Introduction

Science and Me is produced by BECON – Broward Education Communications Network.

This remarkable science program series is designed with primary elementary students in mind. Utilizing state-of-the-art video production techniques, along with the talents and knowledge of our host, Molecular Mike, Science and Me is sure to be a hit with your students!

This accompanying Teacher Guide has been designed to function as a supplementary resource, helping you to get the most out of the Science and Me series. Each program has been matched with a research-based process approach to constructing science knowledge and skills in young students using the following 5 steps:

- Engage – designed to focus student thinking
- Explore – provides an experience base to build on
- Explain – conceptual introduction to the topic
- Elaborate – additional connections to new ideas
- Evaluate – assessment of learning

Thank you for choosing Science and Me to enhance your existing classroom curriculum! We hope you enjoy each and every program in the series and welcome your feedback so we can better serve you!

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Science and Me: Reach for the Stars

What could possibly be out there beyond our world? Outer space is not just empty space. In this episode of Science and Me, Molecular Mike helps us learn about the Sun, planets, stars, and all kinds of things floating around out there! Time to rocket into fun on a trip to worlds beyond our own!

Engage
Take a look at the sky! Bring students outdoors and have them look at the sky.
Ask students:
“What kinds of things do you see in the sky?”
“How does the sky look different at night?”
“Why do you think the sky looks different during the daytime and the nighttime?”
(Note: Tell students not to look directly at the Sun!)

Explore
Give students the opportunity to explore books about outer space! Look for nonfiction and fiction titles that explore the Sun, planets, stars, moons, asteroids and meteors. Put the books at a science learning center or class library for students to discover.
The following are suggested titles for student exploration:
There's No Place Like Space! by Tish Rabe, I Wonder Why Stars Twinkle by Carole Stott, Space Leftovers by Dana Meachen Rau, Watching the Sun by Edana Eckart

Explain
Have students view Science and Me: Reach for the Stars after exploring some books about the Sun, planets, stars, moons, etc.
Follow-up questions: “Where do stars go when the Sun is out?”, “What is a constellation?”, “How many planets can you name?”

Elaborate
After viewing Science and Me: Reach for the Stars, expand on the concept of objects that are visible at night. Show students models of the planets in our solar system and pictures of different star patterns (constellations) we see in the night sky!

Evaluate
Have students use small star stickers to complete the following activity page demonstrating the concept of star patterns (constellations) we see in the night sky!
Reach for the Stars

Use star stickers to make a constellation here:

This constellation is called ________________________________.
The Sun, Moon, and stars appear to move slowly across the sky every day. Where are they going? In this episode of Science and Me, Molecular Mike shows us how these objects seem to move and change. Not everything is as it appears, though! (They’re not the only ones moving...)

**Engage**
Have students spread out in the room and tell them to turn all the way around three times. Ask students:

“What did you see when you were turning around?”
“Did it look like the room was moving around you?”
“Was the room moving or was it you?”

Show students a globe model. Explain that it is a model of the Earth we live on. Ask students:

“Why do you think this model of the Earth turns?”
“Do you think the real Earth turns?”

**Explore**
At a center or in groups, put out globes on stands for students to spin and explore.

**Explain**
Have students view Science and Me: Our Space in Space after exploring and spinning globes on stands.

Follow-up questions: “Why does the Sun look like it moves through the sky?”, “Does the Moon always look the same?”

**Elaborate**
After viewing Science and Me: Our Space in Space, expand on the concept of the Earth’s rotation causing daytime and nighttime by playing the “Daytime & Nighttime” game! Using a lamp or a flashlight to model the Sun, call out “daytime” and “nighttime” having students turn toward or away from the Sun, respectively.

**Evaluate**
Have students complete the following activity page, demonstrating how things look during the daytime and during nighttime!
Our Space in Space

Draw a picture showing daytime here:

Draw the same picture at nighttime here:
Science and Me: Tree of Life

We can find plants just about everywhere on Earth! In this episode of Science and Me, Molecular Mike takes a closer look at these amazing living things. We’ll find out about roots, stems, leaves, and all the things plants need to live. Time to grab your shovel and dig into some science fun!

Engage
Gather students together near a tree or other plant outdoors. Ask students:
“What kinds of things does your body need to stay alive?”
“Where do the things you need to stay alive come from?”
“What does this plant need to stay alive?”
“What do you have in common with this plant?”

Explore
At a center or in groups, put out different varieties of plants and seeds for students to explore. Include nonpoisonous potted plants, fruits, vegetables, and dry seeds.
BE SURE TO INSTRUCT STUDENTS NOT TO EAT ANY OF THE PLANTS!
During their explorations, allow students to take potted plants out of their containers and investigate the root systems. Let them smell and touch the different kinds of plants. With supervision, have students explore selected (safe) outdoor plants, too.

Explain
Have students view Science and Me: Tree of Life after exploring different varieties of plants.
Follow-up questions: “What are some things that plants need?”, “How do plants get water and nutrients?”, “Where can plants live?”

Elaborate
After viewing Science and Me: Tree of Life, elaborate on the concept of plant structures. Use various kinds of potted plants to have students identify roots, stems, and leaves. Have students describe what each of these structures do for plants!

Evaluate
Bring students outdoors and have them collect leaves from various plants. Next, have them complete the following activity page using the unwrapped sides of crayons or pieces of colored chalk to create leaf rubbings!
I collected _______ leaves.
Science and Me: Growing and Knowing

My, how you’ve grown! In this episode of Science and Me, Molecular Mike looks at how people and other living things grow and change over time. Most living things grow up to look like their parents and can even look very similar to other living things. So how, exactly, do we tell them apart?...

Engage
Hold up a picture of yourself as a child for students to see. Ask students:

“Has anyone seen this child anywhere around the school?”
“Who do you think this is?”

Explain that it is a picture of you as a child. Show pictures of your family and ask:

“Who do you think these people are?”
“Who do you look like in your family?”

Explore
Give students the opportunity to explore books about vertebrate animals, animal babies, and the five senses. Include fiction and nonfiction in the collection. Put the books at a science learning center or class library for students to discover.

The following are suggested titles for student exploration:

Are You My Mother? by P.D. Eastman, Baby Animals by Seymour Simon, Me and My Senses by Joan Sweeney, Vertebrates by Ted O’Hare

Explain
Have students view Science and Me: Growing and Knowing after exploring the books about animals and the five senses.

Follow-up questions: “How do structures help us to tell living things apart?”, “What are our five senses?”, “What do our senses do?”

Elaborate
After viewing Science and Me: Growing and Knowing, elaborate on the concepts of structures and senses by giving students opportunities to describe things using their senses.

Evaluate
On the following activity page, have students draw and describe things they use their sensory structures to see, hear, smell, taste, and touch!
Growing and Knowing

This is something I...

- see
- hear
- smell
- taste
- touch
Science and Me: It’s Alive!

What’s the world like where you live? Is it hot? Cold? Wet? Dry? In this episode of Science and Me, Molecular Mike looks at different kinds of environments, plus the living and nonliving things we find in them! We’ll see how living things can be very different and adapt to surviving in many places.

Engage
Bring students outdoors and have them look around at the environment. Ask students:

“What are some living things you see out here?”
“Do you see anything that is not alive?”, “Which things are not alive?”
“How are the living things different from the things that are not alive?”
“Could a fish live outdoors here where we are?”, “Why not?”

Explore
At a center or in groups, put out models of living and nonliving things for students to explore. Include plastic animals and trees, toy cars and trucks, etc.

BE SURE TO INSTRUCT STUDENTS NOT TO CRASH TOY CARS AND TRUCKS!

During their explorations, have students sort “living” models from “nonliving” models. They can also sort the plastic animals and trees based upon their structures and/or the kinds of environments they can be found in (wet, dry, cold, hot, etc.).

Explain
Have students view Science and Me: It’s Alive! after exploring and sorting the “living” and “nonliving” models.

Follow-up questions: “What is an environment?”, “What do structures help living things to do?”, “How do your structures help you?”

Elaborate
After viewing Science and Me: It’s Alive!, elaborate on the concept of environments where we can find living and nonliving things by sharing images. Locate pictures online or use books about deserts, oceans, arctic regions, rainforests, wetlands, and more!

Evaluate
After viewing and discussing the living and nonliving things that can be found in various environments, check for understanding. On the following activity page, have students draw living and nonliving things in their own environment!
It’s Alive!

Draw and label living things in your environment here:

Draw and label nonliving things in your environment here:
Living things depend on one another to stay alive. Look at you! People depend on plants and other living things for food, clothing, shelter, and all sorts of things we need. In this episode of Science and Me, Molecular Mike looks at the ways living things need and help one another!

**Engage**
Show students pictures of people in our community doing different kinds of jobs. Ask students:

“How do we depend on these people?”

“How are there other people we need who help us? Who are they?”

“People are living things. Are there any living things we depend on besides people?”

“What other kinds of things do we depend on?”

**Explore**
At a center or in groups, put out magazines and newspapers for students to explore! Use a variety of printed resources that include people engaged in work-related activities.

**BE SURE TO PREVIEW MAGAZINES / NEWSPAPERS FOR INAPPROPRIATE MATERIAL!**

During their explorations, ask students to look for people doing jobs that we depend on them to do. Have students tear or cut out one picture and explain how the person (or people) in the picture help others in some way.

**Explain**
Have students view Science and Me: Wild Worlds after exploring printed materials for people with jobs we depend on.

Follow-up questions: “What does “interdependency” mean?”, “How do animals depend on plants?”, “How do plants depend on animals?”

**Elaborate**
After viewing Science and Me: Wild Worlds, elaborate on the concept of interdependency by having students describe people they depend on. Then have students describe how they themselves are depended upon. Have them share and discuss their ideas.

**Evaluate**
After elaborating on interdependency with students, have them think about one person they depend on. Use the following activity page to have students draw a picture of someone they depend on and describe how they depend on that person!
Wild Worlds

This is someone that I depend on:

This is a picture of ________________________.

I depend on this person because ____________

__________________________________________.
Have you ever tried to figure out how something works or why something happens? That’s what scientists do! In this episode of Science and Me, Molecular Mike investigates the kinds of things scientists do to learn about our world. Time to make some close observations!

Engage
Using a clear glass of ice water for demonstration, ask students:
“What do we call these things floating at the top of the water in this glass?”
“Does ice float in any other kinds of liquids? What kinds?”
“What could you do to find out if ice floats in all kinds of liquids?”
“How would a scientist find out if ice floats in all different kinds of liquids?”

Explore
Ice floats in water and also floats in most liquids that have a great deal of water in them. Give students the opportunity to explore the way ice floats in different kinds of liquids. Use liquids such as water, various juices, and sports drinks.
BE SURE TO INSTRUCT STUDENTS NOT TO EAT OR DRINK ITEMS THEY ARE EXPLORING!
During their explorations, have students observe how most of the floating ice stays under the surface. Students may also notice condensation on the outside of containers they are using. Ask them where they think the liquid comes from on the outside of the containers!

Explain
Have students view Science and Me: Science Sense after exploring the way ice floats in different liquids.
Follow-up questions: “What do scientists do?”, “How do scientists test their ideas?”, “What kinds of things do scientists learn about?”

Elaborate
After viewing Science and Me: Science Sense, elaborate on the scientific process that scientists use by demonstrating how ice floats in water but sinks in cooking oil. Have students come up with the problem, make hypotheses, experiment, and draw a conclusion.

Evaluate
After elaborating on the scientific process, have students put it into action. On the following activity page, have them use the scientific process to figure out if ice melts faster in water or in the air!
Problem: Does ice melt faster in water or air?

Hypothesis: I think ice melts faster in __________.

Procedure: (Draw your experiment here.)

Conclusion: Ice melts faster in __________.
People use all different kinds of tools to investigate our world. It’s important for us to work together and share information about what we learn! In this episode of Science and Me, Molecular Mike shows us ways that people gather scientific information and look for patterns in nature.

**Engage**

Have an assortment of items to share with students including magnifiers, thermometers, rulers, and balance scales. Ask students:

“What are these things called?”
“How do people learn about the world around them with these things?”
“What parts of our bodies help us learn about the world?”

**Explore**

At a center or in groups, place various scientific tools out for students to explore. Include magnifiers, thermometers, rulers, and balance scales. Use age-appropriate items that are safe for students to handle on their own, with limited supervision.

**FOR SAFETY, DO NOT PUT OUT GLASS TOOLS OR TOOLS WITH SHARP EDGES!**

During their explorations, have students view, measure, and balance various items using the scientific tools. Ask them think about ways they could use the tools to do something or learn about something new!

**Explain**

Have students view Science and Me: Tech Tools after exploring the magnifiers, thermometers, rulers, and balance scales.

Follow-up questions: “What kinds of patterns do we see in nature?”, “How do people get information?”, “What tools do we use in science?”

**Elaborate**

After viewing Science and Me: Tech Tools, elaborate on the concept of scientific tools by having students look for places where scientific tools are used in and around school. Take them on a walk and look for thermostats, electric meters, computers, etc.

**Evaluate**

After taking a walk around the school to look for scientific tools, have students think about ways scientific tools help us get information about things. On the following activity page, have students use scales and rulers (or Unifix Cubes) to make self-measurements!
Name __________________________

Tech Tools

This is a drawing of me:

Use science tools to get information about yourself!

This is how much I weigh: _______________________
This is how tall I am _______________________

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