

# RAFFLES WORLD ACADEMY



**RAFFLES**  

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**WORLD ACADEMY**

**MATHEMATICS - MEASUREMENT  
RWA SCOPE AND SEQUENCE**



## RWA Scope and Sequence - Mathematics - Measurement

### MISSION AND CORE VALUES

Raffles World Academy (RWA) was founded in September 2008. It is an independent co-educational private international day school operated by Innoventures Educational Investments LLC (aka Innoventures Education). The school began its history as Raffles International School (West Campus) and changed its name to Raffles World Academy in September 2012. The Academy is authorised to provide IBPYP in KG1-G5, IBMYP curriculum in G6-10 and IB Diploma and Courses to G11-12. It is an IB World School and a centre for Cambridge International Examinations. The school also provides other programmes including College Board PSAT and SAT, Trinity, and Mother Tongue language programmes including CNED and DELF for French. Raffles World Academy is regulated by the Dubai Knowledge and Human Development Authority (KHDA).

#### Our Guiding Statements

##### Our Vision

Providing world class education.

##### Our Mission

To empower students with a rigorous, holistic and international education for success in an ever-changing world.

##### Our Philosophy

To be recognized by the success of our students in achieving their personal goals

To make student development the centre of all school decisions

To aspire to the highest internationally recognized performance standards

To build and celebrate a culture based on internationalism

To enable the staff to become life-long learners through the development of their professional practice

##### Our Core Values

Achievement | Collaboration | Integrity | Respect | Responsibility

##### The RWA Motto

Towards Excellence

##### The RWA Mascot

Arabian Stallion

#### The RWA definition of International-Mindedness:

International Mindedness begins when we are open to and curious about the world in which we live, respect our own culture and want to know about the culture of others. We progress to acknowledge our common humanity and to recognize and value diversity existing within our communities, whether local, national or global. We exercise our individual and collective responsibilities as world citizens to safeguard the planet we share, promote peace, challenge injustice and engage in improving welfare for all, especially the disadvantaged. We seek to develop a deep understanding of the complexity, diversity and motives that underpin human actions and interactions. We strive to foster mutual respect, dialogue and cooperation through being open and willing to see the world through the lens of all those who share it with us.

As an IB school, international-mindedness is embodied in our implementation of the IB Learner Profile, which challenges students to be communicators in multiple languages, principled in their promotion of international justice, risk-takers in the spirit of exploring new cultures, knowledgeable about world issues, thinkers about complex problems, caring and committed to service, inquirers about the world, open-minded toward other perspectives, balanced in their approach to life, and reflective about their own personal development.

### IB MISSION STATEMENT

IB mission statement The International Baccalaureate aims to develop inquiring, knowledgeable and caring young people who help to create a better and more peaceful world through intercultural understanding and respect. To this end the organization works with schools, governments and international organizations to develop challenging programmes of international education and rigorous assessment. These programmes encourage students across the world to become active, compassionate and lifelong learners who understand that other people, with their differences, can also be right.

#### IB Learner Profile

The aim of all IB programmes is to develop internationally minded people who, recognizing their common humanity and shared guardianship of the planet, help to create a better and more peaceful world.

IB learners strive to be:

**Inquirers:** They develop their natural curiosity. They acquire the skills necessary to conduct inquiry and research and show independence in learning. They actively enjoy learning and this love of learning will be sustained throughout their lives.

**Knowledgeable:** They explore concepts, ideas and issues that have local and global significance. In so doing, they acquire in-depth knowledge and develop understanding across a broad and balanced range of disciplines.

**Thinkers:** They exercise initiative in applying thinking skills critically and creatively to recognize and approach complex problems, and make reasoned, ethical decisions.

**Communicators:** They understand and express ideas and information confidently and creatively in more than one language and in a variety of modes of communication. They work effectively and willingly in collaboration with others.

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**Principled:** They act with integrity and honesty, with a strong sense of fairness, justice and respect for the dignity of the individual, groups and communities. They take responsibility for their own actions and the consequences that accompany them.

**Open-minded:** They understand and appreciate their own cultures and personal histories, and are open to the perspectives, values and traditions of other individuals and communities. They are accustomed to seeking and evaluating a range of points of view, and are willing to grow from the experience.

**Caring:** They show empathy, compassion and respect towards the needs and feelings of others. They have a personal commitment to service, and act to make a positive difference to the lives of others and to the environment.

**Risk-takers:** They approach unfamiliar situations and uncertainty with courage and forethought, and have the independence of spirit to explore new roles, ideas and strategies. They are brave and articulate in defending their beliefs.

**Balanced:** They understand the importance of intellectual, physical and emotional balance to achieve personal well-being for themselves and others.

**Reflective:** They give thoughtful consideration to their own learning and experience. They are able to assess and understand their strengths and limitations in order to support their learning and personal development.

# RWA Scope and Sequence - Mathematics - Measurement

## Phase 1

**Overall Expectation Phase 1:** Learners will develop an understanding of how measurement involves the comparison of objects and the ordering and sequencing of events. They will be able to identify, compare and describe attributes of real objects as well as describe and sequence familiar events in their daily routine.

**PYP Conceptual Understanding:**

- Measurement involves comparing objects and events.
- Objects have attributes that can be measured using non-standard units.
- Events can be ordered and sequenced.

**Learning Objectives:**

P1	P2	P3	P4	P5	P6	P7	P8
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RWA Scope and Sequence - Mathematics - Measurement

<p>KG 1</p>	<p><b>P1:</b> Understands some talk about immediate past and future, e.g. 'before', 'later' or 'soon'.</p> <ul style="list-style-type: none"> <li>• <i>C: I can understand vocabulary connected to time</i></li> <li>• <i>T: I can understand some talk about immediate past and future, e.g. 'before', 'later' or 'soon'.</i></li> <li>• <i>A: I can use time vocabulary to talk about real-life situations</i></li> </ul> <p><b>Anticipates specific time-based events such as mealtimes or home time.</b></p> <ul style="list-style-type: none"> <li>• <i>C: I can understand that events in daily routines can be described and sequenced</i></li> <li>• <i>T: I can anticipate specific time-based events such as mealtimes or home time.</i></li> <li>• <i>A: I can use a timetable to identify what events are next in my day</i></li> </ul> <p><b>Begins to make comparisons between quantities.</b></p> <ul style="list-style-type: none"> <li>• <i>C: I can understand that attributes of real objects can be compared and described</i></li> <li>• <i>T: I can begin to make comparisons between quantities.</i></li> <li>• <i>A: I can compare quantities in my real-life</i></li> </ul> <p><b>Uses some language of quantities, such as 'more' and 'a lot'.</b></p> <ul style="list-style-type: none"> <li>• <i>C: I can understand vocabulary used to compare quantities</i></li> <li>• <i>T: I can use some language of quantities, such as 'more' and 'a lot'.</i></li> <li>• <i>A: I can quantify vocabulary to talk</i></li> </ul>		<p><b>P3:</b> Uses the language of 'more' and 'fewer' to compare two sets of objects</p> <ul style="list-style-type: none"> <li>• <i>C: I can understand that attributes of real objects can be compared and described</i></li> <li>• <i>T: I can use the language of 'more' and 'fewer' to compare two sets of objects</i></li> <li>• <i>A: I can use non-standard units of measurement to solve problems in real-life situations</i></li> </ul> <p><b>Uses everyday language related to time.</b></p> <ul style="list-style-type: none"> <li>• <i>C: I can understand vocabulary connected to time</i></li> <li>• <i>T: I can use everyday language related to time.</i></li> <li>• <i>A: I can use time vocabulary to talk about real-life situations</i></li> </ul> <p><b>Beginning to use everyday language related to money</b></p> <ul style="list-style-type: none"> <li>• <i>C: I understand vocabulary connected to money</i></li> <li>• <i>T: I can begin to use everyday language related to money</i></li> <li>• <i>A: I can use money vocabulary to talk about real-life situations</i></li> </ul> <p><b>Orders and sequences familiar events.</b></p> <ul style="list-style-type: none"> <li>• <i>C: I can understand that events in daily routines can be described and sequenced, for example, before, after, bedtime, storytime, today, tomorrow.</i></li> <li>• <i>T: I can order and sequence familiar events.</i></li> <li>• <i>A: I can describe observations about events and objects in</i></li> </ul>		<p><b>P5:</b> Children use everyday language to talk about size, weight, capacity, positions, distance, time and money to compare</p> <ul style="list-style-type: none"> <li>• <i>C: I can understand that attributes of real objects can be compared and described, for example, longer, shorter, heavier, empty, full, hotter, colder</i></li> <li>• <i>T: I can use everyday language to talk about size, weight, capacity, positions, distance, time and money to compare</i></li> <li>• <i>A: I can use non-standard units of measurement to solve problems in real-life situations</i></li> </ul>	<p><b>P6:</b> Children recognize, create and describe patterns</p> <ul style="list-style-type: none"> <li>• <i>C: I understand patterns are the repetition of attributes</i></li> <li>• <i>T: I can recognize, create and describe patterns</i></li> <li>• <i>A: I can use measurement of objects to find patterns in real-life</i></li> </ul>	<p><b>P7:</b> Using quantities and objects, they add and subtract two single-digit numbers and count on or back to find the answer</p> <ul style="list-style-type: none"> <li>• <i>C: I can understand that attributes of real objects can be compared and described</i></li> <li>• <i>T: I can use quantities and objects, they add and subtract two single-digit numbers and count on or back to find the answer</i></li> <li>• <i>A: I can solve addition and subtraction problems that involve real-life objects</i></li> </ul>	<p><b>P8:</b> Children explore characteristics of everyday objects and shapes and use mathematical language to describe them</p> <ul style="list-style-type: none"> <li>• <i>C: I can understand that attributes of real objects can be compared and described, for example, longer, shorter, heavier, empty, full, hotter, colder</i></li> <li>• <i>T: I can explore characteristics of everyday objects and shapes and use mathematical language to describe them</i></li> <li>• <i>A: I can use non-standard units of measurement to solve problems in real-life situations involving length, mass and capacity</i></li> </ul>
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Phase 2

**Overall Expectation Phase 2:** Learners will understand that standard units allow us to have a common language to measure and describe objects and events, and that while estimation is a strategy that can be applied for approximate measurements, particular tools allow us to measure and describe attributes of objects and events with more accuracy. Learners will develop these understandings in relation to measurement involving length, mass, capacity, money, temperature and time.

**PYP Conceptual Understandings:**

- Standard units allow us to have a common language to identify, compare, order and sequence objects and events.
- We use tools to measure the attributes of objects and events.
- Estimation allows us to measure with different levels of accuracy.

**Learning Objectives:**

Measurement

## RWA Scope and Sequence - Mathematics - Measurement

KG2	<p><b>Measurement: Length and height</b></p> <p>Compare, describe and solve practical problems for: lengths and heights for example, long/short, longer/shorter, tall/short, double/half</p> <ul style="list-style-type: none"><li>• <i>C: I can understand that tools can be used to measure</i></li><li>• <i>T: I can compare, describe and solve practical problems for: lengths and heights for example, long/short, longer/shorter, tall/short, double/half</i></li><li>• <i>A: I can use units of measurement to solve problems in real-life situations involving length and height</i></li></ul> <p><b>Measure and begin to record lengths and heights.</b></p> <ul style="list-style-type: none"><li>• <i>C: I can understand the use of standard units to measure length and height</i></li><li>• <i>T: I can measure and begin to record lengths and heights.</i></li><li>• <i>A: I can use standard units of measurement to solve problems in real-life situations involving length and height</i></li></ul> <p><b>Measurement: Money</b></p> <p><b>Recognize and know the value of different denominations of coins and notes.</b></p> <ul style="list-style-type: none"><li>• <i>C: I can understand values connected to coins and notes</i></li><li>• <i>T: I can Recognize and know the value of different denominations of coins and notes.</i></li><li>• <i>A: I can solve real-life problems involving coins and notes</i></li></ul> <p><b>Solve one step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems.</b></p> <ul style="list-style-type: none"><li>• <i>C: I understand how the value of money can increase and decrease as more is added or taken away</i></li><li>• <i>T: I can solve one step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems</i></li><li>• <i>A: I can solve real-life problems involving coins and notes</i></li></ul> <p><b>Measurement: Weight and Volume</b></p> <p>Compare, describe and solve practical problems for mass/weight [for example, heavy/light, heavier than, lighter than]; capacity and volume [for example, full/empty, more than, less than, half, half full, quarter]</p> <ul style="list-style-type: none"><li>• <i>C: I can understand the use of standard units to measure</i></li><li>• <i>T: I can compare, describe and solve practical problems for mass/weight [for example, heavy/light, heavier than, lighter than]; capacity and volume [for example, full/empty, more than, less than, half, half full, quarter]</i></li><li>• <i>A: I can use standard units of measurement to solve problems in real-life situations involving mass/weight, capacity and volume</i></li></ul> <p><b>Measure and begin to record mass/weight, capacity and volume.</b></p> <ul style="list-style-type: none"><li>• <i>C: I can understand that tools can be used to measure</i></li><li>• <i>T: I can measure and begin to record mass/weight, capacity and volume.</i></li><li>• <i>A: I can use standard units of measurement to solve problems in real-life situations involving mass/weight, capacity and volume</i></li></ul> <p><b>Notes</b></p> <p>Using materials from their immediate environment, learners can investigate how units are used for measurement and how measurements vary depending on the unit that is used. Learners will refine their estimation and measurement skills by basing estimations on prior knowledge, measuring the object and comparing actual measurements with their estimations.</p>
	<b>Measurement</b>



## RWA Scope and Sequence - Mathematics - Measurement

Grade 1

### Measurement: Time

Tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times.

- *C: I can understand that time is measured using universal units of measure, for example, years, months, days, hours, minutes and seconds.*
- *T: I can tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times.*
- *A: I can use measures of time to assist with problem solving in real-life situations.*

Know the number of minutes in an hour and the number of hours in a day.

- *C: I can understand the use of standard units to measure, for example, length, mass, money, time, temperature*
- *T: I know the number of minutes in an hour and the number of hours in a day.*
- *A: I can use measures of time to assist with problem solving in real-life situations.*

Compare and sequence intervals of time

- *C: I can understand that calendars can be used to determine the date, and to identify and sequence days of the week and months of the year*
- *T: I can compare and sequence intervals of time*
- *A: use measures of time to assist with problem solving in real-life situations.*

### Measurement: Length and Mass

Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm) and mass (kg/g) to the nearest appropriate unit, using rulers and scales.

- *C: I can understand that tools can be used to measure*
- *T: I can choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm) and mass (kg/g) to the nearest appropriate unit, using rulers and scales.*
- *A: I can use standard units of measurement to solve problems in real-life situations*

Compare and order length and mass and record the results using  $>$ ,  $<$  and  $=$ .

- *C: I can understand the use of standard units to measure*
- *T: I can compare and order length and mass and record the results using  $>$ ,  $<$  and  $=$ .*
- *A: I can use standard units of measurement to solve problems in real-life situations*

### Measurement: Capacity volume and temperature

Choose and use appropriate standard units to estimate and measure capacity (liters/ml) and temperature ( $^{\circ}\text{C}$ ) to the nearest appropriate unit, using thermometers and measuring vessels.

- *C: I can understand that tools can be used to measure*
- *T: I can choose and use appropriate standard units to estimate and measure capacity (liters/ml) and temperature ( $^{\circ}\text{C}$ ) to the nearest appropriate unit, using thermometers and measuring vessels.*
- *A: I can use standard units of measurement to solve problems in real-life situations*

Compare and order volume/capacity and record the results using  $>$ ,  $<$  and  $=$ .

- *C: I can understand the use of standard units to measure*
- *T: I can compare and order volume/capacity and record the results using  $>$ ,  $<$  and  $=$ .*
- *A: I can use standard units of measurement to solve problems in real-life situations*

### Measurement: Money

Recognize and use symbols of pounds (£) and pence (p); combine amounts to make a particular value.

- *C: I can understand symbols connected to money*
- *T: I can recognize and use symbols of pounds (£) and pence (p); combine amounts to make a particular value.*
- *A: I can use symbols and amount to solve real-life problems*

Find different combinations of coins that equal the same amounts of money.

- *C: I can understand combinations of coins have a specific value*
- *T: I can find different combinations of coins that equal the same amounts of money.*
- *A: I can use combinations of coins to solve real-life problems*

Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change.

- *C: I understand how operations are connected to finding the value of money*
- *T: Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change.*
- *A: I can use money to solve real-life problems*

### Notes

Using materials from their immediate environment, learners can investigate how units are used for measurement and how measurements vary depending on the unit that is used. Learners will refine their estimation and measurement skills by basing estimations on prior knowledge, measuring the object and comparing actual measurements with their estimations.

## RWA Scope and Sequence - Mathematics - Measurement

### Phase 3

**Overall Expectation Phase 3:** Learners will continue to use standard units to measure objects, in particular developing their understanding of measuring perimeter, area and volume. They will select and use appropriate tools and units of measurement, and will be able to describe measures that fall between two numbers on a scale. The learners will be given the opportunity to construct meaning about the concept of an angle as a measure of rotation.

#### PYP Conceptual Understandings:

- Objects and events have attributes that can be measured using appropriate tools.
- Relationships exist between standard units that measure the same attributes.

#### Learning Objectives

Measurement

## RWA Scope and Sequence - Mathematics - Measurement

Grade 2

### Measurement: Time

Tell and write the time from an analogue clock, including using Roman numerals and 12-hour and 24-hourclocks.

- *C: I can understand the parts of a digital and analogue 12 and 24 hour clock and how they work*
- *T: I can tell and write the time from an analogue clock, including using Roman numerals and 12-hour and 24-hourclocks.*
- *A: I can use an analogue and digital 12 and 24 hour clock to solve real-life problems*

Estimate and read time with increasing accuracy to the nearest minute.

- *C: I can understand the parts of a digital and analogue 12 and 24 hour clock and how they work*
- *T: I can estimate and read time with increasing accuracy to the nearest minute.*
- *A: I can solve real-life problems involving reading and estimating the time*

Record and compare time in terms of seconds, minutes and hours.

- *C: I can understand relationships between units of time (eg: year, month, week, hour, minute, second)*
- *T: I can record and compare time in terms of seconds, minutes and hours.*
- *A: I can convert between units of time to solve real-life problems*

Use vocabulary such as o'clock, a.m. /p.m., morning, afternoon, noon and midnight.

- *C: I understand the vocabulary that is connected to time*
- *T: I can use vocabulary such as o'clock, a.m. /p.m., morning, afternoon, noon and midnight.*
- *A: I can use timelines in units of inquiry and other real-life situations.*

Know the number of seconds in a minute and the number of days in each month, year and leap year.

- *C: I can understand relationships between units of time (eg: year, month, week, hour, minute, second)*
- *T: I can know the number of seconds in a minute and the number of days in each month, year and leap year.*
- *A: I can convert between units of time to solve real-life problems*

Compare durations of events (for example to calculate the time taken by particular events or tasks).

- *C: I can explain understand duration and elapses of time*
- *T: I can compare durations of events (for example to calculate the time taken by particular events or tasks).*
- *A: I can solve problems connected to duration of time in real-life*

### Measurement

Measure, compare, add and subtract: lengths (m/cm/mm).

- *C: I can understand that measures can fall between numbers on a measurement scale, for example, 3½ kg, between 4 cm and 5 cm*
- *T: I can measure, compare, add and subtract: lengths (m/cm/mm).*
- *A: I can select appropriate tools and units of measurement*

Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.

- *C: I can understand relationships between units, for example, meters, centimeters and millimeters*
- *T: I can solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.*
- *A: I can use standard units of measurement to solve problems in real-life situations involving perimeter, area and volume*

Measure the perimeter of simple 2D shapes.

- *C: I can understand the use of standard units to measure perimeter, area and volume*
- *T: I can measure the perimeter of simple 2D shapes.*
- *A: I can use standard units of measurement to solve problems in real-life situations involving perimeter, area and volume*

Continue to measure using the appropriate tools and units, progressing to using a wider range of measures, including comparing and using mixed and simple equivalents of mixed units.

- *C: I can understand relationships between units, for example, meters, centimeters and millimeters*
- *T: I can continue to measure using the appropriate tools and units, progressing to using a wider range of measures, including comparing and using mixed and simple equivalents of mixed units.*
- *A: I can select appropriate tools and units of measurement*

### Measurement: Time

Tell and write the time from an analogue clock, including using Roman numerals and 12-hour and 24-hourclocks.

- *C: I can understand the connection between Roman Numerals and current numbers*
- *T: I can tell and write the time from an analogue clock, including using Roman numerals and 12-hour and 24-hourclocks.*
- *A: I can solve problems connected to time using Roman Numerals in real-life situations*

Estimate and read time with increasing accuracy to the nearest minute.

- *C: I can understand the parts of a digital and analogue 12 and 24 hour clock and how they work*
- *T: I can estimate and read time with increasing accuracy to the nearest minute.*
- *A: I can solve real-life problems involving reading and estimating the time*

Record and compare time in terms of seconds, minutes and hours.

- *C: I can understand relationships between units of time (eg: year, month, week, hour, minute, second)*
- *T: I can record and compare time in terms of seconds, minutes and hours.*
- *A: I can convert between units of time to solve real-life problems*

## RWA Scope and Sequence - Mathematics - Measurement

Measurement

## RWA Scope and Sequence - Mathematics - Measurement

Grade 3

### Measurement: Area

Find the area of rectilinear shapes by counting squares.

- *C: I can understand the use of standard units to measure perimeter, area and volume*
- *T: I can find the area of rectilinear shapes by counting squares.*
- *A: use standard units of measurement to solve problems in real-life situations involving area*

### Measurement: Time

Convert between different units of measure eg: hour to minute.

- *C: I can understand relationships between units of time (eg: year, month, week, hour, minute, second)*
- *T: I can convert between different units of measure eg: hour to minute.*
- *A: I can convert between units of time to solve real-life problems*

Read, write & convert time between analogue and digital 12 and 24 hour clocks.

- *C: I can understand the parts of a digital and analogue 12 and 24 hour clock and how they work*
- *T: I can read, write & convert time between analogue and digital 12 and 24 hour clocks.*
- *A: I can use an analogue and digital 12 and 24 hour clock to solve real-life problems*

Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days

- *C: I can understand relationships between units of time (eg: year, month, week, hour, minute, second)*
- *T: I can convert between different units of measure eg: hour to minute.*
- *A: I can use timelines in units of inquiry and other real-life situations.*

### Measurement: Money

Solve simple measure and money problems involving fractions and decimals to two decimal places.

- *C: I can model decimal fractions to hundredths or beyond*
- *T: I can solve simple measure and money problems involving fractions and decimals to two decimal places.*
- *A: I can use fractions and decimals to solve money problems in real-life*

Estimate, compare and calculate different measures, including money in pounds and pence

- *C: I can understand relationships between different coins and notes*
- *T: I can estimate, compare and calculate different measures, including money in pounds and pence*
- *A: I can solve different money problems in real-life*

### Measures: Perimeter and Length

Convert between different units of measure eg kilometers meter.

- *C: I can understand relationships between units, for example, meters, centimeters and millimeters*
- *T: I can convert between different units of measure eg kilometers meter.*
- *A: I can use standard units of measurement to solve problems in real-life situations*

Measure and calculate the perimeter of a rectilinear figure (including squares) in cm and m

- *C: I can understand the use of standard units to measure perimeter*
- *T: I can measure and calculate the perimeter of a rectilinear figure (including squares) in cm and m*
- *A: I can use standard units of measurement to solve problems in real-life situations involving perimeter*

### Measurement: Area and Perimeter

Measure and calculate the perimeter of a rectilinear figure (including squares) in centimeters and meters

- *C: I can understand that measures can fall between numbers on a measurement scale, for example,  $3\frac{1}{2}$  kg, between 4 cm and 5 cm*
- *T: I can measure and calculate the perimeter of a rectilinear figure (including squares) in centimeters and meters*
- *A: I can use standard units of measurement to solve problems in real-life situations involving perimeter*

Convert between different units of measure [for example, kilometer to meter]

- *C: I can understand relationships between units, for example, meters, centimeters and millimeters*
- *T: I can convert between different units of measure [for example, kilometer to meter]*
- *A: I can use standard units of measurement to solve problems in real-life situations involving area*

Find the area of rectilinear shapes by counting squares

- *C: I can understand the use of standard units to measure area*
- *T: I can find the area of rectilinear shapes by counting squares*
- *A: I can use standard units of measurement to solve problems in real-life situations involving area*

### Notes

In order to use measurement more authentically, learners should have the opportunity to measure real objects in real situations. The units of inquiry can often provide these realistic contexts.

A wide range of measuring tools should be available to the students, for example, rulers, trundle wheels, tape measures, bathroom scales, kitchen scales, timers, analogue clocks, digital clocks, stopwatches and

Phase 4

**Overall Expectation Phase 4:** Learners will understand that a range of procedures exists to measure different attributes of objects and events, for example, the use of formulas for finding area, perimeter and volume. They will be able to decide on the level of accuracy required for measuring and using decimal and fraction notation when precise measurements are necessary. To demonstrate their understanding of angles as a measure of rotation, the learners will be able to measure and construct angles.

**PYP Conceptual Understandings:**

- Accuracy of measurements depends on the situation and the precision of the tool.
- Conversion of units and measurements allows us to make sense of the world we live in.
- A range of procedures exists to measure different attributes of objects and events.

**Learning Objectives:**

Measurement

## RWA Scope and Sequence - Mathematics - Measurement

Grade 4	<p><b>Measurement: Converting Units</b></p> <p><b>Convert between different units of metric measure (for example, km and m; cm and m; cm and mm; g and kg; l and ml).</b></p> <ul style="list-style-type: none"><li>• <i>C: I can understand unit conversions within measurement systems (metric or customary).</i></li><li>• <i>T: I can convert between different units of metric measure (for example, km and m; cm and m; cm and mm; g and kg; l and ml).</i></li><li>• <i>A: I can use decimal and fractional notation in measurement, for example, 3.2 cm, 1.47 kg, 1½ miles in real-life situations</i></li></ul> <p><b>Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints.</b></p> <ul style="list-style-type: none"><li>• <i>C: I can understand unit conversions within measurement systems (metric or customary).</i></li><li>• <i>T: I can understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints.</i></li><li>• <i>A: I can use decimal and fractional notation in measurement, for example, 3.2 cm, 1.47 kg, 1½ miles in real-life situations</i></li></ul> <p><b>Solve problems involving converting between units of time.</b></p> <ul style="list-style-type: none"><li>• <i>C: I can understand unit conversions within measurement systems (metric or customary).</i></li><li>• <i>T: I can convert between different units of metric measure (for example, km and m; cm and m; cm and mm; g and kg; l and ml).</i></li><li>• <i>A: I can solve problems involving converting between units of time.</i></li></ul> <p><b>Measurement: Perimeter and Area</b></p> <p><b>Measure and calculate the perimeter of composite rectilinear shapes in cm and m.</b></p> <ul style="list-style-type: none"><li>• <i>C: I can understand procedures for finding perimeter</i></li><li>• <i>T: I can measure and calculate the perimeter of composite rectilinear shapes in cm and m.</i></li><li>• <i>A: I can find perimeter of shapes in our real-life environment</i></li></ul> <p><b>Calculate and compare the area of rectangles (including squares), and including using standard units, cm<sup>2</sup>, m<sup>2</sup> estimate the area of irregular shapes.</b></p> <ul style="list-style-type: none"><li>• <i>C: I can understand the relationships between area and perimeter</i></li><li>• <i>T: I can calculate and compare the area of rectangles (including squares), and including using standard units, cm<sup>2</sup>, m<sup>2</sup> estimate the area of irregular shapes.</i></li><li>• <i>A: I can find area of shapes in our real-life environment</i></li></ul> <p><b>Measurement: Volume</b></p> <p><b>Estimate volume (for example using 1cm<sup>3</sup> blocks to build cuboids (including cubes) and capacity (for example, using water)).</b></p> <ul style="list-style-type: none"><li>• <i>C: I can understand procedures for finding volume</i></li><li>• <i>T: I can estimate volume (for example using 1cm<sup>3</sup> blocks to build cuboids (including cubes) and capacity (for example, using water)).</i></li><li>• <i>A: I can find volume of shapes in our real-life environment</i></li></ul> <p><b>Use all four operations to solve problems involving measure</b></p> <ul style="list-style-type: none"><li>• <i>C: I can understand procedures for finding area, perimeter and volume</i></li><li>• <i>T: I can use all four operations to solve problems involving measure</i></li><li>• <i>A: I can find perimeter, area and volume of shapes in our real-life environment using specific formulas</i></li></ul>
	Measurement

## RWA Scope and Sequence - Mathematics - Measurement

Grade 5

### Measurement

Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate.

- *C: I can understand unit conversions within measurement systems (metric or customary).*
- *T: I can solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate.*
- *A: I can use decimal and fractional notation in measurement, for example, 3.2 cm, 1.47 kg, 1½ miles in real-life situations*

Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to 3 decimal places.

- *C: I can understand unit conversions within measurement systems (metric or customary).*
- *T: I can use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to 3 decimal places.*
- *A: I can use decimal and fractional notation in measurement, for example, 3.2 cm, 1.47 kg, 1½ miles in real-life situations*

Convert between miles and kilometers.

- *C: I can understand unit conversions within measurement systems (metric or customary).*
- *T: I can convert between miles and kilometers.*
- *A: I can use decimal and fractional notation in measurement, for example, 3.2 cm, 1.47 kg, 1½ miles in real-life situations*

Recognize that shapes with the same areas can have different perimeters and vice versa.

- *C: I can understand the relationships between area and perimeter, between area and volume, and between volume and capacity*
- *T: I can recognize that shapes with the same areas can have different perimeters and vice versa.*
- *A: I can compare area and perimeter of shapes that appear in our real-life environment*

Recognize when it is possible to use formulae for area and volume of shapes.

- *C: I can develop and describe formulas for finding perimeter, area and volume*
- *T: I can recognize when it is possible to use formulae for area and volume of shapes.*
- *A: I can find area and volume of shapes in our real-life environment using specific formulas*

Calculate the area of parallelograms and triangles.

- *C: I can develop and describe formulas for finding area*
- *T: I can calculate the area of parallelograms and triangles.*
- *A: I can find area of parallelograms and triangles in our real-life environment using specific formulas*

Calculate, estimate and compare volume of cubes and cuboids using standard units, including cm<sup>3</sup>, m<sup>3</sup> and extending to other units (mm<sup>3</sup>, km<sup>3</sup>)

- *C: I can select and use appropriate units of measurement and tools to solve problems in real-life situations*
- *T: I can calculate, estimate and compare volume of cubes and cuboids using standard units, including cm<sup>3</sup>, m<sup>3</sup> and extending to other units (mm<sup>3</sup>, km<sup>3</sup>)*
- *A: I can determine and justify the level of accuracy required to solve real-life problems involving measurement*

### Notes

Learners generalize their measuring experiences as they devise procedures and formulas for working out perimeter, area and volume.

While the emphasis for understanding is on measurement systems commonly used in the learner's world, it is worthwhile being aware of the existence of other systems and how conversions between systems help us to make sense of them.