Western School of Technology and Environmental Science

Environmental Science

Western’s Environmental Science program is intended for science-oriented and/or environmentally motivated students who plan to attend a four-year college or university immediately after high school. Students are required to earn eight science credits for graduation. Many science courses are offered at the honors, gifted and talented (GT) and advanced placement (AP) levels. Western offers research and internship positions for some students during their senior year.

BCPS Magnet Transportation Information: Western School of Technology & Environmental Science (Southwest Area) Transportation is provided at community pick-up points only for students who are zoned for high schools in the Southwest or Northwest areas.

Magnet Showcase Event: Thursday, October 22, 2015 6-8 p.m.

2016-2017 Assessment Guidelines

Assessment Date: Saturday, January 23, 2016 8 a.m. – 2 p.m. Assessments by appointment

Individual assessment appointments must be scheduled no later than 12/11/15. Schedule your appointment online at https://bcpsonlineapplication.com/apply or call the Magnet Office at 410-887-4127 (NOT BOTH).

Unforeseen Illness or Emergency: Parent(s) must inform both the school and Magnet Office 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: Saturday, January 30, 2016 at the previously scheduled appointment time

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, 410-887-5555. Closing and cancellation announcements will also be made through local media.

Western School of Technology & Environmental Science
100 Kenwood Avenue
Catonsville, MD 21228

Magnet Coordinator
Jennifer Martinez
410-887-0849
jallen3@bcps.org

Directions to Western:

From the north:
• Take 695 West towards Glen Burnie to the Wilkens Avenue East Exit 12B.
• Turn right on Wilkens Avenue, go under the beltway and turn left at the light onto Kenwood Avenue (there will be a sign to the Beltway Towson on Kenwood Avenue).
• Stay on Kenwood Avenue past the entrance to the beltway.
• Western will be at the top of the hill on your left.

From the south:
• Take 695 North towards Towson to Exit 12C Wilkens Avenue Exit.
• Continue straight through the light off the exit. That is Kenwood Avenue.
• Western will be at the top of the hill on your left.
WESTERN SCHOOL OF TECHNOLOGY
AND ENVIRONMENTAL SCIENCE

Environmental Science

Prior to the Assessment

This MUST be completed prior to coming to the audition.

Complete the 2016-2017 Applicant Self-Evaluation included with these guidelines. (pp. 9-10)

How to prepare for the test: Applicants can review science concepts that include metric units of measure, the scientific method, ecosystem structure, energy flow, the atmosphere, population biology, and physical and chemical properties.

Math Concepts: basic operations, basic knowledge of fractions and percentages, math functions and operations, solutions of word problems, solving equations, and writing equations of lines.

A sample practical test has been included with these guidelines.

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 an assessment WILL result in disqualification.

Registration Information

Applicants must attend the school-based assessment for the program to which they applied. Individual assessment appointments must be scheduled no later than 12/11/15. Schedule your appointment online at https://bcpsonlineapplication.com/apply or call the Magnet Office at 410-887-4127 (NOT BOTH).

Students should plan to arrive at least 15 minutes prior to their assessment time and report to the front lobby of Western. Assessments will start at the designated time. Students should be accompanied by at least one parent/guardian. There will be no assessment provided for applicants arriving after the assigned assessment time. Parents may stay in a designated area during the assessment.

If the applicant cannot attend or complete the scheduled assessment due to an unforeseen illness or emergency, please contact Western School of Technology and Environmental Science at (410) 887-0840 and contact the Office of Magnet Programs at (410) 887 - 4127. Please be aware that assessments will not be rescheduled without documentation verifying the illness or emergency.

Assessment Description

Applicants will need to bring two #2 pencils to take the assessment. Applicants will complete a math assessment, reading assessment, and a practical assessment.

Math Assessment (20 points): Applicants will have a timed mathematics assessment.

Practical Assessment (40 points): Applicants will be asked to complete a scientific investigation. The assessment will measure the students’ ability to understand scientific results and follow scientific procedural directions, and read and analyze scientific information.

Documented testing accommodations, as appropriate to the assessment will be provided.
WESTERN SCHOOL OF TECHNOLOGY
AND ENVIRONMENTAL SCIENCE
Environmental Science

Magnet Events

Magnet EXPO!
Saturday, September 26, 2015
10 a.m. - 2 p.m.
Radisson North Baltimore Hotel

Magnet Application Meetings

Tuesday, September 15, 2015
6:30 p.m. in Auditorium
Milford Mill Academy
3800 Washington Avenue, Baltimore, Maryland 21244

Thursday, September 17, 2015
6:30 p.m. in Auditorium
Kenwood High School
501 Stemmers Run Road, Baltimore, Maryland 21221

Application Deadline
Monday, November 30, 2015

Application packets are available at www.bcps.org/offices/omp. Applications must be submitted on or before Monday, November 30, 2015. Late applications are not processed.

You may apply online (at www.bcps.org/offices/omp) or submit a paper application.

- Online applications may be submitted until 1:00 p.m. on Monday, November 30, 2015. To apply online, you will need an active email account.

- Paper applications must be postmarked on or before Monday, November 30, 2015. Hand-delivered applications must be received in the Office of Magnet Programs by 3:30 p.m. on Monday, November 30, 2015.
Preparation for the Environmental Science Reading and Practical Assessments

I. The Scientific Process
   Be aware of the following parts of a scientific experiment and their definitions
   i. Independent variable
   ii. Dependent variable
   iii. Hypothesis
   iv. Theory
   v. Control
   vi. Data

II. Scientific Reading
   a. Practice reading articles based on scientific discoveries and ideas. A good resource for these is Science News for Students on the internet at https://student.societyforscience.org/sciencenews-students.
   b. Be aware of the important components of line graphs and bar graphs. Practice getting information from the graphs. Some sources for practice are:

III. Experimentation
   a. Follow the directions for an at home experiment on the internet at www.sciencebob.com/experiments/lavacup.php
   b. Conduct the experiment that is described on the webpage. Be sure to follow instructions in a step by step process. Make observations as you proceed.
   c. Practice being a scientist and experiment with the four options in the “Make It An Experiment” section.
1.) Solve the following: \( \frac{1}{4} + \frac{1}{5} \)

2.) Solve the following: \( \frac{4}{5} - \frac{3}{7} \)

3.) Solve the following: \( \frac{3}{10} \div \frac{6}{5} \)

4.) Determine the 7th term of the sequence. -10, -6, -2, 2, . . .

5.) Evaluate \( 6 ÷ (2 + 1) \cdot 3 - 9 \)

6.) Solve for x: \(-8x + 4 = 20\)

7.) Solve for z: \( \frac{3}{4} z + 2 = 8 \)

8.) Solve for a: \( 4a - 2 = 2a + 8 \)

9.) Solve for x: \( \frac{2}{5} = \frac{4}{x} \)

10.) The cost to enter a carnival is $5.00. Each ride at the carnival costs $0.50. The cost to enter the carnival and for x number of rides is $7.50. Write an equation that models this situation.

11.) What is the slope of the line joining (4, 5) and (-3, 2)?

12.) Find the equation of the line with slope of 4 that passes through the point (0, -6).

13.) Find the equation of the line with slope of 5 that passes through the point (2, 4).

14.) Find the equation of the line containing the points (2, 6) and (4, 0).
1.) Solve the following: \( \frac{1}{4} + \frac{1}{5} \)

\[
\frac{1}{4} + \frac{1}{5} = \frac{5}{20} + \frac{4}{20} = \frac{9}{20}
\]

2.) Solve the following: \( \frac{4}{5} - \frac{3}{7} \)

\[
\frac{4}{5} - \frac{3}{7} = \frac{28}{35} - \frac{15}{35} = \frac{13}{35}
\]

3.) Solve the following: \( \frac{3}{10} \div \frac{6}{5} \)

\[
\frac{3}{10} \div \frac{6}{5} = \frac{3}{10} \cdot \frac{5}{6} = \frac{15}{60} = \frac{1}{4}
\]

4.) Determine the 7\(^{th}\) term of the sequence. -10, -6, -2, 2, . . .

Pattern increases by 4

-10, -6, -2, 2, 6, 10, 14

The 7\(^{th}\) term is 14.

5.) Evaluate \( 6 \div (2 + 1) \cdot 3 - 9 \)

Use order of operations (PEMDAS)
\[
6 \div (2 + 1) \cdot 3 - 9 = 6 \div 3 \cdot 3 - 9 = 2 \cdot 3 - 9 = 6 - 9 = -3
\]

6.) Solve for \( x \): \(-8x + 4 = 20\)

\[
-8x + 4 = 20
-8x + 4 - 4 = 20 - 4
-8x = 16
\quad \frac{-8}{-8} \quad \frac{16}{x} = \quad \frac{-3}{-3}
\]

\[
x = -2
\]
7.) Solve for $z$: $\frac{3}{4}z + 2 = 8$

\[
\begin{align*}
\frac{3}{4}z + 2 &= 8 \\
\frac{3}{4}z + 2 - 2 &= 8 - 2 \\
\frac{3}{4}z &= 6 \\
\frac{4}{3} \cdot \frac{3}{4}z &= 6 \cdot \frac{4}{3} \\
Z &= \frac{24}{3} \\
Z &= 8
\end{align*}
\]

8.) Solve for $a$: $4a - 2 = 2a + 8$

\[
\begin{align*}
4a - 2 &= 2a + 8 \\
4a - 2 + 2 &= 2a + 8 + 2 \\
4a &= 2a + 10 \\
4a - 2a &= 2a - 2a + 10 \\
2a &= 10 \\
\frac{2a}{2} &= \frac{10}{2} \\
a &= 5
\end{align*}
\]

9.) Solve for $x$: $\frac{2}{5} = \frac{4}{x}$

\[
\begin{align*}
2 \cdot \frac{4}{5} &= \frac{4}{x} \\
(x) \frac{2}{5} &= \frac{4}{x} (x) \\
2x \frac{4}{5} &= 4 \\
\left( \frac{5}{2} \right) \frac{2x}{5} &= 4 \left( \frac{5}{2} \right) \\
x &= \frac{20}{2} \\
x &= 10
\end{align*}
\]
10.) The cost to enter a carnival is $5.00. Each ride at the carnival costs $0.50. The cost to enter the carnival and for x number of rides is $7.50. Write an equation that models this situation.

\[ 5.00 + 0.50x = 7.50 \]

11.) What is the slope of the line joining (4, 5) and (-3, 2)?

\[
\frac{y_2 - y_1}{x_2 - x_1} = \frac{2 - 5}{-3 - 4} = \frac{-3}{-7} = \frac{3}{7}
\]

12.) Find the equation of the line with slope of 4 that passes through the point (0, -6).

\[ m = 4 \]
\[ (0, -6) \rightarrow b = -6 \]
\[ y = mx + b \]
\[ y = 4x - 6 \]

13.) Find the equation of the line with slope of 5 that passes through the point (2, 4).

\[ m = 5 \]
\[ y = mx + b \]
\[ y = 5x + b \]
Substitute in the points (2, 4) and solve for b.
\[ 4 = 5(2) + b \]
\[ 4 = 10 + b \]
\[ b = -6 \]
\[ y = 5x - 6 \]

14.) Find the equation of the line containing the points (2, 6) and (4, 0). Find the slope.

\[
\frac{y_2 - y_1}{x_2 - x_1} = \frac{0 - 6}{4 - 2} = \frac{-6}{2} = \frac{-3}{1} = -3
\]
\[ y = mx + b \]
\[ y = -3x + b \]
Substitute in one of the points and solve for b.
\[ (2, 6) \]
\[ 6 = -3(2) + b \]
\[ 6 = -6 + b \]
\[ b = 12 \]
\[ y = -3x + 12 \]
DO NOT include this worksheet with your application.

Important: All applications must be postmarked by the application deadline of Monday, November 30, 2015. Incomplete applications will not be considered for admission.

Admission Criteria

<table>
<thead>
<tr>
<th>Magnet Program</th>
<th>Admission Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Science</td>
<td>✓ Algebra I or higher in grade 8</td>
</tr>
<tr>
<td></td>
<td>✓ B average (2.5 or better) in English/Language Arts, Mathematics, Social Studies and Science</td>
</tr>
<tr>
<td></td>
<td>✓ Satisfactory Attendance (94% or higher)</td>
</tr>
<tr>
<td></td>
<td>✓ Performance on Magnet Assessments (written assessment and practicum)</td>
</tr>
</tbody>
</table>

Magnet Assessment Date

On January 23, 2016, (inclement weather date: January 30, 2016), all applicants will be required to attend the assessment held at Western School of Technology and Environmental Science. Applicants should be accompanied by at least one parent.

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 show exceptional commitment and promise in the specialized program as evidenced by their performance on the approved magnet assessment(s). The remaining seats will be filled using the centralized random lottery selection process from the remaining pool of qualified applicants. Specifically, applicants who earn the highest combined scores on the program assessments may fill up to 20% of the seats available in the magnet program.

Qualifying for Admission

The applicant must earn at least 80 points from the stated criteria in order to 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).

<table>
<thead>
<tr>
<th>Subject</th>
<th>Last Year's Report Card</th>
<th>Current Year's Report Card</th>
<th>Total Points</th>
<th>Total Marking Periods (4 or 5)</th>
<th>Grade Average</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1st marking pd. grade/points</td>
<td>2nd marking pd. grade/points</td>
<td>3rd marking pd. grade/points</td>
<td>4th marking pd. grade/points (if applicable)</td>
<td>1st marking pd. grade/points</td>
</tr>
</tbody>
</table>
**Western School of Technology and Environmental Science**

**Applicant Self-Evaluation 2016-2017**

**Environmental Science**

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**DO NOT include this worksheet with your application.**

**Important:** All applications must be postmarked by the application deadline of **Monday, November 30, 2015.** Incomplete applications will not be considered for admission.

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<table>
<thead>
<tr>
<th>Criteria</th>
<th>Scoring</th>
<th>My information</th>
<th>My Score</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Admission Criterion #1</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Math Enrollment</td>
<td>Algebra I and higher</td>
<td>My current math course is</td>
<td>____/10 pts</td>
</tr>
<tr>
<td></td>
<td>Grade 8 Math</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pre-Algebra or below</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>10 points</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5 points</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0 points</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Admission Criterion #2</strong></td>
<td>English/LA, Mathematics, Social Studies and Science:</td>
<td>English/LA. Arts Average:</td>
<td>____/5 pts</td>
</tr>
<tr>
<td>Grade Average</td>
<td>“B” average or higher (2.5 or higher)</td>
<td>Mathematics Average:</td>
<td>____/5 pts</td>
</tr>
<tr>
<td></td>
<td>(see “How to Calculate Your Grade Average”)</td>
<td>Science Average:</td>
<td>____/5 pts</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Social Studies Average:</td>
<td>____/5 pts</td>
</tr>
<tr>
<td><strong>Admission Criterion #3</strong></td>
<td>94% Attendance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attendance</td>
<td>Total unexcused absences in Grade 7 - plus - first quarter/trimester</td>
<td>Total unexcused absences in Grade 7 (all quarters/trimesters) = ____ days</td>
<td>____/10 pts</td>
</tr>
<tr>
<td></td>
<td>in Grade 8</td>
<td>-plus-</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10 points</td>
<td>Total unexcused absences in Grade 8 (first quarter/trimester only) = ____ days</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0 points</td>
<td>Total unexcused absences = ____ days</td>
<td></td>
</tr>
<tr>
<td><strong>Admission Criterion #4</strong></td>
<td>Score on assessment determines total points earned.</td>
<td>Applicants may earn up to 20 points.</td>
<td>____/20 pts</td>
</tr>
<tr>
<td>Math Assessment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Admission Criterion #5</strong></td>
<td>Score on assessment determines total points earned.</td>
<td>Applicants may earn up to 40 points.</td>
<td>____/40 pts</td>
</tr>
<tr>
<td>Practical Assessment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Points to Qualify</td>
<td>80 points</td>
<td>My Score:</td>
<td>____/100 pts</td>
</tr>
</tbody>
</table>

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**FOR STUDENT SELF-ASSESSMENT USE ONLY – does not indicate qualification for programs.**