

identify recruits who were mentally fit for military service and, of those, which were more likely to make good officers

- **Army alpha and army beta tests**
- *Group tests are frequently used in schools for educational achievement testing*

### **Reliability and validity of IQ tests**

Two key attributes of any psychological test are **reliability and validity**

**Reliability** refers to the attribute of **consistency in measurement**

The **validity** of a test is **the extent to which it measures what it purports to measure in a particular context**

### **Cultural bias**

Some people argue that intelligence tests are **designed to favour the white middle class** – James Wilson-Miller (1982) developed the **Koori IQ Test**. It resembles what an IQ test would be like if it were designed by indigenous people in Australia

The response to eliminate cultural bias from intelligence tests has been to produce **culture free tests**, or tests that do not include culturally specific information, and **culture fair tests**, using only information common to different cultures

### **Genetics versus environment**

To what extent is intelligence **inherited or learned**?

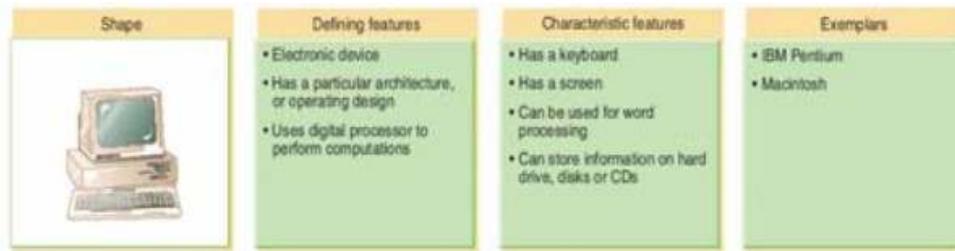
We typically use **family, twin and adoptions studies** to investigate genetic influences. Family studies allow us to examine the extent to which a trait 'runs' through intact families, those in which all members live together

Galton (1869) found that highly intelligent individuals that had first degree relatives who were also highly intelligent, but fewer second and third degree relatives who were highly intelligent

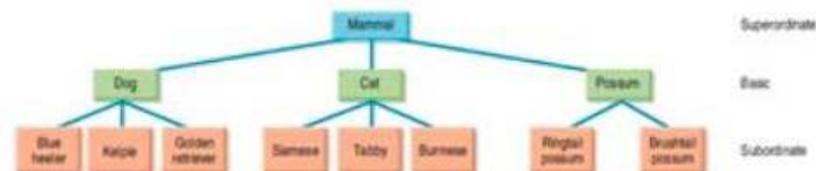
However, a **limitation that applies to family studies** is that they do not allow for researchers to distinguish between the effects of genes from those of the environment. Twin studies addresses this limitation by comparing correlations in a trait in two types of twins – monozygotic (MZ) and dizygotic (DZ)

**Twin studies** have revealed that MZ twins correlation have been between .7-.8, while DZ twins correlations range between .3-.4. Although this provides **strong evidence for genetic influence**, it also **supports environmental influences** since correlations between MZ were not 1

**Adoption studies** examine the extent to which children adopted into new homes resemble their adoptive versus biological parent. Adoption studies do **support the role of the environment**, with adopted children who come from poor and disadvantaged homes showing an increase in IQ when placed in an enriched



## Hierarchy of concepts



Many concepts are hierarchically ordered. The level people naturally tend to use in categorising objects is known as the **basic level** – one level up is the **superordinate level** – one level down is the **subordinate level**. Culture shapes not only the categories people consider basic but also the way they group things together. Categorisation, like most cognitive processes, is functional, so that people tend to categorise in ways that help them solve problems

**Reasoning** refers to the process by which people generate and evaluate arguments and beliefs

- **Inductive reasoning** means reasoning from specific observations to more general propositions that seem likely to be true
- **Deductive reasoning** is logical reasoning that draws conclusions from premises leads to certainty if the premises are correct
- **Analogical reasoning** is the process by which people understand a novel situation in terms of a familiar one

**Problem solving** is process of transforming one situation into another to meet a goal, by identifying discrepancies between the initial state and goal and using various operators to try to eliminate the discrepancies

**Algorithms** are systematic procedures that inevitably produce a solution to a problem

**Problem solving techniques** are techniques that serve as guides for solving a problem. One of the most important problem-solving strategies is **mental simulation** – imaging the steps involved in solving a problem mentally before actually undertaking them