EDUCATION IS THE MOST POWERFUL WEAPON WE CAN USE TO CHANGE THE WORLD

– NELSON MANDELA

Assessment is ?

TESTING ≠ ASSESSMENT

# Assessment Cycle

PURPOSE OF ASSESSMENT

REVISITING COMPETEMNCES

TEST BLUEPRINT

ITEM DEVELOPMENT

TEST ADMINISTRATION

ITEM ANALYSIS

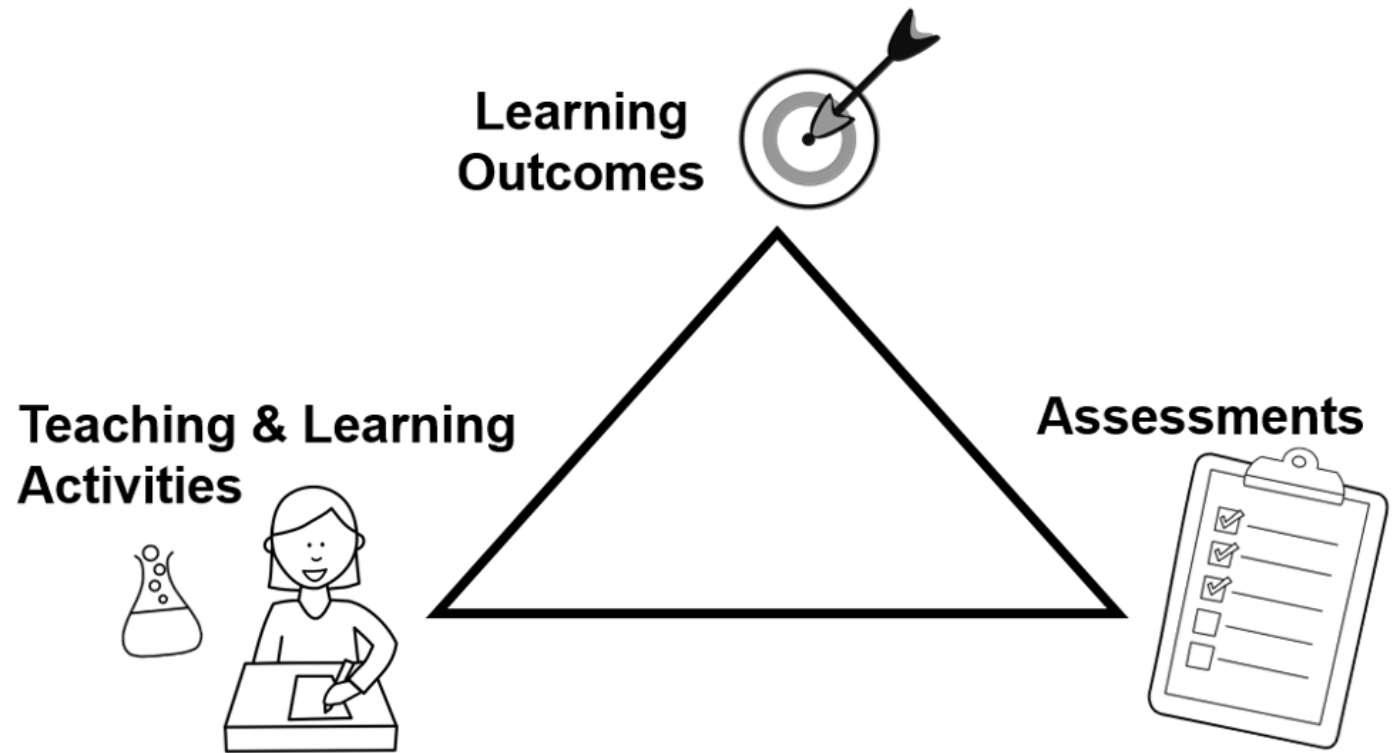What are purposes of assessment?

# Alignment

| Competencies | Teaching and Learning Activities | Assessment |
|---|---|---|
| What students will be able to do? | How students will actively learn? | How to measure students' achievement? |

Why is Alignment important?

Learning Outcomes

Teaching & Learning Activities

Assessments

# According to what?

- Purpose

Formative

Summative



When the cook tastes the soup, that's formative assessment. When the guests taste the soup, that's summative assessment.
~ Paul Black ~

# Arrange ……
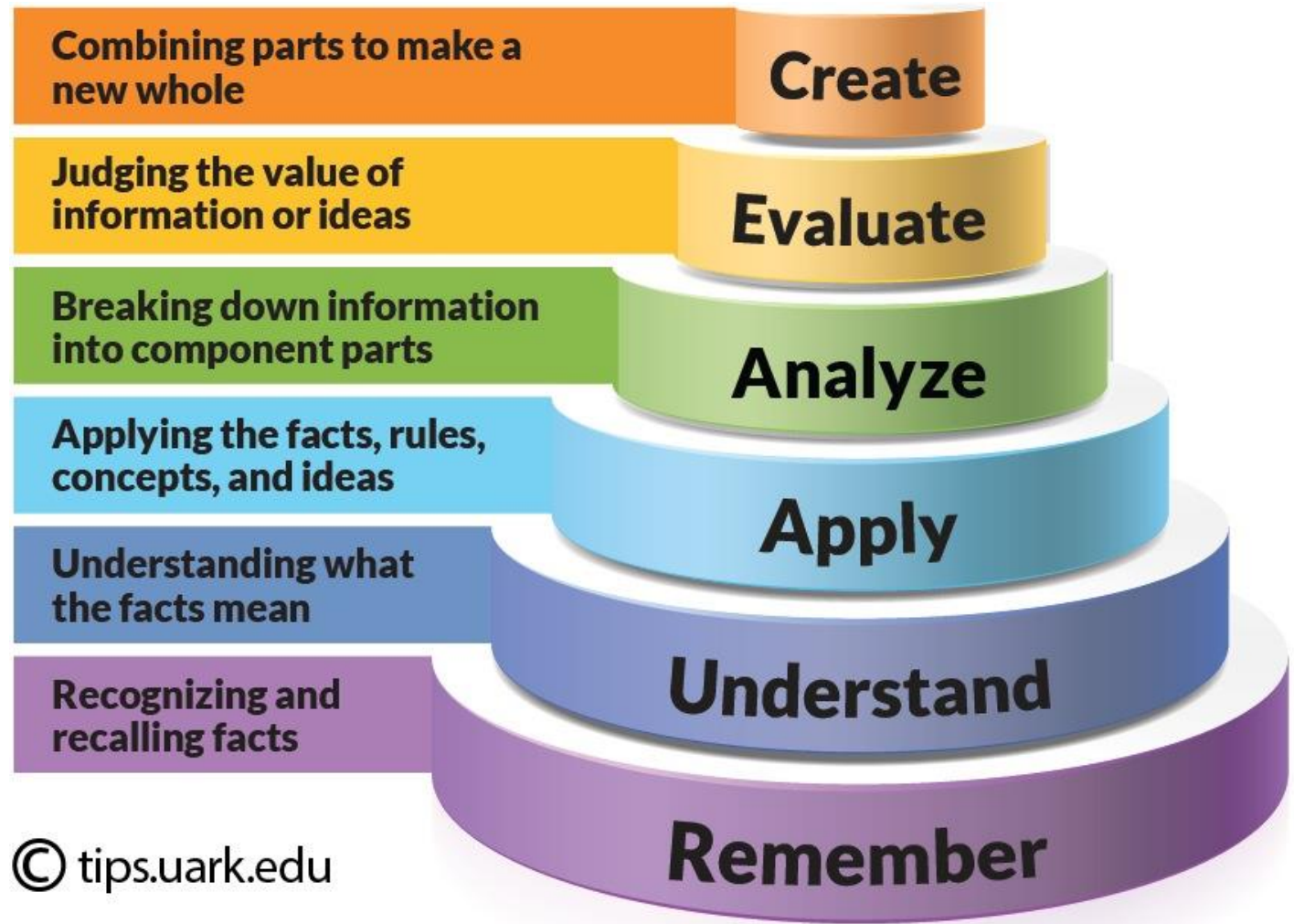
 Understand

 Apply

 Remember

 Evaluate

 Analyze

 Create

# Bloom's Taxonomy - Cognitive

Higher Order ↑

## 6. Creation

Behaviour: Display creative thinking, develop new concepts or approaches

Verbs: Develop, Create, Plan, Design, Revise, Formulate, Propose, Establish, Assemble, Modify, Arrange, Synthesise, Generate, Devise, Compose

## 5. Evaluation

Behaviour: Assess effectiveness of whole concepts in relation to other variables

Verbs: Assess, Review, Justify, Report On, Defend, Present A Case For, Argue, Appraise, Investigate, Support, Predict, Judge, Rate

## 4. Analysing

Behaviour: Interpret elements, structure relationships between individual components

Verbs: Analyse, Structure, Catalogue, Compare, Break Down, Quantify, Test, Examine, Experiment, Relate, Measure, Plot, Contrast, Extrapolate, Infer

## 3. Applying

Behaviour: Use or apply knowledge, in practice or real life situations

Verbs: Use, Apply, Manage, Execute, Produce, Implement, Construct, Prepare, Respond, React, Change, Compute, Solve, Operate, Show

## 2. Understanding

Behaviour: To comprehend meaning, explain data in own words

Verbs: Explain, Illustrate, Paraphrase, Classify, Summarise, Translate, Report, Interpret, Critique, Reiterate, Reference, Locate, Indicate
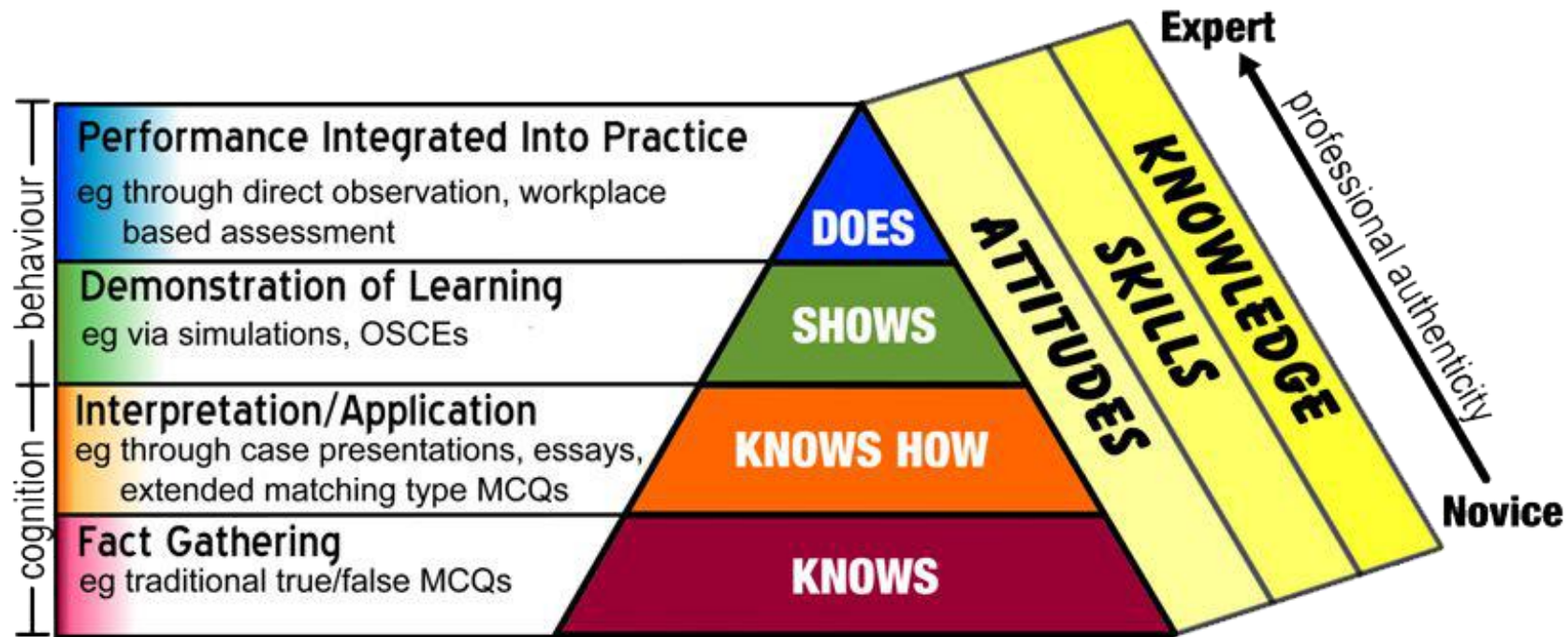
## 1. Remembering

Behaviour: To recall, recognise, or identify concepts

Verbs: Identify, Highlight, Arrange, Define, Describe, Label, List, Relate, Memorise, Select, Reproduce, State, Match, Outline

Lower Order ↓

# MILLER'S PRISM OF CLINICAL COMPETENCE (aka Miller's Pyramid)

## it is only in the "does" triangle that the doctor truly performs



Expert

**behaviour**
- Performance Integrated Into Practice
  eg through direct observation, workplace based assessment — **DOES**
- Demonstration of Learning
  eg via simulations, OSCEs — **SHOWS**

**cognition**
- Interpretation/Application
  eg through case presentations, essays, extended matching type MCQs — **KNOWS HOW**
- Fact Gathering
  eg traditional true/false MCQs — **KNOWS**

ATTITUDES
SKILLS
KNOWLEDGE

professional authenticity

Novice

Based on work by Miller GE, The Assessment of Clinical Skills/Competence/Performance; Acad. Med. 1990; 65(9); 63-67
Adapted by Drs. R. Mehay & R. Burns, UK (Jan 2009)

What is Blueprint?
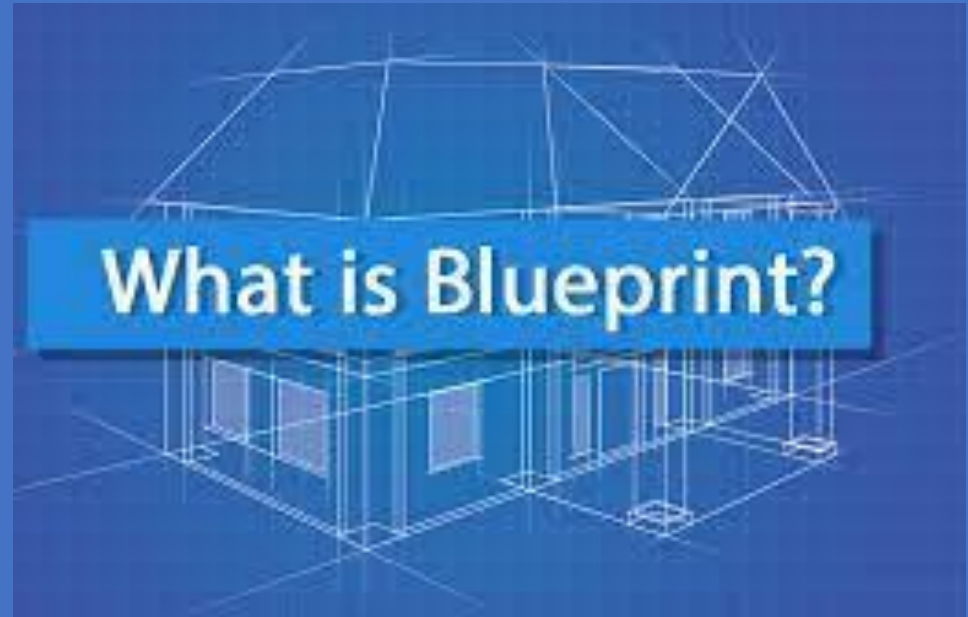
# Test Blueprinting

*Blueprinting is the process that ensures a match between the curriculum and the assessment system.*
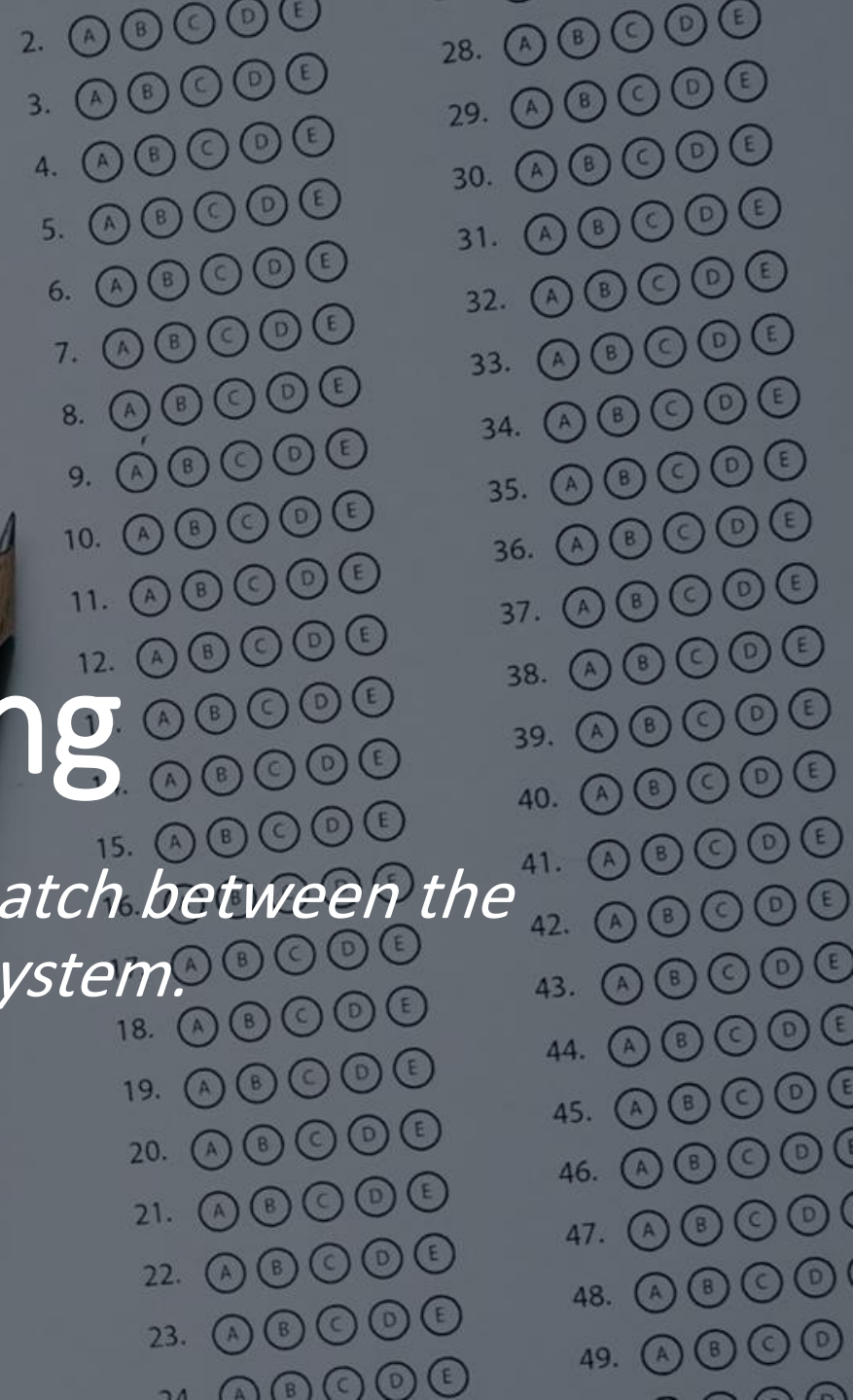
# BLUEPRINTING



TO MAKE SURE THAT ASSESSMENT MATCHES OUTCOMES (COMPETENCIES) LEARNT



TO MAKE SURE THAT ASSESSMENT MATCHES LEARNING FORMAT
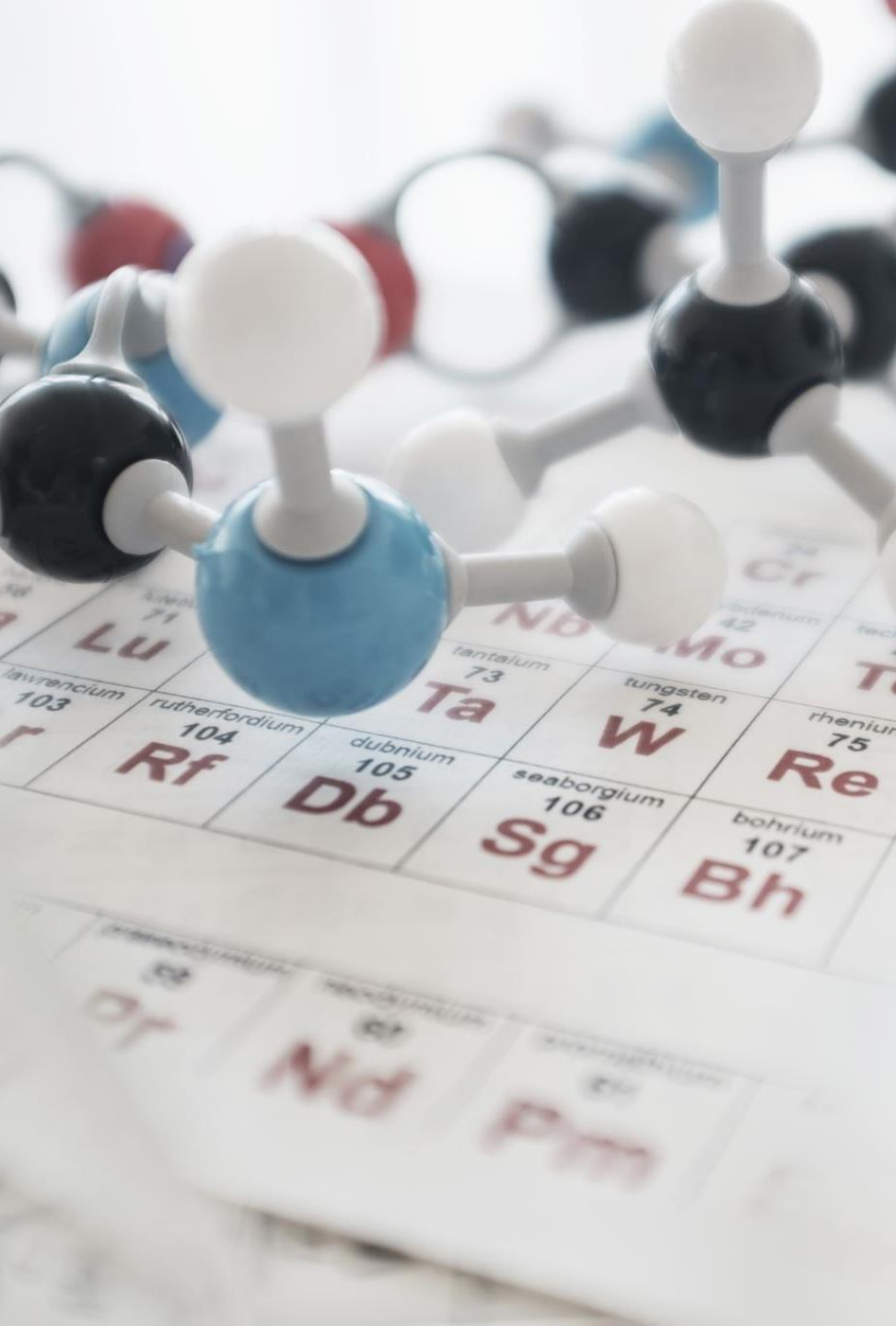
# Test blueprinting

 … is the matrix or chart reporting the number and type of test questions represented across the topics in content area, consistent with learning objectives and relative weight on test given to each topic

# Test Blueprinting

*... is required for constructing a VALID and FAIR exam Question paper that measures the achievements of the planned competencies.*

# Purpose of Blueprint

Provide a map of examination format and the content area

Type of measurement tool for assessing the items weighting the learning objectives

Content validity of assessment (It guides item collection and development)

Satisfy the Bloom's taxonomy of educational objective

# Criteria of the final exam paper

*Cover all the materials taught throughout the semester. (from week 1...)*

*Assess critical thinking and include application-based questions.*

*A comprehensive marking scheme and answer booklet should be submitted along with the question paper.*

# Blueprint: Characters

It is a matrix or chart reporting the number and type of test questions.

The questions represent the topics in the content area.

The questions are based on the learning objective from each topic.

Also identifies the percentage (%) weighting of cognitive dimensions.

# Benefits of Blueprint

Guide construction of question paper.

Links assessment to learning objectives and domains.

Helps to match various competencies with the course content and the appropriate modality of assessment.

Helps the teachers in designing the instructional strategies.

# Relative weightage to …..

- Course contents (lectures)
- Question type
- Question time
- Competency covered
- Difficulty level

| Anatomic Pathology Exam Blueprint | Approximate % | | |
|---|---|---|---|
| | Written | Practical with Images | Micro/ Virtual |
| Alimentary Canal, Pancreas, Liver, Extrahepatic Biliary tree, Gall Bladder | 7 | 12 | 15 |
| Anatomic Pathology Management | 5 | 0 | 0 |
| Bone Marrow | 3 | 3 | 1 |
| Breast | 8 | 6 | 11 |
| Cardiovascular | 2 | 1 | 1 |
| Central and Peripheral Nervous System | 4 | 2 | 6 |
| Cytopathology | 6 | 32 | 0 |
| Endocrine | 5 | 3 | 6 |
| Female Genital, Placenta | 10 | 6 | 9 |
| Forensic | 2 | 2 | 0 |
| General Pathology Principles | 5 | 4 | 0 |
| Head and Neck | 4 | 5 | 8 |
| Laboratory Management-General | 4 | 0 | 0 |
| Lymph Nodes and Spleen | 3 | 3 | 6 |
| Male genital | 4 | 5 | 8 |
| Molecular | 4 | 0 | 0 |
| Respiratory, Pleura, Mediastinum | 6 | 4 | 8 |
| Skin | 6 | 3 | 8 |
| Soft Tissue and Bone | 6 | 3 | 6 |
| Urinary | 6 | 8 | 8 |
| Total Number of Questions in Each Section | 125 | 120 | 80 (55/25) |
| Total Hours Allotted for Each Section | 2 | 2 | 3.75 |

# Test Blueprint

| Content/ Objective | Learning Level (Number of test items) | | | Total |
|---|---|---|---|---|
| | Knows facts (Recall) | Understanding | Applies Principles (Application) | |
| Kreb Cycle | 3 | 5 | 2 | 10 |
| Aquaporins | 2 | 2 | 4 | 10 |
| Cell Types | 5 | 0 | 0 | 5 |
| Total | 10 | 7 | 8 | 25 |

| By the completion of the Unit students should: | MED4000 Summative Assessment Instrument | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Witten MCQ Paper | Written SCT Paper | Written SAQ Paper | MSAT Clinical | Clinical Rotations | Journal Club | PRINT Tutorial | Short Case Presentation | PPH Project | Professional Portfolio |
| Relative Weight | 35 | | | 30 | 15 | 5 | 2 | 5 | 5 | 5 |
| Be able to interpret their knowledge and understanding of the basic & clinical sciences to enable them to assess and manage patient illness and disease. | X | X | X | X | X | | X | X | | |
| Be able to integrate the clinical information gained from patient assessment, formulate diagnostic possibilities, communicate and implement an evidence based management plan. | X | X | X | X | X | X | X | X | | |
| Integrate ethical professional behaviours into all aspects of medical working life. | | | X | X | X | | X | | | X |
| Integrate their understanding of the principles of population health and knowledge of the range and accessibility of health services into the assessment and management of patients. | | | X | | | X | | | X | |

**Ain Shams University**
**Faculty of Medicine**
**Department of ……**
**Year………….**

جامعة عين شمس
كلية الطب
قسم .............
العام الجامعى.............

| TABLESPECIFICATIONEXAM BLUEPRINT | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SPECIFICATION TABLE | | | | CONTENT | | | EXAM BLUEPRINT | | | | | |
| Teaching | | | | Topic title | Weight % | ILOs | Continuous Assessment | Final Exam | | | | |
| Other hours | Tutorial hours | Practical hours | Lecture hours | | | | | MCQ | Essay | Practical/ clinical | Oral | Total marks |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | Total | | | | | | | |

## Pediatric Surgery (MSc 505)
### Academic Year 2018/2019
### Second Semester
### Blueprint

| # | Course content | *L | *R | *H | LRH Weight | # of Items | MCQs | | | Matching | Essay questions |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Recall 30% | Applications 50% | Analysis 20% | | Complete |
| | | | | | | | (1 min/item) | (1.5- 2 min/item) | (1.5-2 min/item) | | |
| 1. | Neonatal surgical emergencies | 1 | 1 | 3 | 3 | 3.6 4 | | | | | |
| 2. | Neonatal intestinal obstruction Colostomy | 2 | 1 | 3 | 6 | 7.3 7 | | | | | |
| 3. | IHPS & intussusception | 2 | 1 | 3 | 6 | 7.3 7 | | | | | |
| 4. | Craniofacial Abnormalities (Cleft Lip and Palate) | 1 | 1 | 3 | 3 | 3.6 4 | | | | | |
| 5. | Genitourinary disorders: Undescended test & hypospadias & Circumcision | 3 | 1 | 3 | 9 | 10.9 11 | | | | | |
| 6. | Inguinal scrotal swelling | 1 | 1 | 2 | 2 | 2.4 2 | | | | | |
| | | | | | 29 | | | | | | |
| | # Of Questions | | | | 35/29 1.21 | | | | | | |
| | Total Marks of exam  (50) | | | | | | | | | | |

- Total marks of the exam: 50 mark
- **Key Words:**      *L.: Number of lectures.                    *R.: Relation to other content areas.
        *H.: History of exam