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Project Lead The Way and the IBCC

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Topics:

- IBCC
- Project Lead The Way Programs
- Watkins Mill Implementation
- Rockville High School Implementation Planning
- Student Engagement and Success
- Lessons Learned
- Discussion



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International Baccalaureate Career Certificate Program



Montgomery County
Public Schools 





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IBCC

- Combines the educational principles of IB courses with a career focused program of study
- Flexible framework allows schools to create IBCC programs that meet the needs of their students



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IBCC Program Requirements





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IBCC Program Requirements

Three Part Framework:

1. At least two IB Diploma Program Courses
2. Approved Career Program of Study
3. IBCC Core



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IBCC Program Requirements

IB Diploma Program Courses:

- At least two from any of the subject groups in the IB Diploma Program
- Courses should be relevant to career-related studies.



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Approved Career Program of Study:

- Program is selected by the school
- Must be approved by IB
 - Accreditation
 - Assessment
 - Quality Assurance



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IBCC Program Requirements

IBCC Core:

- IBCC Approaches to Learning Course
- Community Service
- Language Development
- Reflective Project



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Project Lead The Way Programs





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Project Lead The Way

- Project Lead The Way began in 1997
- United States' leading provider of in-school curriculum for integrated science, technology, engineering, and mathematics
- Mission: To prepare students for the global economy.



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Project Lead The Way

A large red graphic divided into three vertical columns by white lines. The background features a stylized atomic symbol and a gear. The columns contain the text: "World-Class Curriculum", "High-Quality Professional Development", and "Engaged Network". Below the columns is a dark blue horizontal bar with three white bullet points containing the text: "LEADERSHIP • INNOVATION", "CONTINUOUS IMPROVEMENT", and "ACCOUNTABILITY".

World-Class Curriculum

High-Quality Professional Development

Engaged Network

- LEADERSHIP • INNOVATION
- CONTINUOUS IMPROVEMENT
- ACCOUNTABILITY



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Project Lead The Way

- Full-year courses
- Aligned to Common Core and Next Generation Standards
- Teacher Notes
- Day-by-Day Lesson Planning
- Student Handouts
- Scoring Rubrics
- Answer Keys
- Additional Resources



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PLTW Program Requirements

PLTW High School Programs:

- Engineering
- Biomedical Science
- Computer Science (in development)



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PLTW Program Requirements

PLTW Engineering:

- Introduction to Engineering Design
- Principles of Engineering
- One of the six Specialty Courses and/or the Capstone Course



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PLTW Program Requirements

PLTW Biomedical Science:

- Principles of Biomedical Science
- Human Body Systems
- Medical Interventions
- Biomedical Innovation (optional)



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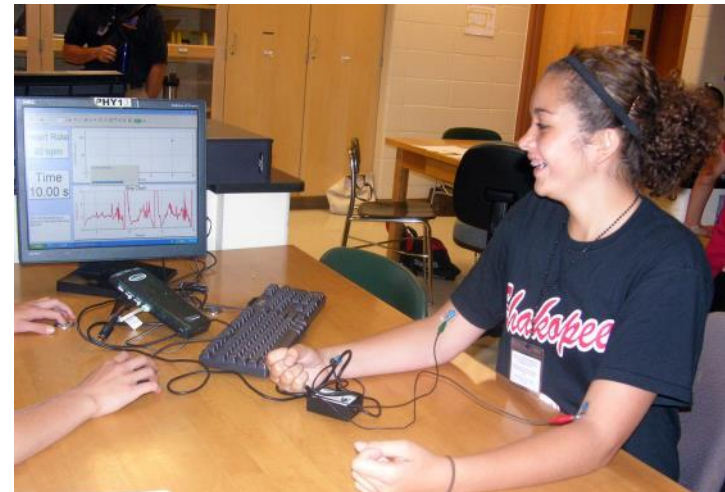
PLTW Computer Science:

- Computer Science and Software Engineering
- Computer Science Applications
- At least two half-year specialty courses or the capstone course



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Implementation





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Implementation

Watkins Mill High School:

- Located in Montgomery County, MD; 20 miles North of D.C.
- 1500 students
- 50% FARMS; 73% Ever FARMS
- 60% take at least one IB Course



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Implementation

Watkins Mill High School: Class of 2013-14 IB Candidates

	Population (1449)	IB Diploma (30)	IBCC (19)
Asian	10%	30% (9)	32% (6)
Black	38%	20% (6)	47% (9)
Hispanic	36%	37% (11)	16% (3)
White	13%	13% (4)	5% (1)



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Implementation

Watkins Mill High School: PLTW Support

- Partnered with Lockheed Martin
- AAAS Volunteer
- Construction Management with Montgomery College





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Watkins Mill High School: Student and Parent Recruiting

- Middle School Visits
- Pizza Luncheons
- Electives Fair
- Direct Conversations
- Enhanced by IBCC



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Implementation

Watkins Mill PLTW IBCC Schedule Example

- 9th Grade: Introduction to Engineering Design
- 10th Grade: Principles of Engineering
- 11th Grade: Digital Electronics, IB Physics 1, IB Psychology, ATL (2 Semesters)
- 12th Grade: Aerospace Engineering, Engineering Design and Development, IB Physics 2, ATL (1 Semester)
- IBCC Core: Supervised throughout ATL



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Implementation

Watkins Mill PLTW IBCC IB Courses

- Physics (16)
- Chemistry (1)
- Biology (6)
- Math SL (11)
- Math Studies (1)
- English (14)
- History (9)
- Psychology (6)



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Implementation

Rockville High School:

- Information session attended by Principal and IB Coordinator
- Team attended IBCC Focus Group:
 - Principal, Assistant Principal, IB Coordinator, Child Development Academy Head, Culinary Arts Teacher
- IB Coordinator presented to and met with all students in PLTW, Child Development and Foods classes
- Develop student cohort



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Implementation

Rockville HS: Cohort Enrollment

- First cohort—fifteen students:
- Six enrolled in PLTW
- Four enrolled in Child Development
- Two enrolled in Foods



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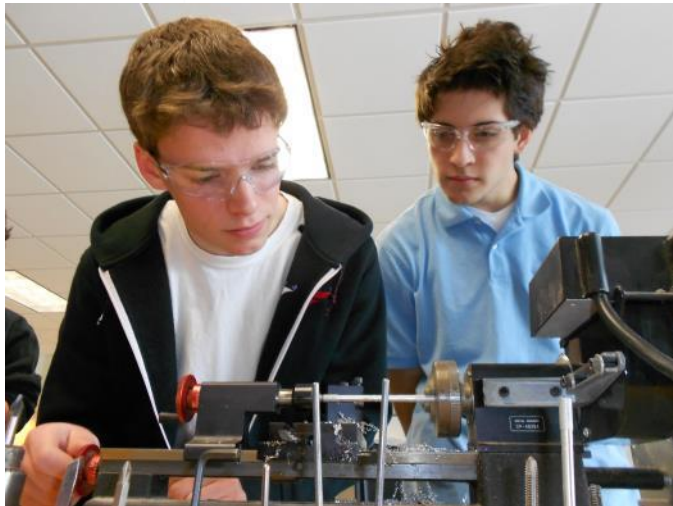
Rockville HS: IB Courses Selected

- Chemistry
- English
- Math Studies
- Biology (HL and SL)
- Psychology
- Visual Arts
- History



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Student Engagement and Success





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Student Engagement and Success

Watkins Mill Students Say:

- “The IBCC helped me challenge myself and take risks in school.”
- “The IBCC helped me decide what I wanted to do in the future and expand my horizons.”
- “IBCC has prepared me for the Engineering courses I am going to take in college.”



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Student Engagement and Success

Watkins Mill Principal:

“Kids are making connections from ATL to their career class. I’ve seen them bring global perspective or whatever ethical dilemma they are discussing in ATL and influence discussion in the career class. And that spreads among the rest of the class.”

-Scott Murphy



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Student Engagement and Success

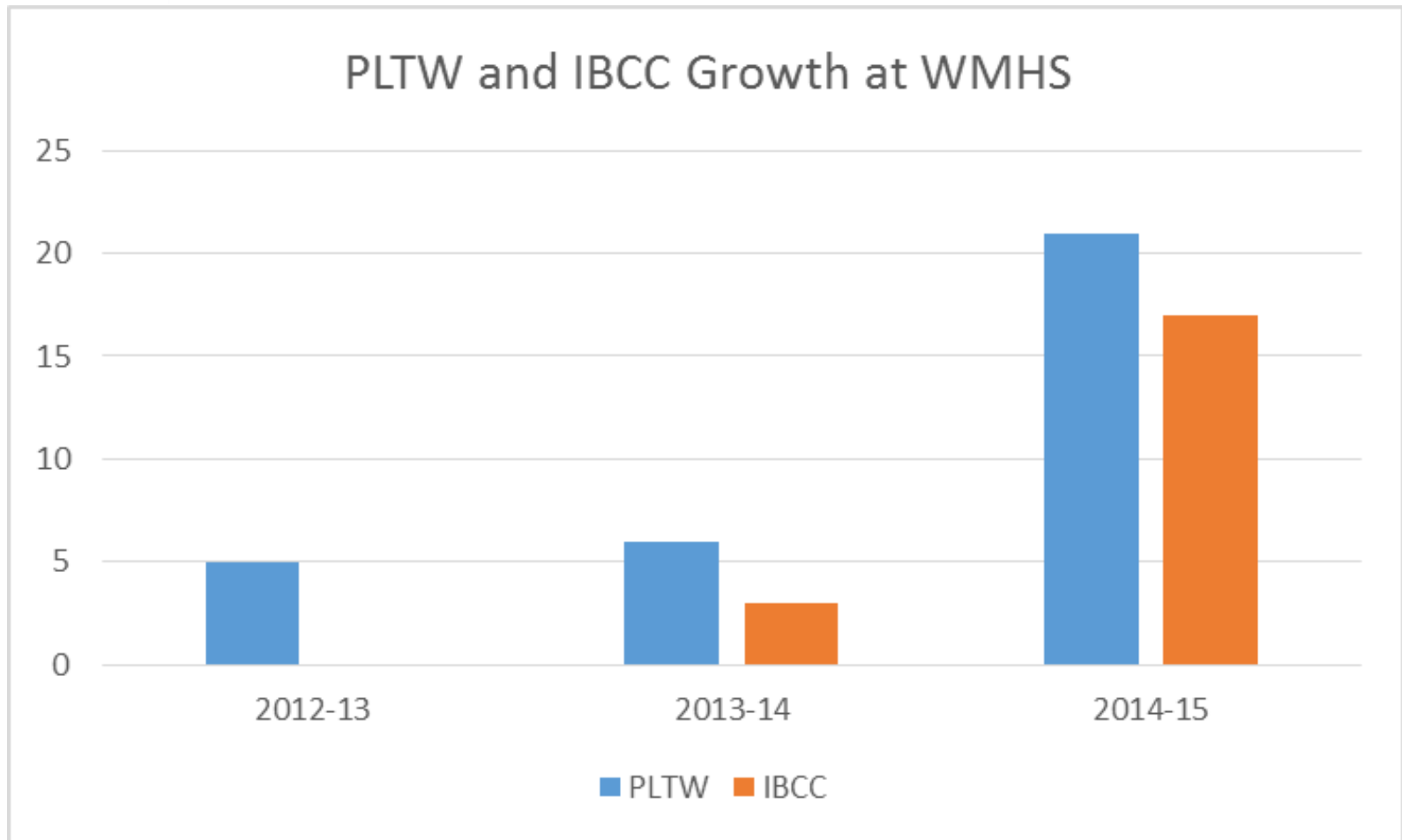
Growth of PLTW at Watkins Mill

- 2012-13: 5 Program completers (IBCC not offered)
- 2013-14: 6 Program completers (3 IBCC)
- 2014-15: 21 Program completers expected (17 IBCC)



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Student Engagement and Success





Watkins Mill High School

- 14 of 20 IBCC students are taking IB classes beyond the requirements
- Community and Service Projects
 - Electronic School Map/Blueprint
 - Design and Build Greenhouse
- Reflective Project Sample
 - Use of Poor Quality Levees in the U.S. Should the USA's failing levee system undergo reconstruction?



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Student Engagement and Success

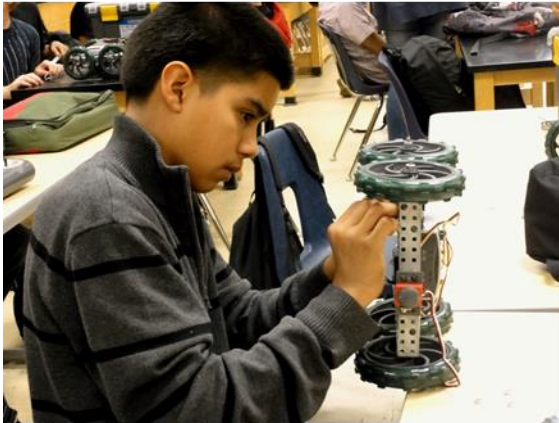
Watkins Mill IBCC Graduate Says:

“ Participating in the IBCC allowed me to take the challenging IB classes I wanted to take without having to succumb to the pressure of the full IB program. Both the IBCC and PLTW programs have taught me the research skills I will need in college and the importance of finding balance in your workload. Approaches to Learning, paired with my interest in Engineering, introduced me to a side of engineering which I never knew existed: a side of ethics. The classes offered for PLTW had topics that would be taught in other PLTW classes as well as some IB Classes”



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Lessons Learned





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Lessons Learned

Watkins Mill:

- All students taking Engineering vs. open access
- Developing a student cohort
- Career teachers taking ATL and Reflective Project training



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Discussion





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