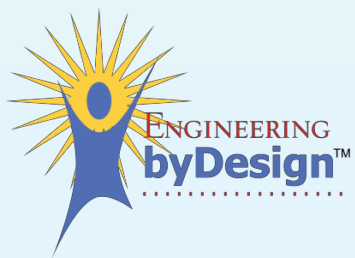
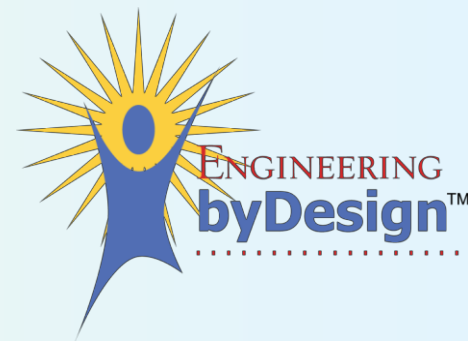




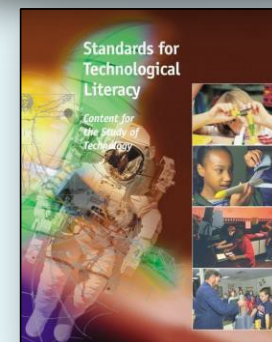
HOW TO ACCESS **Engineering byDesign™** In Virginia




















What Is Engineering byDesign™ ?

- **Model Curriculum for K-12 STEM and Engineering**
- **Aligned to National Standards:**
 - **Common Core State Standards – Math & ELA**
 - **Next Generation Science Standards**
 - **Standards for Technological Literacy**
- **Real world context through engineering challenges**
- **Developed by the STEM Center for Teaching and Learning at ITEEA**



K-12 Integrative STEM Curriculum

CORE PROGRAM	PreK–2		EbD-TEEMS NXTGEN™		1-6 weeks
	3–6		EbD-TEEMS NXTGEN™ (6th Grade Capstone), I ³	 	1-6 weeks
	6		<i>Exploring Technology</i>		18 weeks
	7		<i>Invention and Innovation</i>		18 weeks
	8		<i>Technological Systems</i>	 	18 weeks
	9		<i>Foundations of Technology</i>	 	36 weeks
	10–12	HS Choices	<i>Technology and Society</i>		36 weeks
	10–12		<i>Technological Design</i>		36 weeks
	11–12		<i>Advanced Design Applications</i>		36 weeks
	11–12		<i>Advanced Technological Applications</i>		36 weeks
	11–12		<i>Engineering Design (Capstone)</i>	 	36 weeks

Access to EbD Curriculum in Virginia: VA-EbD STEM Network



Eligibility Options:

1. Virginia teachers
2. University and college that are a VA-EbD partner

- **NO COST TO ACCESS THE SE →**
- **ACCESS THROUGH PASSWORD-PROTECTED WEBSITE**

Unit 2: Design and Engineering

Overview

Standards

- Understanding engineering design (ITEA/STL – 9)
- Abilities to apply the design process (ITEA/STL – 11)
- Understanding of and abilities to select and use transportation technologies (ITEA/STL – 18)
- Technology and Science (AAAS - 7)
- Scientific Inquiry (AAAS-2)
- Use visualization, spatial reasoning and geometric modeling to solve problems (NCTM – 11)
- Understand measurable attributes of objects and the units, systems, and processes of measurement (NCTM – 12)
- Apply appropriate techniques, tools, and formulas to determine measurements (NCTM – 13)

Benchmarks

AAAS - Benchmarks for Science	NCTM - Benchmarks for Mathematics
<ul style="list-style-type: none">• Scientists differ greatly in what phenomena they study and how they go about their work. Although there is no fixed set of steps that all scientists follow, scientific investigations usually involve the collection of relevant evidence, the use of logical reasoning, and the application of imagination in devising hypotheses and explanations to make sense of the collected evidence (2.I).• Engineers, architects, and others who engage in design and technology use scientific knowledge to solve practical problems. But they usually have to take human values and limitations into account as well. (7.J).	<ul style="list-style-type: none">• Draw geometric objects with specified properties, such as side lengths or angle measures. (11-R)• Recognize and apply geometric ideas and relationships in areas outside the mathematics classroom, such as art, science and everyday life. (11-V)• Understand relationships among units and convert from one unit to another within the same system (12-K)• Understand, select, and use units of appropriate size and type to measure angles, perimeter, area, surface area, and volume. (12-L)• Solve problems involving scale factors, using ratio and proportion (13-R)• Solve simple problems involving rates and derived measurements for such attributes as velocity and density (13-S)

ITEA - Benchmarks for Technological Literacy

- Expressing ideas to others verbally and through sketches and models is an important part of the design process. (9.D)

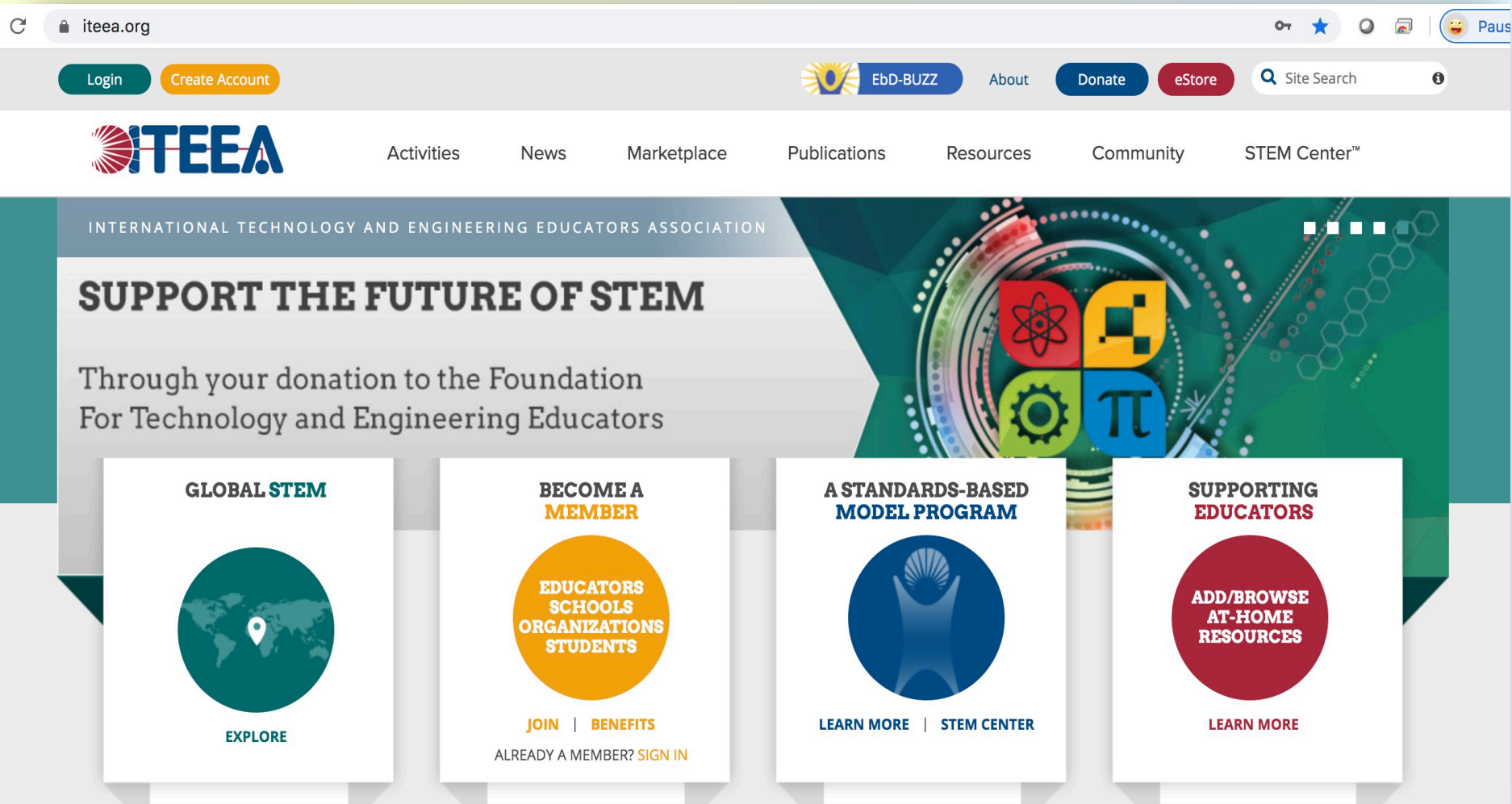
1

Unit 2
Design and
Engineering

Next Page

Table of
Contents

Go to the www.iteea.org website



The screenshot shows the homepage of the International Technology and Engineering Educators Association (ITEEA). The browser address bar displays "iteea.org". The top navigation bar includes links for "Login", "Create Account", "EbD-BUZZ", "About", "Donate", "eStore", and a "Site Search" box. Below this, the ITEEA logo is followed by a horizontal menu with links to "Activities", "News", "Marketplace", "Publications", "Resources", "Community", and "STEM Center™".

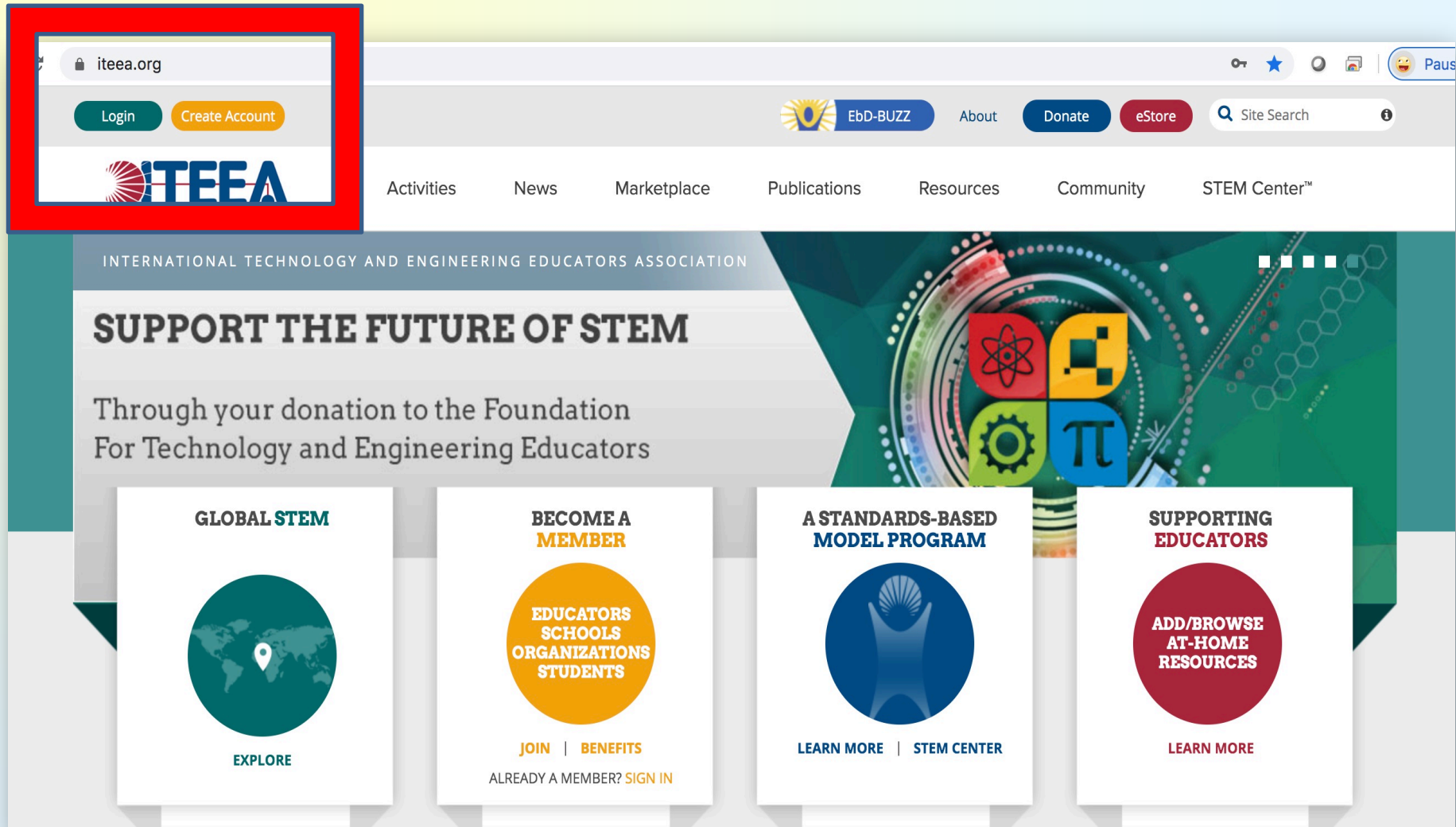
The main banner features the text "INTERNATIONAL TECHNOLOGY AND ENGINEERING EDUCATORS ASSOCIATION" and "SUPPORT THE FUTURE OF STEM". Below this, it states "Through your donation to the Foundation For Technology and Engineering Educators".

The page is divided into four white rectangular boxes, each with a circular graphic and a call to action:

- GLOBAL STEM**: Features a teal circle with a white world map and a location pin. Below the circle is the word "EXPLORE".
- BECOME A MEMBER**: Features an orange circle with the text "EDUCATORS SCHOOLS ORGANIZATIONS STUDENTS". Below the circle are the links "JOIN | BENEFITS" and "ALREADY A MEMBER? SIGN IN".
- A STANDARDS-BASED MODEL PROGRAM**: Features a blue circle with a white stylized figure holding a torch. Below the circle are the links "LEARN MORE | STEM CENTER".
- SUPPORTING EDUCATORS**: Features a red circle with the text "ADD/BROWSE AT-HOME RESOURCES". Below the circle is the link "LEARN MORE".

The background of the main banner is a green and blue abstract design with various STEM-related icons, including a red atom, a yellow square with a black dot, a green gear, and a blue circle with a white pi symbol.

“Login” or “Create Account” to create a FREE account



The screenshot shows the ITEEA website homepage. A red rectangular box highlights the top-left navigation area, which includes the URL "iteea.org", a "Login" button, and a "Create Account" button. Below this is the ITEEA logo. The main header features a navigation bar with links for "Activities", "News", "Marketplace", "Publications", "Resources", "Community", and "STEM Center™". To the right of the navigation bar are links for "EbD-BUZZ", "About", "Donate", "eStore", and a "Site Search" field. The main content area has a large banner with the text "SUPPORT THE FUTURE OF STEM" and "Through your donation to the Foundation For Technology and Engineering Educators". Below the banner are four white cards with colorful circular icons and text:

- GLOBAL STEM**: Icon of a globe with a location pin. Text: "EXPLORE".
- BECOME A MEMBER**: Icon of a yellow circle with text "EDUCATORS SCHOOLS ORGANIZATIONS STUDENTS". Text: "JOIN | BENEFITS", "ALREADY A MEMBER? SIGN IN".
- A STANDARDS-BASED MODEL PROGRAM**: Icon of a blue circle with a stylized figure. Text: "LEARN MORE | STEM CENTER".
- SUPPORTING EDUCATORS**: Icon of a red circle with text "ADD/BROWSE AT-HOME RESOURCES". Text: "LEARN MORE".

Click on GLOBAL STEM

iteea.org

Login Create Account Ebd-BUZZ About Donate eStore Site Search


ITEEA Activities News Marketplace Publications Resources Community STEM Center™

INTERNATIONAL TECHNOLOGY AND ENGINEERING EDUCATORS ASSOCIATION

SUPPORT THE FUTURE OF STEM


Through your donation to the Foundation
Engineering Educators

GLOBAL STEM



EXPLORE

BECOME A MEMBER




EDUCATORS
SCHOOLS
ORGANIZATIONS
STUDENTS

JOIN | BENEFITS


ALREADY A MEMBER? SIGN IN

A STANDARDS-BASED MODEL PROGRAM



LEARN MORE | STEM CENTER

SUPPORTING EDUCATORS



ADD/BROWSE
AT-HOME
RESOURCES

LEARN MORE

Click on STEM BY STATE

[Activities](#)[News](#)[Marketplace](#)[Publications](#)[Resources](#)[Community](#)[STEM Center™](#)[About](#)[Global STEM](#)[Global STEM](#)[STEM by State](#)[International STEM Centers](#)

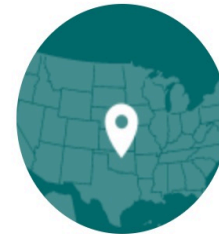
Global STEM

The ***International Technology and Engineering Educators Association (ITEEA)*** is the professional organization for technology, innovation, design, and engineering educators. Our mission is to promote technological and engineering literacy for all by supporting the teaching of technology and engineering and promoting the professionalism of those engaged in these pursuits. ITEEA strengthens the profession through leadership, professional development, membership services, publications, and classroom activities. [See a Brief History of ITEEA](#)

INTERNATIONAL CENTERS

[SEARCH](#)

STEM BY STATE



Click on VA on the map



The screenshot shows a web browser window with the URL www.iteea.org/Community/37348.aspx. The page features the ITEEA logo and navigation links: Activities, News, Publications, Resources, Community (selected), and STEM Center. Below the navigation bar, there are tabs for Home, Community, and My State. The main content area is titled "STEM by State" and includes a paragraph explaining that ITEEA offers a State-by-State view of calendar events and other resources. A map of the United States is displayed, with Virginia highlighted by a red oval. To the right of the map, there are two promotional sections: "A STANDARDS-BASED MODEL PROGRAM" with a blue circular logo and a "LEARN MORE | STEM CENTER" link, and "UPCOMING A CONFERENCE" with a red circular logo indicating the dates "MARCH 2-4 2016" and location "WASHINGTON, DC", with a "LEARN MORE | REGISTER" link.

ITEEA - STEM by State

www.iteea.org/Community/37348.aspx

ITEEA

Activities News Publications Resources **Community** STEM Center

ENGINEERING BY DESIGN


Home Community My State

STEM by State

ITEEA offers a State-by-State view of calendar events and other resources. Click on your State Supervisor, Affiliate Representative, State Association, and more. EbD Consortium States will also see curriculum resources developed and provided exclusively for them.



A STANDARDS-BASED MODEL PROGRAM



LEARN MORE | STEM CENTER

UPCOMING A CONFERENCE



MARCH
2-4 2016
WASHINGTON, DC

LEARN MORE | REGISTER

Click on Request Access Button

Engineering byDesign™ Central

Virginia
STATE

VA, United States

Profile VA State Resources 3 Contacts 4

Latest Updates

There are no items available to display.

About

Engineering byDesign™ (EbD™) is available in Virginia through the Center for Technology Education, a grant-funded project of the Virginia Department of Education. The Center supports career and technical education programs by providing resources for curriculum development and program design and implementation in response to the Carl D. Perkins Career and Technical Education Act. Access to the Standard Edition (SE in PDFs) of EbD™ curriculum is available at no cost to individuals who meet one or more of the following criteria: 1) Virginia teacher, 2) University and college departments that are a VA-EbD™ partner. Access to the Media Rich Edition (MRE) and online assessments through EbD™ is limited to schools that complete a Network School Agreement and pay an annual fee. For more information, please contact Kevin Reilly, VA-EbD™ State Consortium Director at kreilly@cteresource.org or (804) 673-3778.

How to Access Engineering byDesign™ In Virginia

Main Contacts

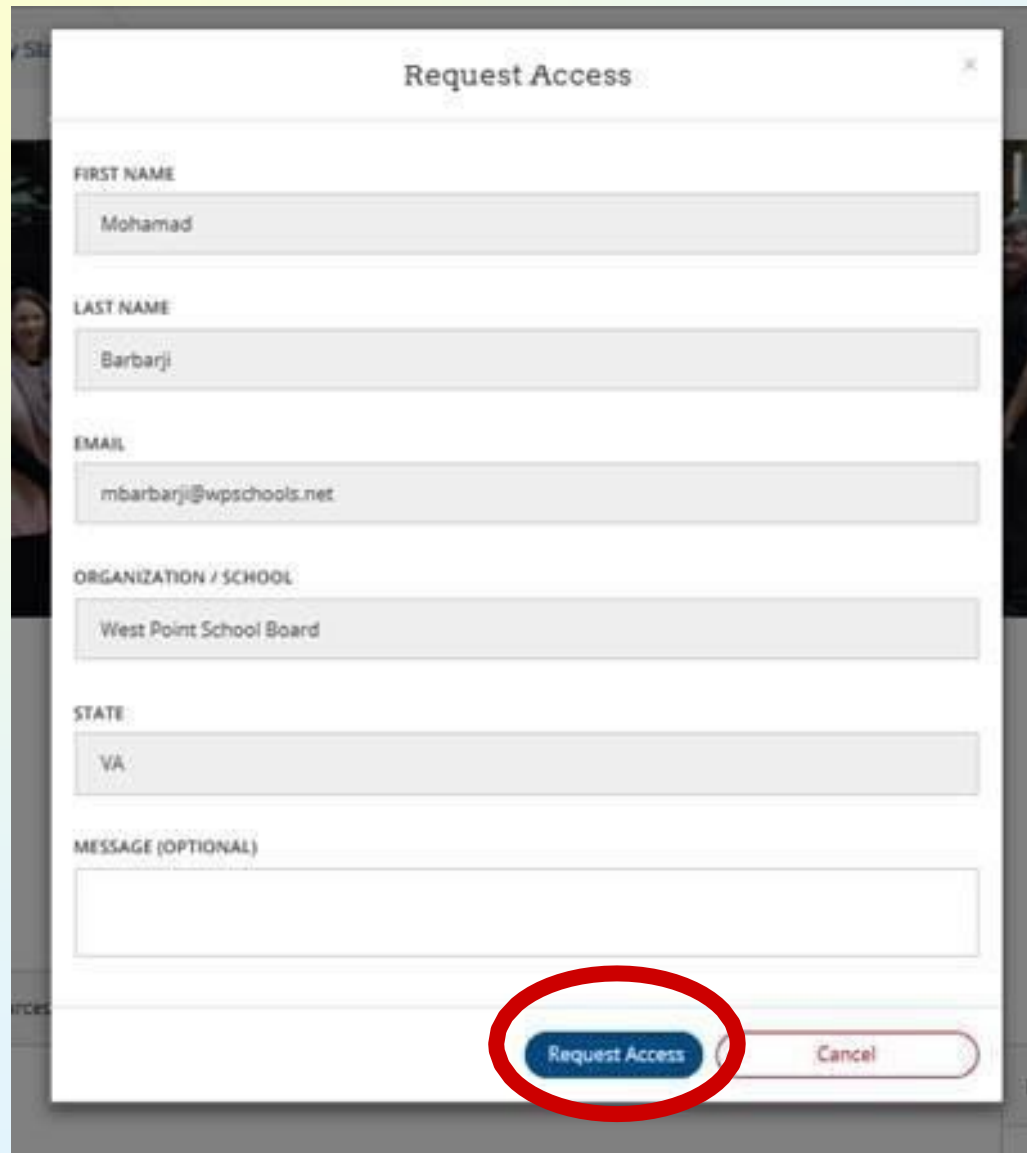
Kevin Reilly
EBD STATE CONSORTIUM DIRECTOR

Glenda Lewis
TECHNOLOGY SUPPORT SPECIALIST,
CTE RESOURCE CENTER

Lynn Basham
STATE/PROVINCE SUPERVISOR US
STATES

Mohamed Barbarji
AFFILIATE REPRESENTATIVE
CTE DEPARTMENT CHAIR

Complete the Form and Submit



A screenshot of a web form titled "Request Access" with a close button in the top right corner. The form contains several input fields: "FIRST NAME" with the value "Mohamad", "LAST NAME" with "Barbarji", "EMAIL" with "mbarbarji@wpschools.net", "ORGANIZATION / SCHOOL" with "West Point School Board", and "STATE" with "VA". There is an empty "MESSAGE (OPTIONAL)" field. At the bottom, there are two buttons: "Request Access" (highlighted with a red circle) and "Cancel".

Request Access

FIRST NAME
Mohamad

LAST NAME
Barbarji

EMAIL
mbarbarji@wpschools.net

ORGANIZATION / SCHOOL
West Point School Board

STATE
VA

MESSAGE (OPTIONAL)

Request Access Cancel

The EbD State Director receives notification



The EbD Director will then log into the state page and grant access by clicking on the Manage Access tab and checking the box next to the teacher's name. Only the person who has been designated to manage access for each state can see this tab. When access has been granted, the teacher will receive notification by email.

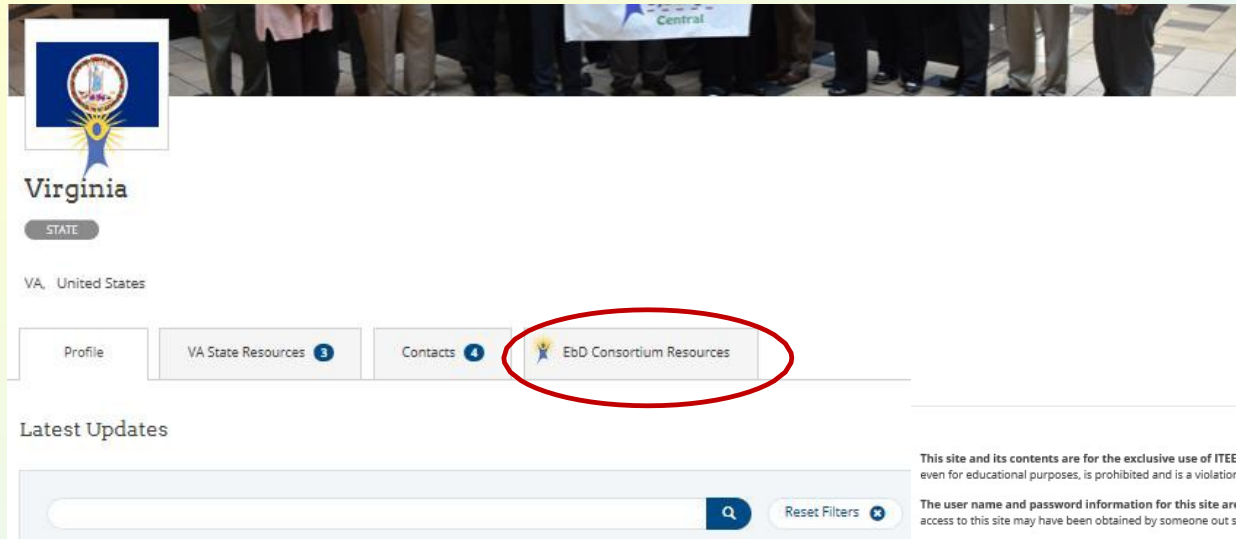
Reply Email from Access Request

Your request for access to the EbD resources on the (STATE) Consortium [page has been granted by your EbD Consortium Director. Go to the ITEEA website and login. Click the STEM by STATEmap and click on your state.](#) You will now see the “EbD Resources” tab. Click the tab to see your state’s EbD courses. If you do not see this tab, log out, refresh your browser, and log back in so the system will recognize your new status. The files you see here are either ZIP files or PDF. You must “extract all” files in the Zip files. Click the START HERE file in the root folder to begin.

Email ITEEA at iteea@iteea.org with questions.

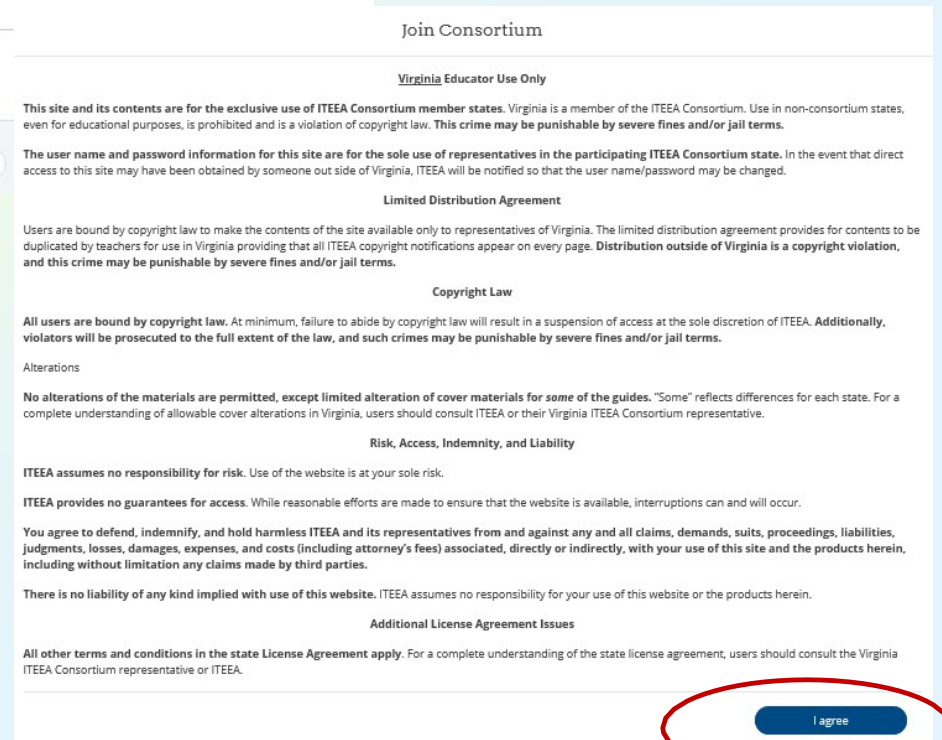
Log back into the ITEEA website (you should log out and refresh your browser so the system will recognize your new status). Go to the VA page. You should now see the EbD Resources tab which contains the EbD courses to which you have access.

Downloading a Course



Click I Agree on the user agreement screen.

Click the EbD Consortium Resources tab.



Downloading a Course

Virginia
STATE

VA, United States

Profile VA State Resources 1 Contacts 1 EbD Consortium Resources 1

Search Reset Filters

Consortium years

SORT BY DATE NAME

Displaying 1 - 3 of 3 Records per Page 10

Invention and Innovation, A Standards-Based Middle School Model Course Guide, v4 (2014)

More Info

Standard Edition
RELEASE DATE 01/01/2015

Click the course title.

Invention and Innovation, A Standards-Based Middle School Model Course Guide, v4 (2014)

More Info

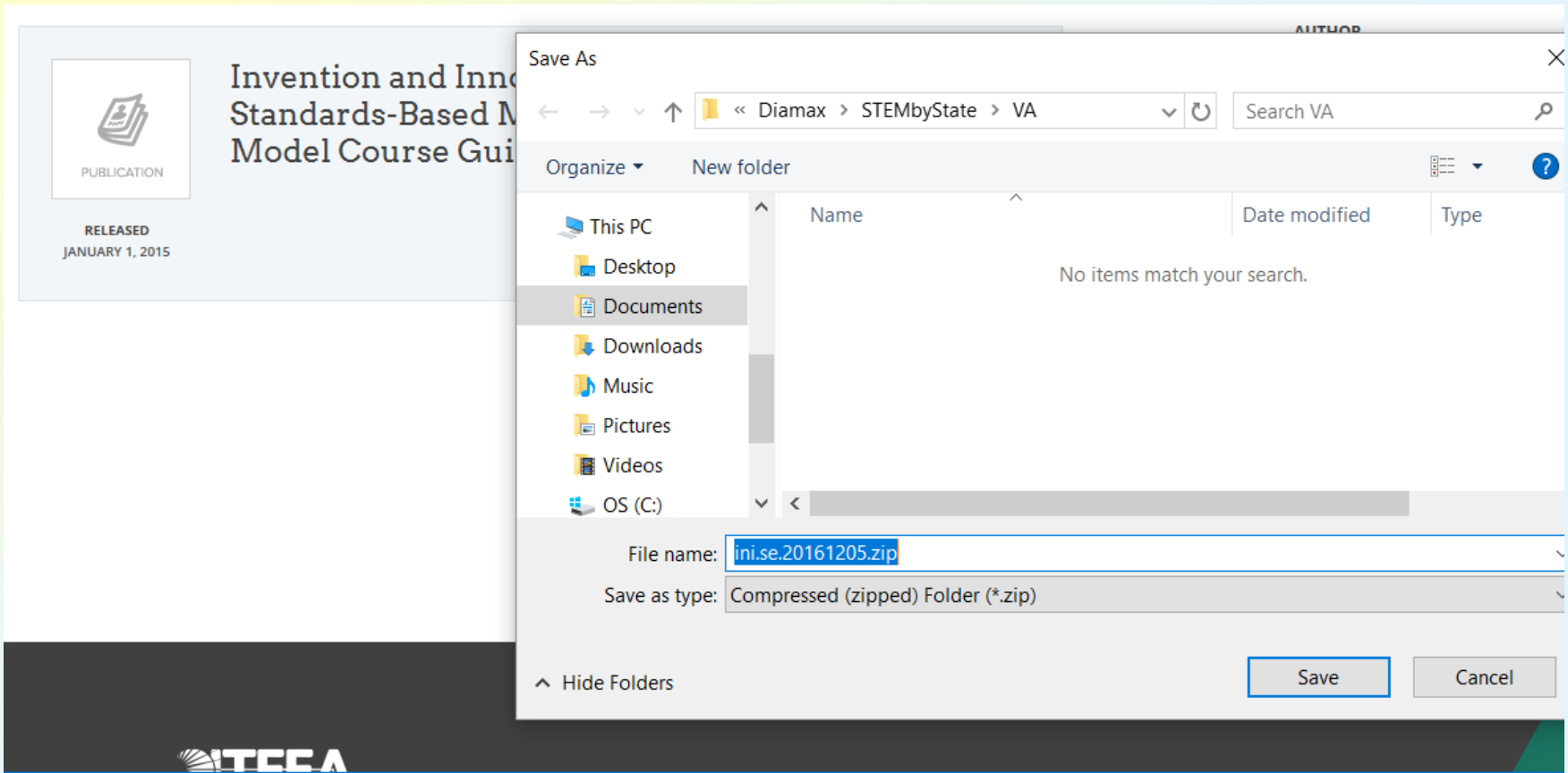
Standard Edition

RELEASED
JANUARY 1, 2015

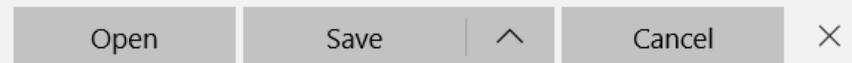
Download

Click the download button.

Downloading a Course

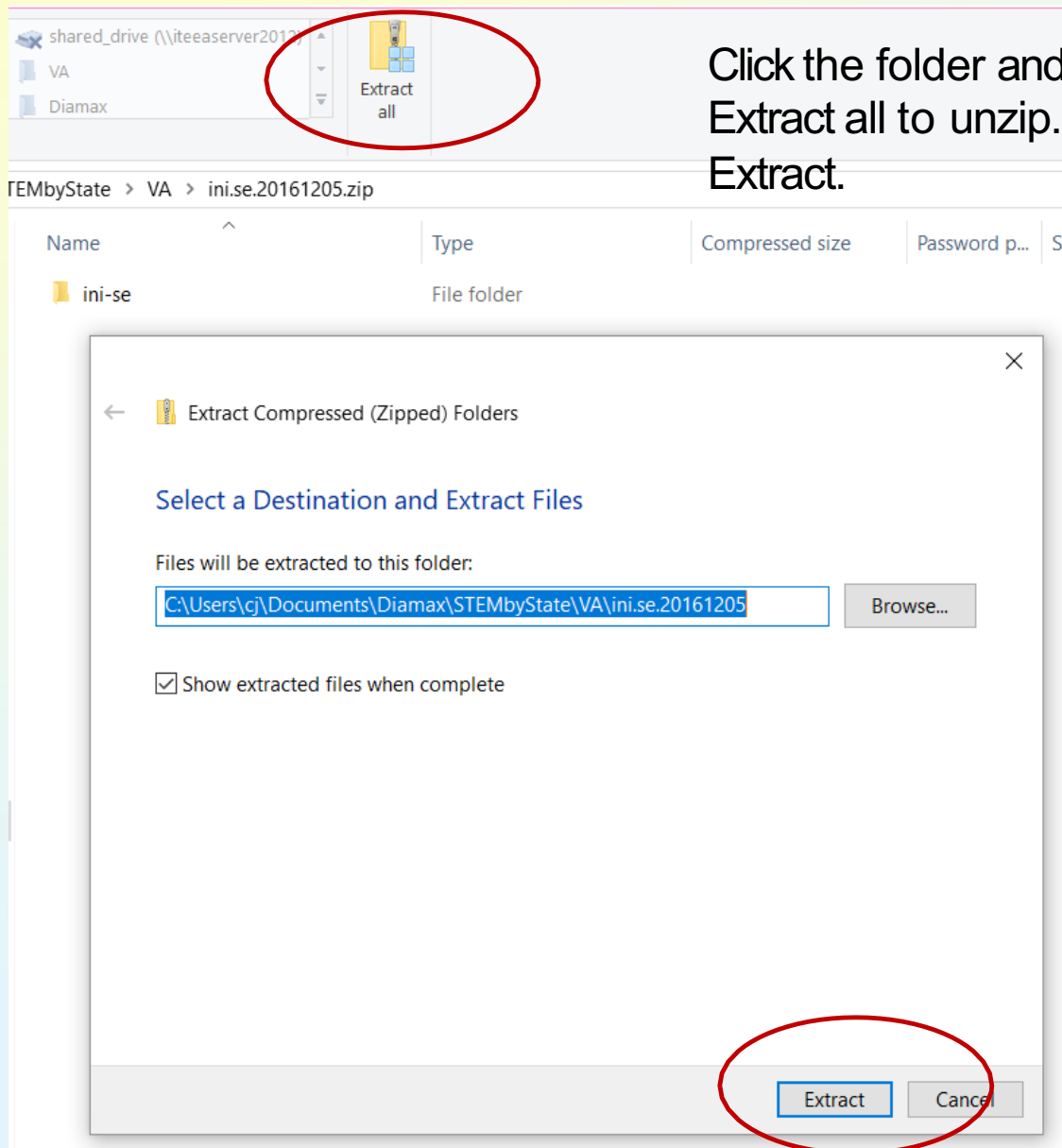


What do you want to do with ini.se.20161205.zip (40.5 MB)?
From: iteea.org



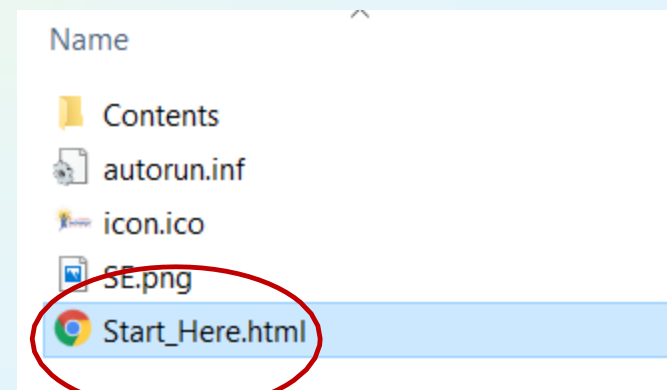
Download the ZIP file and save as to the appropriate folder on your computer.

Unzipping Your File



Click the folder and then click Extract all to unzip. Click Extract.

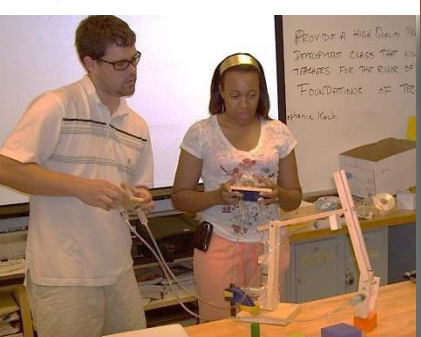
Click the Start_Here.html to open the course.



UPGRADE YOUR SCHOOL'S ACCESS TO EbD!

Become an EbD™ Network School

- ✓ Online access to the Media Rich edition (MRe) of the curriculum delivered through a state-of-the-art platform –EbD Buzz™
- ✓ Online Pre/Post assessments to measure student learning and a dashboard to access real-time data
- ✓ Summative achievement and growth reports – useful for identifying “teacher effectiveness” and SOL data
- ✓ Lead teachers in VA receive “train-the-trainer” professional development at the annual VA-EbD Institute
- ✓ Exclusive online professional learning community
- ✓ Additional PD offerings are available from ITEEA throughout the summer and at the ITEEA conference
- ✓ VA-EbD Network Schools are also provided with an ITEEA STEM School membership!





FOR MORE INFORMATION:

Kevin Reilly
Administrative Coordinator
CTE Resource Center
kreilly@cteresource.org

