GRADE 8 MATHEMATICS

Overview:

Domains	The Number System	Expressions and Equations	Functions	Geometry	Statistics & Probability
Clusters	• Know that there are numbers that are not rational, and approximate them by rational numbers	• Work with radicals and integer exponents • Understand the connections between proportional relationships, lines, and linear equations • Analyze and solve linear equations and pairs of simultaneous linear equations	• Define, evaluate, and compare functions • Use functions to model relationships between quantities	• Understand congruence and similarity using physical models, transparencies, or geometry software • Understand and apply the Pythagorean Theorem • Solve real-world and mathematical problems involving volume of cylinders, cones and spheres	• Investigate patterns of association in bivariate data

Mathematical Practices	1. Make sense of problems and persevere in solving them. 2. Reason abstractly and quantitatively.	3. Construct viable arguments and critique the reasoning of others. 4. Model with mathematics.	5. Use appropriate tools strategically. 6. Attend to precision.	7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning.

Major Thematic Grade 8 Units	**English Language Arts: across the content areas** • Reading • Writing • Speaking & Listening • Language • Figure it Out: Mysteries – What makes us want to read? • Science or Fiction – How do we determine where the line should be drawn between what we consider as fiction and what we explore as science? Does fiction fuel science or does science drive the writing of fiction? • The Road Not Taken: Going Against Conventional Wisdom – Does society always provide us with the best advice? How do we learn what to value and what choices to make? Can literature help us define the greater good?	**Science** • Structure of Matter • Properties of Matter • Basics of Energy • Forms of Energy • Forces and Motion • Simple Machines	**Social Studies** • Indigenous Cultures • Colonial Heritage • Events to the American Revolution • War for Independence • Constitution • New Nation • Age of Andrew Jackson • Regional Development • Industrial Beginnings • Pre-Civil War – Reconstruction

In Grade 8, instructional time should focus on three critical areas:

1. Formulating and reasoning about expressions and equations, including modeling an association in bivariate data with a linear equation, and solving linear equations and systems of linear equations

Students use linear equations and systems of linear equations to represent, analyze, and solve a variety of problems. Students recognize equations for proportions ($y/x = m$ or $y = mx$) as special linear equations ($y = mx + b$), understanding that the constant of proportionality (m) is the slope, and the graphs are lines through the origin. They understand that the slope (m) of a line is a constant rate of change, so that if the input or x-coordinate changes by an amount A, the output or y-coordinate changes by the amount $m \cdot A$. Students also use a linear equation to describe the association between two quantities in bivariate data (such as arm span vs. height for students in a classroom). At this grade, fitting the model, and assessing its fit to the data are done informally. Interpreting the model in the context of the data requires students to

express a relationship between the two quantities in question and to interpret components of the relationship (such as slope and *y*-intercept) in terms of the situation.

Students strategically choose and efficiently implement procedures to solve linear equations in one variable, understanding that when they use the properties of equality and the concept of logical equivalence, they maintain the solutions of the original equation. Students solve systems of two linear equations in two variables and relate the systems to pairs of lines in the plane; these intersect, are parallel, or are the same line. Students use linear equations, systems of linear equations, linear functions, and their understanding of slope of a line to analyze situations and solve problems.

2. Grasping the concept of a function and using functions to describe quantitative relationships

Students grasp the concept of a function as a rule that assigns to each input exactly one output. They understand that functions describe situations where one quantity determines another. They can translate among representations and partial representations of functions (noting that tabular and graphical representations may be partial representations), and they describe how aspects of the function are reflected in the different representations.

3. Analyzing two- and three-dimensional space and figures using distance, angle, similarity, and congruence, and understanding and applying the Pythagorean Theorem

Students use ideas about distance and angles, how they behave under translations, rotations, reflections, and dilations, and ideas about congruence and similarity to describe and analyze two-dimensional figures and to solve problems. Students show that the sum of the angles in a triangle is the angle formed by a straight line, and that various configurations of lines give rise to similar triangles because of the angles created when a transversal cuts parallel lines. Students understand the statement of the Pythagorean Theorem and its converse, and can explain why the Pythagorean Theorem holds, for example, by decomposing a square in two different ways. They apply the Pythagorean Theorem to find distances between points on the coordinate plane, to find lengths, and to analyze polygons. Students complete their work on volume by solving problems involving cones, cylinders, and spheres.

Domain: The Number System

8.NS

Cluster: Know that there are numbers that are not rational, and approximate them by rational numbers.

1. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually, and convert a decimal expansion which repeats eventually into a rational number.
    - I can demonstrate that every number has a decimal expansion.
    - I can convert a rational number (a/b) into appropriate decimal notation.
    - I can convert a repeating decimal number into simplified rational form.

2. Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions

(e.g., π^2). *For example, by truncating the decimal expansion of √2, show that √2 is between 1 and 2, then between 1.4 and 1.5, and explain how to continue on to get better approximations.*

- I can use the appropriate estimates of irrational numbers to compare, order on a number line, and find approximate values of variable expressions.

Domain: Expressions and Equations

8.EE

Cluster: Work with radicals and integer exponents.

1. Know and apply the properties of integer exponents to generate equivalent numerical expressions. For example, $3^2 \times 3^{-5} = 3^{-3} = 1/3^3 = 1/27$.
   - I can apply the properties of integer exponents to generate equivalent expressions.

2. Use square root and cube root symbols to represent solutions to equations of the form $x^2 = p$ and $x^3 = p$, where p is a positive rational number. Evaluate square roots of small perfect squares and cube roots of small perfect cubes. Know that √2 is irrational.
   - I can express the solution to a square root or cube root problem in radical form.
   - I can evaluate the roots of small perfect squares and cubes.
   - I can predict when a square or cube root is rational or irrational.

3. Use numbers expressed in the form of a single digit times a whole-number power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other. *For example, estimate the population of the United States as 3 times 10^8 and the population of the world as 7 times 10^9, and determine that the world population is more than 20 times larger.*
   - I can use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or small quantities.
   - I can state how many times larger or smaller items are when quantities are in the form of a single digit times an integer power of 10.

4. Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities (e.g., use millimeters per year for seafloor spreading). Interpret scientific notation that has been generated by technology.
   - I can perform operations in scientific notation, decimal notation, or a combination of both scientific and decimal notation.
   - I can write measurements of very large and very small quantities in scientific notation and choose units of appropriate size for the given situation.
   - I can interpret the different formats of scientific notation that have been generated by technology.

Cluster: Understand the connections between proportional relationships, lines, and linear equations.

5. Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways. For example, compare a

distance-time graph to a distance-time equation to determine which of two moving objects has greater speed.

- I can graph proportional relationships identifying the unit rate as the slope of the graph.
- I can compare two different proportional relationships represented in different ways and state the connections between them.

6. Use similar triangles to explain why the slope *m* is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation $y = mx$ for a line through the origin and the equation $y = mx + b$ for a line intercepting the vertical axis at *b*.
   - I can use similar triangles to explain why the slope "m" is the same between any two distinct points on a non-vertical line in the coordinate plane.
   - I can derive the equation y = m* x (+0) for a line through the origin.
   - I can derive the equation y = m* x + b for a line intercepting the vertical axis at b and cannot equal 0.

Cluster: Analyze and solve linear equations and pairs of simultaneous linear equations.

7. Solve linear equations in one variable.
   a. Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form $x = a$, $a = a$, or $a = b$ results (where *a* and *b* are different numbers).
      - I can solve multi-step linear equations in one variable.
      - I can solve linear equations with the same variable on both sides of the equal sign.
   b. Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.
      - I can solve multi-step linear equations in one variable that include rational number coefficients, distributive property, and collecting like terms.

8. Analyze and solve pairs of simultaneous linear equations.
   a. Understand that solutions to a system of two linear equations in two variables correspond to points of intersection of their graphs, because points of intersection satisfy both equations simultaneously.
      - I can graph two linear equations on the same coordinate plane and identify their point of intersection if possible.
      - I can verify and defend that the point of intersection of two lines on the same coordinate plane is a solution for both equations.
   b. Solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations. Solve simple cases by inspection. *For example, 3x + 2y = 5 and 3x + 2y = 6 have no solution because 3x + 2y cannot simultaneously be 5 and 6.*
      - I can rewrite an equation from standard form into slope-intercept form.
      - I can solve a system of two linear equations algebraically.
      - I can estimate the solution of a system of linear equations by graphing.
   c. Solve real-world and mathematical problems from a variety of cultural contexts, including those of Montana American Indians, leading to two linear equations in two variables. *For*

example, given coordinates for two pairs of points, determine whether the line through the first pair of points intersects the line through the second pair.

- I can solve real-world mathematical problems from a variety of cultures which involve systems of linear equations.

Domain: Functions

8.F

Cluster: Define, evaluate, and compare functions.

1. Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output.[1] ([1]Function notation is not required in Grade 8.)
   - I can define a function as a rule for ordered pairs that shows each input has exactly one output.
   - I can relate input to output in graphical form as ordered pairs.

2. Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). *For example, given a linear function represented by a table of values and a linear function represented by an algebraic expression, determine which function has the greater rate of change.*
   - I can create a function table.
   - I can graph the contents of a function table.
   - I can write a function rule in y = m * x + b form from multiple sources.
   - I can compare and analyze two functions represented in different forms.

3. Interpret the equation $y = mx + b$ as defining a linear function, whose graph is a straight line; give examples of functions that are not linear. *For example, the function $A = s^2$ giving the area of a square as a function of its side length is not linear because its graph contains the points (1,1), (2,4) and (3,9), which are not on a straight line.*
   - I can identify the attributes of linear or non-linear functions based on multiple sources.

Cluster: Use functions to model relationships between quantities.

4. Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (*x*, *y*) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.
   - I can determine the rate of change and initial value from a table, a graph, an equation, and a verbal model.
   - I can write a function rule (y = m * x + b) from any of the other three representations.

5. Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally.
   - I can write a verbal model of a graph showing a functional relationship.
   - I can produce an approximate graph of a functional relationship from a verbal model.

Domain: Geometry

8.G

Cluster: Understand congruence and similarity using physical models, transparencies, or geometry software.

1. Verify experimentally the properties of rotations, reflections, and translations from a variety of cultural contexts, including those of Montana American Indians:
   a. Lines are taken to lines, and line segments to line segments of the same length.
   b. Angles are taken to angles of the same measure.
   c. Parallel lines are taken to parallel lines.
   - I can create and characterize reflections, rotations, and translations using a variety of tools.

2. Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that exhibits the congruence between them.
   - I can define congruency in two-dimensional figures giving examples and non-examples.
   - I can describe the sequence of transformations between two congruent figures.
3. Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures from a variety of cultural contexts, including those of Montana American Indians: using coordinates.
   - I can describe the effect of transformations observed in Native American geometric patterns using coordinate notation.

4. Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them.
   - I can define similarity in two-dimensional figures giving examples and non-examples.
   - I can describe the sequence of transformations between two similar figures.

5. Use informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles. *For example, arrange three copies of the same triangle so that the sum of the three angles appears to form a line, and give an argument in terms of transversals why this is so.*
   - I can demonstrate the sum of interior angles of any triangle is equal to 180 degrees.
   - I can generalize the patterns and relationships found between the interior and exterior angles of any triangle.
   - I can summarize the patterns and relationships found among the angles created when parallel lines are cut by a transversal.
   - I can justify similarity between triangles using angle to angle correspondence.

Cluster: Understand and apply the Pythagorean Theorem.

6. Explain a proof of the Pythagorean Theorem and its converse.
   - I can explain and prove the Pythagorean Theorem and its converse.

7. Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions. *For example, determine the unknown height of a Plains Indian tipi when given the side length and radius.*

- I can apply the Pythagorean Theorem to determine unknown side lengths in 2D and 3D real world situations.

8. Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.
    - I can apply the Pythagorean Theorem to find the distance between two points in a coordinate system.

Cluster: Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres.

9. Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems.
    - I can apply the formulas for the volumes of cones, cylinders, and spheres to solve real-world mathematical problems.

Domain: Statistics and Probability

8.SP

Cluster: Investigate patterns of association in bivariate data.

1. Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association.
    - I can define and create examples of clustering, outliers, positive or negative association, linear association, and nonlinear association.
    - I can construct and interpret scatter plots to investigate patterns of association.

2. Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line.
    - I can sketch a line of best fit for a graph of bivariate data.(scatter plot)
    - I can construct and interpret scatter plots to investigate patterns of association.
    - I can use the closeness of the data points to the line of best fit to assess the correlation between the predicted values and the actual data.

3. Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept. *For example, in a linear model for a biology experiment, interpret a slope of 1.5 cm/hr as meaning that an additional hour of sunlight each day is associated with an additional 1.5 cm in mature plant height.*
    - I can interpret the slope and intercept of a line of best fit in the context of the bivariate data set.

4. Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table. Construct and interpret a two-way table summarizing data including data from Montana American Indian sources on two categorical variables collected from the same subjects. Use relative frequencies calculated for rows or columns to describe possible association between the two variables. *For example, collect data from students in your class on whether or not they have a curfew on school nights and whether or not they have assigned chores at home. Is there evidence that those who have a curfew also tend to have chores?*

- I can construct a two-way frequency table from a variety of cultural contexts, including data from Montana American Indian sources.
- I can interpret relative frequencies calculated for rows or columns to describe possible associations between the two variables.

Standards	Explanations and Examples
Students are expected to:	**The Standards for Mathematical Practice describe ways in which students ought to engage with the subject matter as they grow in mathematical maturity and expertise.**
8.MP.1. Make sense of problems and persevere in solving them.	In grade 8, students solve real world problems through the application of algebraic and geometric concepts. Students seek the meaning of a problem and look for efficient ways to represent and solve it. They may check their thinking by asking themselves, "What is the most efficient way to solve the problem?", "Does this make sense?", and "Can I solve the problem in a different way?"
8.MP.2. Reason abstractly and quantitatively.	In grade 8, students represent a wide variety of real world contexts through the use of real numbers and variables in mathematical expressions, equations, and inequalities. They examine patterns in data and assess the degree of linearity of functions. Students contextualize to understand the meaning of the number or variable as related to the problem and decontextualize to manipulate symbolic representations by applying properties of operations.
8.MP.3. Construct viable arguments and critique the reasoning of others.	In grade 8, students construct arguments using verbal or written explanations accompanied by expressions, equations, inequalities, models, and graphs, tables, and other data displays (i.e. box plots, dot plots, histograms, etc.). They further refine their mathematical communication skills through mathematical discussions in which they critically evaluate their own thinking and the thinking of other students. They pose questions like "How did you get that?", "Why is that true?" "Does that always work?" They explain their thinking to others and respond to others' thinking.
8.MP.4. Model with mathematics.	In grade 8, students model problem situations symbolically, graphically, tabularly, and contextually. Students form expressions, equations, or inequalities from real world contexts and connect symbolic and graphical representations. Students solve systems of linear equations and compare properties of functions provided in different forms. Students use scatterplots to represent data and describe associations between variables. Students need many opportunities to connect and explain the connections between the different representations. They should be able to use all of these representations as appropriate to a problem context.
8.MP.5. Use appropriate tools strategically.	Students consider available tools (including estimation and technology) when solving a mathematical problem and decide when certain tools might be helpful. For instance, students in grade 8 may translate a set of data given in tabular form to a graphical representation to compare it to another data set. Students might draw pictures, use applets, or write equations to show the relationships between the angles created by a transversal.
8.MP.6. Attend to precision.	In grade 8, students continue to refine their mathematical communication skills by using clear and precise language in their discussions with others and in their own reasoning. Students use appropriate terminology when referring to the number system, functions, geometric figures, and data displays.
8.MP.7. Look for and make use of structure.	Students routinely seek patterns or structures to model and solve problems. In grade 8, students apply properties to generate equivalent expressions and solve equations. Students examine patterns in tables and graphs to generate equations and describe relationships. Additionally, students experimentally verify the effects of transformations and describe them in terms of congruence and similarity.
8.MP.8. Look for and express regularity in repeated reasoning.	In grade 8, students use repeated reasoning to understand algorithms and make generalizations about patterns. Students use iterative processes to determine more precise rational approximations for irrational numbers. During multiple opportunities to solve and model problems, they notice that the slope of a line and rate of change are

	the same value. Students flexibly make connections between covariance, rates, and representations showing the relationships between quantities.

Grade 8 Montana Common Core Vocabulary

Standard	Vocabulary	Standard	Vocabulary	Standard	Vocabulary	Standard	Vocabulary	Standard	Vocabulary
S.ID.2	absolute deviation	A.REI.3	equation	8.G.6	leg	8.G.6	Pythagorean Theorem	A.CED.3	union
F.IF.7	absolute value	A.CED.4	equivalent equation	A.REI.3	like terms	F.LE.1	quadratic equation	F.LE.1	unit rate
F.IF.7	absolute value equation	A.CED.4	equivalent expression	8.SP.2	line of best fit/trend line	A.CED.1	quadratic formula	8.SP.4	univariate
F.IF.7	absolute value function	A.REI.5	equivalent inequalities	A.REI.3	linear	F.LE.1	quadratic function	A.CED.3	universal set
A.RIE.3	additive identity	F.LE.1	exponent	8.SP.1	linear association	A.REI.2	radical	A.CED.1	variable
A.REI.3	additive inverse	A.CED.1	exponential	A.CED.1	linear equation	A.REI.2	radical expression	F.LE.1	vertex
F.LE.2	arithmetic sequence	F.IF.8	exponential decay	A.CED.2	linear function	A.REI.2	radical function	F.LE.1	vertex form of a quadratic equation
F.IF.7	axis of symmetry	F.LE.1	exponential function	A.CED.1	linear inequality	A.REI.2	radical symbol	F.LE.3	vertical motion model
A.CED.1	base	F.IF.8	exponential growth	F.IF.7	linear model	F.IF.1	range	A.REI.1	x and y intercepts
A.REI.4	binomial	A.SSE.1	expression	F.IF.8	linear regression	F.IF.6	rate	A.SSE.3	zero exponent
8.SP. 4	bivariate	A.REI.2	extraneous solution	F.IF.7	linear representation	F.IF.6	rate of change	A.SSE.3	zeros of a function
S.ID.1	box and whisker plot	F.BF.1	extrapolation	A.CED.4	literal equation	F.IF.6	ratio		
S.ID.9	causation	S.ID.3	extreme value	A.SSE.3	maximum value/maxima	N.RN.1	rational equation		
A.REI.2	closed system	A.SSE.1	factor	S.ID.3	measures of central tendency	N.RN.1	rational number		
8.SP.1	clustering	A.SSE.3	factor completely	A.SSE.3	minimum value/minima	N.RN.3	real number		
A.SSE.1	coefficient	A.REI.4	factoring	A.APR.1	monomial	A.REI.3	reciprocal		
A.REI.4	completing the square	F.IF.8	family of function	A.REI.3	multiplicative identity	F.BF.1	recursive		
A.CED.3	compound inequality	S.ID.5	frequency	A.REI.3	multiplicative inverse	A.CED.1	relation		
A.REI.4	compound interest	A.CED.1	function	8.SP.1	negative association/correlation	A.REI.2	restricted domain		
A.REI.3	consistent dependent system	A.REI.1	function notation	A.SSE.3	negative exponent	A.SSE.3	roots		
A.REI.3	consistent independent system	F.LE.2	geometric sequence	8.SP.1	no correlation	F.IF.7	scale		
F.IF.6	constant of variation	A.CED.2	graph ordered pairs	8.SP.1	nonlinear	8.SP.1	scatter plot		
A.REI.3	constant term	F.IF.8	growth factor	8.SP.1	nonlinear association	A.CED.3	set		
A.CED.3	constraints	F.IF.8	growth rate	F.IF.8	order of mag	F.IF.6	slope		
8.G.6	converse	S.ID.1	histogram	A.CED.2	ordered pair	F.IF.7	slope-intercept form		
A.CED.2	coordinate plane	8.G.6	hypotenuse	F.IF.7	origin	A.REI.3	solution		
S.ID.9	correlation	A.REI.5	identity	8.F.1	output	A.REI.5	solution to a system		
S.ID.8	correlation coefficient	A.REI.3	inconsistent system	8.SP.1	outlier	A.REI.5	solution to inequality		
N.RN.1	cube root	8.F.1	independent variable	F.IF.7	parabola	N.RN.1	square root		
A.REI.4	decay factor	A.CED.1	inequality	F.IF.8	parent function	A.REI.2	square root function		
A.APR.1	degree of polynomial	8.F.1	input	F.IF.8	parent quadratic function	S.ID.2	standard deviation		
8.F.1	dependent variable	N.RN.1	integer	N.RN.1	perfect square	A.REI.10	standard form		
A.CED.1	direct variation	N.RN.1	integer exponent	A.SSE.3	perfect square trinomial	F.LE.1	standard form of a quadratic		

Grade 8 Montana Common Core Vocabulary									
Standard	Vocabulary	Standard	Vocabulary	Standard	Vocabulary	Standard	Vocabulary	Standard	Vocabulary
							function		
A.REI.4	discriminant	F.BF.1	interpolation	F.IF.4	periodicity	F.IF.7	step function		
A.REI.3	distributive property	S.ID.2	interquartile range	F.IF.7	piecewise function	8.SP.1	strong correlation		
F.IF.1	domain	8.EE.8	intersection	F.IF.7	point slope form	F.IF.4	symmetry		
S.ID.1	dot plot	F.BF.4	inverse function	A.APR.1	polynomials	A.REI.12	system of linear inequalities		
A.CED.3	element	A.REI.3	inverse operations	8.SP.1	positive association/correlation	8.EE.8	system of linear equations		
A.CED.3	empty set	N.RN.1	irrational number	F.LE.1	power	A.REI.3	term		
F.LE.1	equal intervals	A.SSE.2	leading coefficient	F.IF.8	properties of exponents	A.APR.1	trinomial		