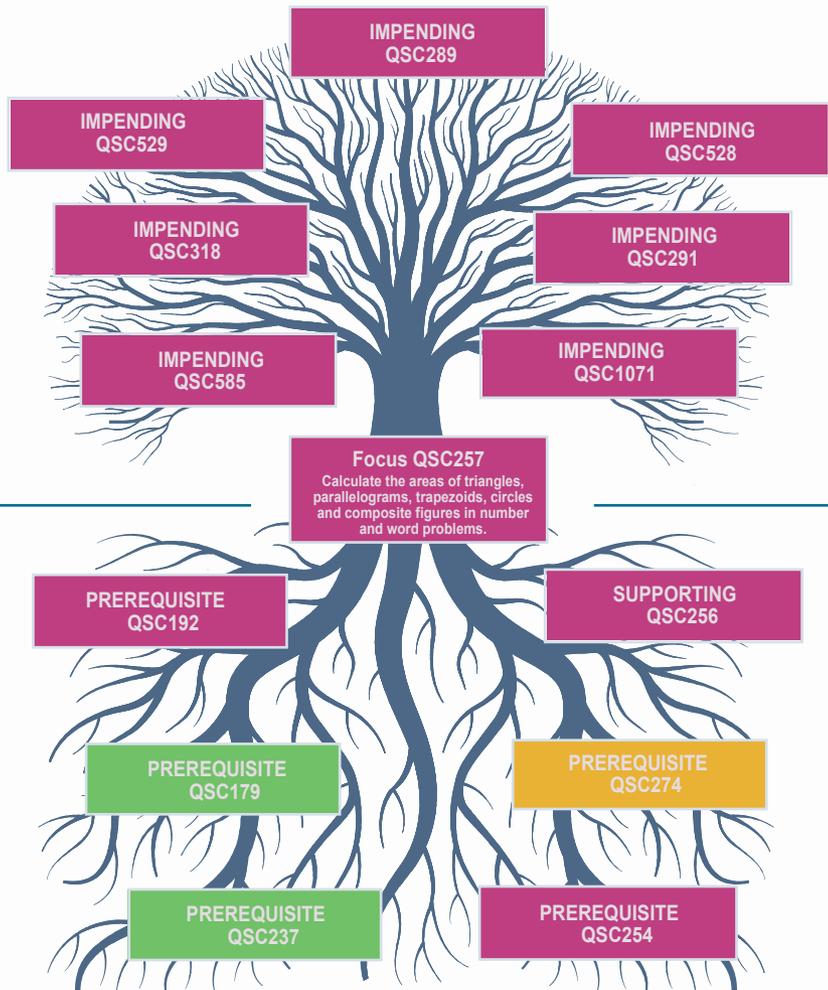




The Quantile® Framework for Mathematics: Knowledge Cluster

At the trunk of the tree is the focus Quantile Skill and Concept (QSC257). A knowledge cluster consists of the prerequisite skills and concepts at the root of the tree and the impending skills and concepts in the branches of the tree.



STRAND BY COLOR



A knowledge cluster illustrates a focus Quantile Skill or Concept (QSC) and its impending, prerequisite, and supporting skills and concepts (QSCs). Knowledge clusters depict the interconnectivity of skills, concepts, and applications within the Quantile® Framework.

Impending Skills and Concepts: Impending QSCs are the skills and concepts students are likely to learn after instruction on the focus QSC.

Focus Skill or Concept: The focus QSC is the basis of the knowledge cluster and represents the skill or concept being learned.

Prerequisite Skills and Concepts: Prerequisite QSCs are the skills and concepts that students need to learn before beginning instruction on the focus QSC.

Supporting Skills and Concepts: Supporting QSCs are those skills and concepts which enrich a lesson on the focus QSC, make connections across strands, and integrate different mathematical concepts.

| | QSC | Quantile Measure | Description |
|---|---------|------------------|---|
| IMPENDING SKILLS AND CONCEPTS (QSCs) | QSC291 | 1000Q | Recognize the effect on the area and perimeter when one or two dimensions of a plane figure are changed. |
| | QSC585 | 1000Q | Estimate and calculate areas with scale drawings and maps. |
| | QSC318 | 1040Q | Use nets or formulas to find the surface area of prisms and cylinders in number and word problems. |
| | QSC529 | 1150Q | Use measures of arcs or central angles to find arc length or sector area of a circle. |
| | QSC528 | 1280Q | Find the area of rhombi and of regular polygons to solve problems in number and word problems. |
| | QSC289 | 840Q | Use models to find volume for prisms and cylinders as the product of the area of the base (B) and the height. Calculate the volume of prisms in number and word problems. |
| | QSC1071 | 1240Q | Use various methods, including trigonometric relationships or Heron's Formula, to find the area of a triangle in number and word problems. |
| FOCUS SKILL OR CONCEPT (QSC) | QSC257 | 1040Q | Calculate the areas of triangles, parallelograms, trapezoids, circles, and composite figures in number and word problems. |
| PREREQUISITE SKILLS AND CONCEPTS (QSCs) | QSC192 | 450Q | Determine the area of rectangles, squares, and composite figures using nonstandard units, grids, and standard units in number and word problems. |
| | QSC179 | 530Q | Predict results of tessellating, subdividing, and changing shapes by paper folding or dissecting and rearranging pieces of plane figures and solids. |
| | QSC237 | 810Q | Draw circles; identify and determine the relationships between the radius, diameter, chord, center, and circumference. |
| | QSC254 | 930Q | Investigate and determine the relationship between the diameter and the circumference of a circle and the value of pi; calculate the circumference of a circle. |
| | QSC274 | 840Q | Evaluate algebraic expressions in number and word problems. |
| SUPPORTING SKILL OR CONCEPT (QSC) | QSC256 | 1010Q | Use models to develop formulas for finding areas of triangles, parallelograms, trapezoids, and circles in number and word problems. |