

Saudi Arabia

National Centre for Assessment

Introduction

Overview of Education System

The Kingdom of Saudi Arabia aims to prepare future generations to be productive citizens who can meet the aspirations of the Kingdom's Saudi Vision 2030 initiative. One part of the initiative is the Human Capital Development Program, which aims to:

“Improve the outputs of the education and training system at all stages from early education to continuous education and provide training to reach the international levels through education, rehabilitation and training programs that keep abreast of modern times and requirements and are in line with the needs of development and the local and global labor market in partnership with all relevant parties locally and internationally. The program also contributes to the development of all components of the education and training system, including teachers, trainers, faculty members, governance, evaluation systems, quality, curricula, educational and vocational paths, and training environment for all stages of education and training to cope with modern and innovative trends in the fields of education and training. The program will be based on the Islamic, educational, social and professional foundations. It will introduce new educational and training policies and systems that will enhance the efficiency of human capital in line with the Kingdom Vision 2030 to achieve comprehensiveness, quality, flexibility and serve all segments of the society to promote the Kingdom's regional leadership and international competitiveness.”¹

Since the founding of the nation in 1932, the public education system in Saudi Arabia has accomplished the following:

- Free education available to all throughout the country
- Near complete (99 percent) enrollment of targeted children in primary education
- Equal education opportunities for men and women
- A radical decrease in illiteracy among men and women

In addition, other achievements related to developing curricula and adopting student evaluation policies have focused on satisfying basic needs, providing and developing the learning environment, and improving procedures for hiring and integrating teachers and for reviewing their employment status.

The Ministry of Education oversees the education system in Saudi Arabia and currently aims to achieve the following:

- Differentiate teaching for all students, based on individual abilities, by placing students at the center of the education process
- Plan and direct the learning process by developing standards and requirements and new systems of quality control and motivation
- Avoid centralization in managing learning processes by granting independence to both education directorates and schools
- Provide facilities and equipment to schools, and focus school plans and programs on learning processes
- Build human and technical capabilities to manage education; lead the process of developing schools and achieving quality performance; grant suitable administrative authority; define goals for students; and establish schools that can accomplish these goals

The Ministry oversees education directorates and has refined their missions and processes to help schools concentrate on student learning and commit to nurturing personal development. This refinement also has put in place mechanisms to aid directorates and schools in meeting learning outcomes and organizing supervision. Currently, school and directorate competence are assessed according to administrative effectiveness, ability to implement education, and effective follow-up and monitoring. The Ministry of Education (MOE) and its regional directorates develop plans for courses of study and requisite education infrastructure; approve plans and policies for education development, training, education research, computer projects, learning technology, and assessment; develop curricula; and prepare teacher education and professional development programs. The Ministry of Education supervises these plans via its education directorates and offices in all parts of the country.

General education in Saudi Arabia is divided into public (government-funded) education, private education, special education (under the supervision of the Ministry), vocational education (related to the Technical and Vocational Training Corporation), and foreign education. There are also many specialized institutes under the supervision of different departments, such as the Ministry of Health and telecommunications and security departments. There are 30 universities (six of which are private) in addition to many colleges offering varied courses of study. Basic compulsory education in Saudi Arabia is for all children ages 6 to 18. Saudi Arabia's public education system is organized according to the following structure:

- Kindergarten—optional, ages 4 to 6
- Primary education—Grades 1 to 6
- Intermediate education—Grades 7 to 9
- Secondary education—Grades 10 to 12

Arabic is the official language of Saudi Arabia and the main medium of instruction. English is the second-most commonly spoken language used and spoken in international schools, and international schools may use other languages of instruction.

Use and Impact of TIMSS

Saudi Arabia participated in TIMSS for the first time in 2003 and has participated in all TIMSS cycles since then. Participation in TIMSS has yielded clear insights into student knowledge and achievement in mathematics and science. After each cycle, TIMSS data are used to identify strengths and weaknesses in the mathematics and science curricula. The MOE has established the Curriculum Development Center to improve and reform national curricula using a variety of tools; one of the major tools is TIMSS data, which provides a rich source to build curricular benchmarks.

Participation in international studies such as TIMSS enables policymakers and educators to compare the performance of Saudi Arabia’s students with students in other countries; it represents a major indicator of the Kingdom's Vision 2030 initiative.

The Mathematics Curriculum in Primary and Lower Secondary Grades

The authorized mathematics curriculum in Saudi Arabia is similar to curricula published by McGraw-Hill. These curricula are based upon balanced learning and rely on vertical interdependence among curricula for the various grades to develop cognitive understanding and mathematical skills for all grades. Specifically, this approach depends upon:

- Examining concepts and building cognitive skills
- Developing mathematical skills and ways of mastering them
- Applying mathematics logically to solve problems from daily life

In the fourth year of primary education (Grade 4), mathematics textbooks comprise 12 chapters distributed equally across two semesters, with content related to five domains: Number, Algebra, Measurement, Geometry, and Statistics. Exhibit 1 lists the content discussed within these domains.

Exhibit 1: Domains and Content Areas for Grade 4 Mathematics Curriculum

Domain	Content
Number	<ul style="list-style-type: none"> ▪ Whole numbers and comparisons of whole numbers ▪ Place value up to 1 million ▪ Fractions ▪ Equivalent fractions (comparing, ordering, and placing them on a number line) ▪ Categorizing fractions (rational, irrational, and decimal)
Algebra	<ul style="list-style-type: none"> ▪ Defining and explaining patterns of multiplication and division ▪ Properties of addition and multiplication ▪ Basics of subtraction and division ▪ Algebraic representations of number sentences

Domain	Content
Measurement	<ul style="list-style-type: none"> Units of length, area, volume, and mass Time intervals Perimeter and area of squares
Geometry	<ul style="list-style-type: none"> Categorizing and describing solids Geometric concepts of lines (e.g., parallelism and perpendicularity) Angles and types of angles polygons (e.g., triangles and congruence) Locating numbers and fractions on a number line and a coordinate plane
Statistics	<ul style="list-style-type: none"> Data collection, organization, and representation (points, columns) Creating bar graphs Reading and explaining data Finding median and mode

In the second year of intermediate education (Grade 8), mathematics textbooks comprise 10 chapters evenly distributed across two semesters and covering five similar domains: Number, Algebra, Measurement, Geometry, and Statistics and Probabilities. Exhibit 2 lists the content discussed within these domains.

Exhibit 2: Domains and Content for Grade 8 Mathematics Curriculum

Domain	Content
Number	<ul style="list-style-type: none"> Proportionality Rate of change Scale Percentage and its applications Whole numbers, integers, and rational and irrational numbers Square roots
Algebra	<ul style="list-style-type: none"> Arithmetic progression Simplifying algebraic expressions Algebraic transformations Solving linear equations and inequalities Functions and their applications Slope
Measurement	<ul style="list-style-type: none"> Perimeter and area of a circle Surface area and volume of prisms, pyramids, and cylinders
Geometry	<ul style="list-style-type: none"> The Pythagorean theorem Identifying polygons The relationship between lines and angles Plotting points on the coordinate plane and the distance between two points in the plane Geometric transformations of figures (e.g., symmetry across a line or around a point, translations, and scale changes)

Domain	Content
Statistics and Probabilities	<ul style="list-style-type: none"> ▪ Histograms, pie charts ▪ Measures of central tendency ▪ Range ▪ Data analysis—interpretation and presentation ▪ Measures of dispersion

The Science Curriculum in Primary and Lower Secondary Grades

The officially authorized science curriculum in Saudi Arabia is organized around texts designed to position students centrally in the teaching and learning process. Various activities are designed for recursive learning and enable students to participate at all levels. The overall philosophy of science textbooks emphasizes the importance of the scientific method of investigation, practical skills (e.g., scientific reading and writing, drawing, and collecting samples), and connecting science knowledge with daily life (e.g., relating science to mathematics and society).

At the fourth year of primary education (Grade 4), science textbooks include the following topics:

- Living creatures, cells, classification, plants, animals (vertebrates and mollusks), and animal conservation
- Environmental systems
- Earth, water, and minerals
- Space and the Solar System
- Substances and their change
- Power and energy (power and movement, movement change, heat, electricity, magnetism)

In the second year of intermediate education (Grade 8), science textbooks discuss the content listed in Exhibit 3.

Exhibit 3: Domains and Content for Grade 8 Science Curriculum

Domains	Content
Biology	<ul style="list-style-type: none"> ▪ Skin and muscles ▪ Structural and nervous system ▪ Endocrine and reproductive organs ▪ Stages of human life ▪ Human body—immune, digestive, and respiratory systems ▪ Body motion ▪ Seeds and seedless plants ▪ Environmental resources ▪ Pollution and environmental protection

Domains	Content
Chemistry	<ul style="list-style-type: none"> ▪ Temperature ▪ Heat transfer ▪ Solutions and solubility ▪ Acidic and basic solutions ▪ Materials ▪ Heat and material transformations
Physics	<ul style="list-style-type: none"> ▪ Waves ▪ Sound waves ▪ Light ▪ Fluid behavior ▪ Engines and refrigerators ▪ Energy transformations

Professional Development Requirements and Programs

The Ministry of Education sends some teachers and administrators to national universities or abroad to obtain master’s or doctoral degrees. It further seeks to train qualified teachers with extensive professional development courses and programs throughout the year to enhance teacher performance according to the needs of curricular projects, some of which are developed in cooperation with specialized private sector corporations.

Teachers receive professional development and supervision throughout their careers through a number of means. For example, computerized supervision allows for rapid idea exchange and information access that helps to develop teacher knowledge, teaching environments, and quality teaching outputs. Presently, the Ministry is launching an electronic gateway called Future Gateway² for communication within the education sector, to contribute to knowledge building, and to assist teachers in publishing education research. Additionally, a new project known as Teach Me How to Learn aims to develop teaching strategies and techniques for use in and out of the classroom.

The Ministry also is preparing a teacher assessment project to improve practical and educational outputs to build knowledge. Another program aims to implement changes to education programs based on analyses of teacher evaluations and education trends.

All teachers of the first year in intermediate education (Grade 7) and beyond have specialization in mathematics and science, as are most fourth grade primary education teachers. Some teachers who are well qualified, have considerable teaching experience, and have participated in a significant amount of professional development courses may teach mathematics and science provisionally, even if they do not have a minor degree in these subjects. In the future, these teachers will be replaced gradually by academically qualified specialist degree holders.

In 2024, all public school teachers will be required to hold a license. The MOE is responsible for granting teacher licenses. Teachers will be required to pass special exams in their subjects as well as fulfill the requirements for professional development.

Monitoring Student Progress in Mathematics and Science

At all schools, teachers must conduct at least two summative assessments per year (one at the end of each term). In addition, teachers use formative assessments (called continuous assessments) to monitor student progress using a variety of methods, such as projects, presentations, written tests, and achievement portfolios. Schools report to parents regularly about their children's progress through official reports, by phone, and at school-organized parent-teacher meetings.

Suggested Readings

Centre of Educational Statistics and Decision Support. (2019). Retrieved from <https://departments.moe.gov.sa/Statistics/Pages/default.aspx>

Ministry of Education. (2019). *Ministry of Education Strategy*. Retrieved from https://www.moe.gov.sa/ar/about/Documents/Strategy_of_the_Ministry_of_Education.pdf

IEN National Education Portal. (2019). Retrieved from <https://ien.edu.sa/Home/Dashboard>

References

¹ Saudi Vision 2030. (2019). *Human Capital Development Program*. Retrieved from <https://vision2030.gov.sa/en/programs/HCDP>

² Future Gateway. (2019). Retrieved from <https://fg.moe.gov.sa/#News>