




COMPUTER SCIENCE, EMPLOYABILITY & THE STEM AGENDA

"SKILLS ARE KEY TO THE PROSPERITY OF NATIONS AND
TO BETTER LIVES FOR INDIVIDUALS IN THE 21ST CENTURY."


OECD GLOBAL SKILLS REPORT

Joel Lathrop
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Strategic Alliance Manager
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A background image showing three people (two men and one woman) sitting around a table, looking at a laptop. The image is overlaid with a semi-transparent blue rectangle containing white text.

More than **50%** of today's jobs
require some technology skills,
and experts say that percentage
will increase to **77%**
in less than a decade.

*Source: Pearson VUE 2015 Value of IT Certification Survey : <https://home.pearsonvue.com/Test-Owner/Industries-served/value-of-certification.aspx>

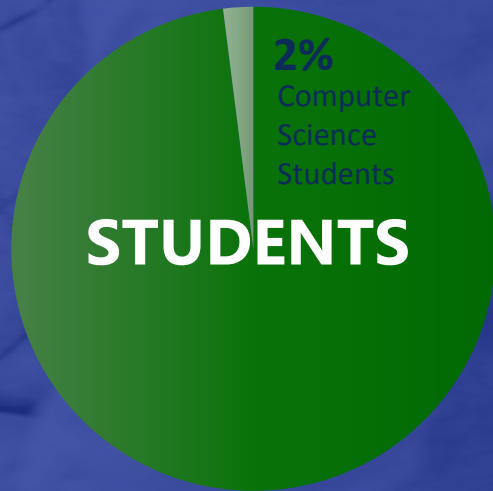
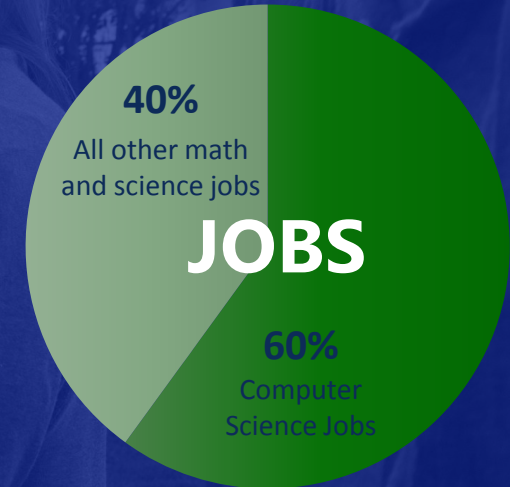
A photograph of two women in a park setting. One woman is standing on the left, wearing a blue denim jacket, black pants, and glasses, smiling. The other woman is sitting on a wooden bench, wearing a dark jacket and blue jeans, looking at a smartphone. A bicycle is parked next to the bench. In the background, there are trees with autumn foliage and a black metal fence.

BY 2022, THERE WILL BE **6.2 MILLION** NEW IT JOBS

MOST IN CLOUD-RELATED FIELDS.

IT LABOR SHORTAGE REPORT

60% of STEM jobs are in
COMPUTER SCIENCE



Yet only 2% of STEM grads
FILL THE PIPELINE

BEYOND TECHNICAL SKILLS

The top 20 most sought-after employability skills

1. Oral and written communication skills
2. Project management
3. **Microsoft Office**
4. Team-oriented, teamwork
5. Marketing
6. Creativity
7. Problem solving
8. Detail oriented
9. **Microsoft PowerPoint**
10. Integrity
11. Self-starting, self-motivated
12. Management skills
13. Analytical Skills
14. Coaching
15. Business Process Modeling
16. Work Independently
17. Strong Leadership Skills
18. Management experience
19. SAP
20. Business requirements gathering



“Technology is for empowering people, and if you look at the younger generation of entrepreneurs, all the way back, one of the most important investments any society can make is in **STEM** education. . . . It can't be something only the elites do, so it's very important to have an enlightened policy that makes access to education like computer science available everywhere to create opportunity.”

Satya Nadella – Microsoft CEO

Our strategy

1

**MOVE STEM
FORWARD**

Policy, Advocacy,
Access & Diversity

2

**CREATE THE
STUDENT JOURNEY**

Skills, CS, and
STEM Portfolio

3

**DEVELOP GREAT
EDUCATORS**

Community and Professional
Development

Our STEM Priority

Policy,
Advocacy
Computer
Science

Skills, CS,
and STEM
Portfolio





Teacher
Capacity



Creating a Student Journey . . .



Jobs Seeking Vendor-specific Skills & Certifications

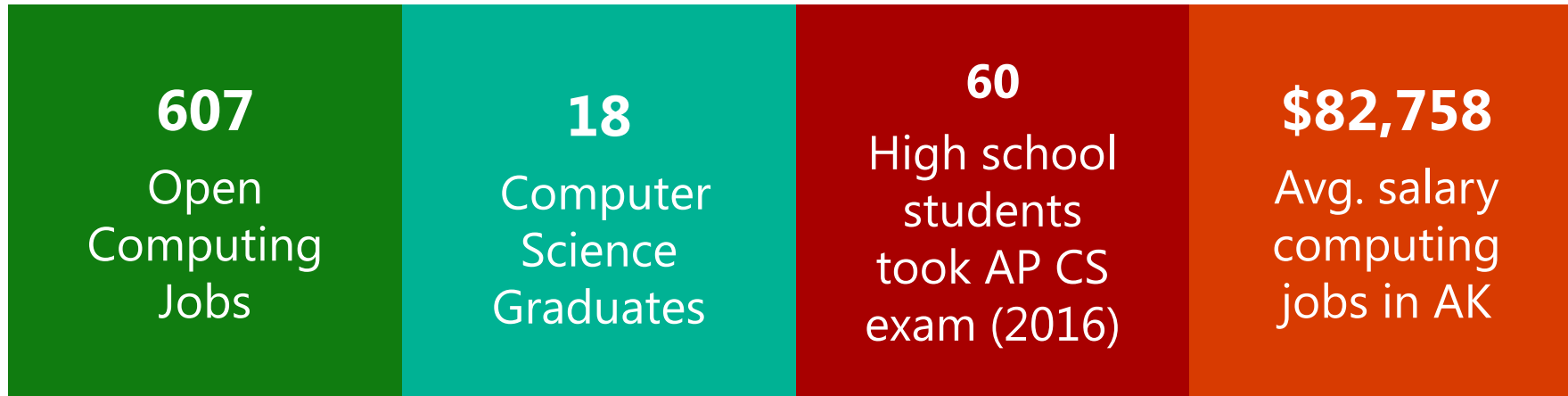
				
Alaska	705	30	21	54

Data from leading job search engine indeed.com (March 2017)



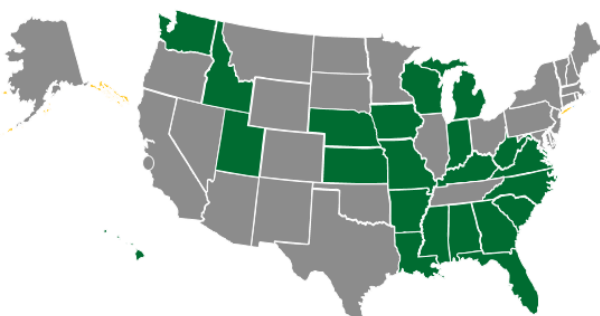
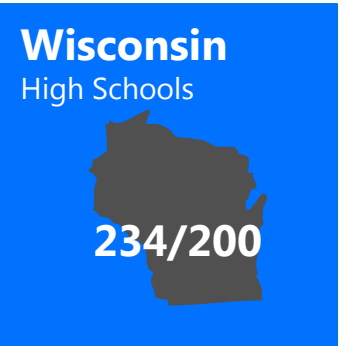
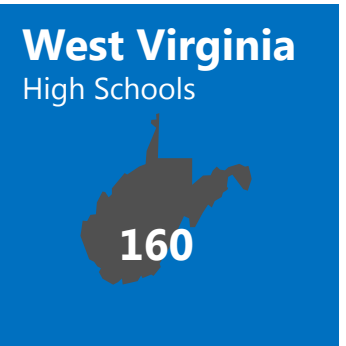
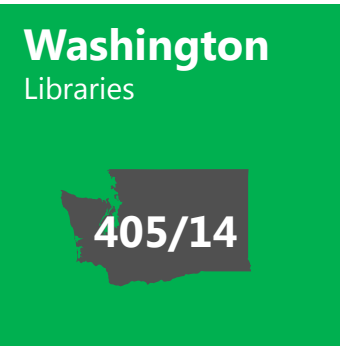
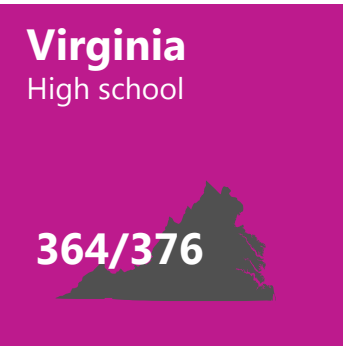
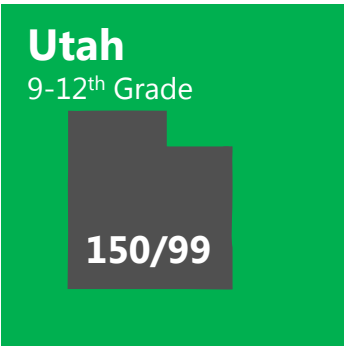
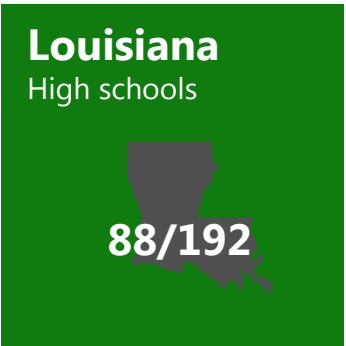
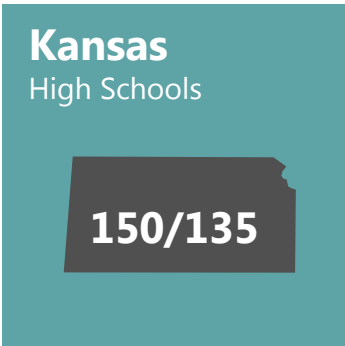
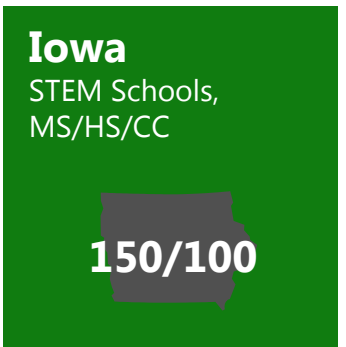
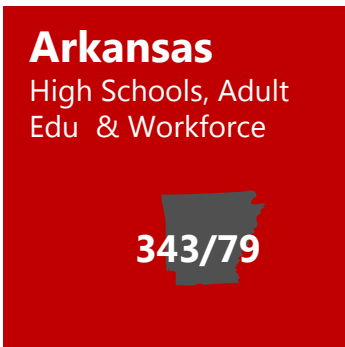
Job Demands for Computer Science

Alaska data from not-for-profit *code.org* (March 2017)

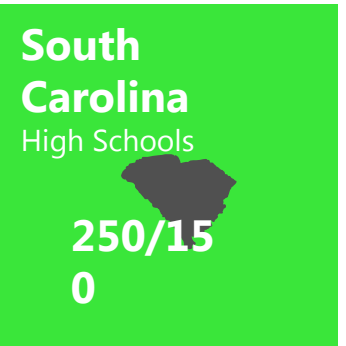
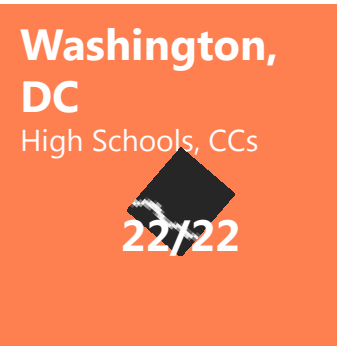


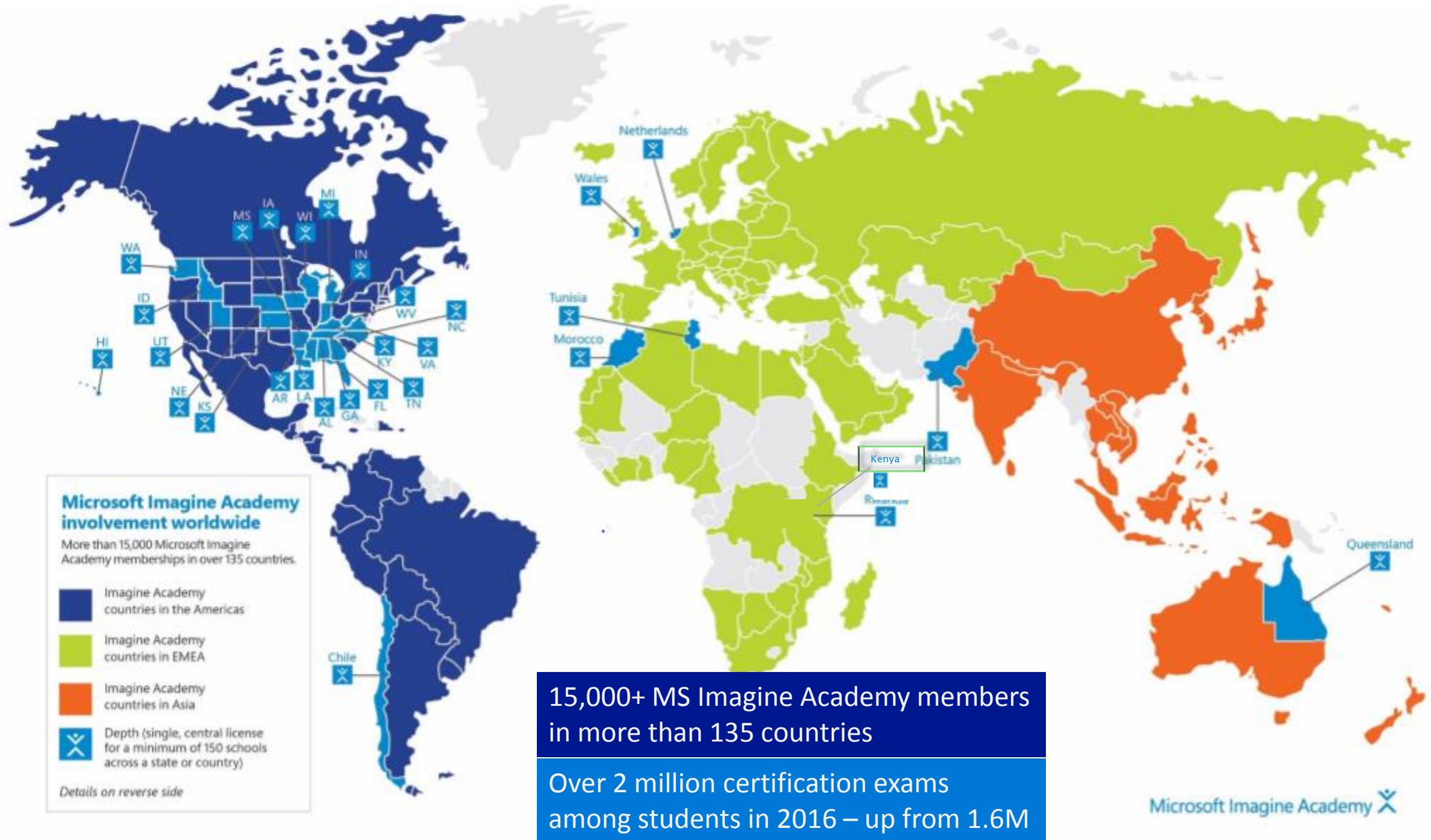
Only 3 schools in Alaska offered the AP Computer Science course 2015-16





Statewide Agreements – USA
Imagine Academy/Certification Site Licenses





Microsoft Imagine Academy: Growing Global Academic Ecosystem

Reach
8.5 million
students and
educators annually

Over
16,000 educators
certified

2 million
Academic certification
exams in 2015-16

15,000
Microsoft Imagine Academy
member schools
in 135 countries

Over 1 million
Online Learning users



Microsoft Imagine Academy Benefits

Annual license designed to save schools time and resources on course implementation and delivery

MOAC

Microsoft Official
Academic
Courseware

ONLINE LEARNING



CUSTOMIZABLE LESSON PLANS

STUDY GUIDES



NO COST EXAM VOUCHERS FOR EDUCATORS

– MOS, MTA, MCE



What types of academic institutions benefit from and license Imagine Academy?

**K-12
Schools**

**Universities,
Colleges or
Junior Colleges**

Skills Centers

Military Academies



**Vocational,
Workforce
Development and
Trade Schools**

**Scientific or
Technical Schools**

**Libraries and
Health
Academies**

GIVE STUDENTS A PATH FORWARD

MICROSOFT IMAGINE ACADEMY

Computer Science
Productivity
Data Science
IT Infrastructure



INDUSTRY- RECOGNIZED CERTIFICATION

MTA
MOS
MCP
MCE



EMPLOYABILITY

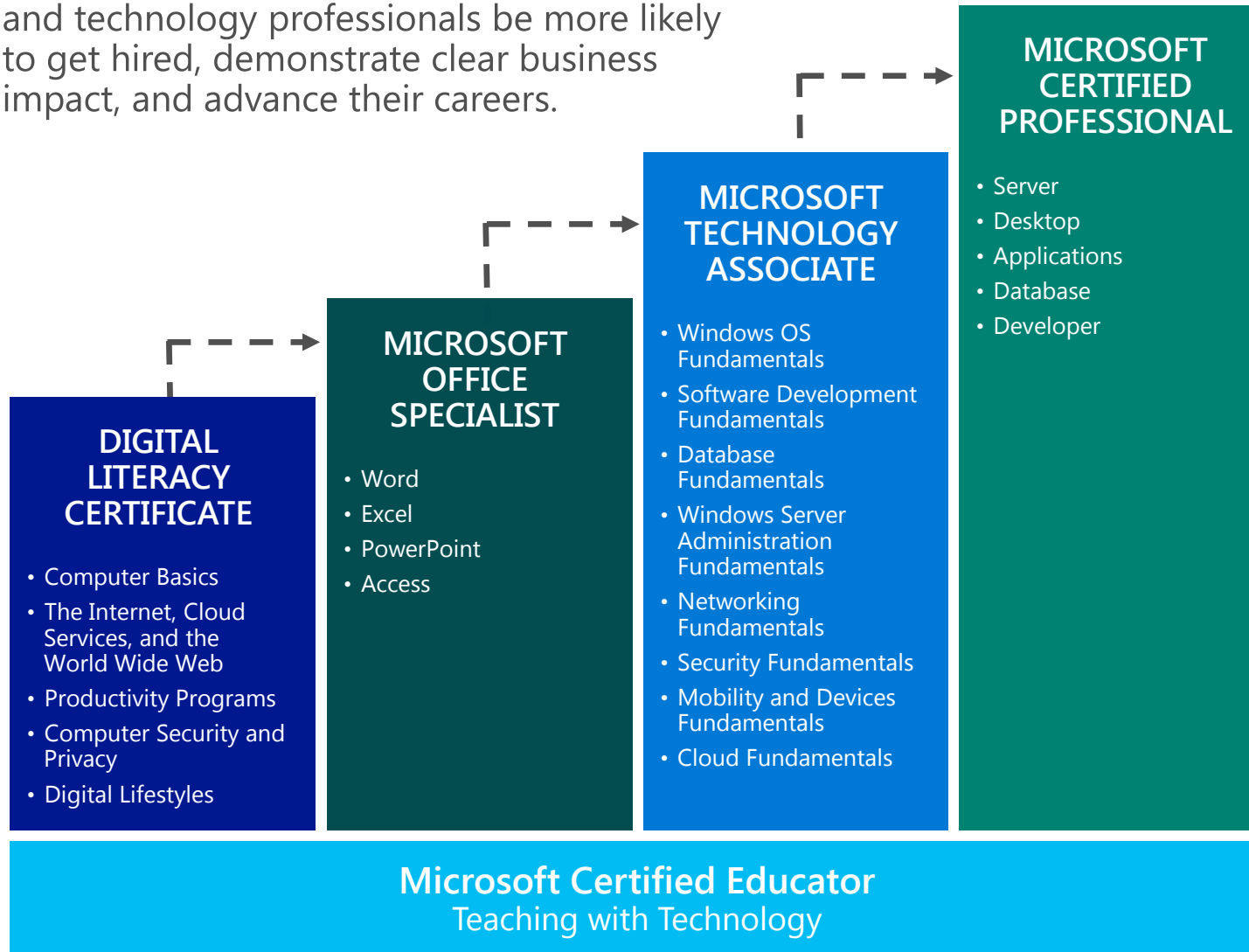
**ECONOMIC
DEVELOPMENT**

ENTREPRENEURSHIP



Microsoft Certification Journey

MICROSOFT CERTIFICATION help students and technology professionals be more likely to get hired, demonstrate clear business impact, and advance their careers.



MS Imagine Academy supports online, flipped, blended and traditional classroom instruction

Microsoft Imagine Academy


Classroom

Educator Development

Student Certification

Marketing

Jeff Johnson




Curriculum overview >

Your curriculum resources support technology skills and certification preparation. These curriculum resources include:

- Learning Paths
- Microsoft Digital Literacy
- Microsoft Official Academic Course (MOAC)
- Lesson Plans
- Online Learning
- Review & study guides


Curriculum downloads



Online learning dashboard >

Online Learning provides a library of multi-media, interactive courses on multiple Microsoft technologies that allow educators to manage and organize users, course assignment, and activity reports.


- Videos
- Simulations
- Hands-on activities
- Learning plans



Additional resources >

To complement and enhance your curriculum delivery there are a range of additional resources available to you at a special Imagine Academy discount. These resources include:


- MS Press books and eBooks
- Wiley resources, including print MOAC, OfficeGrader and OfficeTrainer
- Microsoft Official Courseware (MOC)



Classroom setup >

Here are some resources to help you get ready for your classes:

- IT Director Guide



Student recognition

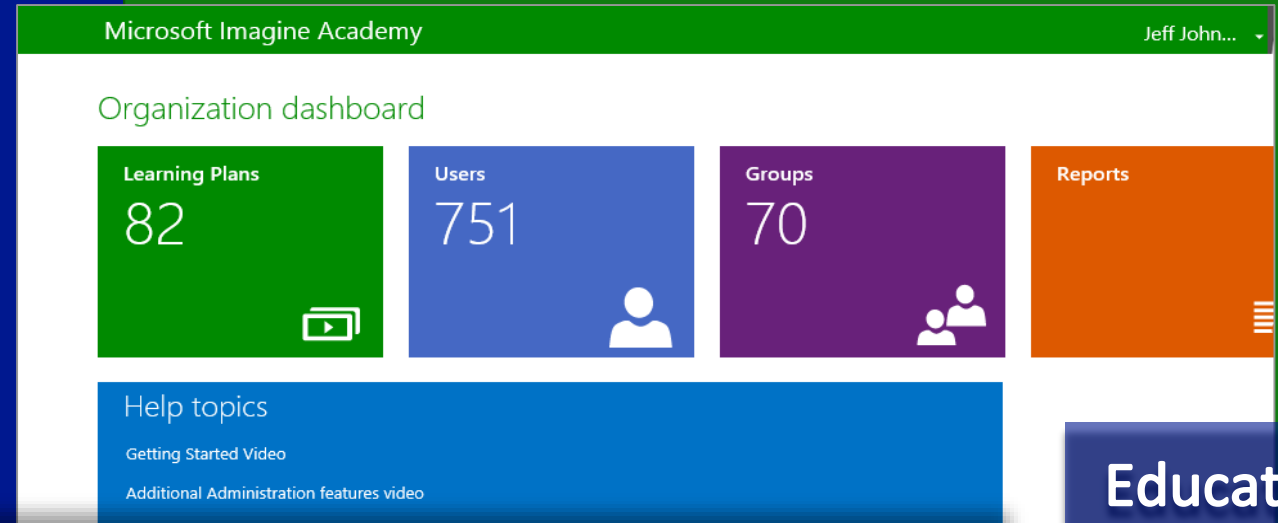
You can easily create course completion recognition awards to distribute to students. These are ideal for students who may not be able to take the certification exam. The award can be customized with your school logo, name, etc.

Imagine Academy: Online Learning

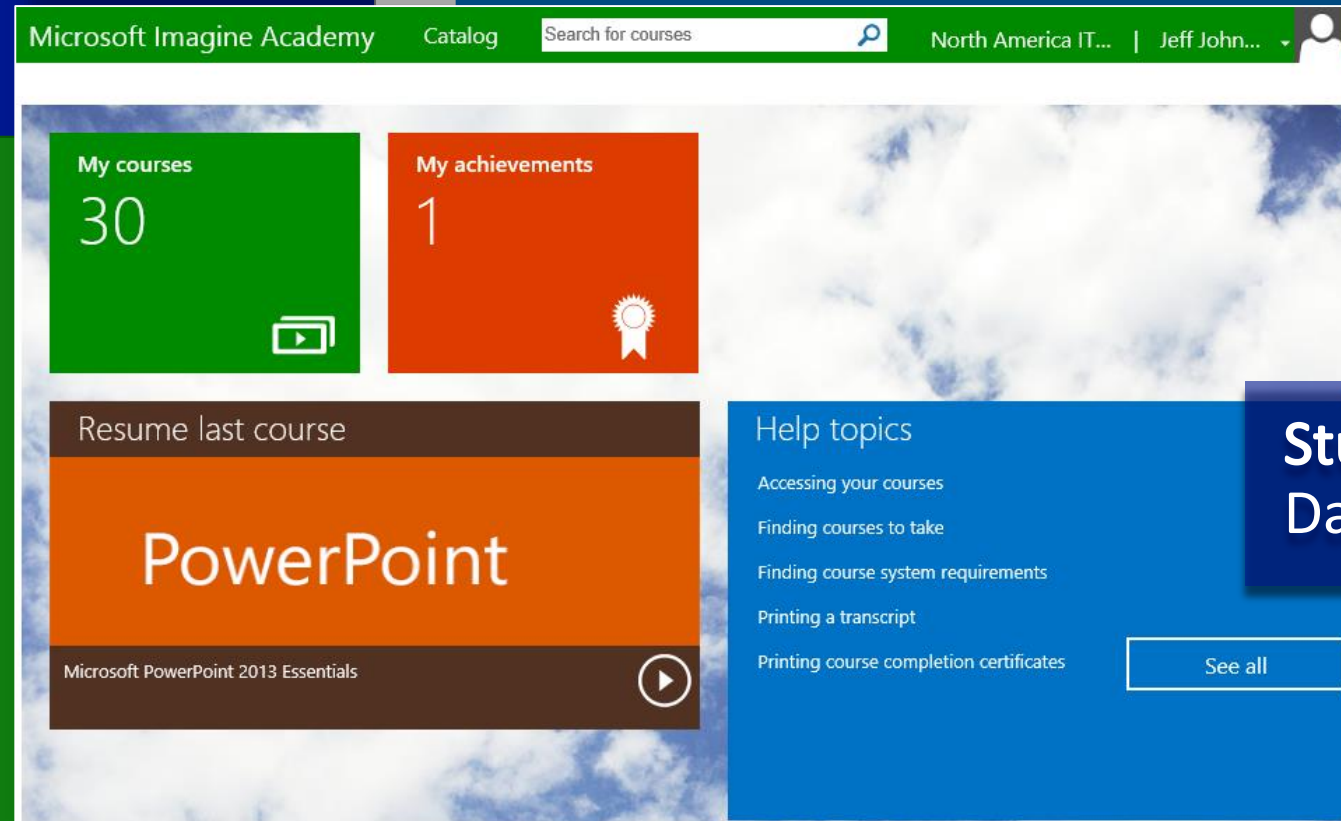
150 courses

Multiple technologies

Complementary educator &
student experiences



**Educator
Dashboard**



**Student
Dashboard**

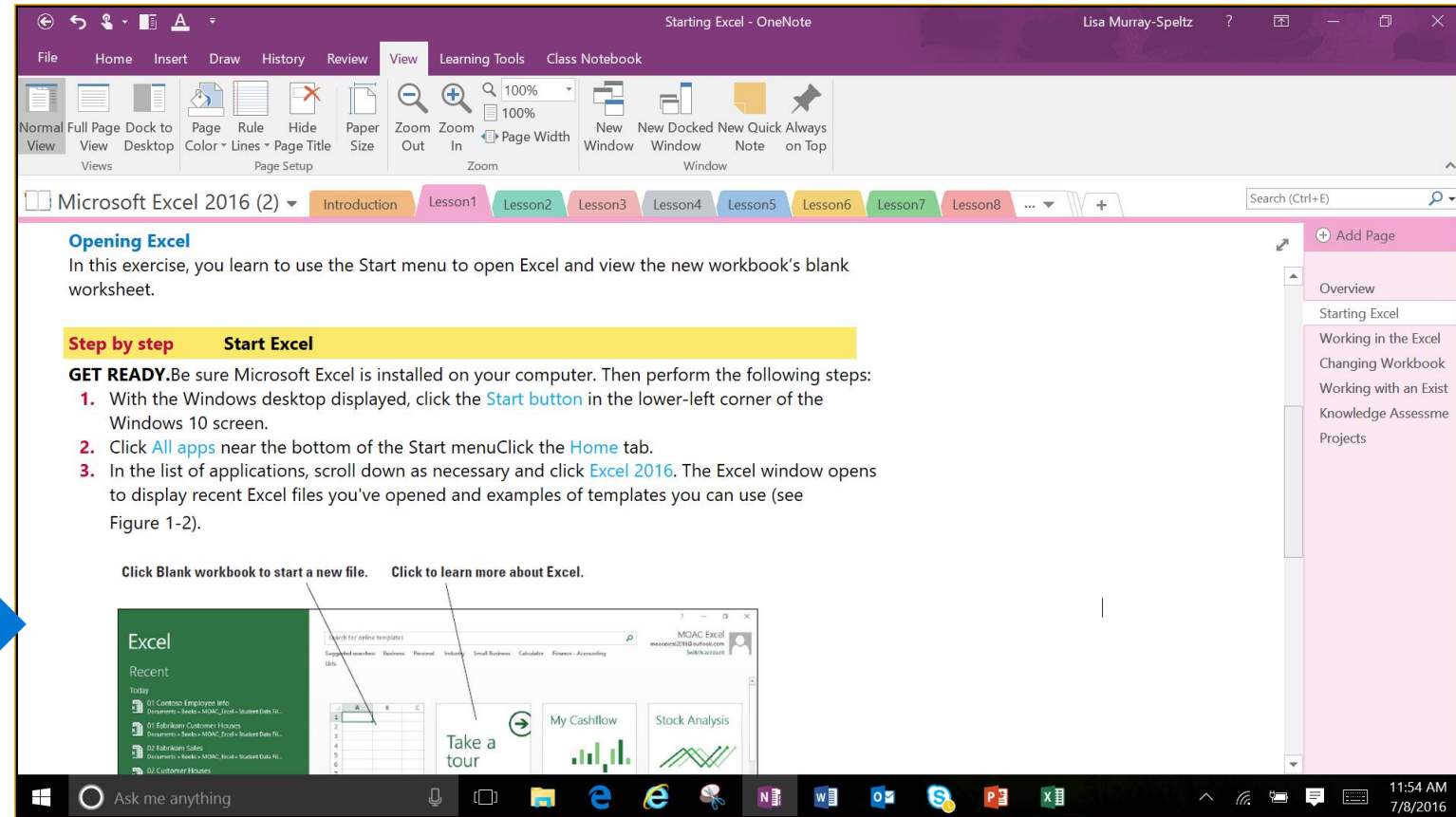
Digital Textbooks – mapped to certification

Microsoft Official Academic Course



Hands-on lessons, quizzes, industry relevant exercises focused on students learning essential job tasks and current technologies

- MOAC digital curriculum for MSIA mapped to latest exam objectives
- Full text downloads for educators and students
- Take advantage of flexibility and adaptability of OneNote
- Save teachers time and save schools course costs



The screenshot shows the OneNote interface with a lesson titled "Opening Excel". The lesson content includes:

- Opening Excel**
In this exercise, you learn to use the Start menu to open Excel and view the new workbook's blank worksheet.
- Step by step Start Excel**
- GET READY.** Be sure Microsoft Excel is installed on your computer. Then perform the following steps:
 1. With the Windows desktop displayed, click the **Start button** in the lower-left corner of the Windows 10 screen.
 2. Click **All apps** near the bottom of the Start menu. Click the **Home** tab.
 3. In the list of applications, scroll down as necessary and click **Excel 2016**. The Excel window opens to display recent Excel files you've opened and examples of templates you can use (see Figure 1-2).

Below the text, there is a screenshot of the Microsoft Excel 2016 Start screen. It shows a list of recent files under "Recent" and a "Take a tour" button. Arrows point from the text "Click Blank workbook to start a new file." and "Click to learn more about Excel." to the respective buttons on the Excel screen.

DEVELOP GREAT EDUCATORS

Microsoft Educator Community



Microsoft Educator Experts



Microsoft Authorized Trainers



Microsoft Imagine Academy

Microsoft Certified Educator



Microsoft Office Specialist



Microsoft Technology Associate




Microsoft Showcase Schools



Microsoft Certified Educator -- Self Assessment & Individual Learning Plan for Educators, future teachers

self-assessment recommended courses all courses



Create a customized e-learning path

This 40-question self-assessment will help identify your current knowledge of integrating Information and Communication Technology (ICT) into teaching and learning. It is aligned to the Technology Literacy Teacher Competencies Framework for Teachers (ICT-CFT).

The results will help design a learning plan that us to recommend a personal learning path that competencies.

You can retake the self-assessment at any time plan and see the competencies you are achievin

Duration: About 50 minutes
Date last taken: 4/29/2012
Number of attempts: 2

[start self-assessment >](#)

Starts with self assessment

Partners in Learning: Technology Literacy Teacher Competencies | Self-Assessment - Windows Internet Explorer

<https://itacademy.microsoftlearning.com/courseAccess/coursePlayer.aspx?courseId=394781&topicId=764670>

technology literacy teacher competencies | self-assessment

[Print](#)

Technology Literacy Teacher Competencies Self-Assessment	Further Learning Recommended	Further Learning Optional
Demonstrate Understanding of the Technology Literacy Goals Described in the CFT Framework		
Identify the policy goals supported by the CFT framework.	<input checked="" type="checkbox"/>	
Identify CFT and its approaches.	<input checked="" type="checkbox"/>	
Identify the target student outcomes that result from implementing a CFT-supported learning experience.	<input checked="" type="checkbox"/>	
Demonstrate Basic Knowledge of How ICT Resources Can Support Curriculum Outcomes.		
Given a curriculum goal, identify appropriate ICT resources and skills required to use ICT resources.		<input checked="" type="checkbox"/>
Given a scenario, evaluate and select an ICT instructional resource.	<input checked="" type="checkbox"/>	
Given a scenario, evaluate and select an ICT assessment resource.	<input checked="" type="checkbox"/>	
Select an appropriate computer-based tool to monitor and share pupil performance data.		<input checked="" type="checkbox"/>

Six core curriculum focus courses for educators

CURRICULUM & ASSESSMENT

EDUCATION POLICY

TECHNOLOGY & PEDAGOGY

ICT CLASSROOM TOOLS

ORGANIZATION & ADMINISTRATION

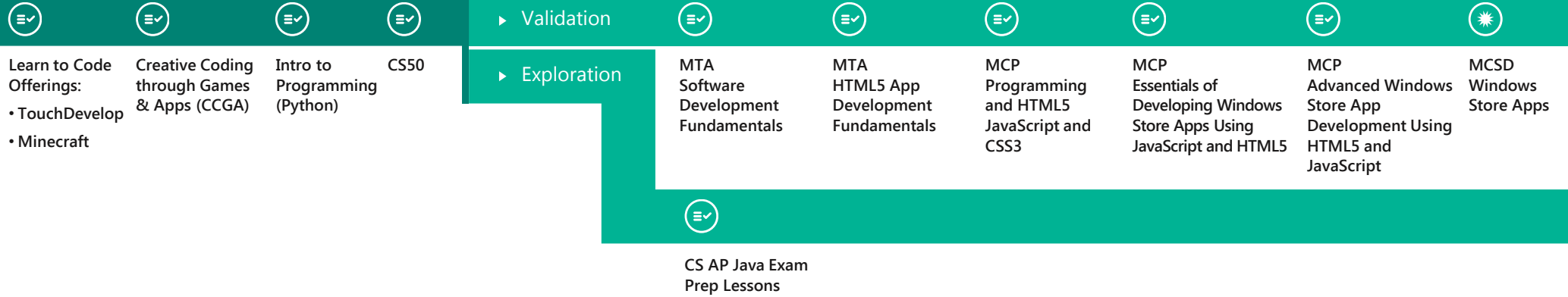
PROFESSIONAL DEVELOPMENT

Aligned with UNESCO Global Standard

University Credit through Lamar University

Microsoft Certification Pathways

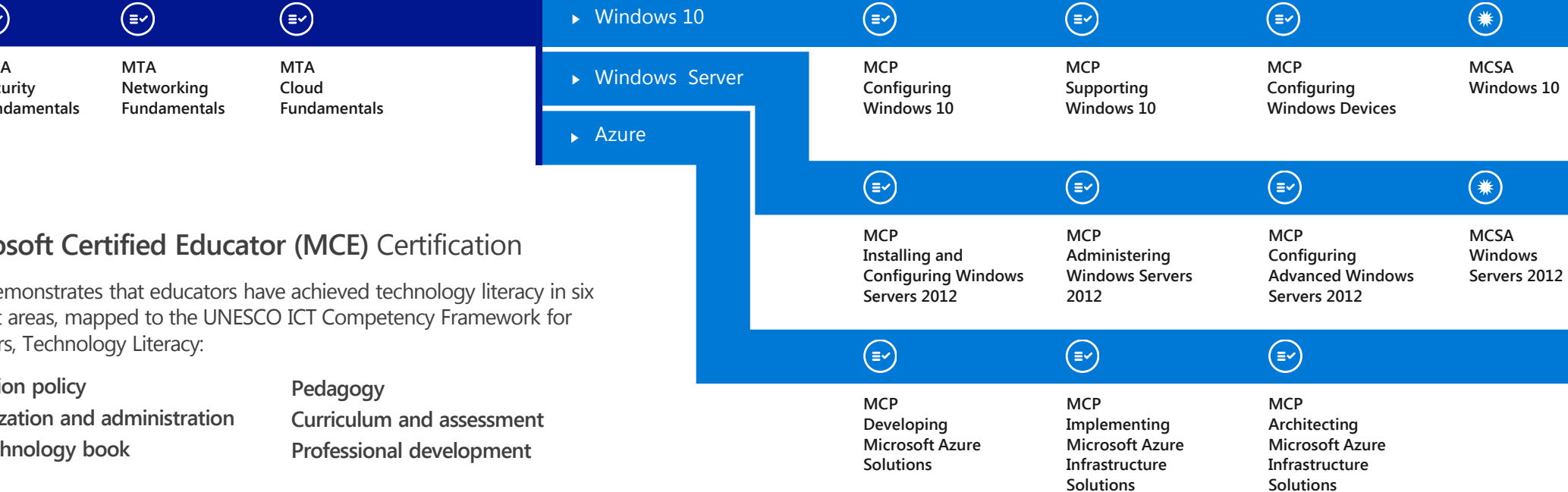
Computer Science



Productivity



IT Infrastructure



Supported Languages:

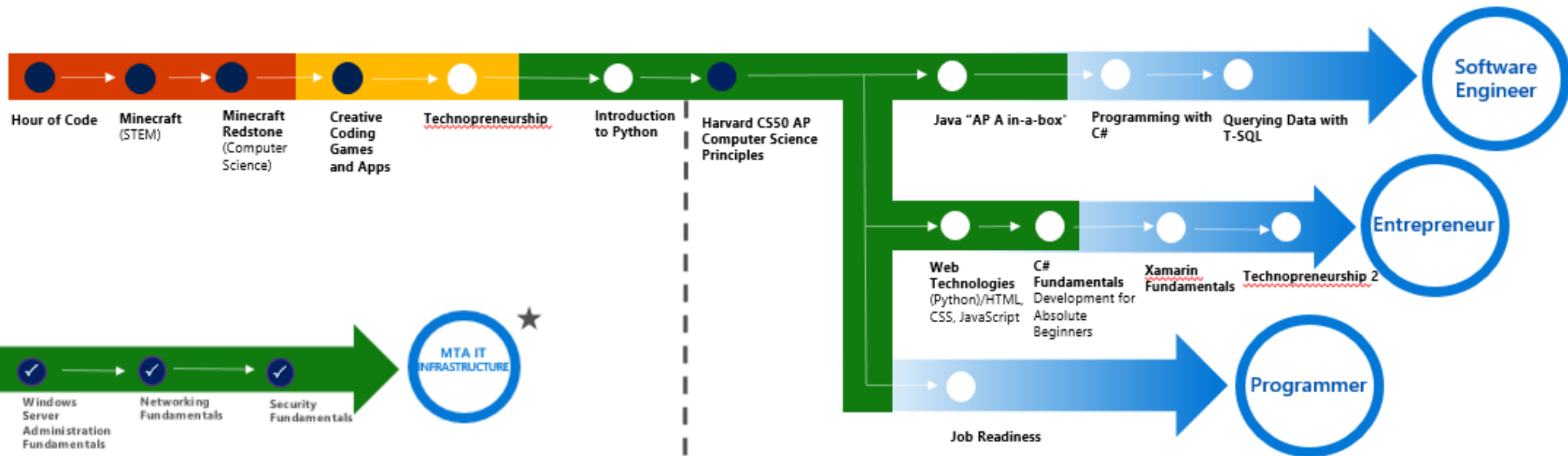
Arabic
Chinese
Dutch
English
French
German
Japanese
Korean
Portuguese
Spanish

Microsoft Certified Educator (MCE) Certification

MCE demonstrates that educators have achieved technology literacy in six content areas, mapped to the UNESCO ICT Competency Framework for Teachers, Technology Literacy:

Education policy	Pedagogy
Organization and administration	Curriculum and assessment
ICT/technology book	Professional development

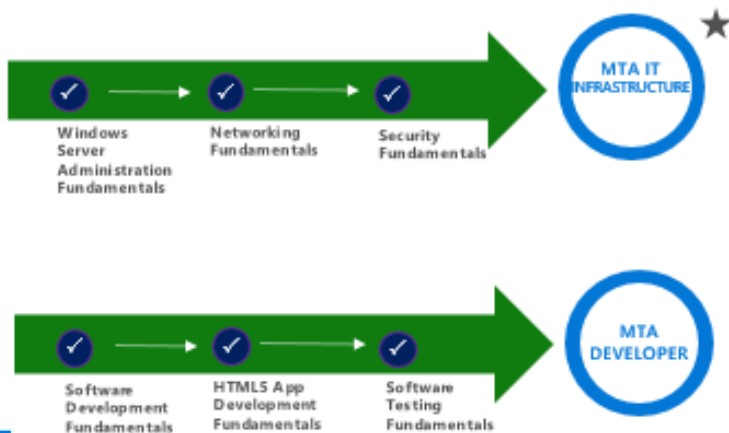
Computer Science



IT Infrastructure



Microsoft Technology Associate (MTA)

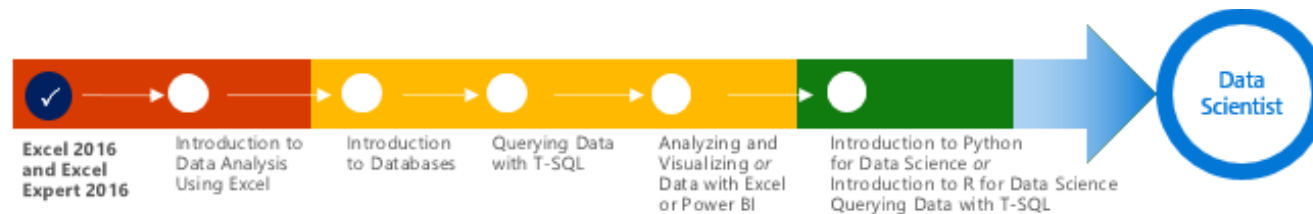


Microsoft Technology Associate (MTA)

Windows OS Fundamentals
Software Development Fundamentals
Database Fundamentals
Windows Server Administration Fundamentals
Networking Fundamentals
Security Fundamentals
Mobility and Devices Fundamentals
Cloud Fundamentals

Microsoft Imagine Academy Learning Pathways

Data Science *in development*



Productivity



- Early Skill Development
- Basic Skill Development
- Intermediate Skill Development
- Advanced Skill Development
- Live Learning Experience
- Live Learning Experience with Certification

JUNE ATKINSON
NORTH CAROLINA STATE
SUPERINTENDENT



SYSTEM-WIDE CHANGE IN NORTH CAROLINA, USA

In 2010 North Carolina became our first partnership to deploy MSIA system-wide in all high schools in the state. Their goal.... to develop a pipeline of information workers to attract new business and higher paying jobs.

- 234,000 certifications earned to date
- From 16 to 58,485 per year
- Created a pathway to two year Community Colleges

From 16 to 58,485



FLORIDA (USA)

Key Performance Indicator	Students without Certifications	Students with Certifications	CAPE Academy Students with Certifications
Average GPA	2.64	2.88	2.98
Dropout Rate	2.7%	.6%	.3%
Graduating 12 th Graders	71.9%	92.1%	94.9%
Chronically Absent	18.3%	16.2%	11.3%
Disciplinary Action	16.4%	10.3%	9.9%

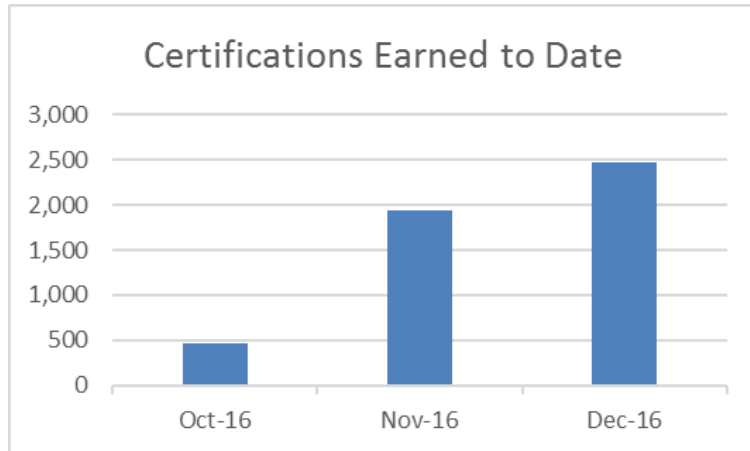
Impacts of Skills & Certifications Attainment on School Performance Measures

Annual study across more than 1,500 Florida high schools and middle schools

Students with industry certification outperform non-certified peers on key performance indicator for schools

The career program is in its 6th year in Florida high schools. Over time, industry certification earner graduates outperformed the overall average high school population with consistently higher placement rates in employment or postsecondary education.

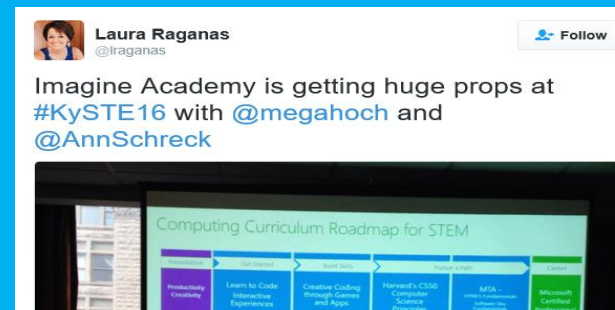
Kentucky Department of Education



COMPUTER SCIENCE MOMENTUM



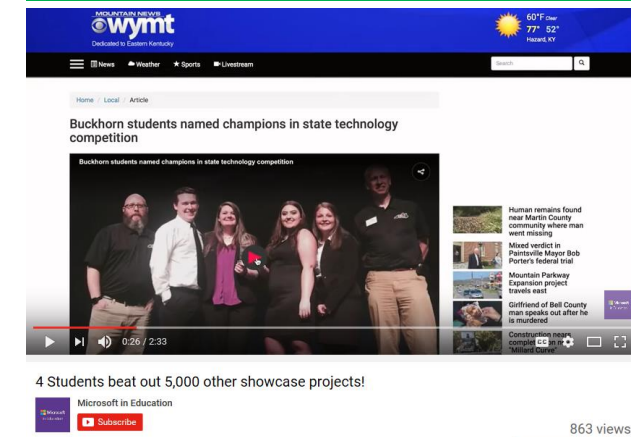
The Hour of Code with Minecraft provided new inspirational learning opportunities in classrooms in Shelby County, Kentucky, USA



90+ Kentucky, USA, educators gained insights for teaching Computer Science and MTA track with MSIA in Louisville

- 187 Microsoft Imagine Academy high schools and tech centers
- 160 Microsoft Certification Site Licenses
- O365 Statewide K-12
- Strong Focus on Computer Science & Student Certifications

"So many of our industries and businesses are asking for our students to have those skills in Computing. It does give our students a little leg up." Laura Raganas, MSIA program manager, KDE Office of Knowledge, Information and Data Services



Kentucky students featured at ISTE for [winning Math competition](#)



Computer Science



TURNER USD VIDEO



Students and educators:

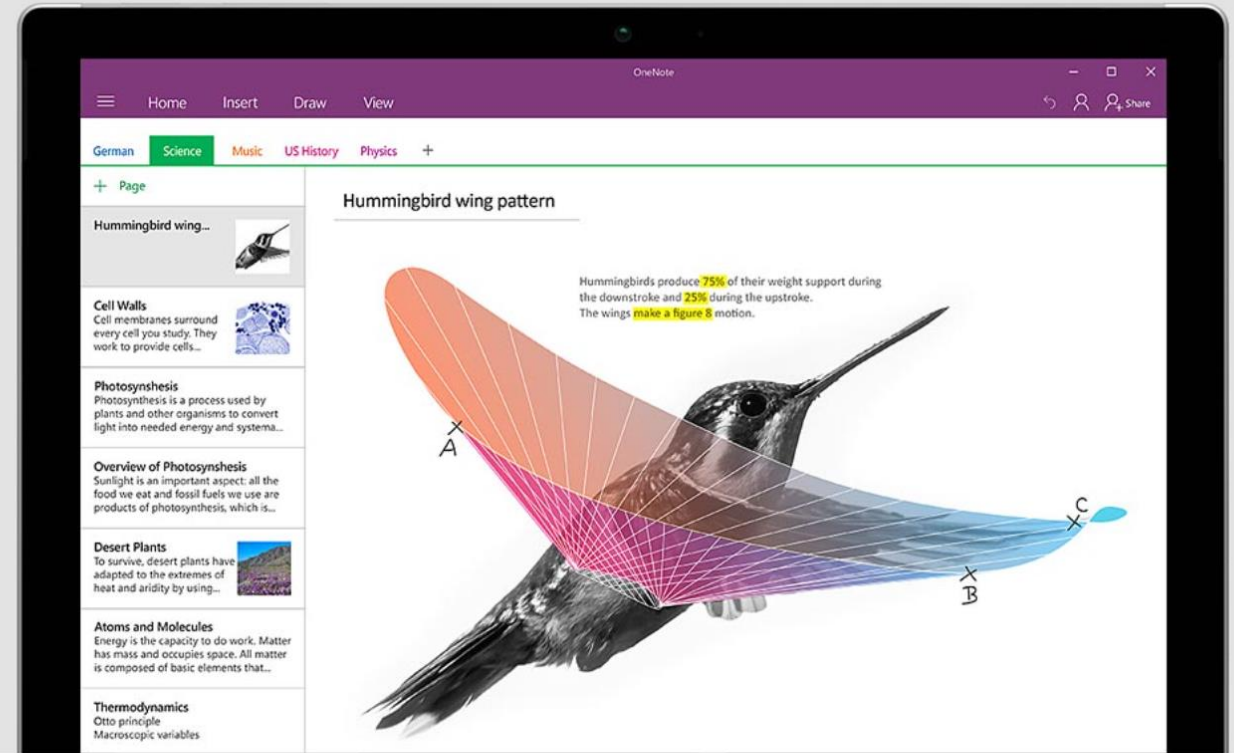
Get Office for free

Transform your classroom with Office 365 Education. It's free, it's not a trial, and it includes Word, Excel, PowerPoint, OneNote, and more with your valid school email address.

[LEARN HOW IT WORKS >](#)

Get Office for free

[IT PROS, SIGN UP YOUR ENTIRE SCHOOL >](#)

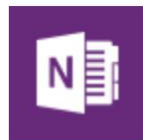


Get started with free Office apps

Organize



Microsoft
Classroom



OneNote



Outlook



OneDrive

Collaborate



Word



Excel



PowerPoint



Skype

What's new in Office 365 Education?

Collaboration and communication in the classroom



Class Notebook add-in (preview) with Classroom & LMS assignments
Professional Learning Community (PLC) Groups
Office Online collaboration improvements—scale and chat

Managing the online classroom



Class Notebook add-in (preview) with Classroom & LMS assignments
Microsoft Classroom (preview) for Office 365 Education
Microsoft Forms (preview) and Microsoft Forms Grader add-in

Student empowerment



Learning Tools for OneNote (preview) add-in
Sway—add audio narration, embedded quizzes with Microsoft Forms

Saving time



Teacher-to-Student invites in the Class Notebook
School Data Sync (preview)

Teacher training and CPD



Docs.com—content download and publishing for Learning Registry
Microsoft Educator Community

Class Notebook—invite new students quickly

OneNote Class Notebook

Save time. Organize. Collaborate.

OneNote Class Notebooks have a personal workspace for every student, a content library for handouts, and a collaboration space for lessons and creative activities.

[Class Notebook Sign In](#)

Sign in with your Office 365 account from your school to get started.

[Sign up for a free Office 365 account >](#)



Office 365

✓ 1 Add Notebook Name

✓ 2 Notebook Overview

✓ 3 Add Another Teacher

✓ 4 Add Student Names

5 Design Student Spaces

6 Preview

7 Done

⬅ Now, what are your students' names?

Type or paste your students' names (separated by semicolon) to add them to the class notebook

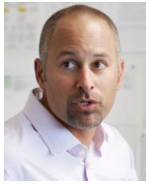
adrian.dumont@contoso.edu x christina.long@contoso.edu x jose.zambr

Next

1. Teachers—sign up for Office 365 Education, create OneNote Class Notebooks for their classes, and easily add students to a Class Notebook
2. Invites students to Office 365 without any help from IT!
3. Go to onenote.com/classnotebook and use the Class Notebook app

OneNote Staff Notebook

1



2



Collaboration space



Content library



Staff member
notebooks

School administrators can quickly set up a shared, permissioned OneNote notebook with an easy Office 365 app. Uses include:



Collaboration: staff meeting notes/staff initiatives/shared lesson plan development/data chats/scope and sequence across content and grades/fundraisers/book studies/PLC's

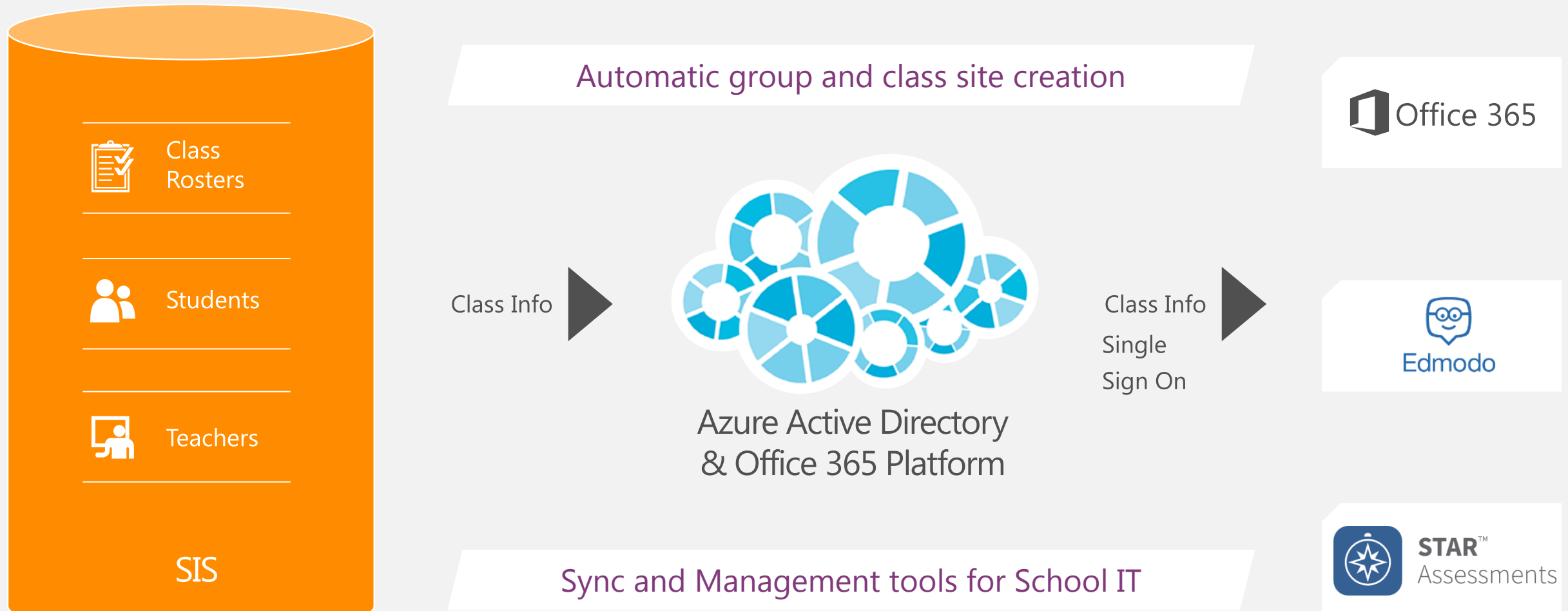


Content Library: policies and procedures/various school planning and calendar activities

Staff Member Notebooks (private): professional development/classroom observations/lesson plans/parent communication/evaluations/classroom data progress

Microsoft School Data Sync

A service in Office 365 Education



THANK YOU



Questions, Follow-up:

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