

# Identifying Matter

## Investigation 1

### Scientist's Glossary



#### Tool: Rehearsal

Rehearsal strategies include:

- saying the definition to yourself.
- being quizzed by someone else.
- drawing a diagram or picture from memory.
- looking for everyday examples of terms.
- using the terms to solve a problem.
- conducting experiments that use these terms.

1. **Chemist:** A scientist who studies chemistry.
2. **Chemistry:** The science that investigates the composition, properties and structures of matter.
3. **Properties:** Characteristics of a substance.
4. **Qualitative properties:** Properties of matter that describe matter but are generally not measured.
5. **Quantitative properties:** Properties of matter that can be measured.
6. **Mass:** The quantity of matter in a body, object, or substance. Mass is measured in the metric system in units of grams (g), kilograms, milligrams, etc.
7. **Volume:** The quantity of space an object or substance occupies. Volume is measured in the metric system in units of liters (L) and milliliters (ml).
8. **Gram:** A basic unit in the metric system used to measure mass. Grams are represented mathematically as "g".
9. **Liter:** A basic unit in the metric system used to measure volume. Liters are represented mathematically as "L".
10. **Milliliter:** One one-thousandth ( $1/1000$ , 0.001) of a liter. Milliliters are represented mathematically as "ml".
11. **Triple beam balance:** A scientific tool that measures mass in grams (g).

# Measuring Matter

## Investigation 2

### Scientist's Glossary



Tool: **Rehearsal**

1. **Chemist:** A scientist who studies chemistry.
2. **Chemistry:** The science that investigates the composition, properties and structures of matter.
3. **Properties:** Characteristics of a substance.
4. **Qualitative properties:** Properties of matter that describe matter but are generally not measured.
5. **Quantitative properties:** Properties of matter that can be measured.
6. **Mass:** The quantity of matter in a body, object, or substance. Mass is measured in the metric system in units of grams (g), kilograms, milligrams, etc.
7. **Volume:** The quantity of space an object or substance occupies. Volume is measured in the metric system in units of liters (L), milliliters (ml) and cubic centimeters (cm<sup>3</sup>).
8. **Gram:** A basic unit in the metric system used to measure mass. Grams are represented mathematically as "g".
9. **Liter:** A basic unit in the metric system used to measure volume. Liters are represented mathematically as "L".
10. **Milliliter:** One one-thousandth (1/1000, 0.001) of a liter. Milliliters are represented mathematically as "ml".
11. **Triple beam balance:** A scientific tool that measures mass in grams (g)

# Combining Matter

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## Investigation 3

### Scientist's Glossary



Tool: **Rehearsal**

1. **Dissolve:** When one or more substances separate and spread evenly through one another.
2. **Miscible:** Two or more liquids that can mix together without separating.
3. **Mixture:** A combination of two or more substances.
4. **Soluble:** The ability of a gas or solid to dissolve in liquid.
5. **Solute:** The substance that changes its state when a solution is created or that is present in the smallest amounts in a solution.
6. **Solution:** A mixture of two or more substances that is the same throughout the mixture.
7. **Solvent:** The substance in a solution that does not change its state when a solution is created or that is present in the largest amount in a solution.

# Changing Matter

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## Investigation 4

### Scientist's Glossary



Tool: Rehearsal

1. **Chemical change:** A change in which a new substance or substances are produced.
2. **Physical change:** A change in which no new substance is produced but the original substance changes form.
3. **Solute:** The substance that changes its state when a solution is created or that is in the smallest amount in a solution.
4. **Solution:** A mixture of two or more substances that is the same throughout the mixture.
5. **Solvent:** The substance in a solution that does not change its state when a solution is created or that is present in the largest amount.

# Matter and pH

## Investigation 5

### Scientist's Glossary



Tool: Rehearsal

1. **Acidic:** A property of matter which depends on the chemical make-up of a substance. A substance which is an acid has a pH between 0 and 6 and is neither a base nor a neutral substance.
2. **Basic:** A property of matter which depends on the chemical make-up of a substance. A substance which is a base has a pH between 8 and 14 and is neither an acid nor a neutral substance.
3. **Neutral:** A property of matter which depends on the chemical make-up of a substance. A substance which is neutral has a pH of 7 and is neither an acid nor a base.
4. **pH:** A property of matter that defines whether a substance is an acid, a base, or a neutral substance.
5. **pH scale:** A scale of numbers from 0 to 14. The scale describes the strength of an acid or a base.
6. **Properties:** Characteristics of a substance.
7. **Solute:** The substance or substances that change its (their) state when a solution is created or that is present in the smallest amounts in a solution.
8. **Solution:** A mixture of two or more substances that is the same throughout the mixture.
9. **Solvent:** The substance in a solution that does not change its state when a solution is created or that is present in the largest amount in a solution.