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# Introduction to Science: A 3-Day Adventure

## Day 1: We Are Scientists! (The Scientific Method)

**Learning Objective:** Mirabelle will understand that scientists ask questions and do experiments. She will practice a simple 3-step scientific method (Question, Guess, Check) to find an answer.

### Materials Needed:

- A clear plastic bin or large bowl filled with water
- A towel to place under the bin for spills
- A collection of small, waterproof household items (e.g., a crayon, a plastic toy, a coin, a leaf, an apple slice, a rubber duck, a small rock, a bottle cap)
- **Twinkl Worksheet:** Sink or Float Worksheet (This will be your portfolio piece!)
- Pencil or crayons
- **Optional Book:** "What Is a Scientist?" by Barbara Lehn or a similar book from your library.
- **Optional Video:** "The Scientific Method for Kids" on YouTube (choose one that is short and animated).

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### Lesson Plan (Approx. 25-40 minutes)

#### Part 1: What is a Scientist? (10 minutes)

1. **Engage:** Start by saying, "*Hi Mirabelle! Guess what? For the next three days, you and I are going to become super scientists! What do you think a scientist does?*" Listen to her ideas and praise her thoughts. You can write them down on a piece of paper.
2. **Explain:** Say, "*Those are amazing ideas! Scientists are super curious people who ask questions about the world. They want to know 'why' and 'how' things work. To find answers, they use a secret three-step code. Do you want to learn it?*"
3. **Introduce the "Secret Code":** Say, "*The scientist's secret code is: **Ask, Guess, and Check!***
   ***1. Ask:** You ask a question about something.*
   ***2. Guess:** You make a smart guess about what the answer might be. Scientists call this a 'hypothesis.'*
   ***3. Check:** You do an experiment to see if your guess was right!*"
4. **Connect:** Say, "*We're going to use this secret code right now for our very first experiment!*"

#### Part 2: The "Sink or Float" Experiment (15-30 minutes)

1. **Set Up:** Go to your experiment station with the bin of water and collection of items. Lay out the "Sink or Float Worksheet."
2. **Step 1 - Ask:** Hold up one of the items, like the crayon. Say, "*Okay, Scientist Mirabelle, our first mission is this crayon. Our scientist question is: **Will it sink to the bottom or float on the top of the water?***"
3. **Step 2 - Guess:** Ask, "*What is your guess? Do you think it will sink or float?*" On the worksheet, help her find the row for the crayon and circle her guess (her hypothesis) in the "My Prediction" column.
4. **Step 3 - Check:** Say, "*Time to check our guess! Gently place the crayon in the water and let's observe what happens.*" Watch together. Then, help her circle the correct answer in the "What Happened?" column on her worksheet.
5. **Repeat:** Continue this "Ask, Guess, Check" process for each item. Let her be the one to place
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the items in the water. Encourage her to talk about why she thinks something might sink or float. There are no wrong guesses, only discoveries!

Wrap-Up (2 minutes)

Look at the completed worksheet together. Say, "*Look at all this amazing science we did! You asked questions, made guesses, and did an experiment to check your answers. You are officially a scientist! Great work today!*" Save this worksheet for her end-of-year review.

Day 2: A Scientist's Super Tools

Learning Objective: Mirabelle will be able to identify a magnifying glass, ruler, and microscope and describe how each tool helps scientists observe and measure.

Materials Needed:

- Your science tools: magnifying glass, microscope, ruler, thermometer
- A few interesting things to observe: a leaf, a flower, a fabric swatch, a strand of hair, some salt or sugar crystals
- A few things to measure: a book, her favorite small toy, a crayon
- Your 'My Encyclopedia of Very Important Things' by DK or a children's dictionary
- **Twinkl Resource:** Science Lab Labels (Print and cut these out to label your "stations.")
- Paper and a pencil for recording observations (optional)

Lesson Plan (Approx. 20-35 minutes)

Part 1: Exploring the Toolkit (10 minutes)

1. **Engage:** Say, "*Good morning, Scientist Mirabelle! Every great scientist needs a set of super tools to help them explore the world. Let's look at our mission tools for today.*" Lay out the magnifying glass, ruler, microscope, and thermometer.
2. **Discuss Each Tool:**
    - **Magnifying Glass:** Pick it up and say, "*What does this do? It makes things look bigger! It helps us see tiny details we might miss with just our eyes.*" Let her look through it at her hand.
    - **Ruler:** Pick it up and say, "*This tool helps us measure things. We can find out how long, short, or tall something is.*"
    - **Microscope:** Point to it and say, "*This is a super-powered magnifying glass! It lets us see things that are SO tiny, they are invisible to our eyes, like germs or tiny parts of a plant.*"
    - **Thermometer:** Show her this tool and say, "*This tells us how hot or cold something is. It measures the temperature.*"
3. **Book Connection:** Open your encyclopedia or dictionary and look up "science," "tools," or "microscope" to see pictures and read a short definition.

Part 2: Science Stations Scavenger Hunt (10-25 minutes)

1. **Set Up:** Say, "*Now it's time to put your tools to work! We have three science stations to investigate.*" Set up three small areas, each with a tool, a Twinkl label, and the items to be investigated.
2. **Station 1: The Magnifying Station.** Place the magnifying glass here with a leaf and a flower. Say, "*At this station, use the magnifying glass to discover the hidden details on this*

leaf. What do you see?"
3. **Station 2: The Measuring Station.** Place the ruler here with the book, toy, and crayon. Say, "*Your mission here is to use the ruler to measure how long each of these objects is.*" Help her line up the ruler and read the numbers.
4. **Station 3: The Microscopic Station.** Place the microscope here with prepared slides of a hair and some salt. Say, "*Here you get to use the super-powered microscope! Let's see what a tiny piece of salt and a strand of hair look like up close.*" (This will require your help to focus).

Wrap-Up (2 minutes)

After visiting the stations, ask, "*Which tool was your favorite to use today, Scientist Mirabelle? Tools are so important because they help us see and understand the world in new ways! You did a fantastic job.*"

Day 3: Meet a Famous Scientist: Albert Einstein

Learning Objective: Mirabelle will be able to state one fact about Albert Einstein (e.g., he was very curious, he was a scientist, he had crazy hair) and create a craft inspired by him.

Materials Needed:

- **Twinkl Resource:** Albert Einstein Colouring Page (Use this as the base for the craft).
- White cotton balls or fluffy white yarn
- Glue stick or liquid glue
- Scissors
- Crayons or markers
- **Optional Book:** "On a Beam of Light: A Story of Albert Einstein" by Jennifer Berne or another kid-friendly Einstein biography from the library.
- **Optional Video:** A short, animated biography of Einstein for kids from YouTube.

Lesson Plan (Approx. 20-35 minutes)

Part 1: Who Was Albert Einstein? (10 minutes)

1. **Engage:** Say, "*Hello, my curious scientist! Today we're going to meet one of the most famous scientists ever. His name was Albert Einstein, and he used his amazing brain to think about space, stars, and light! And guess what? He had the most amazing, wild, crazy hair!*"
2. **Learn About Einstein:** Read the picture book or watch the short video about him. As you do, point out key ideas. Say things like:
    - "*Look how he was always asking questions! Just like us!*"
    - "*He loved to imagine things. He did 'thought experiments' just by thinking in his head.*"
    - "*He proved that being curious and creative is the most important part of being a scientist.*"
3. **Discuss:** After the book/video, ask, "*What is one thing you remember about Albert Einstein?*"

Part 2: Crazy Hair Einstein Craft (10-25 minutes)

1. **Introduce the Craft:** Say, "*To remember how fun and creative Einstein was, we're going to make a portrait of him, complete with his crazy hair!*"
2. **Create:** Give Mirabelle the printed coloring page. First, let her color in his face and clothes with crayons or markers.
3. **Add the Hair:** Show her how to pull the cotton balls apart to make them fluffy or cut pieces of

yarn. Use the glue to stick the "hair" all over his head on the paper. Encourage her to make it as wild and fun as she wants.

4. **Talk While Crafting:** As you work, reinforce the lesson. Say, "*Einstein teaches us that it's okay to be a little silly and to always, always stay curious. What are you curious about today?*"

Wrap-Up (2 minutes)

Display her finished Einstein craft proudly. Say, "*This looks amazing! You did such a great job learning about what science is, what tools scientists use, and meeting a famous scientist. You have completed your first science mission. I am so proud of you, Scientist Mirabelle!*"

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