SCIENCE FOUNDATIONS

Lab safety and scientific equipment

Difficulty level: Intermediate

Science Foundations

This document was made by AI and there may be mistakes. If a question or answer looks wrong, use the Flag a mistake button to let Brett know so he can fix it.

Overview of the concept

This is how you stay safe in a lab, by knowing which glassware measures precisely, when to wear goggles, and what to do when something spills or breaks. A student who grabs a beaker instead of a pipette for a precise volume will get a wrong result before anything dangerous even happens. A worker who knows where the eyewash station is does not waste time looking for it when something splashes. Knowing lab safety and equipment tells you how to handle chemicals and tools so a small mistake stays small.

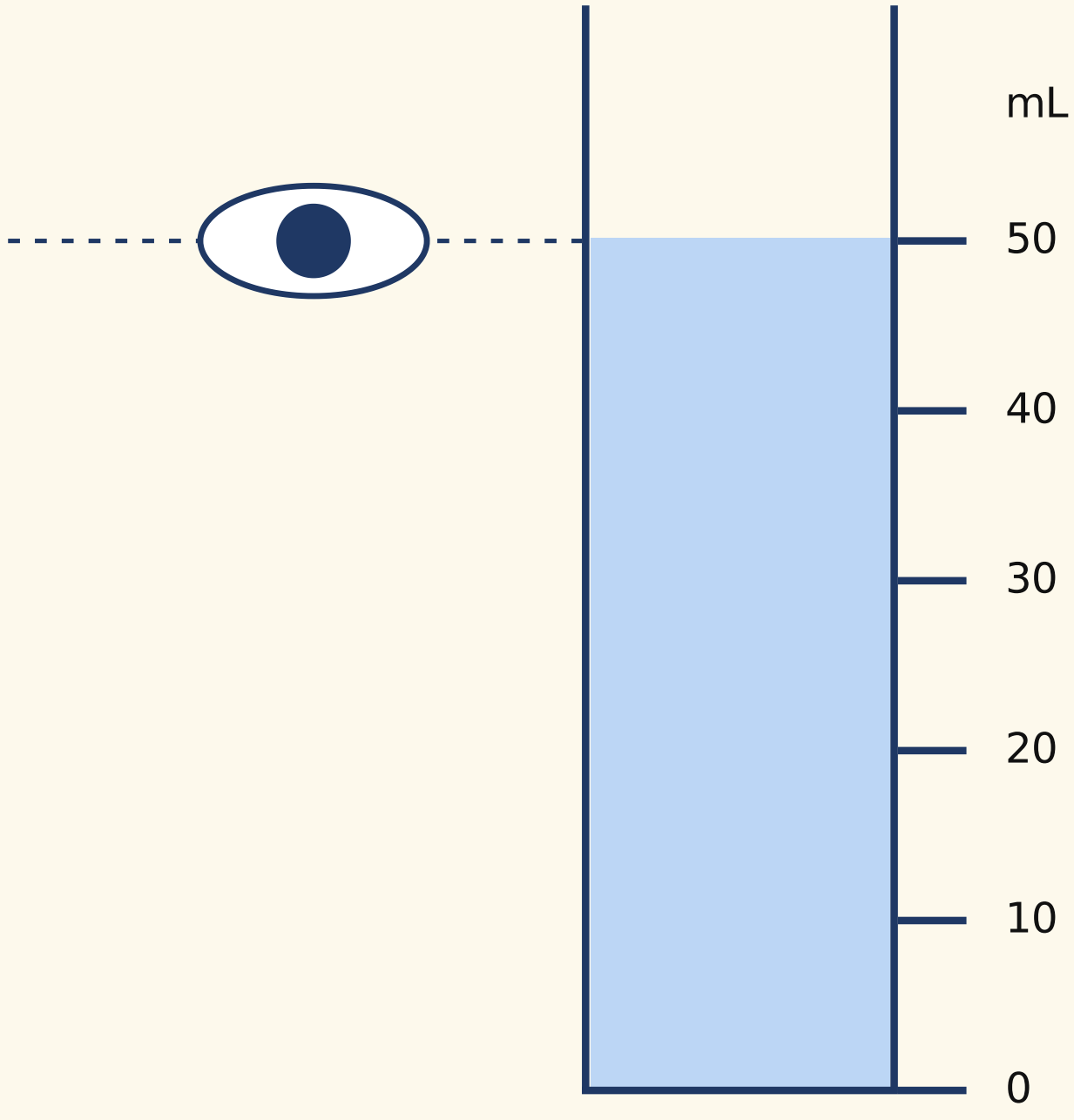


© 2026 Brett Robbins. All Rights Reserved.

Worked examples

EXAMPLE 1

Q Choose equipment to measure 50 mL of water accurately.



SOLUTION

Ask what matters: accuracy, not just holding the liquid.

© 2026 Brett Robbins. All Rights Reserved.

Compare tools: a beaker is rough, a graduated cylinder is accurate.

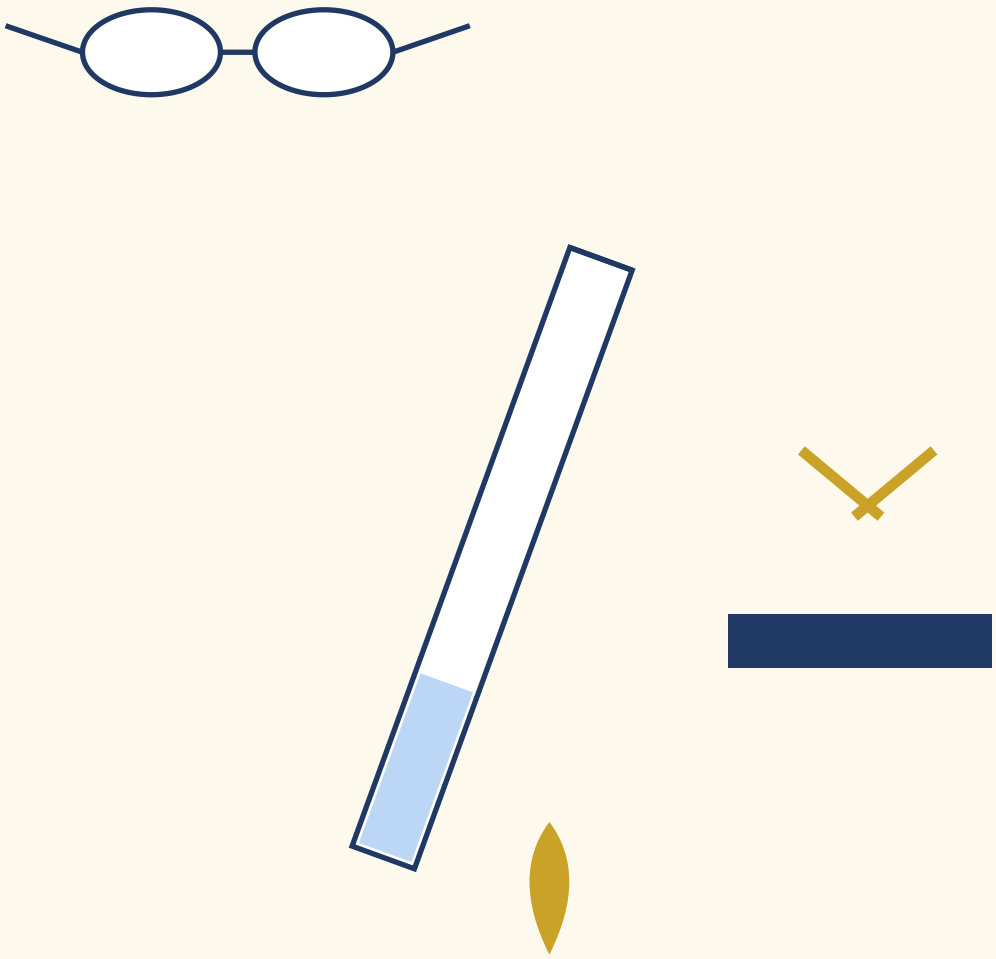
Choose the graduated cylinder and read at eye level.

The result is graduated cylinder, read at eye level.

© 2026 Brett Robbins. All Rights Reserved.

EXAMPLE 2

Q Choose protection for heating a test tube.



SOLUTION

Ask what the hazard is: heat and possible splashes.

Choose goggles for eyes and tongs to hold the tube.

Point the open end away from people while heating.

The result is goggles and tongs, tube pointed away.

© 2026 Brett Robbins. All Rights Reserved.

Practice questions

1 You need to measure 75 mL of water accurately. Which piece of equipment do you choose, and how do you read it?

- **A** Graduated cylinder, read at eye level
- **B** Beaker, read at eye level
- **C** Graduated cylinder, read from above
- **D** Test tube, read at eye level

Understand It with Pulse | Flag a mistake

© 2026 Brett Robbins. All Rights Reserved.

2 **You need to measure 25 mL of acid accurately. Which piece of equipment do you choose, and why not a beaker?**

- **A** Graduated cylinder, because a beaker only gives rough volumes
- **B** Beaker, because a beaker gives exact volumes
- **C** Graduated cylinder, because a beaker is too small
- **D** Test tube, because a test tube is the most accurate

Understand It with Pulse | Flag a mistake

© 2026 Brett Robbins. All Rights Reserved.

3 You are evaporating salt water in an evaporating dish over a Bunsen burner. What protection do you wear, and what do you use to hold the hot dish?

- **A** Safety goggles and tongs
- **B** Safety goggles only
- **C** Tongs only
- **D** Gloves and a beaker

Understand It with Pulse | Flag a mistake

4 A beaker breaks on the bench and glass is scattered. What do you do?

- **A** Sweep it up and put it in the broken-glass bin
- **B** Pick up the pieces with your fingers
- **C** Leave it for the next class
- **D** Sweep it into the normal rubbish bin

Understand It with Pulse | Flag a mistake

© 2026 Brett Robbins. All Rights Reserved.

5

What protects eyes from splashes?

A Gloves

B Safety goggles

C Tongs

D Apron

Understand It with Pulse | Flag a mistake

6

What is used to hold a hot test tube?

A Beaker

B Test tube

C Tongs

D Graduated cylinder

Understand It with Pulse | Flag a mistake

© 2026 Brett Robbins. All Rights Reserved.

7 What do you do if you are unsure in the lab?

- A Stop and ask the teacher
- B Guess and carry on
- C Ask a friend to do it for you
- D Leave the lab at once

Understand It with Pulse | Flag a mistake

8 What is a balance used for?

- A Heating
- B Measuring volume
- C Measuring mass
- D Pouring liquids

Understand It with Pulse | Flag a mistake

© 2026 Brett Robbins. All Rights Reserved.

9

What is a Bunsen burner used for?

A Cooling

B Heating

C Measuring mass

D Filtering

Understand It with Pulse | Flag a mistake

10

What do you do with a spill?

A Tell the teacher at once

B Clean it up quietly and say nothing

C Leave it for the next class

D Pour water on it and carry on

Understand It with Pulse | Flag a mistake

© 2026 Brett Robbins. All Rights Reserved.

ANSWER KEY

1. Graduated cylinder, read at eye level
2. Graduated cylinder, because a beaker only gives rough volumes
3. Safety goggles and tongs
4. Sweep it up and put it in the broken-glass bin
5. Safety goggles
6. Tongs
7. Stop and ask the teacher
8. Measuring mass
9. Heating
10. Tell the teacher at once

© 2026 Brett Robbins. All Rights Reserved.