! Listen closely.
What sounds do you hear?
You might hear a bird or plane,
Or a car coming near.
Can you hear the sound of the wind,
Or kids playing in the park?
I can hear the meowing of my cat
And a little dog bark.
Can you hear wind in the trees
Or when the clock ticks?
I can hear the buzz of a bee,
And sound of the music.
I can make my own sounds
Like whistling and talking to you.
I love the sound of giggling,
And opening a bag that's new.
Shhhhhhhhhhh! Listen closely.
What sounds do you hear?
You might hear a bird or plane,
Or just me whispering in your ear.

Benchmark: SC.2.N.1.1 (Next Generation Sunshine State Standards) Raise questions about the natural world, investigate them in teams through free exploration and systematic observations, and generate appropriate explanations based on those explorations.

Science Walk

Observing closely is an important part of science, and tools such as a magnifying glass help scientists—even young ones—to observe, measure and do things that they otherwise could not do

Background

Even a walk around the yard can provide many opportunities to introduce children to scientific concepts and processes by helping them to gain the scientific habit of observing what's around them.

What You Need

Science journal (Pad of paper or notebook)

What to do

Take a walk outside with your child—around the yard, to the end of the block, in the park, on the beach—anywhere that's convenient. Invite them to bring along a science journal and show them how to use a magnifying glass. As you walk, stop and—depending on the weather—ask your child to use the lens to examine things such as the following:

- dirt
- leaves (from the same tree, one on the ground and one on the tree)
- a flower
- rocks
- grass
- bugs
- a mud puddle
- sand

Ask your child to talk about what they observed. Ask, for example:
What's on each side of this leaf?

Benchmark: SC.2.N.1.1 (Next Generation Sunshine State Standards) Raise questions about the natural world, investigate them in teams through free exploration and systematic observations, and generate appropriate explanations based on those explorations.

After your walk answer the following questions:

1. How is this leaf on the ground different from the one on the tree?_____
2. Are all the petals on this flower the same size and color? _____
3. Are these rocks exactly alike? _____
4. How are they different? _____
5. How many legs does this bug have? _____
6. How many colors can you see in this mud puddle? _____
7. Is this rock smooth or rough? _____
8. Is it hard or soft? _____
9. Is it dry or wet? _____
10. Is it alive? _____
11. How do you know? _____
12. What shape is it? _____
13. Give your child two different kinds of rocks or flowers. Describe how they are alike and different. _____
14. Record your observations, reactions, findings and opinions in the journal box below.

ANTI-DISCRIMINATION POLICY

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