Intro to Science: A 3-Day Lesson Plan for Mirabelle

Here is a fun, hands-on, 3-day plan to introduce science, the scientific method, and a famous scientist. Each day is designed to be short, engaging, and perfect for one-on-one learning.

Day 1: We Are Scientists! Exploring Our Tools

Materials Needed:

- Science Tools and Equipment Read and Write the Room Activity (worksheet printed, cards cut out and taped around the room before the lesson begins)
- Pencil and clipboard (or a hard book to write on)
- Your real science tools: magnifying glass, microscope, ruler, thermometer
- A few interesting objects to observe (e.g., a leaf, a rock, a feather, a drop of water on wax paper)
- Optional: A lab coat (an old oversized white button-down shirt works perfectly!)

Lesson Plan:

1. Introduction: What is a Scientist? (2-3 minutes)

What to Say: "Hi Mirabelle! This week, we're going to become scientists! Do you know what a scientist does? A scientist is a super curious person who asks lots of questions about the world, like 'Why is the sky blue?' or 'How do birds fly?'. They are like detectives for nature! The most important part of being a scientist is being curious and asking 'I wonder...' questions. You are already an expert at that!"

What to Do: If you have the "lab coat," present it to her now to make her an official scientist for the week. This gets her excited and in character.

2. Learning & Discovery: A Scientist's Tools (5 minutes)

What to Say: "Just like a builder needs a hammer and a chef needs a spoon, scientists need special tools to help them answer their questions. Let's look at some of the tools we have."

What to Do: Show her each of the real tools you have. Let her hold them. Briefly explain what each one does in simple terms.

- **Magnifying Glass:** "This helps us see tiny things up close. It makes things look bigger!"
- **Microscope:** "This is like a SUPER powerful magnifying glass. It helps us see things that are too small for our eyes to see, like tiny living things in water!"
- **Ruler:** "This helps us measure how long or tall something is."
- **Thermometer:** "This tells us if something is hot or cold. It measures temperature."

3. Hands-On Activity: Science Tool Hunt! (15-20 minutes)

What to Say: "Alright, Scientist Mirabelle, your first mission! I've hidden pictures of science tools all around the room. Your job is to take your clipboard and pencil, find each picture, and write down the name of the tool on your paper. It's called 'Read and Write the Room'!"

What to Do:

1. Give her the clipboard with the worksheet and a pencil.
2. Let her walk around the room to find each card. Help her sound out the words if she needs it. The goal is exploration and fun, not perfect spelling.
3. After she finds them all, have her use her REAL magnifying glass to look at the interesting objects you gathered (the leaf, rock, feather). Ask her questions like, "What do you see now that you couldn't see before?" This is a great, simple activity that makes her feel like a real scientist.

This worksheet is your proof of learning for Day 1.

4. Wrap-Up (2 minutes)

What to Say: "Great work today, Scientist Mirabelle! You learned that scientists are curious people, and you used real science tools to explore the world. Tomorrow, we're going to do our very first science experiment!"

Suggestions for Books & Videos:

- **Book:** "What Is a Scientist?" by Barbara Lehn
- **Book:** "Ada Twist, Scientist" by Andrea Beaty
- **Video:** Search YouTube for "SciShow Kids: What's a Scientist?"

Day 2: The Scientific Method & A Melting Experiment

Materials Needed:

- Scientific Method Poster
- Scientific Method Experiment Template for Homeschool (printed)
- Pencil and crayons
- 3 small bowls or plates
- 3 ice cubes of the same size
- Things to test: a small bowl of salt, a small bowl of sugar, a cup of warm water
- A timer (you can use your phone)

Lesson Plan:

1. Introduction: A Plan for Questions (3-5 minutes)

What to Say: "Good morning, Scientist! Yesterday we learned that scientists ask questions. But what do they do after they ask a question? They don't just guess! They have a special plan to find the answer. It's called the Scientific Method."

What to Do: Show her the Scientific Method Poster. Point to each step and explain it in very simple terms.

- **Ask a Question:** "First, we wonder about something."
- **Hypothesis (Guess):** "Then, we make a smart guess about what we think will happen."
- **Experiment (Test):** "This is the fun part! We do a test to see if our guess was right."
- **Observation (See):** "We watch very closely to see what happens in our test."
- **Conclusion (Learn):** "Finally, we talk about what we learned and if our guess was right!"

2. Learning & Discovery: Our Experiment Question (5 minutes)

What to Say: "Today, our question is going to be: **What will make an ice cube melt the**

fastest? We have a few things to test: salt, sugar, and warm water. Now we need to make our 'Hypothesis'—our smart guess. Which one do *you* think will make the ice melt fastest? Why do you think that?"

What to Do:

1. Take out the "Scientific Method Experiment Template."
2. Help her write down the question at the top.
3. In the "Hypothesis" section, help her write or draw her guess. For example, "I think the warm water will melt the ice fastest because it is warm."

3. Hands-On Activity: The Great Melt-Off! (15-20 minutes)

What to Say: "Okay, it's time to test your guess! Let's do the experiment!"

What to Do:

1. Set out the three bowls. Place one ice cube in each.
2. At the exact same time, pour a little salt on one, a little sugar on the second, and a little warm water on the third. Start your timer!
3. Watch the ice cubes closely. This is the 'Observation' step. Talk about what you see happening. Is one fizzing? Is one just getting wet?
4. On the worksheet, help her draw what each ice cube looks like after 1 minute, 3 minutes, etc. in the "Observation" section.
5. Stop the timer when the first ice cube is completely melted. Note which one it was.

4. Wrap-Up & Record (5 minutes)

What to Say: "Wow! So which one melted the fastest? Was your guess correct? It's okay if it wasn't—real scientists make wrong guesses all the time! The important part is what we learned. We learned that [warm water] melts ice very fast!"

What to Do: Help her complete the "Conclusion" section of her worksheet by writing or drawing what she learned. ***This template is your proof of learning for Day 2.***

Suggestions for Books & Videos:

- **Book:** "Oscar and the Bat: A Book About the Scientific Method" by Geoff Waring
- **Video:** Search YouTube for "The Scientific Method for Kids" by Homeschool Pop.

Day 3: Meet a Scientist: Albert Einstein

Materials Needed:

- Computer or tablet for the "All about Einstein" PowerPoint
- "All about Einstein" flip book (printed and ready to be assembled)
- Crayons, markers, and a pencil
- Scissors and a stapler or glue
- Optional: "My Encyclopedia of Very Important Things" book

Lesson Plan:

1. Introduction: Famous Scientists (2 minutes)

What to Say: "Hi Scientist Mirabelle! We've learned what scientists do and how they do experiments. Today, let's meet a real, super famous scientist. His name was Albert Einstein, and he was one of the smartest and most imaginative people who ever lived!"

2. Learning & Discovery: Who Was Einstein? (5-7 minutes)

What to Say: "Let's learn a little bit about him. He was a lot like you when he was little—he was very quiet and loved to ask big questions and imagine things."

What to Do:

1. Go through the "All about Einstein" PowerPoint together. Don't worry about the complex science.
2. Focus on the fun, relatable facts: he loved to play the violin, he had messy hair, he rode his bike, and he used his imagination to do "thought experiments" in his head.
3. Emphasize that his biggest power was his curiosity and imagination.

3. Hands-On Activity: Einstein Flip Book (20-30 minutes)

What to Say: "Now you're going to make your very own book about Albert Einstein to remember all the cool things we learned about him."

What to Do:

1. Give her the pages for the flip book. Go through one page at a time.
2. **Portrait Page:** Have her draw her best picture of Einstein (don't forget the fun hair!).
3. **Characteristics Page:** Talk about what he was like. Help her write words like "curious," "smart," and "imaginative."
4. **Accomplishments Page:** Keep it simple! Help her write "Asked big questions" or "Famous scientist."
5. Let her color and decorate all the pages.
6. When she's done, help her cut out the pages and staple them together to make the book.

This flip book is your proof of learning for Day 3 and is a fantastic project for your end-of-year review.

4. Wrap-Up (2 minutes)

What to Say: "Look at this amazing book you made! You learned so much this week. You learned that you are a scientist, you know how to use science tools, you can do an experiment, and you even know about one of the most famous scientists in history. Being a scientist is all about staying curious and having fun discovering new things!"

What to Do: Have her "read" her flip book back to you, telling you what she remembers about Einstein.

Suggestions for Books & Videos:

- **Book:** "On a Beam of Light: A Story of Albert Einstein" by Jennifer Berne
- **Book:** "I am Albert Einstein" by Brad Meltzer
- **Video:** Search YouTube for "Albert Einstein for Kids" by Socratica Kids.