



Measurement of Intelligence

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Why Do We Need To Assess Intelligence

- For placement
- For screening
- For identification of any exceptionality .
- For guidance and counselling

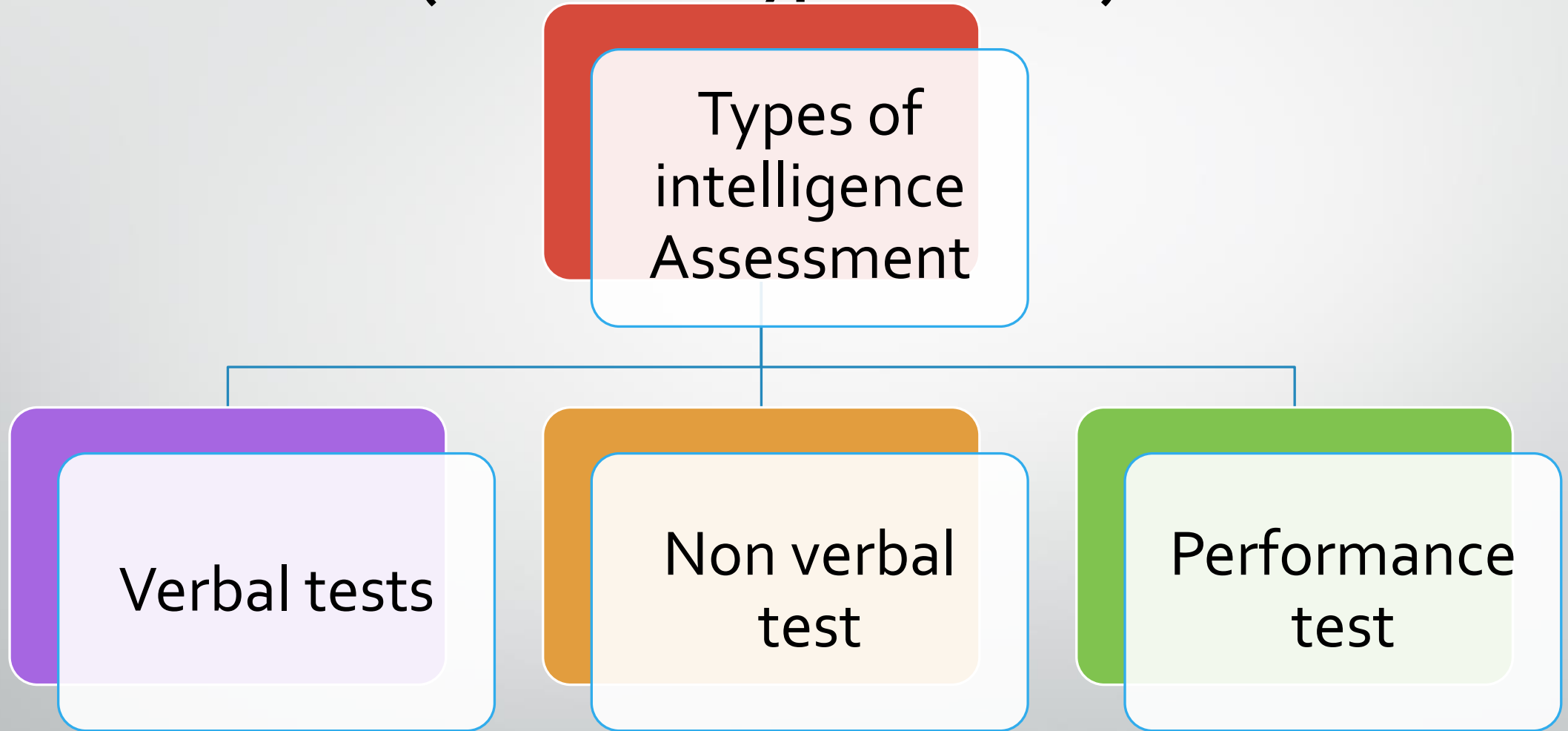
Intelligence Test

- Intelligence is measured through psychological test, The intelligence test measures intelligence as it is defined .
- Intelligence is a construct
- and the test includes items to assess the capacity which has been included in the **operational definition** of the concept (intelligence)
- intelligence tests calculate a person's intelligence quotient score(IQ), which is based on a relative scale, measured against an age-based average score.

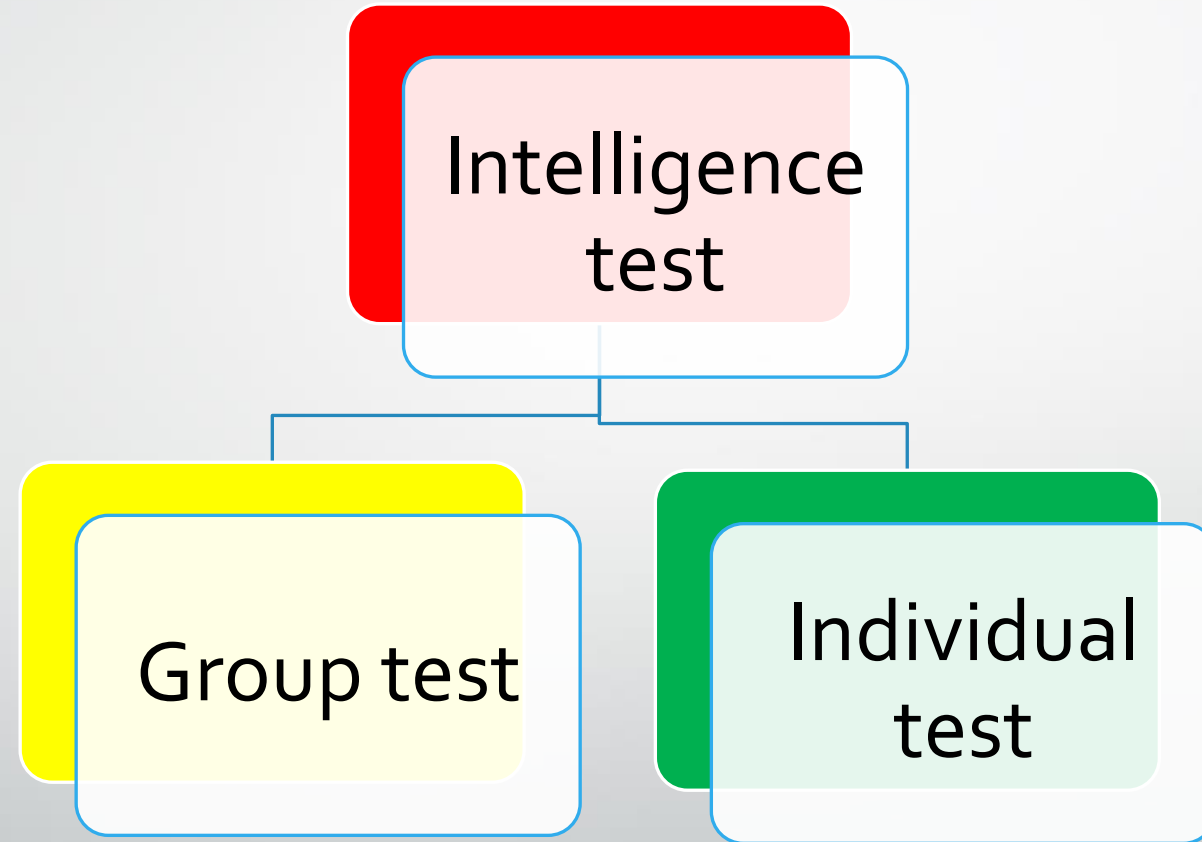
Some Important Points.

- **Sir Francis Galton** was the first to measure human intelligence but was in terms of individual differences . He was particularly concerned with sensory responses (visual and auditory acuity and reaction times) and their relationship to differences in ability.
- The first psychological attempt by developing proper test to assess the intelligence was done by *Alfred Binet*.
- in 1905 **Alfred Binet and Theodore Simon**, published the first modern intelligence test, the **Binet-Simon intelligence scale**.
- Later *Lewis Terman* of Stanford University studied it and reformed it. He created and published the first IQ test in the United States, **Stanford-Binet Intelligence Scale (Terman, 1916)**.

Types of Intelligence Measurement (based on type of item)



Types of Intelligence Measurement (based on type administration)



Verbal test

- The tests which make use of language. The person being assessed must understand the language used in the test for instruction as well as in items.
- The test content might consist items on .
- **Information** • Measures a child's range of factual information • Example: What day of the year is Independence Day? •
- **Similarities** • Measures a child's ability to categorize • Example: In what way are wool and cotton alike? •
- **Arithmetic** • Measures the ability to solve computational math problems • Example: If I buy 6 rupees worth of candy and give the clerk 25 rupees, I would get _____ back in change?
- **Vocabulary** • Measures the ability to define words • Example: What does "telephone" mean? •
- **Comprehension** • Measures the ability to answer common sense questions • Example: Why do people buy fire insurance? •
- **Digit Span** • Measures short-term auditory memory

Non verbal test

- The test which uses non verbal items like pictures, symbols etc.
- The instructions are explained by the administrator in the native language .
- *Ravens Progressive Matrices*, *Draw A Man Test*. *Army Beta Test* Etc
- These test can be administered at group level as well as individualized.
- The items in the test may contain logical arrangement of pictures. Finding the missing part int the series or the picture.
- these test are paper pencil test .
- The test is useful to assess the IQ of children as well as illiterate people.
-

Ravens progressive matrices

Context Panels

+1

+1

Answer Panels

XOR(panel 1, panel 2)

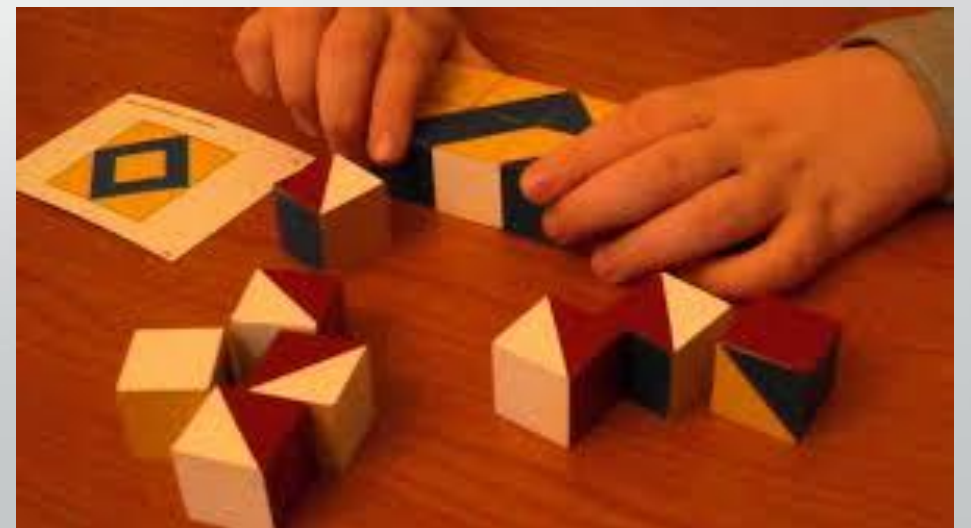
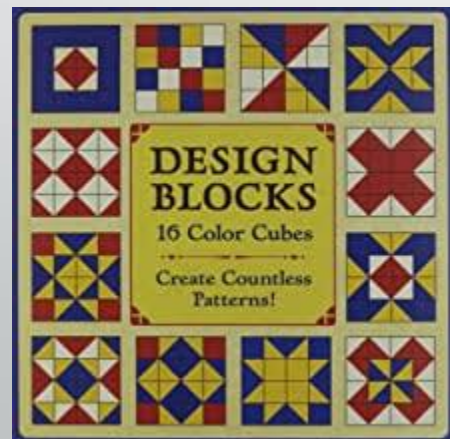
Answer Panels

Performance test

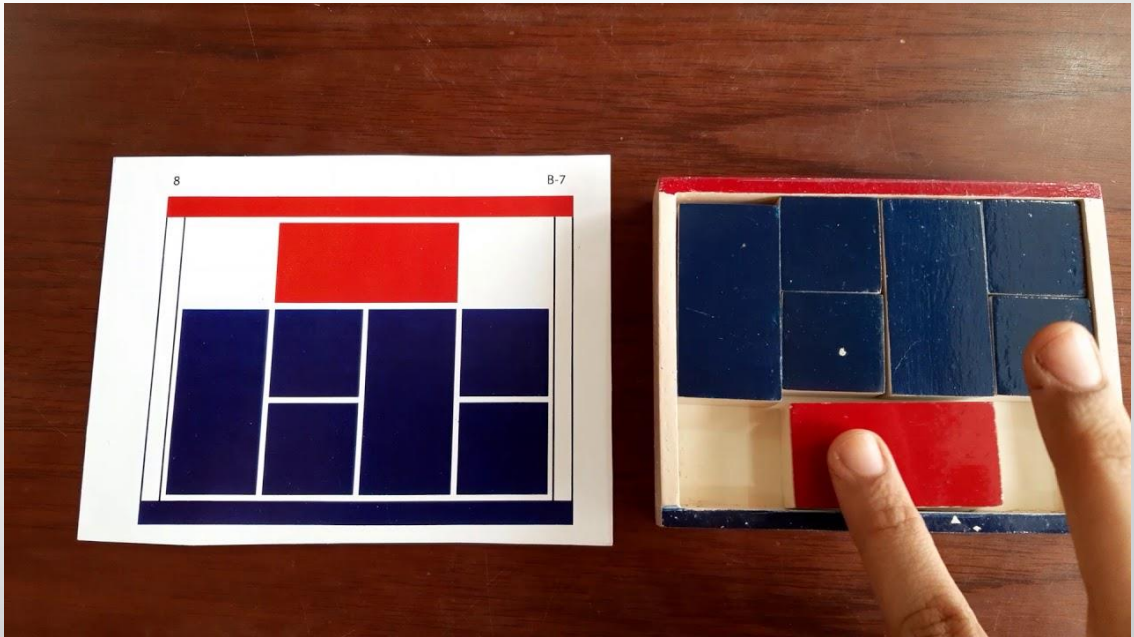
- In this test the contents and responses are in the form of performance.
- The person being tested is supposed to manipulate the given items.
- Some the standardized test of this category are
- **Koh's Block Design Test,**
- **Alexander Pass Along Test ,**
- **Cube Construction Test**

Performance test items

- The performance in these activities are tested.
- Some of them are;
- **Block Building/Cube Construction:** asked to make a structure or design by means of blocks or cubes.
- To fit the blocks in the hole, Tracing a maze,
- **Picture Arrangement** - Arranging pictures to tell a story
- **Block Design** -Arranging multi-colored blocks to match printed design
- **Object Assembly** •
- **Putting puzzles together** - measures nonverbal fluid reasoning



Alexander Pass Along Test



Stanford- Binet- Simon Scale

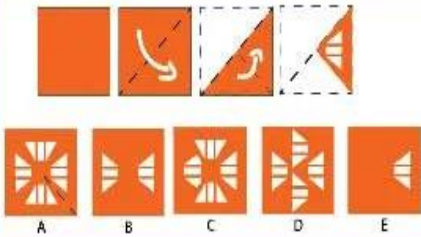
- The Stanford-Binet Fourth Edition (SB-4) contains four general classes of items, and each class consists of several kinds of sub- tests:
- 1. **Verbal Reasoning** – vocabulary, comprehension, absurdities, and verbal relations.
- 2. **Quantitative Reasoning** - quantitative, number series, equation building.
- 3. **Abstract/Visual Reasoning** - pattern analysis, copying, matrices, paper folding and cutting.
- 4. **Short-term Memory** – bead memory, memory for sentences, memory for digits, memory for objects.
- This test contains 30 items arranged in order with increasing difficulty. The test is for people from 2 to 20 years.
- The Indian version is called **Samanya Budhi Pariksha**. •
- Binet scale have also been adopted in India by Dr. C.H.Rice in 1922 as **Hindustani Binet Performance Point Scale**.

Stanford-Binet Simon Scale

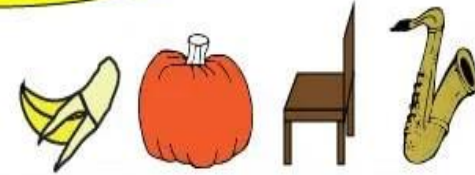


$$+ 3 \ 2 \times 3 \ 9 =$$

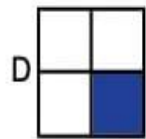
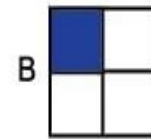
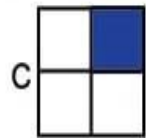
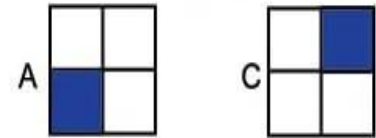
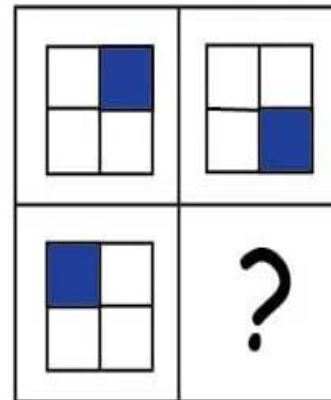
$$3 \times 2 + 3 = 9$$



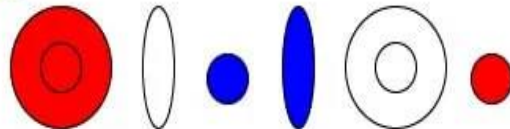
Memory for Objects



Matrices



Bead Memory



Weschler Intelligence Scale

David Wechsler published the Wechsler-Bellevue Intelligence Scale in 1939. Wechsler Adult Intelligence Scale-Third Edition - The most recent revision of WAIS that was introduced in 1997 –

Wechsler intelligence test consists of ELEVEN sub-sets

SIX of them are in VERBAL INTELLIGENCE

FIVE of them are PERFORMANCE INTELLIGENCE

The WAIS-III yields The seven major IQ

Verbal IQ, Performance IQ, Full Scale IQ, Verbal Comprehension, Perceptual Organization, Working Memory, and Processing Speed.

Wechsler intelligence test

- Consists of three scales :
- 1) **WAIS** -Wechsler Adult Intelligence Test
- 2) **WISC** –Wechsler Intelligence Scale for Children
- 3) **WPPSI** –Wechsler Preschool and Primary Scale of Intelligence
- WAIS : to measure intelligence and Cognitive ability in adults and older Adolescents (16-74 years)
- WISC : intelligence test for children between the ages of 6 to 16 years
- WPPSI : intelligence test for children between the ages 4-6 years

11 subsets

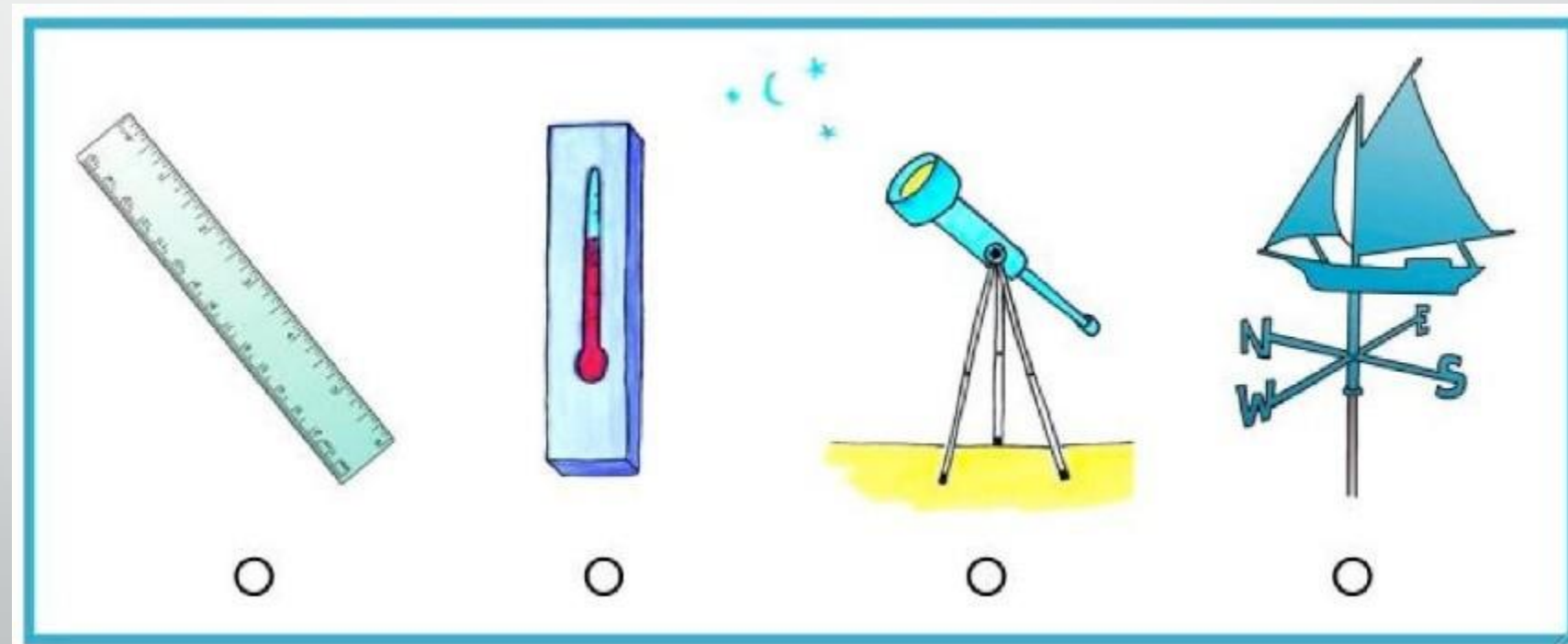
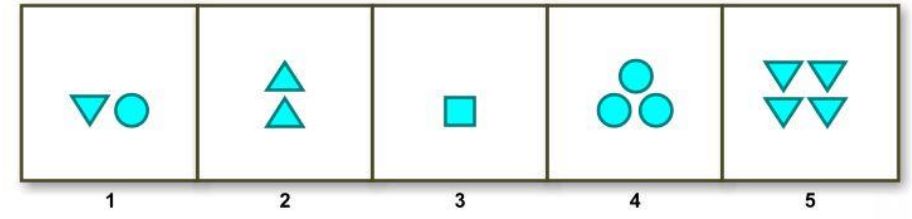
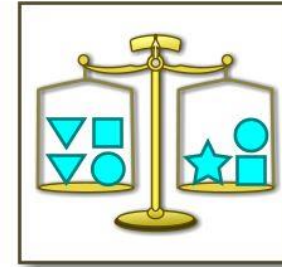
- **VERBAL SCALE**

- Information
- Comprehension
- Arithmetic
- Similarities
- Digit Span
- Vocabulary
- Word Reasoning

- **PERFORMANCE SCALE**

- Picture completion
- Block Design
- Picture Arrangement
- Object Assembly
- Matrix reasoning
-

9-4-2-7-8-0-3



VERBAL

General information

What day of the year is Independence Day?

Arithmetic reasoning

If eggs cost 60 cents a dozen, what does 1 egg cost?

Vocabulary

Tell me the meaning of corrupt.

Comprehension

Why do people buy fire insurance?

Digit span

Listen carefully, and when I am through, say the numbers right after me.

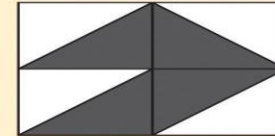
7 3 4 1 8 6

Now I am going to say some more numbers, but I want you to say them backward.

3 8 4 1 6

Block design

Using the four blocks, make one just like this.



Object assembly

If these pieces are put together correctly, they will make something. Go ahead and put them together as quickly as you can.



