

ORLEANS-HANNA

ALGEBRA PROGNOSIS TEST

Third Edition

Increase Algebra I Passing Rates

Ensure Proper Program Design and Placement So All Students Can Be Successful

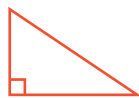
The Orleans-Hanna Algebra Prognosis Test, Third Edition, helps confirm teachers' opinions about a student's readiness for algebra, providing accurate information for making course placement decisions.

- Predict first-year algebra success of students in grades 7–11
- Use results from the non-routine problem-solving items to assess a student's ability to apply new information
- Assess expressions, exponents, integers, and general mathematics objectives
- Administer in 50 to 60 minutes
- Interpret and easily explain test results to students and parents with the Student Report Forms

Prognosis Test Score		Final Algebra Score				
Total Raw Score (0-44)	Number of Students	Percentage Passing Each Grade				
		F	D	C	B	A
25-28	51	0	0	0	0	0
29-34	457	0	0	0	0	16
35-36	516	0	1	1	1	35
37-38	521	1	1	12	42	
39-40	482	3	4	25	55	
41-42	513	4	5	25	42	
43-44	453	1	7	41	31	
45-46	325	4	15	37	21	
47-48	239	13	12	36	21	
49-50	262	12	17	44		
51-52	220	7	31	35		
53-54	176	14	28	31		
55-56	111	15	32	37		
57-58	98	21	23	27		
59-60	124	22	28	35		
61-62	35	51	14	31		
Total N = 4590		5	5	24		
Mean = 50.1 SD = 18.2		Mean = 50.1 SD = 18.2				

The Student Report Form is titled "ORLEANS-HANNA Student Report Form" and "Interpreting Your Algebra Prognosis Test Score". It provides instructions for interpreting the test results, including a section for "Interpreting the Test Score" and a section for "Interpreting the Test Score". The form includes a table for "Interpreting the Test Score" and a section for "Interpreting the Test Score".

For more information about the Orleans-Hanna,
please call 800.328.5999 | PearsonAssessments.com/LearningAssessments



Connecting Geometry and Algebra in the Middle Grades

Welcome to the 2011 Focus Issue, which highlights connections between geometry and algebra that teachers can leverage in the middle grades. NCTM's *Principles and Standards for School Mathematics* (2000) recommends that students in the middle grades experience both the geometric representation of algebraic ideas and the algebraic representation of geometric ideas. By making these connections, students see that mathematical topics are related. They are not just a collection of isolated facts in seemingly disjoint fields but facts that often have many extensive connections.

Exciting and engaging ways for students to make connections between geometry and algebra are provided in light of making the *Standards* and *Curriculum Focal Points* meaningful for readers.

The articles in this issue explore geometry and algebra relationships to produce successful lessons, promote critical understanding of mathematical ideas, and capitalize on learners' spatial abilities.

Authors also explore how they have incorporated technology into their curricula to help students gather and analyze data. For example, by having students change various parameters when studying the circumference and area of circles, teachers can pose questions to make student thinking visible. Using manipulatives

such as colored counters also helps students make needed connections between these two topics.

Many students can recite the Pythagorean relationship $a^2 + b^2 = c^2$ and know that it involves right triangles and areas of squares. However, extending the relationship to other shapes provides opportunities to deepen student understanding about the relationship. In one Focus article, you will see that the Pythagorean theorem holds for all similar shapes constructed on the sides and hypotenuse of a right triangle. Through relations between the theorem and the distance formula, students are able to explore equations of circles centered at the origin and eventually at arbitrary points (h, k) in the plane.

The idea of a piecewise linear function is often thought to be a topic for calculus and certainly not part of middle school learning. By presenting a context and story graph, a few authors have been able to provide a setting in which students are able to interpret the "motion" of characters as they move from a point x to a point y at varying rates. They not only understand slope as a rate of change but also are able to create their own stories that make sense of the graphs.

Analyzing and representing linear functions and other types of functions is one of the three topics identified in the *Curriculum Focal Points* for study in grade 8. Through a series of activities

around a "growing table," students are better able to understand rate of change (slope) and y -intercept. A simple paper-folding activity visually connects students to an exponential function.

Our authors also use origami to make connections between algebra and geometry. They explore what happens to the surface area or volume of a cube when the length of a side is changed. In addition, as parameters are changed, corresponding graphs change, as well.

Students can find numerous algebraic relations as they explore polyhedra. By building various models of prisms and collecting data about the number of vertices, faces, and edges, they discover simple relations (vertices = $2 \times$ sides; faces = sides + 2; and edges = $3 \times$ sides) that help them understand other three-dimensional figures. The intersection of geometry and algebra was also seen in fractals found in both two- and three-dimensional settings.

As you read this Focus Issue, we hope you will find some new ideas for helping students make connections between geometry and algebra. Share the ideas with your colleagues. Make the activities and ideas your own. Communicate your results with fellow NCTM members by writing about your successes.

By Don Balka and Jane Porath
For the Editorial Panel

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