Lesson: Clouds and Weather	Name:
Teacher:	Date:

Clouds and Weather Lesson Plan

NGSS: MS-ESS2-5: Collect data to provide evidence for how the motions and complex interactions of air masses result in changes in weather conditions.

Objective:

Students will identify common cloud types (stratus, cumulus, cirrus), understand how clouds form, and explain how cloud observation helps predict weather. Students will build a **cloud-in-a-jar model** in groups to observe condensation and cloud formation.

Materials:

- Clear glass jar with lid
- Hot water
- Ice cubes
- Aerosol spray (optional)
- Water
- Towels or tray (to catch spills)
- Paper and pencils for observations

Procedure:

1. **Introduction (5 min):**
   Discuss clouds and their importance in weather prediction. Show images of stratus, cumulus, and cirrus clouds.
2. **Demonstration / Experiment (15 min):**
   - Pour hot water into the jar (~1/3 full).
   - Place ice cubes on the jar lid.
   - Optionally, spray a small puff of aerosol into the jar to simulate condensation nuclei.
   - Observe cloud formation inside the jar.
3. **Group Activity (15 min):**
   - Students work in groups to create their cloud-in-a-jar models.
   - Record observations: what they see, how condensation forms, and relate it to cloud formation in the sky.

4. Discussion & Reflection (5 min):
    - Discuss how observing clouds can help predict weather.
    - Compare the cloud-in-a-jar formation to real cloud formation.

Safety Guidelines:

- Handle hot water carefully; teacher supervision required.
- Use aerosol spray sparingly and safely.
- Work on trays to avoid spills.

Accommodations:

- Provide step-by-step visual instructions for ELL or ESE students.
- Allow extra time for setup and observation.
- Offer group support and guided questions for students who need assistance with scientific explanations.

Project / Extension:

Cloud Observation Journal – Students observe the sky for a week, record cloud types, cloud cover, and any weather predictions based on their observations. Groups can share findings and compare predictions to actual weather reports.