

WOODLAWN HIGH SCHOOL

1801 Woodlawn Drive
Woodlawn, MD 21207

Mathematics, Science & Pre-Engineering

The Mathematics, Science & Pre-Engineering program provides students with a highly competitive college preparatory program, offering challenging courses of study at the gifted and talented level in the fields of mathematics, science and engineering. Using Project Lead The Way engineering curriculum, students are introduced to the scope, rigor, and discipline of engineering and engineering technology. Students have the opportunity to earn articulated college credit.

BCPS Magnet Transportation Information: Woodlawn High (Southwest Area)

Transportation is provided at community pick-up points only for students who are zoned for a Southwest or Northwest area high school.

Magnet Showcase Event: Tuesday, October 23, 2018 Program starts at 6 p.m.

2019 - 2020 Assessment Guidelines

Magnet Coordinator: Sommer Joe 443-809-1309 sjoe@bcps.org

Assessment Dates: Monday, January 14, 2019 6 p.m. **Test Registration: 5:30 p.m.**

All Assessments are by appointment.

Individual assessment appointments must be scheduled no later than Wednesday, November 21, 2018. Schedule your appointment online at the BCPS Magnet Programs' Web site (www.tinyurl.com/BCPSMagnet) or call BCPS Magnet Programs at 433-809-4127 (NOT BOTH).

Unforeseen Illness or Emergency: Parent(s) must inform the school immediately if the applicant cannot attend or complete the scheduled assessment due to an unforeseen illness or emergency. Please be aware that assessments will not be rescheduled without documentation verifying the illness or emergency.

Inclement Weather Date: January 23, 2019 6 p.m. **Registration: 5:30 p.m.**

Inclement Weather: In the event that school activities are cancelled due to inclement weather, magnet assessments will be postponed. Postponed assessments will occur on the designated inclement weather date. All emergency closing and cancellation information will be posted on the BCPS automated information line, 443-809-5555. Closing and cancellation announcements may also be made through local media.



Directions to Woodlawn High School:

From I-695

- Exit onto MD-122 East/Security Blvd, Exit 17, toward Woodlawn.
- Turn left onto MD-122 East/Security Blvd.
- Turn left onto Woodlawn Drive.
- Woodlawn High School is on the right.

WOODLAWN HIGH SCHOOL

Mathematics, Science & Pre-Engineering

Prior to the Assessment

Complete the Applicant Self-Evaluation included with these guidelines.

Interest Essay: Applicants must complete the *Student Essay* on the form provided in these guidelines. Applicants must bring the completed *Student Essay* with them to the assessment.

How to prepare for the test: Applicants can prepare for the test portion of the assessment by reviewing mathematics and science concepts taught in Grades 7 and 8. Applicants can review mathematics concepts that include solving word problems, algebraic equations, and rate problems; simplifying mathematical expressions; recognizing numerical patterns; and comparing fractions. Applicants can review science concepts that include metric units of measure, effects of gravity on objects, the scientific method, physical properties of substances, reproductive genetics, and the process of respiration. Sample questions are attached.

On the Day of the Assessment

The assessment takes approximately 2 hours.

It is the responsibility of the parent(s) to:

- ensure that the applicant attends the assessment on the scheduled date and time.
- contact the schools if scheduled magnet assessment appointments conflict.

Failure to attend the assessment WILL result in disqualification.

Registration Information

Applicants will need to bring two #2 pencils to take the assessment. Test registration will occur from 5:30–6p.m. Assessments will begin at 6 p.m. Applicants should be accompanied by at least one parent. Applicants should arrive 30 minutes prior to the scheduled assessment time and will need to register for the assessment in the main lobby. Applicants arriving more than 15 minutes after the scheduled assessment time will not be allowed into the testing area. On average, the entire assessment takes approximately 2 hours. Parents may wait in the building or return to the school by 8 p.m.

*Electronic devices, such as iPods and cellular phones, **are not allowed** in the testing areas.*

If the applicant cannot attend or complete the scheduled assessment due to an unforeseen illness or emergency, please contact Woodlawn High School at (443) 809-1309 and contact the Office of Magnet Programs at (443) 809-4127. Please be aware that assessments will not be rescheduled without documentation verifying the illness or emergency.

WOODLAWN HIGH SCHOOL

Mathematics, Science & Pre-Engineering

Assessment Description

On the day of the assessment, applicants will submit the writing assessment and complete a mathematics and science test.

Writing Assessment: (10 pts)

Before coming to the assessment, applicants must write an essay, addressing the prompt that is included with these assessment guidelines. Applicants must bring the completed essay to the assessment. Do NOT submit the essay with the application.

Science/Mathematics Test: (40 points)

The test consists of selected-response questions that cover a variety of concepts in mathematics and science. Applicants will be given an opportunity to complete the assessment in full.

Documented testing accommodations, as appropriate to the assessment, will be provided.
--

Magnet Application Deadline

Friday, November 16, 2018

Applications are available on the BCPS Magnet Programs' Web site (www.tinyurl.com/BCPSMagnet) beginning at 12:00 noon on Monday, September 17, 2018. Applications must be submitted on or before **Friday, November 16, 2018**. Late applications are not processed.

You are encouraged to **apply online** on the BCPS Magnet Programs' Web site (www.tinyurl.com/BCPSMagnet) or **submit a paper application**.

- **Online applications** may be submitted until 1:00 p.m. on Friday, November 16, 2018. To apply online, you will need an active email account.
- **Paper applications** must be postmarked on or before Friday, November 16, 2018.

WOODLAWN HIGH SCHOOL

Mathematics, Science & Pre-Engineering

STUDENT ESSAY

Please bring completed essay to the Assessment

WHS Magnet Office: (443) 809-1309



WOODLAWN HIGH SCHOOL MAGNET PROGRAM

MATH, SCIENCE & PRE-ENGINEERING

Student's Last Name:	Student's First Name:	MI:	Current Middle/High School:
----------------------	-----------------------	-----	-----------------------------

To be completed by the **student** in the student's own handwriting. Legibility is critical for valid evaluation. Use ink only. Bring to Entrance Exam.

The WHS Magnet Program for Math, Science & Pre-Engineering is looking for students who welcome academic challenges in the areas of science and mathematics. Please explain ***why you want to attend the Woodlawn High School Magnet Program***. Include examples of research or Science Fair projects that you have completed in Middle School. Consider spelling & grammar, the intended audience, and organization of thoughts when writing your essay.

WOODLAWN HIGH SCHOOL

Mathematics, Science & Pre-Engineering

Math/Science Practice Problems

1. Evaluate each expression

a. $4(5-3)^2$

b. $5(9+3) - 3(4)$

c. $25 - 1/3(18+9)$

2. Evaluate each expression if $a = 2$, $b = 5$, $x = 4$, $n = 10$

a. $x^2 - 4n$

b. $bx + an$

c. $n^2 + 3(a+4)$

3. Simplify

a. $|10 - 22|$

b. $\left|\frac{1}{2} - \frac{1}{4}\right|$

c. $\left(\frac{2}{3}y^3\right)(3y^2)^3$

d. $a^5(a)(a^7)$

4. Solve each equation

a. $7x + 6 = -36$

b. $5x + 4x = -72$

c. $-\frac{13}{4}x - 7 = 6$

5. Write an algebraic equation for each statement

a. 4 less than one-half the cube of a number x is 3

b. -10 increased by 4 times a number x is 2

6. Find the solution set for each equation, given the replacement set

a. $2y = 8 - 4x$; $\{(2,0), (0,4), (0,2), (-4,12)\}$

b. $3x + 4y = 10$; $\{(3, 0.25), (-10,5), (2,1), (5,5)\}$

7. Convert 10 meters to equivalent:

a. centimeters

b. millimeters

c. kilometers

8. List the steps of the scientific method.

9. What is the Law of Conservation of Mass?

WOODLAWN HIGH SCHOOL

Mathematics, Science & Pre-Engineering

Answer Key

Math/Science Practice Problems

1. Evaluate each expression

a. $4(5-3)^2$

16

b. $5(9+3)-3(4)$

48

c. $25 - 1/3(18 + 9)$

16

$4(5-3)^2$

$4(2)^2$

$4(4)$

16

Hint: Remember the order of operations

2. Evaluate each expression if $a = 2$, $b = 5$, $x = 4$, $n = 10$

a. $x^2 - 4n$

-24

b. $bx + an$

40

c. $n^2 + 3(a + 4)$

118

$x^2 - 4n$

$(4)^2 - 4(10)$

$16 - 40$

-24

Hint: substitute the vales into the expression, then simplify

3. Simplify

a. $|10 - 22|$

12

b. $\left|\frac{1}{2} - \frac{1}{4}\right|$

$\frac{1}{4}$

c. $\left(\frac{2}{3}y^3\right)(3y^2)^3$

$18y^9$

d. $a^5(a)(a^7)$

a^{13}

4. Solve each equation

a. $7x + 6 = -36$

$x = -6$

b. $5x + 4x = -72$

$x = -8$

c. $-\frac{13}{4}x - 7 = 6$

$x = -4$

$7x + 6 = -36$

$7x = -36 - 6$

$7x = -42$

$\frac{7x}{7} = \frac{-42}{7}$

$x = -6$

Hint: use inverse operations to isolate the variable

WOODLAWN HIGH SCHOOL

Mathematics, Science & Pre-Engineering

Answer Key

5. Write an algebraic equation for each statement

a. 4 less than one-half the cube of a number x is 3

$$\frac{1}{2}x^3 - 4 = 3$$

b. -10 increased by 4 times a number x is 2

$$-10 + 4x = 2$$

Hint: translate key words into mathematical operations

Less than, fewer – subtraction

Is – equals

Of, product – multiplication

More, increase – addition

6. Find the solution set for each equation, given the replacement set

a. $2y = 8 - 4x$; $\{(2,0), (0,4), (0,2), (-4,12)\}$

$2y=8-4x (2,0)$	$2y=8-4x (0,4)$	$2y=8-4x (0,2)$	$2y=8-4x (-4,-12)$
$2*0=8-4*2$	$2*4=8-4*0$	$2*2=8-4*0$	$2*12=8-4*(-4)$
$0=8-8$	$8=8-0$	$4=8-0$	$24=8+16$
$0=0$	$8=8$	$4\neq 8$	$24\neq 24$

b. $3x + 4y = 10$; $\{(3, 0.25), (-10,5), (2,1), (5,5)\}$

$3x + 4y = 10 (3, 0.25)$	$3x + 4y = 10 (-10, 5)$	$3x + 4y = 10 (2, 1)$	$3x + 4y = 10 (5, 5)$
$3*3 + 4*0.25 = 10$	$3*-10 + 4*5 = 10$	$3*2 + 4*1 = 10$	$3*5 + 4*5 = 10$
$9 + 1 = 10$	$-30 + 20 = 10$	$6 + 4 = 10$	$15 + 20 = 10$
$10=10$	$-10\neq 10$	$10=10$	$35\neq 10$

7. Convert 10 meters to equivalent:

a. centimeters

b. millimeters

c. kilometers

$$10 \text{ meters} = 1000 \text{ centimeters}$$

$$10 \text{ meters} = 10,000 \text{ millimeters}$$

$$10 \text{ meters} = 0.01 \text{ kilometers}$$

8. List the steps of the scientific method.

1. Observation
2. Question
3. Hypothesis
4. Prediction
5. Experiment
6. Theory

9. What is the Law of Conservation of Mass?

Law of Conservation of Mass is a relation stating that in a chemical reaction, the mass of the products equals the mass of the reactants.

WOODLAWN HIGH SCHOOL

Mathematics, Science & Pre-Engineering

APPLICANT SELF-EVALUATION

DO NOT include this worksheet with your application.

Important: All applications must be postmarked by the application deadline of **Tuesday, November 16, 2018**. Incomplete applications will not be considered for admission.

Admission Criteria

Magnet Program	Admission Criteria
Mathematics, Science & Engineering	<ul style="list-style-type: none"> ✓ Algebra I or higher in grade 8; Algebra II or higher in grade 9 ✓ B average (2.5 or better) in, Mathematics and Science ✓ C average(1.5 or better) in, English/Language Arts and Social Studies ✓ Performance on Mathematics & Science Assessment ✓ Performance on Written Assessment ✓ Performance on Interview

Magnet Assessment Date

On January 14, 2019, (inclement weather date: January 23, 2019) all applicants will be required to attend the assessment at Woodlawn High School. Applicants should be accompanied by at least one parent/guardian. All applicants should arrive between 5:30-5:45 p.m.

Placement Prior to the Lottery

According to Superintendent's Rule 6400, *at the high school level, where the number of qualified applicants exceeds the number of available seats, up to 20% of the seats may first be filled with candidates who achieve a minimum of 80% in the total evaluation and who score the highest scores on the magnet assessments. The remaining seats will be filled using the centralized random lottery selection process from the remaining pool of applicants.*

Entrance Worksheet

Use the worksheet provided to determine if you may qualify for admission.

How to Calculate Your Grade Average

Convert your marking period grades to points (A=4, B=3, C=2, D=1, E=0). Then divide by the number of marking periods.

Subject	Last Year's Report Card 1 st marking pd. grade/points	Last Year's Report Card 2 nd marking pd. grade/points	Last Year's Report Card 3 rd marking pd. grade/points	Last Year's Report Card 4 th marking pd. grade/points (if applicable)	Current Year's Report Card 1 st marking pd. grade/points	Total Points	Total Marking Periods (4 or 5)	Grade Average
English/Lang Arts								
Math								
Science								
Social Studies								

WOODLAWN HIGH SCHOOL

Mathematics, Science & Pre-Engineering

APPLICANT SELF-EVALUATION – Grade 9

DO NOT include this worksheet with your application.

Assessment Information:

- All assessments must be scheduled by November 21, 2018.
- It is the responsibility of the parent to ensure that the student is on time and prepared for each assessment.
- Failure to attend and complete an assessment will disqualify the applicant and admission in to the magnet program will be denied.

Evaluation Components	Scoring	My Information	My Score
Math Enrollment Gr 9 <i>Algebra I preferred</i>	Algebra I or higher—10 points Algebraic Thinking II—5 points Pre-Algebra, Grade 8 Math or below—0 points	My Grade 8 math course is: _____ (record math course here)	____ / 10 pts
Grade Average - English/Language Arts and Social Studies <i>1.5 (C) average or higher preferred</i>	1.5 (C) average or higher—10 points each Less than 1.5 (C) average—0 points each	English/Lang. Arts Avg: ____ Social Studies Avg: ____	____ / 10 pts ____ / 10 pts
Grade Average - Math and Science <i>2.5 (B) average or higher preferred</i>	2.5 (B) average or higher—10 points each 2.4 – 1.5 (C) average—5 points each Less than 1.5 (C) average—0 points each	Math Avg: ____ Science Avg: ____	____ / 10 pts ____ / 10 pts
Essay Assessment <i>Score determines total points earned</i>	Applicant may earn up to 10 points	To be determined on scheduled assessment date Assessment appointment must be scheduled by Nov. 21, 2018	____ / 10 pts
Math & Science Assessment <i>Score determines total points earned</i>	Applicant may earn up to 40 points	To be determined on scheduled assessment date Assessment appointment must be scheduled by Nov. 21, 2018	____ / 40 pts
Total Score:			____ / 100 pts

WOODLAWN HIGH SCHOOL

Mathematics, Science & Pre-Engineering

APPLICANT SELF-EVALUATION – Grade 10

DO NOT include this worksheet with your application.

Assessment Information:

- All assessments must be scheduled by November 21, 2018.
- It is the responsibility of the parent to ensure that the student is on time and prepared for each assessment.
- Failure to attend and complete an assessment will disqualify the applicant and admission in to the magnet program will be denied.

Evaluation Components	Scoring	My Information	My Score
Math Enrollment Gr 10 <i>Algebra II preferred</i>	Algebra II or higher—10 points Algebra I—5 points Algebraic Thinking II, Pre-Algebra, Grade 8 Math or below—0 points	My Grade 9 math course is: _____ (record math course here)	____ / 10 pts
Grade Average - English/Language Arts and Social Studies <i>1.5 (C) average or higher preferred</i>	1.5 (C) average or higher—10 points each Less than 1.5 (C) average—0 points each	English/Lang. Arts Avg: ____ Social Studies Avg: ____	____ / 10 pts ____ / 10 pts
Grade Average - Math and Science <i>2.5 (B) average or higher preferred</i>	2.5 (B) average or higher—10 points each 2.4 – 1.5 (C) average—5 points each Less than 1.5 (C) average—0 points each	Math Avg: ____ Science Avg: ____	____ / 10 pts ____ / 10 pts
Essay Assessment <i>Score determines total points earned</i>	Applicant may earn up to 10 points	To be determined on scheduled assessment date Assessment appointment must be scheduled by Nov. 21, 2018	____ / 10 pts
Math & Science Assessment <i>Score determines total points earned</i>	Applicant may earn up to 40 points	To be determined on scheduled assessment date Assessment appointment must be scheduled by Nov. 21, 2018	____ / 40 pts
Total Score:			____ / 100 pts