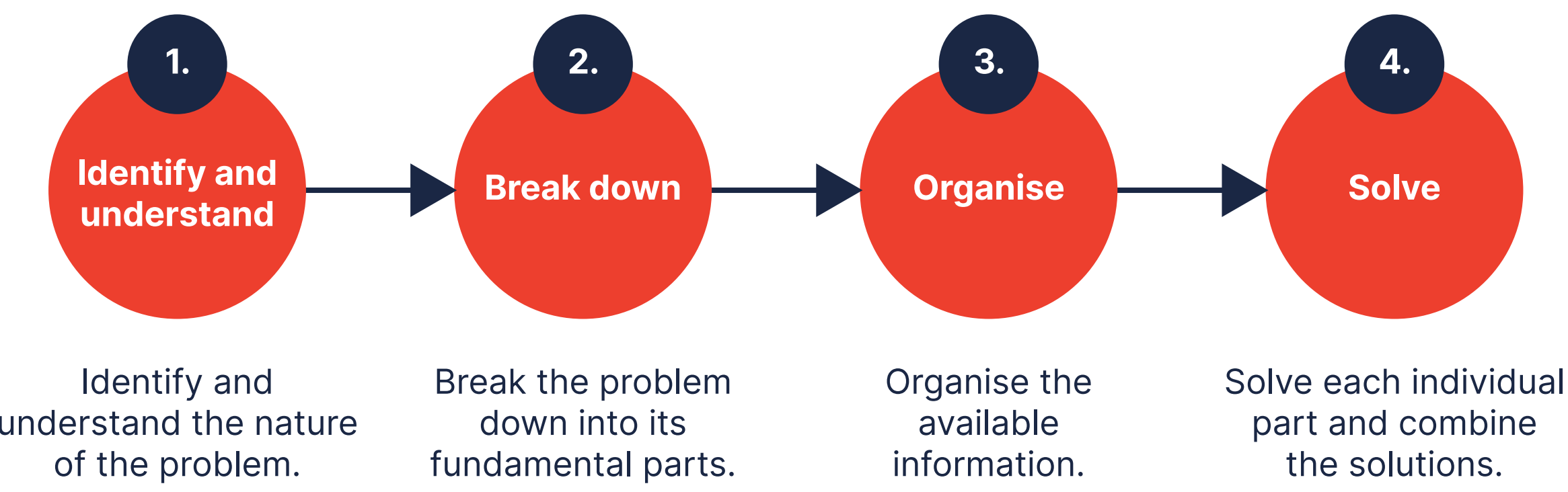


Problem solving

How to approach a problem



Problem-solving methodologies

Depending on the **nature and complexity of the problem** we are trying to solve, we can apply a problem-solving methodology to bring **structure and repeatability to our approach**.

- Logic trees** A fundamental **problem-structuring framework** for solving complicated problems.
- Agile** A framework to effectively **manage projects**. Mostly used by developers, but can be applied to almost anything.
- Design thinking** A solution-based approach to **solve complex, ill-defined** problems.
- Scientific method** A logical problem-solving approach that is **rigorous and replicable** – used by scientists.
- Root cause analysis** A problem-solving method used to **identify the root causes** of problems.

The 5W2H method

The 5W2H (what, why, where, when, who, how, how much) method enables us to ask the **right questions** in an appropriate order to define an **actionable** problem statement.

WHAT

WHAT is the problem that needs to be solved?

HOW

HOW is the problem manifesting?

The symptoms of the problem.

WHY

WHY is it a problem?

Already known explanations contributing to the problem.

WHERE

WHERE does the problem present itself?

The locations and/or products affected by the problem.

WHEN

WHEN is the problem observed?

The times when the problem is occurring.

WHO

WHO is experiencing the problem?

The stakeholders that are impacted by the problem.

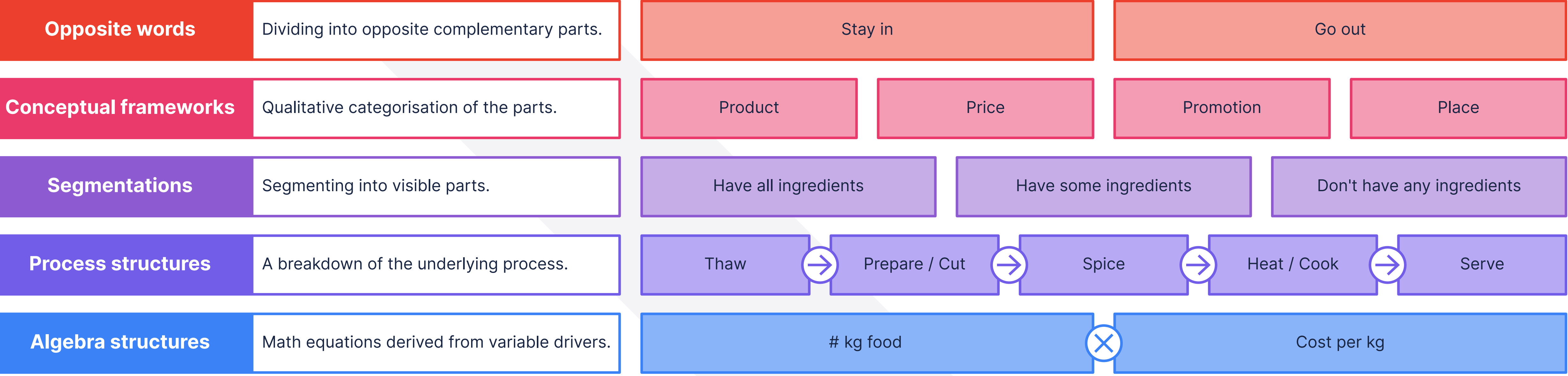
HOW MUCH

HOW MUCH of a problem is it?

The magnitude, error rate, and trend of the problem.

MECE

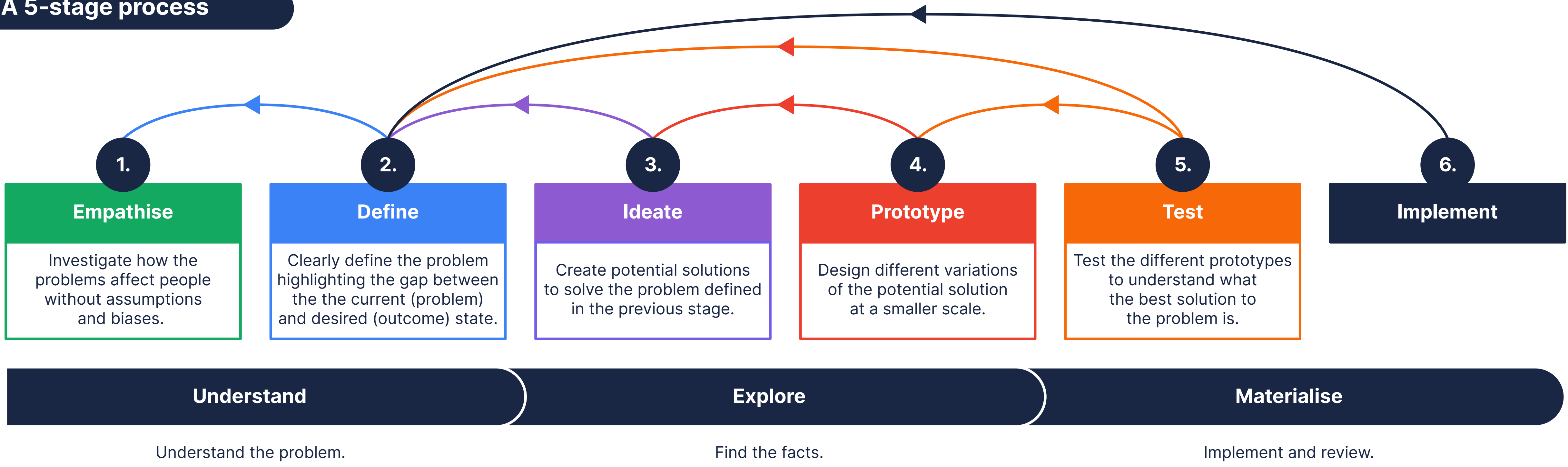
MECE, or **mutually exclusive collectively exhaustive**, is a grouping principle that helps us solve problems coherently and comprehensively. It ensures that **all possible answers are considered exactly once**.



Design thinking

Design thinking is an **iterative** process to **redefine problems**, **challenge assumptions** (about the problem), and **create innovative solutions**.

A 5-stage process



The double diamond

