The background of the slide is a light gray gradient with several realistic water droplets of various sizes scattered across it. The droplets have highlights and shadows, giving them a three-dimensional appearance. The text is centered in the middle of the slide.

**DELIVERY OF PRACTICAL AND OTHER
LABORATORY ACTIVITIES**

BY

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INTRODUCTION

- Practical work and laboratory work provides controlled conditions and allows precise manipulation of variables.
- Practical work outside the laboratory offers the opportunity to explore and understand phenomena in their natural context.

PRACTICAL AND LABORATORY ACTIVITIES

Practical activities involve:

- Demonstration
- Investigation
- Problem solving
- Structured practical
- Relating practical



Laboratory activities involve:

- Confirmatory
 - Inquiry
 - Discovering
 - Problem based
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OBJECTIVES OF LABORATORY COURSE WORK

Main objectives of doing a laboratory course are to :

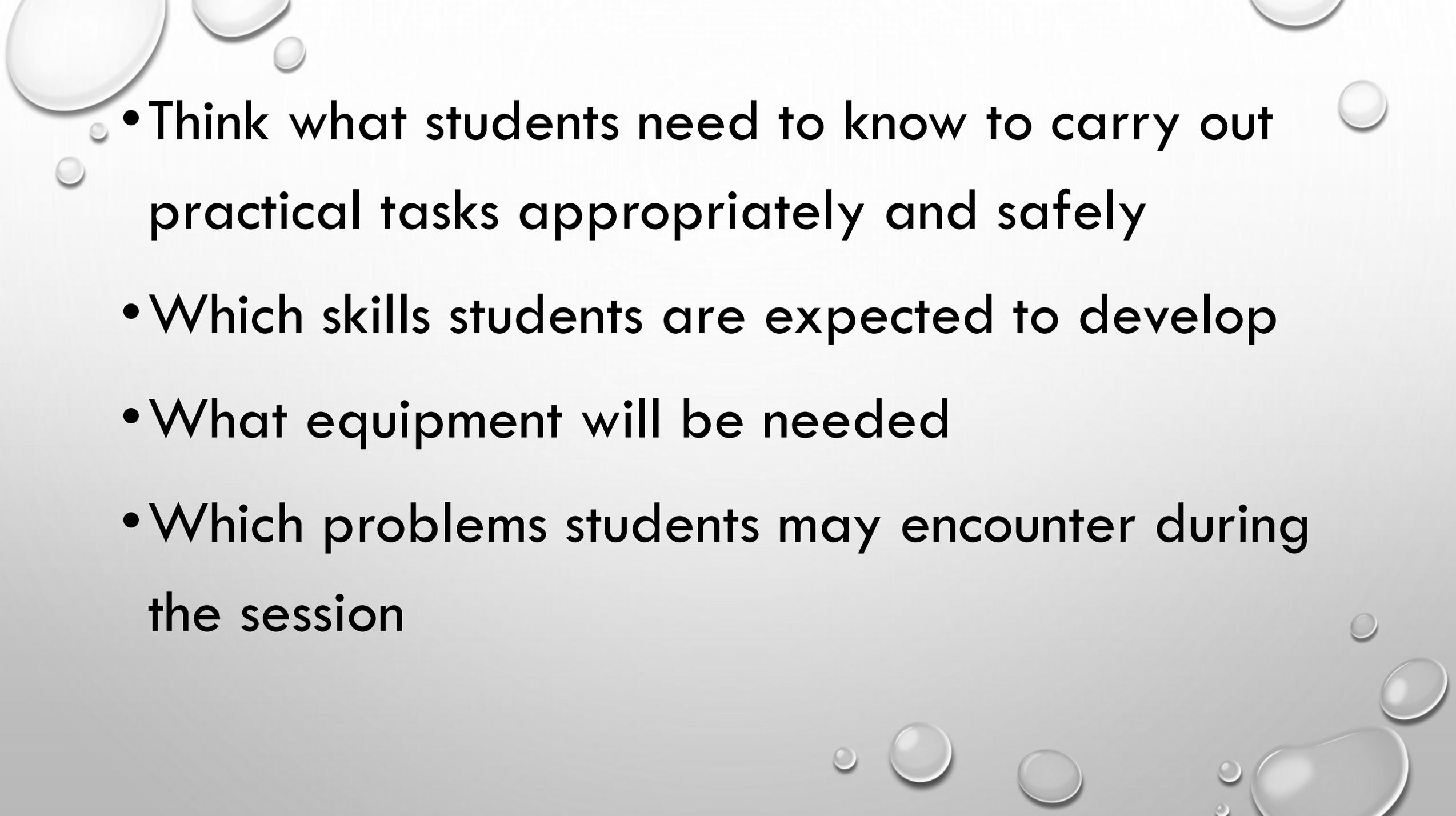
- Develop critical, quantitative thinking
- Develop experimental and data analysis skills
- Learn to use scientific apparatus
- Learn to estimate statistical errors and recognize systematic errors.

PRACTICAL SKILLS

- Planning
- Collecting data
- Analyzing data
- Evaluation

PLANNING AND DESIGNING PRACTICAL AND LABORATORY SESSIONS

- Establish aims and intended learning outcomes for the session and link them to the wider programme of learning
- Choose and design appropriate safe and feasible learning tasks
- Design supportive resources, including instructions, procedures, a manual or worksheets

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- Think what students need to know to carry out practical tasks appropriately and safely
 - Which skills students are expected to develop
 - What equipment will be needed
 - Which problems students may encounter during the session

FOUR PHASES IN A TYPICAL PRACTICAL AND LABORATORY BASED SESSIONS.

1. PRELIMINARY

- Check the equipment and health and safety procedures

2. OPENING

- Get the students' attention
- Check that they can hear and see you
- Announce your intended learning outcomes for the session and show how the practical is related to the rest of the programme of learning
- Describe the equipment to be used and how it works

3. MAIN SECTION

- Give clear instructions about how to use the equipment
- Demonstrate how to perform the successive tasks safely and effectively
- Mention possible mistakes that students should try to avoid making
- Show the how to take, record, calculate, present and interpret results/data

4. ENDING

- Encourage students to ask questions
- Review with them the expected learning outcomes for the session
- Ask students to feedback their perceptions of the learning tasks and to summarize and discuss their main findings and possible problems and mistakes
- Introduce the next session and suggest further work that students could undertake in their own time, whether or not it is part of some in- course summative assessment

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THANKS FOR LISTENING