Taxonomy

Numbers in square brackets indicate the equivalent NSDL Mathematics Taxonomy topic. '[ENC]' indicates that the topic related to 'cultural content' and 'instructional issues' is taken from the Eisenhower National Clearinghouse for Mathematics and Science Education thesaurus.

Cultural groups and geographic regions are not included in the subject taxonomy, as they are listed in separate subject lists. See section 14. Coverage.

- **Numbers and computation** [1.0]
  - Number concepts [1.1]
    - Natural numbers [1.1.1]
      - Number systems
      - Symbols
      - Words
      - Counting
    - Rational numbers [1.1.3]
      - Number systems
      - Symbols
    - Famous numbers [1.1.8]
      - Zero [1.1.8.1]
      - Pi [1.1.8.2]
      - Golden Mean [1.1.8.5]
  - Numerical terminology [1.1.9]
  - Bases, numerical [1.1.10]
  - Arithmetic [1.2]
    - Operations [whole numbers] [1.2.1]
      - Addition of whole numbers [1.2.1.1]
      - Subtraction of whole numbers [1.2.1.2]
      - Multiplication of whole numbers [1.2.1.3]
      - Division of whole numbers [1.2.1.4]
      - Estimation of whole numbers [1.2.1.9]
    - Fractions [1.2.2]
      - Addition of fractions [1.2.2.1]
      - Subtraction of fractions [1.2.2.2]
      - Multiplication of fractions [1.2.2.3]
      - Division of fractions [1.2.2.4]
      - Ratio and proportion of fractions [1.2.2.5]
    - Comparison of numbers [1.2.4]
    - Body parts used for counting [1.2.5]
  - Patterns and sequences [1.3]
    - Number patterns [1.3.1]
    - Fibonacci sequence [1.3.2]
    - Arithmetic sequence [1.3.3]
    - Geometric sequence [1.3.4]
  - Measurement [1.4]

- Units of measurement [1.4.1]
  - Metric System [1.4.1.1]
  - Standard units [1.4.1.2]
  - Nonstandard units [1.4.1.5]
- Linear measure [1.4.2]
  - Distance [1.4.2.1]
  - Circumference [1.4.2.2]
  - Perimeter [1.4.2.3]
- Area [1.4.3]
  - Area of polygons [1.4.3.1]
  - Area of circles [1.4.3.2]
  - Surface area [1.4.3.3]
  - Area of nonstandard shapes [1.4.3.4]
- Volume [1.4.4]
- Weight and mass [1.4.5]
- Temperature [1.4.6]
- Time [1.4.7]
  - Calendar development
- Speed [1.4.8]
- Money [1.4.9]
- Scale [1.4.10]
- Size, concepts [1.4.11]

Logic and Foundations [2.0]

Geometry and topology [5.0]

- Plane geometry [5.2]
  - Measurement [5.2.1]
  - Lines and planes [5.2.2]
  - Angles [5.2.3]
  - Triangles [5.2.4]
    - Properties [5.2.4.1]
    - Congruence [5.2.4.2]
    - Similarity [5.2.4.3]
    - Pythagorean Theorem [5.2.4.4]
  - Polygons [5.2.5]
  - Circles [5.2.6]
  - Patterns [5.2.7]
    - Geometric patterns [5.2.7.1]
    - Tilings and tessellations [5.2.7.2]
    - Symmetry [5.2.7.3]
  - Transformations [5.2.8]
    - Translation [5.2.8.1]
    - Rotation [5.2.8.2]
    - Reflection [5.2.8.3]
    - Scaling [5.2.8.4]
  - Solid geometry [5.3]
    - Spheres [5.3.2]

- Cones [5.3.3]
- Cylinders [5.3.4]
- Pyramids [5.3.5]
- Prisms [5.3.6]
- Polyhedra [5.3.7]
- Fractal geometry [5.10]

Statistics and probability [9.0]
- Data [9.1]
  - Data collection [9.1.1]
  - Data representation [9.1.2]
- Statistics [9.2]
- Probability [9.3]

Applied mathematics [10.0]
- Mathematical physics [10.1]
  - Astronomy
  - Navigation
- Mathematical economics [10.2]
  - Taxes
  - Land ownership
- Mathematical biology [10.3]
  - Agriculture
  - Medicine and healing
- Mathematics for business [10.4]
  - Trade and barter
- Engineering mathematics [10.5]
  - Architecture and building
  - Planning (including reconstructed archaeological sites)
  - Civil engineering works
  - Design and construction of canoes and sailing vessels
  - Design and construction of household items
- Mathematical sociology [10.6]
  - Kinship relationships
  - Religious practices
- Mathematics for social sciences [10.7]
  - Games and toys
  - Gambling/games of chance
  - Sports (including scoring)
- Mathematics for humanities [10.9]
  - Decorative arts and design
    - Basketry
    - Beading
    - Clothing design
    - Embroidery
    - Hairstyles
    - Jewelry
    - Knitting

- Quilting
- Sewing
- Sona
- Tattooing, body painting, and body adornment
- Weaving

Music [10.10]
- Chants and chanting
- Dance
- Musical instruments
- Songs and singing

Spatial concepts [10.11]
Acculturation and mathematical concepts [10.12]

Mathematical tools and devices
Abacus
Calculator
Cañar counter
Khipu (quipu)
Quahuitl

Mathematics history [11.0]
General [11.1]
Comparative [11.2]
Biographies of mathematicians [11.3]

Cultural context
Cultural awareness [ENC]
Cultural diversity [ENC]
- Popular mathematical practices (Street math)
- Women's role in mathematics

Environmental factors
Influence of culture on learning mathematics
Influence of culture on teaching mathematics
- Culturally based instruction
- Multicultural approaches to teaching [ENC]

Cultural perspectives on mathematics
- Euro-centrism
- Socialization into mainstream culture
- Standard versus non-standard mathematics

Kinship relationships
Linguistical/language context
Political Implications

Instructional issues
Achievement [ENC]
At-risk students [ENC]
Attitudes [ENC]
Classificatory ability
Curriculum [ENC]
Curriculum design [ENC]

Educational research [ENC]
ESL [ENC]
Hands-on learning [ENC]
Instructional materials [ENC]
Learning environment [ENC]
Learning styles [ENC]
Learning theory [ENC]
Mathematical ability [ENC]
Mathematical anxiety [ENC]
Mathematical language
Minority students
Parent involvement [ENC]
Questioning [ENC]
Reform [ENC]
Spatial ability [ENC]
Student projects [ENC]
Teaching methods [ENC]
Writing [ENC]