

Curriculum Links

TI-15 Explorer™: Pieces of Pi

C

Year 7 Measurement

Statement of Learning Opportunities

- Students investigate and use the relationship between the radius and diameter of a circle and its circumference and area

Key Ideas

- The perimeter of a circle is called its circumference
- For all circles the ratio of circumference length to the diameter length will be the same
- This fixed ratio is called pi (π)
- Pi is an irrational number and cannot be exactly represented as a fraction or as a decimal. The only exact way of writing it is as a symbol – π
- The circumference of a circle can be calculated by the formula: $C = \pi D$ or $C = 2\pi r$

Key Vocabulary

Circle, Diameter, Radius, Perimeter, Circumference, Ratio, Pi (π), Rational, Irrational, Exact, Approximate, Formula

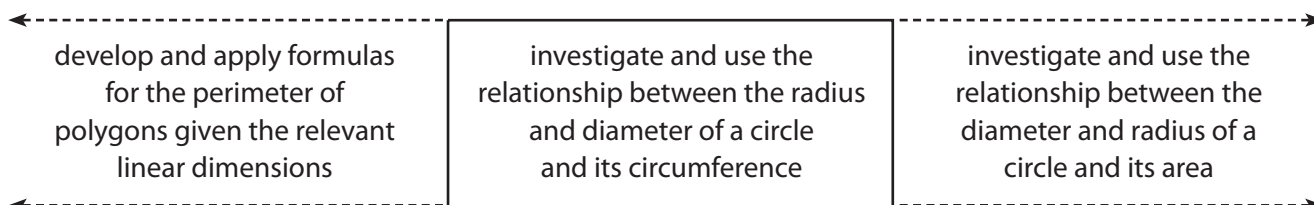
Lesson Overview

- Discovery of π (or review of the meaning of π)
- Two different circumference formulas for different input information
- Adding and subtracting circumferences for more than one circle
- Assessment

Equipment

TI-15 Explorer™ calculators for students, copies of worksheets 1 & 2, copies of assessment sheet, string, ruler, PowerPoint display (optional)

Sequencing



Indicators of Success

- Students can identify circles in their environment
- Students can identify and name parts of a circle; radius, diameter and circumference
- Students understand that the perimeter of a shape is the length of the measure around the boundary of the shape
- Students understand that circumference is the name given to the perimeter of a circle
- Students demonstrate that perimeter and circumference should be measured in length units (e.g. mm, cm, m, km)
- Students demonstrate knowledge that π is a letter of the Greek alphabet and that it is pronounced 'pi'
- Students demonstrate knowledge that π is chosen to represent the constant value of any circle's circumference divided by its diameter
- Students indicate that any decimal number representation of pi must be an approximation
- Students can find and use the π key on their calculator
- Students can calculate the circumference of any circle from a knowledge of the circle's radius or diameter and provide their answer in either exact or approximate form