

Tsuen Wan Public Ho Chuen Yiu Memorial College
Junior Form Science Curriculum 2024 - 2025

Curriculum objectives:

The primary objectives of the Junior Form Science Curriculum are to provide students with meaningful learning experiences in the field of science. These experiences aim to foster scientific literacy, allowing students to actively explore and appreciate the natural world. By doing so, students can develop a genuine interest in science, nurture their sense of curiosity, and establish a strong foundation for future scientific pursuits or career paths.

The key objectives of the Junior Form Science Curriculum encompass the following:

- Cultivating and sustaining a genuine passion for science, while nurturing a sense of wonder and appreciation for the living world and its surroundings.
- Building and applying a solid knowledge base in fundamental scientific concepts, understanding the essence of scientific inquiry, and recognizing the interconnectedness of science with other disciplines.
- Developing essential skills for scientific inquiry, encouraging critical and creative thinking, and fostering both independent and collaborative problem-solving abilities within scientific contexts.
- Acquiring proficiency in the language of science, effectively communicating scientific ideas and perspectives, and actively engaging in discussions related to scientific topics.
- Developing awareness of the social, ethical, economic, environmental, and technological implications of scientific advancements, enabling students to make informed decisions and judgments in various scientific contexts.
- Cultivating a sense of responsible citizenship, emphasizing the importance of science in addressing national security issues, societal challenges, and promoting personal and community well-being.

Junior Form Science forms vital vertical and lateral connections with various subjects, fostering a holistic and interconnected approach to education. Through the integration of Science, Technology, Engineering, Arts, and Mathematics (STEAM), students are encouraged to explore the interdisciplinary nature of scientific knowledge and its applications.

Furthermore, Junior Form Science establishes vertical connections with higher form subjects like Physics, Chemistry, and Biology, enabling students to recognize the continuity and interdependencies across these scientific disciplines.

By embracing these connections, students develop a well-rounded scientific mindset and are better equipped to tackle real-world challenges that require a multidimensional approach.

Subject Panel Head: Dr. Yuen Man Leuk

Subject teacher: Mr. Yau Chun Kwong, Mr. Wong Chi To, Ms. Ho Kai Yin Karen, Mr. Ng Weng Cheong Frankie

Form 1 Science Curriculum

<p>1 Introducing science</p>	<p>1.1 Learning about science</p> <p>1.2 Practice of science</p> <p>1.3 Safety in the laboratory</p> <p>1.4 Laboratory apparatus and basic practical skills</p>	<p>Values</p> <ul style="list-style-type: none"> - Responsibility - Law abidingness - Biosafety
<p>2 Water</p>	<p>2.1 Change in states of water</p> <p>2.2 Water cycle</p> <p>2.3 Dissolving</p> <p>2.4 Water purification</p> <p>2.5 Further treatment of drinking water</p> <p>2.6 Water conservation and pollution</p>	<p>Values</p> <ul style="list-style-type: none"> - Responsibility - Commitment - Law-abidingness - Empathy - National Identity <p>National Security</p> <ul style="list-style-type: none"> - Resource security - Ecological security - Homeland security - New security domain (biodiversity, conservation, exploration and protection of deep seas and polar regions)
<p>3 Looking at living things</p>	<p>3.1 Living things</p> <p>3.2 Grouping of living things</p> <p>3.3 Identification key</p> <p>3.4 Biodiversity</p>	<p>Values</p> <ul style="list-style-type: none"> - Responsibility - National Identity <p>National Security</p>

		<ul style="list-style-type: none"> - Ecological security - New security domain (biodiversity, conservation, exploration and protection of deep seas and polar regions)
4 Cells, human reproduction and heredity	<p>4.1 Cells</p> <p>4.2 From a single cell to a multicellular organism</p> <p>4.3 Sex cells and reproductive systems</p> <p>4.4 Sexual maturity and birth of a new life</p> <p>4.5 Becoming parents</p> <p>4.6 Heredity and variation</p>	<p>Values</p> <ul style="list-style-type: none"> - Respect for Others - Responsibility - Empathy
5 Energy	<p>5.1 Energy changes</p> <p>5.2 Heat transfer</p> <p>5.3 <i>Energy sources</i></p>	<p>Values</p> <ul style="list-style-type: none"> - National identity - Responsibility <p>National Security</p> <ul style="list-style-type: none"> - Resource security - Ecological security - Homeland security - Nuclear security - New security domain (biodiversity, conservation, exploration and protection of deep seas and polar regions)

<p>6 Matter as particles</p>	<p>6.1 Matter and particle theory</p> <p>6.2 Particle model</p> <p>6.3 Dissolving</p> <p>6.4 Thermal expansion and contraction</p> <p>6.5 <i>Gas pressure</i></p> <p>6.6 Density</p>	<p>Values</p> <ul style="list-style-type: none"> - National identity - Perseverance <p>National Security</p> <ul style="list-style-type: none"> - Technological security -Resource security - Homeland security - New security domain (biodiversity, conservation, exploration and protection of deep seas and polar regions)
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Form 2 Science Curriculum

<p>7 Living things and air</p>	<p>7.1 Air</p> <p>7.2 Photosynthesis</p> <p>7.3 Respiration</p> <p>7.4 Gas exchange in plants</p> <p>7.5 Gas exchange in animals</p> <p>7.6 Balance of oxygen and carbon dioxide in Nature</p> <p>7.7 Air quality</p>	<p>Values</p> <ul style="list-style-type: none"> - Responsibility - Commitment <p>National Security</p> <ul style="list-style-type: none"> - Ecological security - New security domain (biodiversity, conservation, exploration and protection of deep seas and polar regions)
<p>8 Making use of electricity</p>	<p>8.1 Simple circuit</p> <p>8.2 Current</p> <p>8.3 Voltage</p> <p>8.4 Resistance</p> <p>8.5 Electrical circuits</p> <p>8.6 Household electricity</p> <p>8.7 <i>Power and efficiency</i></p>	<p>Values</p> <ul style="list-style-type: none"> - Responsibility - Law-abidingness
<p>9 Common acids and alkalis</p>	<p>9.1 Common acids and alkalis</p> <p>9.2 Distinguishing acids and alkalis</p>	<p>Values</p> <ul style="list-style-type: none"> - Responsibility - Commitment

	<p>9.3 Neutralization</p> <p>9.4 Corrosive nature of acids</p> <p>9.5 Acid rain</p> <p>9.6 Potential hazards related to the use of acids and alkalis</p>	<p>National Security</p> <ul style="list-style-type: none"> - Ecological security - New security domain (biodiversity, conservation, exploration and protection of deep seas and polar regions)
<p>10 Sensing the environment</p>	<p>10.1 Senses and sense organs</p> <p>10.2 Sight</p> <p>10.3 Hearing</p> <p><i>10.4 Smell and taste</i></p> <p><i>10.5 Other senses</i></p> <p>10.6 Brain and our senses</p>	<p>Values</p> <ul style="list-style-type: none"> - Benevolence - Empathy - Responsibility - Law-abidingness
<p>11 Force and motion</p>	<p>11.1 Motion</p> <p>11.2 Effects of forces and ways to describe forces</p> <p>11.3 Balanced forces and free-body diagrams</p> <p>11.4 Gravity</p> <p>11.5 Friction and air resistance</p> <p>11.6 Action and reaction</p> <p><i>11.7 Space flight</i></p>	<p>Values</p> <ul style="list-style-type: none"> - Perseverance - National identity <p>National Security</p> <ul style="list-style-type: none"> - Technological security