Programme of study for Year 10 Foundation Maths 24-2025

Autumn (1st term)	Autumn (2nd term)	Spring (1st term)	Spring (2nd Term)	Summer (1st term)	Summer (2nd term)
Topic / Big Question: **-Fractions, decimals & percentages** **-Fractions: add and subtract mixed number fractions, multiply mixed number fractions** **-Perimeter and Area**	Topic / Big Question: **-Probability** **-Right – angled triangles: Pythagoras and trigonometry** .	Topic / Big Question: **-Ratio** **-Proportion** **-3D and Volume**	Topic / Big Question: **-Multiplicative reasoning** **-Indices and standard form** **-Quadratic equations**	Topic / Big Question: **-Straight-line graphs** **-Real life graphs** **-Plans and elevations**	Topic / Big Question: **-Circles** **-Cylinders, cones and spheres** **-Constructions, loci and bearings**
Skills (students should be able to do): A01: Use, recall and apply standard techniques AO2: From given mathematical information: Reason, interpret & communicate mathematically A03: Solve problems or evaluate methods and solutions within mathematics and in other contexts.	Skills (students should be able to do): A01: Use, recall and apply standard techniques AO2: From given mathematical information: Reason, interpret & communicate mathematically A03: Solve problems or evaluate methods and solutions within mathematics and in other contexts.	Skills (students should be able to do): A01: Use, recall and apply standard techniques AO2: From given mathematical information: Reason, interpret & communicate mathematically A03: Solve problems or evaluate methods and solutions within mathematics and in other contexts.	Skills (students should be able to do): A01: Use, recall and apply standard techniques AO2: From given mathematical information: Reason, interpret & communicate mathematically A03: Solve problems or evaluate methods and solutions within mathematics and in other contexts.	Skills (students should be able to do): A01: Use, recall and apply standard techniques AO2: From given mathematical information: Reason, interpret & communicate mathematically A03: Solve problems or evaluate methods and solutions within mathematics and in other contexts.	Skills (students should be able to do): A01: Use, recall and apply standard techniques AO2: From given mathematical information: Reason, interpret & communicate mathematically A03: Solve problems or evaluate methods and solutions within mathematics and in other contexts.

Key Learning Outcomes (students should know):	Key Learning Outcomes (Students should know):	Key Learning Outcomes (Students should know):	Key Learning Outcomes (Students should know):	Key Learning Outcomes (Students should know):	Key Learning Outcomes (Students should know):
Perform operations with decimals, including addition, subtraction, multiplication, and division. Understand the relationships between fractions, decimals, and percentages, and convert between these forms. Calculate percentages of given amounts. Calculate percentage change. Perform the four operations with mixed-number fractions. Find the reciprocal of an integer, decimal, or fraction. Recall and use formulas to find the area of a triangle and a rectangle. Find the area of a trapezium and recall the associated formula.	Distinguish between events which are impossible, unlikely, even chance, likely and certain to occur. Mark events/probabilities on a probability scale of 0 to 1. Write probability using fractions, percentages or decimals. Find the probability of an event happening using theoretical probability. List all the outcomes for single events, and combined events systematically. Work out probabilities from frequency tables, frequency trees and two way tables. Record outcomes of probability experiments in tables. Add simple probabilities.	Write ratios in their simplest form. Express the division of a quantity into a number of parts as a ratio. Share a ratio in a given quantity. Interpret a ratio to describe a situation. Use ratio to find 1 quantity when the other is known. Write ratio as a fraction + as a linear function. Write ratio in form 1:m or m:1. Use ratio and be able to: - compare a scale model to real-life object to scale up recipes and convert currencies. Write a ratio as a fraction.	Understand and use compound measures: density, pressure & speed. Convert between metric speed measures. Read values in km/h and mph from a speedometer. Use kinematics formulae to calculate speed and acceleration. Express a given number as a percentage of another number. Calculate percentage profit or loss. Make calculations involving repeated and change not using a formula Find the original amount, given the final amount after a percentage increase or decrease. Use compound interest.	Use function machines to find coordinates. Identify, plot and draw graphs ***y=a, x=a, y=x, y= -x.*** Plot and draw graphs of straight line: ***y=mx + c.*** Sketch a linear graph using the gradient & y-intercept. Identify parallel lines from given equations. Plot and draw graphs for equation. In form: ***ax + by= c.*** Find the equation of a straight-line graph. Find the equation to a line through one point and a given gradient. Find approximate solutions to a linear equation from a graph.	Recall the definition of a circle. Identify and draw parts of a circle including: tangent, chord and segments. Recall and use two formulas for circumference C= π x d C = 2 x π x r And A = πr^2 Use π is approximately 3.142 or the π button on a calculator. Give answers to a question on area and circumference of a circle in terms of π. Find the radius or diameter, given the area or circumference of a circle. Calculate perimeters and areas of composite shapes make from circles, semi-circles and parts of a circle.

Find the area of a parallelogram. Calculate the areas and perimeters of compound shapes made from triangles and rectangles. Estimate surface areas by rounding measurements to one significant figure. Find the surface area of a prism. Calculate surface area using rectangles and triangles.	Identify different mutually exclusive outcomes and know the sum of the probabilities of all outcomes is 1. Use ***1 – p*** as the probability of an event not occurring, where ***p*** is the probability of the event occurring. Find a missing probability from a list or table, including algebraic terms. Find the probability of an event happening using relative frequency. Estimate the number times of times an event will occur, given the probability and the number of trials (experimental & theoretical). Draw and use a sample space diagrams. Work out the probabilities from Venn diagrams to represent real life situation and	Use proportion as equality of ratios. Solve word problems involving direct and indirect proportion. Work out which product is better buy. Scale up recipes. Convert between currencies. Solve problem using unitary method. Recognising direct & indirect proportion graphs. Understand direct proportion: ***y = kx.*** Find Surface Area (SA) of a prism. Identify and name common 3D shapes. Sketch nets of cuboids and prisms. Find the volume of a prism. Estimate volume of prism, by rounding	Use measures in ratio proportion problems: currency, conversion, rates of pay, best value. Set up, solve and interpret the answers in growth and decay problems. Understand and interpret equations/graph that are in direct and indirect proportion. Understand X is inversely proportional y is equivalent to x is proportional to $\frac{1}{y}$. Use index laws to simplify and calculate the value of numerical expressions (involving multiplication and division of integer powers and fractions.) Use numbers raised to the power of zero. (Including 0 to the power of 10.) Convert large and small numbers into standard form.	Find the gradient of straight lines from real life graphs. Find the midpoint coordinates of a line segment. Draw straight line graphs for real-life situations. Draw distance/time graphs and velocity/time graphs. Work out time intervals for graph scales. Interpret distance/time graphs. Interpret information presented in a range of linear & non-linear graphs. Interpret graphs with negative values on axes. Interpret gradient as the rate of change in distance/time & speed/time graphs, graphs of containers filling and emptying.	Calculate the arc length, angles and areas of sectors of circles. Find the surface area and volume of a cylinder. Find the surface area, volume of spheres, pyramids, cones and composite solids. Draw circles and arcs to a given radius or diameter. Measure & draw lines to nearest mm + angles to nearest degree. Understand CW & ACW and use compass directions Construct: perpendicular bisector of line/angle, perpendicular from a point to a line & angles of 45^0, 90^0 Draw and construct diagrams from given instructions.

	also abstract sets of numbers. Compare experimental data & theoretical probability. Compare relative frequencies from samples of different sizes. Find the probability of success events (Several throw of a single dice). Use tree diagrams to calculate the probability of independent/dependent events. Understand, recall and use Pythagoras' theorem in 2D. Justifying if a triangle is right-angled or not using Pythagoras' theorem. Calculate the length of the hypotenuse and of a shorter side in a right-angled triangle (including surd and decimal lengths).	lengths to 1 significant figure.	Convert numbers in standard form into ordinary form. Add, subtract, multiply and divide numbers in standard form. Interpret a calculator display using standard form and know how to enter numbers in standard form using calculator functions. Generate points and plot graphs of simple quadratic functions, then more general quadratic functions. Identify a line of symmetry of a quadratic graph. Find approximate solutions to quadratic equations using a graph. Interpret graphs of quadratic functions from real-life problems. Identify and Interpret roots, intercepts and turning points or quadratic graphs.	Draw sketches of 3D solids: Know the terms face, edge, and vertex. Identify and sketch planes of symmetry of 3D solids. Use isometric grids to draw 2D representations of 3D solids. Make accurate drawings of 2D shapes using a ruler + protractor. Draw front & side elevations & plans of shapes made from simple solids. Given the front + side elevations &plan, sketch the 3D solid.	Use and interpret maps and scale drawings. Make an accurate scale drawing from a diagram. Use 3 figure bearings to specify direction. Mark on a diagram the position of point B, given its bearing from point A. Given the bearing of point A from B, workout the bearing of B from A. Give bearings between the points on a map or a scaled plan. Use accurate drawings to solve bearings problems. Solve locus problems including bearings.

	Apply Pythagoras' theorem with a triangle drawn on a coordinate grid. Calculate the length of a line segment AB given pairs of points. Understand, use and recall the trigonometric ratios sine, cosine and tan; apply them to find angles and lengths of general triangles in 2D figures. Use trigonometric ratios to solve 2D problems including angles of elevation and depression. Know exact values of $\sin\theta$ and $\cos\theta$ for : θ= 30^0, 45^0 ,60^0 and 90^0. For $\tan\theta$ know exact values for : θ= 30^0, 45^0, 60^0				
Autumn Term – centrally planned, standardised and teacher marked piece(s) of work End of term 1 assessment to cover: - Fractions, decimals & percentages - Perimeter and Area - Probability		Spring Term – centrally planned, standardised and teacher marked piece(s) of work End of term 2 assessment to cover: - Ratio - Proportion - 3D and Volume		Summer Term – centrally planned, standardised and teacher marked piece(s) of work End of year exam	

- Right – angled triangles: Pythagoras and trigonometry Progress check as per assessment calendar		- Multiplicative reasoning - Indices and standard form - Quadratic equations Progress check as per assessment calendar		Progress check as per assessment calendar	
Building understanding: Rationale / breakdown for your sequence of lessons:	**Building understanding: Rationale / breakdown for your sequence of lessons:**	**Building understanding: Rationale / breakdown for your sequence of lessons:**	**Building understanding: Rationale / breakdown for your sequence of lessons:**	**Building understanding: Rationale / breakdown for your sequence of lessons:**	**Building understanding: Rationale / breakdown for your sequence of lessons:**
Fractions, decimals, and percentages represent different ways of describing parts of a whole, which is a fundamental concept in many areas, from everyday shopping to scientific measurements. We use these concepts when dealing with money, cooking, measuring, and understanding data in percentages (e.g., surveys, statistics, discounts, etc.). Perimeter and area are essential for measuring physical spaces, whether it's determining the amount of paint needed for a wall, the size of a	In KS3 students are taught to record, describe and analyse the frequency of outcomes of simple probability experiments involving randomness, fairness equally and unequally likely outcomes using the appropriate language and the 0-1 probability scale. They recall and retain that the probability of all outcomes sum to 1. In KS4 students are expected to recall and retain how to draw and use sample space diagrams. They also recall information on how to find a missing probability from a list or table including algebraic terms using their prior algebra skills.	In KS3 students are familiar with the concept of a ratio. Here learners simplify and divide an amount into a ratio. In Autumn term 1 in KS4 learners are now interpreting a ratio to describe a situation. Students will then be introduced to write a ratio in the form of 1:n or n:1 to find one quantity when the other is unknown. Learners will learn how to express ratio by parts and fractions. Students discover this through real life scaling problems. A real-life scenario can be applied when scaling up or down recipes. Linking proportion and ratio with KS3, students have been taught to	In KS3 learners have previously worked with percentage multipliers (increase and decrease.) In KS4 they need to recall and retain information and understand the language of a question for depreciation (loses value) interest/appreciation and apply skills retained on percentage multipliers to compound interest questions. Here students explore real life applications of compound interest (I.e. interest gained from a saving account after a number of years.) Students will explore field of real life jobs such as finance when being introduced to this topic.	Straight-line graphs introduce students to linear relationships, a fundamental concept in algebra. By learning how to plot and interpret these graphs, students gain a foundational understanding of functions, slopes, and intercepts. In KS3 learners previously can measure and draw lines to the nearest mm and angles to the nearest degree. In KS4 learners need to recall these skills by drawing sketches of 3D solids identify and understand what the terms face, edge and vertex mean. This term learners will be introduced to drawing front and side elevations and plans of	In KS3 students have been taught to calculate the area and circumference of a circle. Linking their prior knowledge about circle students are required to recall facts about circles and use and apply them to solve problems involving surface area and volume of other 3D shapes such as cylinders, cones and spheres. Leaners have previously been introduced to construction and loci and bearings. In KS4 learners understand the importance of congruency and recall skills on constructing SSS, SAS, ASA and right angles triangles using a ruler compass and protractor. Learners are

piece of land, or the material required to make a dress.	Learners this term begin to develop skills on find probabilities using a Venn diagram to represent real life situations and abstract set of numbers. Here they explore how Venn diagrams are used in real life jobs such as scientists studying human health and medicines. Leaners are also introduced to calculating the probability of independent and dependent combined events, including using tree diagrams and other representations, and know the underlying assumptions. In autumn term 2 students are expected to develop their multiplicative reasoning skills and are expected to recall and retain Pythagoras theorem whilst being introduced to new trigonometry	express and simplify ratio; unitary ratio and divide into ratio; solve problems involving proportion i.e. recipe and exchange rates In KS4 building on their previous knowledge, learners will be able to solve complex problems using the understanding of direct and inverse proportions. Most of the other concepts that requires multiplicative reasoning. Furthermore, students need to express a multiplicative relationship between two quantities as a ratio or a fraction and show this on a graph. The equation of a straight-line can been as a relation between two quantities and the table representation is closely related to proportions. The concept of proportion and ratio relies on multiplicative reasoning, which appears in most mathematical contexts.	In KS4 learners are also revisiting skills obtained from previous terms on real lie graphs by using ratio and proportion problems: currency conversions, rates of pay and best value. Leaners will also set up and solve and interpret problems involving growth and decay using prior skills from graph work. Indices improve readability in complex equations by reducing lengthy expressions. They provide a clear hierarchy, making it easier to follow the order of operations in formulas. **I**n the last term of year 10 students discovering more depth of quadratics and its graphs and properties. Learners need to recall skills obtained from the summer term 1 on quadratic graphs and	shapes made from simple solids (recall from previous skills obtained) and give the front and side elevations and plans and sketch these 3D solids. Here learners discover the importance of plans and elevations to real life jobs in mechanical engineering, architects when constructing initial building plans.	expected to use loci by drawing and constructing diagrams from given instructions and is introduced to skills on constructing perpendicular bisectors of a line. Learners explore how important bearing and loci are for architects, pilots and jobs, which involve a boat sailing i.e. fisherman.

	content in a right-angled triangle. Learners have previously been exposed to the concept of Pythagoras theorem. In KS4 they have to extend their skills by applying Pythagoras' theorem with a triangle drawn on a coordinate grid, find the hypotenuse and shorter lengths of a triangle from a right-angle triangle. They will need to recall skills on leaving answers in surd form and to any correct decimal point, significant figure. Learners will also explore real life aspects of Pythagoras theorem and trigonometry SOH CAH TOA using trigonometric ratios to solve 2D problems including angles or elevation and depression for example pilots when they are landing and flying back to airports.	From recipe and exchange rates, from graphs to interpreting the gradient at a point on a curve as the instantaneous rate of change, from Pythagoras to trigonometry, from scaling a length to find the relative area and volume of a given 3D shape. Learners will be taught in the Spring term 1 to sketch nets of cuboids and prisms at the same time be able to identify and name common 3D shapes.	develop skills on its properties this term. Previously students learnt how to factorise quadratic equations where the coefficient of x^2 is 1, then place these into brackets and can begin to solve for x. Students are exposed to new vocabulary such as estimates and roots (where it meets the x axis). This term students are required to generate points and plot graphs of simple quadratic functions and more complex quadratics using a table of values. Here students will need to recall and recap skills on algebra previously obtained on substitution and need to be careful when substituting negative values into squares ensuring brackets are used to avoid common calculator mistakes. Students this term also deepen their		

			understanding on properties of quadratics graphs by identifying a line of symmetry on a quadratic graph, interpret and identify roots, intercepts and turning points. Students will explore real life jobs where quadratic graphs are used i.e. astronomers, physicists and economists.		
Home – Learning: Homework is assigned on Sparx Maths for students to complete once a week.	Home – Learning: Homework is assigned on Sparx Maths for students to complete once a week.	Home – Learning: Homework is assigned on Sparx Maths for students to complete once a week.	Home – Learning: Homework is assigned on Sparx Maths for students to complete once a week.	Home – Learning: Homework is assigned on Sparx Maths for students to complete once a week.	Home – Learning: Homework is assigned on Sparx Maths for students to complete once a week.
Reading / High Quality Text: Elements of literacy will be incorporated through key words and worded questions	Reading / High Quality Text: Elements of literacy will be incorporated through key words and worded questions	Reading / High Quality Text: Elements of literacy will be incorporated through key words and worded questions	Reading / High Quality Text: Elements of literacy will be incorporated through key words and worded questions	Reading / High Quality Text: Elements of literacy will be incorporated through key words and worded questions	Reading / High Quality Text: Elements of literacy will be incorporated through key words and worded questions
Numeracy: Throughout the lessons students will be	Numeracy: Throughout the lessons students will be engaged with numeracy.	Numeracy: Throughout the lessons students will be	Numeracy: Throughout the lessons students will be	Numeracy: Throughout the lessons students will be	Numeracy: Throughout the lessons students will be

engaged with numeracy.		engaged with numeracy.	engaged with numeracy.	engaged with numeracy.	engaged with numeracy.

Enrichment / opportunities to develop cultural capital (including careers, WRL and SMSC):
In maths lessons:

Spiritual growth is encouraged by students reflecting on their answers, reasoning and in class discussions
Learners are made aware of choices they make may results to different outcomes and consequences. Their **Moral** duty is to be able to make the right choices in terms of behaviour and to reach the correct answers/conclusions
Leaners **Social** developments is encouraged through discussions, sharing ideas, peer marking, articulating their thinking and group work
Leaners are exposed to different topics and their links to different **Culture** throughout the curriculum. This includes different multiplication methods from Egypt, Russia and China, Pythagoras' Theorem from Greece, algebra from the Middle East and debates as to where Trigonometry was first used. We try to develop an awareness of both the history of maths alongside the realisation that many topics we still learn today have travelled across the world and are used international
Perimeter Area and Volume:
Area of UK / other countries, Area of Southall compared to other towns / discuss population. No of laps in F1 race. Fuel required?
Straight line graphs:
Currency conversion - exchanging money for holiday. Holiday bookings, best value for money, distance-time (Formula one), Fuel consumption for vehicles, Cabs - mileage against cost of journey
Fractions, decimals & percentages:
When managing a household or social organization's finances, people use fractions, decimals, and percentages to allocate budgets, manage income, and track expenses (e.g., 50% of the budget for groceries).
Fractions and percentages help manage time for social activities, work, and personal life. For example, dividing your day into different parts: ⅓ for work, ⅓ for personal tasks, and ⅓ for social activities.
Many religious practices involve donating a percentage of one's income (e.g., 10% tithe in Christianity or zakat in Islam, which is 2.5%).
Decimals or percentages are used to calculate the amount of time devoted to spiritual practices relative to the entire day or week (e.g., spending 10% of your day in meditation).
In certain spiritual practices, the fraction of the day spent fasting (e.g., during Ramadan or Lent) is calculated to help people manage their health and spiritual commitments.
Percentages are often used to analyse participation rates in cultural events or festivals (e.g., 75% of the population celebrates a national holiday).
Fractions and percentages show how different cultural groups are represented in media, art, and literature (e.g., 25% of films produced feature indigenous stories).
Percentages are used to track personal progress, such as achieving 80% of your fitness goal or 50% of a career development plan.
Grading systems often use percentages to reflect personal academic progress (e.g., getting 90% on an exam).
Fractions and percentages help in tracking performance improvement (e.g., running 10% faster) and time spent in training (e.g., spending 50% of your training time on strength and 50% on cardio). Decimals and percentages are used to measure caloric intake and balance

Multiplicative reasoning:

Social Development:

Budgeting and financial planning:

Moral Development:

Fairness and equality: Multiplicative reasoning can help individuals assess and evaluate situations involving fairness and equality, such as understanding proportional distribution of resources in a fair and just manner.

Spiritual Development:

Rituals and ceremonies: Multiplicative reasoning may be involved in understanding the significance of numerical patterns or proportions within spiritual rituals or ceremonies.

Cultural Development:

Art and design: Artists and designers often use multiplicative reasoning to scale their creations, ensuring proportions and dimensions are maintained accurately.

Personal Development:

Health and fitness: Understanding concepts like calorie intake and expenditure involves multiplicative reasoning, as individuals calculate nutritional values and plan exercise routines.

Physical Development:

Sports and athletics: Athletes and coaches use multiplicative reasoning to analyze performance metrics, such as calculating speed, distance, and time, or understanding the relationship between force and acceleration.

Probability:

Probability is used in **political polling** to predict election outcomes based on sampled data. This helps assess the likelihood of certain political or social changes.

Social scientists use probability sampling methods to study populations, allowing them to generalize findings from a small sample to a larger group.

In anthropology, probability is used to model how cultures evolve over time. For instance, it can help predict which cultural traits are likely to be passed down through generations based on environmental factors or societal pressures.

In linguistics, the probability of certain words or language patterns being used in a culture can help decode societal preferences, values, and changes in communication styles.

Personal financial decisions often involve probabilistic thinking, such as investing in the stock market, saving for retirement, or evaluating the risks and rewards of major purchases.

In sports, athletes and coaches use probability to assess the likelihood of success in a game or competition. Statistical analysis can predict outcomes based on past performance and improve training methods.

Pythagoras:

Architecture and Construction: Architects and builders use the Pythagorean theorem to ensure that structures are built accurately and safely. Navigation: The Pythagorean theorem is essential in navigation, especially in aviation and maritime contexts. It helps pilots and navigators calculate the shortest distance between two points on the Earth's surface when flying or sailing in a straight line. Engineering: Engineers use the Pythagorean theorem extensively in various engineering applications.

Quadratics:

Social: Medicine and Biology: Quadratic equations can be applied in pharmacokinetics to model the concentration of drugs in the body over time or to analyse the growth patterns of populations or organisms.

Moral: Optimization Problems: Quadratic equations often arise in optimization problems, where one seeks to maximize or minimize a certain quantity, such as cost, profit, or efficiency.

Spiritual: Psychology and Sociology: Quadratic equations can be utilized in statistical analysis to model relationships between variables or to study phenomena like learning curves or population dynamics.

Cultural: Art and Music: Quadratic equations can be used in art to create visually appealing shapes and patterns or in music to model sound waves and frequencies.

Personal Development: While not directly applicable in everyday life, understanding quadratic equations and problem-solving skills related to them can contribute to personal development by enhancing critical thinking and analytical abilities.

Simultaneous equations:

Social: Economic Analysis: Economists use simultaneous equations to model complex economic systems where multiple variables are interrelated, such as supply and demand, investment and consumption, or inflation and unemployment.

Spiritual and Moral Reflection: While not traditionally associated with mathematical equations, individuals might metaphorically use simultaneous equations to reflect on the interconnectedness of moral principles, spiritual beliefs, and personal values, considering how different aspects of their lives influence and shape one another.

Culture: Urban Planning: Urban planners use simultaneous equations to model urban growth, transportation networks, housing demand, and other factors influencing the development of cities and regions.

Personal: Personal Finance: Individuals may use simultaneous equations to manage their personal finances, such as budgeting for expenses, saving for retirement, or planning investments, considering factors like income, expenses, interest rates, and asset values. Physical: Interpersonal Relationships: In personal development and counselling, simultaneous equations can be used metaphorically to represent the interconnectedness of various aspects of one's life, helping individuals understand and navigate the complex dynamics of relationships, emotions, and personal goals.

Ratio and Proportion: In communities, ratio and proportion are used to allocate resources like food, water, or funding fairly. For example, in relief efforts, aid may be distributed based on the proportion of people affected.

Proportion:

It plays a role in addressing income inequality by analysing the ratio of the rich to the poor and designing social policies accordingly.

In various spiritual traditions, ratios determine fasting periods. For instance, fasting for one-third of the day or certain proportions of the month.

Ratios are fundamental in the creation of art and cultural artifacts. The Golden Ratio is often used in the proportions of paintings, sculptures, and buildings to create aesthetic balance.

Cultural dishes require precise ratios of ingredients to maintain authenticity. For example, in traditional cooking, the ratio of rice to water in various dishes may be crucial to achieving the desired texture.

Allocating a proportion of one's income to savings, expenses, and leisure ensures a well-managed personal finance plan.

Transformations:

Symmetry, housing industry, manufacturers, art works, Kew Gardens floral arrangements, **places of worship** architecture tessellations.

Constructions and Bearings:

Social Implications:

Construction projects can enhance infrastructure, improving the overall quality of life in communities.

Moral responsibility lies with construction professionals to ensure the safety of structures and adherence to ethical standards.

Construction can involve the creation of religious or spiritual spaces, influencing the spiritual experiences of individuals within those spaces.

Construction projects can impact cultural heritage, either by preserving historical structures or by introducing new architectural styles that influence cultural identity.

Construction directly affects individuals by providing housing and shelter, influencing their quality of life.

Cylinders, Cones and Spheres:

Understanding these mathematical concepts can be beneficial in fields like architecture, engineering, and design, contributing to the construction of buildings, bridges, and other structures that shape society. In certain spiritual or cultural contexts, geometric shapes hold symbolic meanings. For example, the circle (related to the surface area of a sphere) often symbolizes unity or perfection in various spiritual traditions. In fields like physics and engineering, knowledge of volume and surface area is crucial for understanding properties of materials and structures, such as their strength, buoyancy, and heat transfer capabilities.