



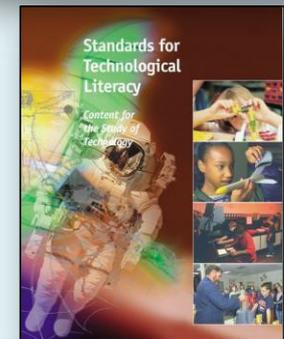
# HOW TO ACCESS Engineering byDesign™ In Virginia

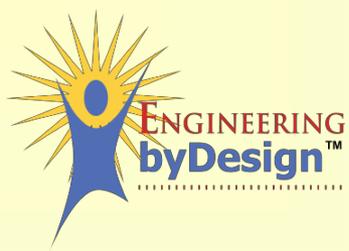




# What Is Engineering byDesign™ ?

- **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

<b>CORE PROGRAM</b>	PreK-2		<b>EbD-TEEMS NXTGEN™</b>		1-6 weeks
	3-6		<b>EbD-TEEMS NXTGEN™</b> (6th Grade Capstone), I <sup>3</sup>	 	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	<b>HS Choices</b>	<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>	 

# 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"><li>• 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).</li><li>• 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).</li></ul>	<ul style="list-style-type: none"><li>• Draw geometric objects with specified properties, such as side lengths or angle measures. (11-R)</li><li>• Recognize and apply geometric ideas and relationships in areas outside the mathematics classroom, such as art, science and everyday life. (11-V)</li><li>• Understand relationships among units and convert from one unit to another within the same system (12-K)</li><li>• Understand, select, and use units of appropriate size and type to measure angles, perimeter, area, surface area, and volume. (12-L)</li><li>• Solve problems involving scale factors, using ratio and proportion (13-R)</li><li>• Solve simple problems involving rates and derived measurements for such attributes as velocity and density (13-S)</li></ul>

**ITEA - Benchmarks for Technological Literacy**

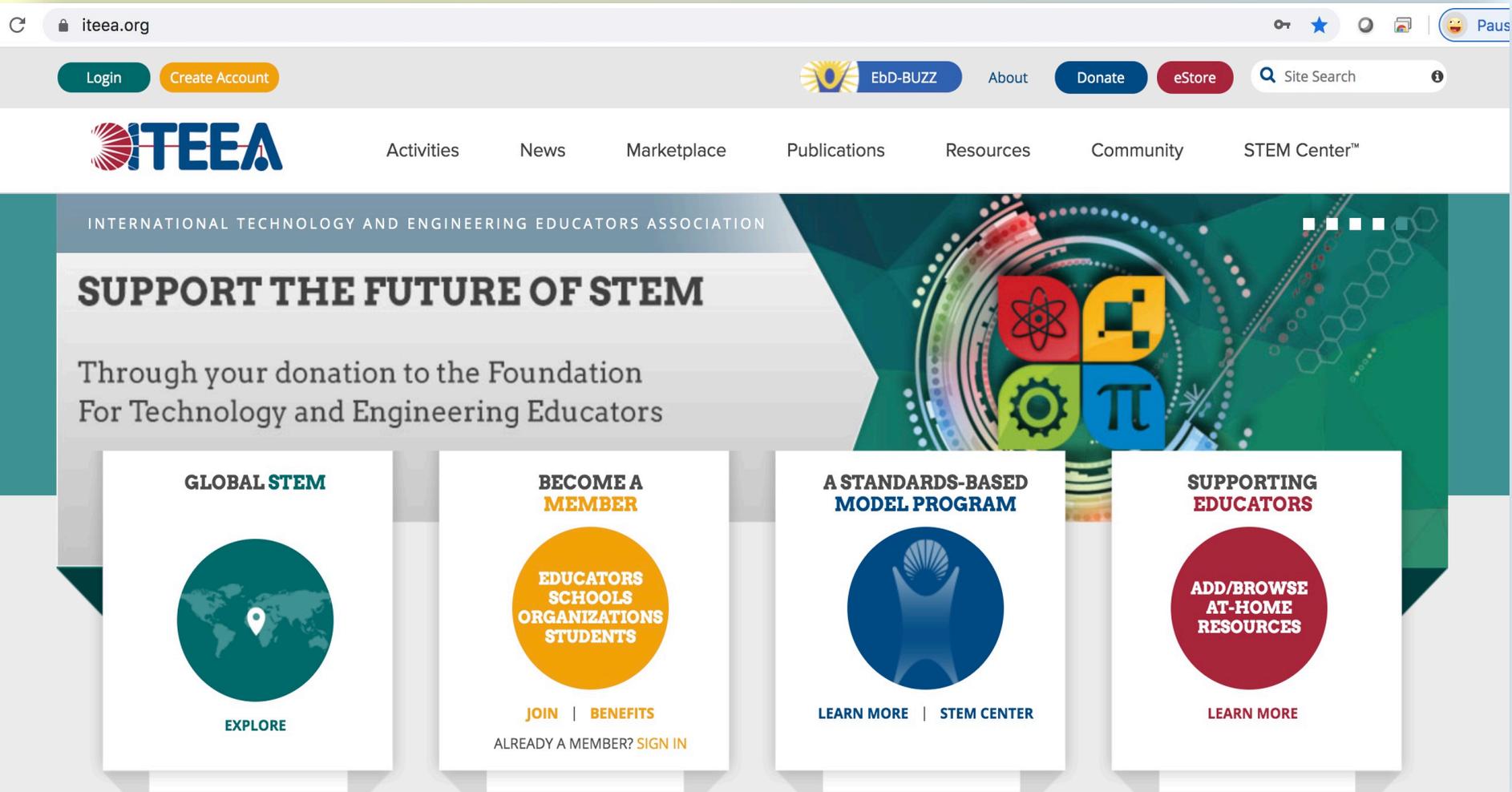
- Expressing ideas to others verbally and through sketches and models is an important part of the design process. (9.R)

**1**  
Unit 2  
Design and  
Engineering

[New Page](#)

[Table of Contents](#)

# Go to the [www.iteea.org](http://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 navigation bar includes "Login" and "Create Account" buttons, a "EbD-BUZZ" logo, "About", "Donate", and "eStore" buttons, and a "Site Search" input field. The main header features the ITEEA logo and a menu with "Activities", "News", "Marketplace", "Publications", "Resources", "Community", and "STEM Center™". The main content area has a teal background with the text "INTERNATIONAL TECHNOLOGY AND ENGINEERING EDUCATORS ASSOCIATION" and "SUPPORT THE FUTURE OF STEM". Below this, it says "Through your donation to the Foundation For Technology and Engineering Educators". There are four white callout boxes with icons and text: "GLOBAL STEM" with a globe icon and "EXPLORE" link; "BECOME A MEMBER" with a yellow circle icon containing "EDUCATORS SCHOOLS ORGANIZATIONS STUDENTS" and "JOIN | BENEFITS" link, plus "ALREADY A MEMBER? SIGN IN" text; "A STANDARDS-BASED MODEL PROGRAM" with a blue icon of a person holding a torch and "LEARN MORE | STEM CENTER" link; and "SUPPORTING EDUCATORS" with a red circle icon containing "ADD/BROWSE AT-HOME RESOURCES" and "LEARN MORE" link.

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 For Technology and Engineering Educators

**GLOBAL STEM**



**EXPLORE**

**BECOME A MEMBER**

**EDUCATORS SCHOOLS ORGANIZATIONS STUDENTS**

**JOIN | BENEFITS**

ALREADY A MEMBER? **SIGN IN**

**A STANDARDS-BASED MODEL PROGRAM**



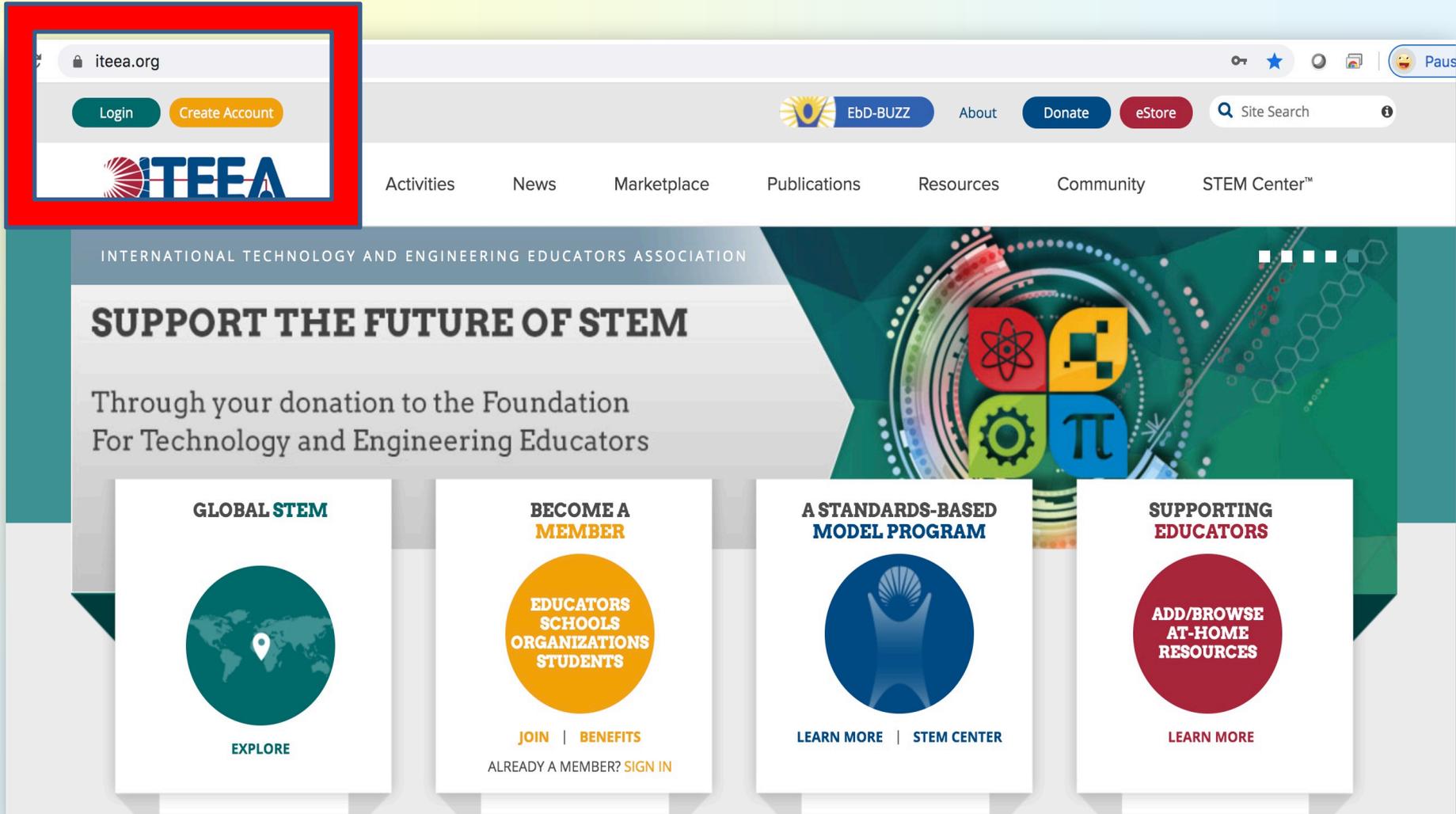
**LEARN MORE | STEM CENTER**

**SUPPORTING EDUCATORS**

**ADD/BROWSE AT-HOME RESOURCES**

**LEARN MORE**

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



The image shows a screenshot of the ITEEA website homepage. A red rectangular box highlights the top-left corner, which contains the browser's address bar with the URL 'iteea.org' and two buttons: 'Login' (in a dark teal circle) and 'Create Account' (in an orange circle). Below the address bar is the ITEEA logo, which consists of a stylized sunburst icon followed by the letters 'ITEEA' in a bold, blue, sans-serif font.

The main navigation bar is white and contains the following links: 'Activities', 'News', 'Marketplace', 'Publications', 'Resources', 'Community', and 'STEM Center™'. To the right of these links are a search bar labeled 'Site Search', a 'Donate' button, and an 'eStore' button. Above the search bar is a 'Paus' button with a speech bubble icon.

The main content area has a dark teal background with a large graphic of a gear and a pi symbol. The text reads: 'INTERNATIONAL TECHNOLOGY AND ENGINEERING EDUCATORS ASSOCIATION' and 'SUPPORT THE FUTURE OF STEM'. Below this is a sub-headline: 'Through your donation to the Foundation For Technology and Engineering Educators'.

There are four white callout boxes with rounded corners and drop shadows:

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

# Click on GLOBAL STEM

The image shows a screenshot of the ITEEA website homepage. At the top, the browser address bar shows 'iteea.org'. The navigation bar includes 'Login', 'Create Account', 'EbD-BUZZ', 'About', 'Donate', 'eStore', and a 'Site Search' field. The main header features the ITEEA logo and a menu with 'Activities', 'News', 'Marketplace', 'Publications', 'Resources', 'Community', and 'STEM Center™'. Below the header, a banner reads 'INTERNATIONAL TECHNOLOGY AND ENGINEERING EDUCATORS ASSOCIATION' and 'SUPPORT THE FUTURE OF STEM'. A sub-header says 'Through your donation to the Foundation for Engineering Educators'. The main content area has four white cards with rounded corners and shadows. The first card, 'GLOBAL STEM', is highlighted with a red border and contains a teal globe icon with a location pin and the text 'EXPLORE'. The second card, 'BECOME A MEMBER', has a yellow circle icon with 'EDUCATORS SCHOOLS ORGANIZATIONS STUDENTS' and 'JOIN | BENEFITS' text, with a link 'ALREADY A MEMBER? SIGN IN'. The third card, 'A STANDARDS-BASED MODEL PROGRAM', has a blue circle icon with a hand holding a fan and 'LEARN MORE | STEM CENTER' text. The fourth card, 'SUPPORTING EDUCATORS', has a red circle icon with 'ADD/BROWSE AT-HOME RESOURCES' and 'LEARN MORE' text. The background of the lower section is a green and blue graphic with STEM symbols like an atom, a square, a gear, and pi.

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 for 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

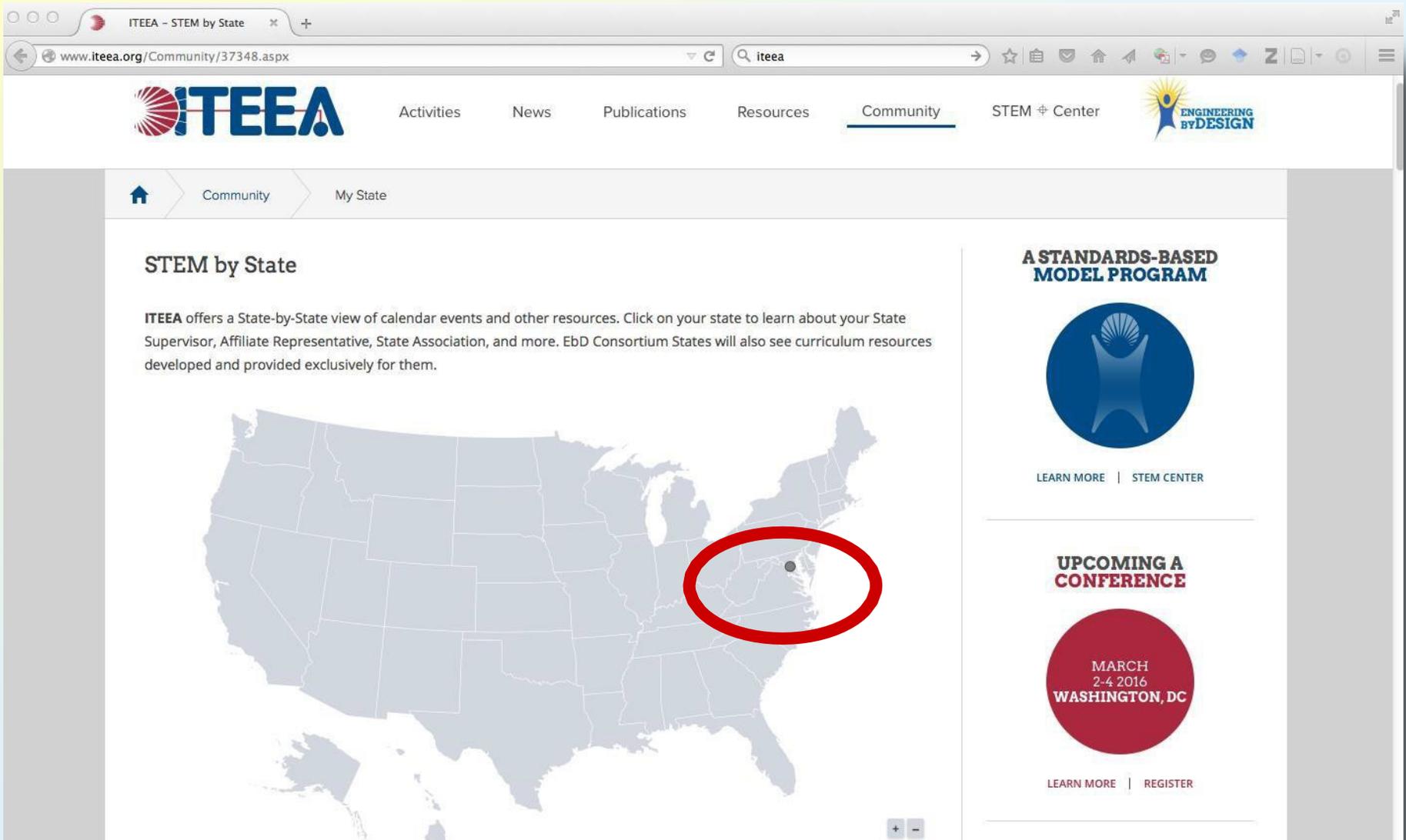


SEARCH

### 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](http://www.iteea.org/Community/37348.aspx). The page features the ITEEA logo and navigation links for Activities, News, Publications, Resources, Community, and STEM Center. The main content area is titled "STEM by State" and includes a map of the United States. A red oval highlights the state of Virginia on the map, with a small black dot indicating a specific location within the state. To the right of the map, there are two promotional sections: "A STANDARDS-BASED MODEL PROGRAM" with a blue circular icon and "UPCOMING A CONFERENCE" with a red circular icon. The conference details are: MARCH 2-4 2016 WASHINGTON, DC.

**STEM by State**

ITEEA offers a State-by-State view of calendar events and other resources. Click on your state to learn about 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**

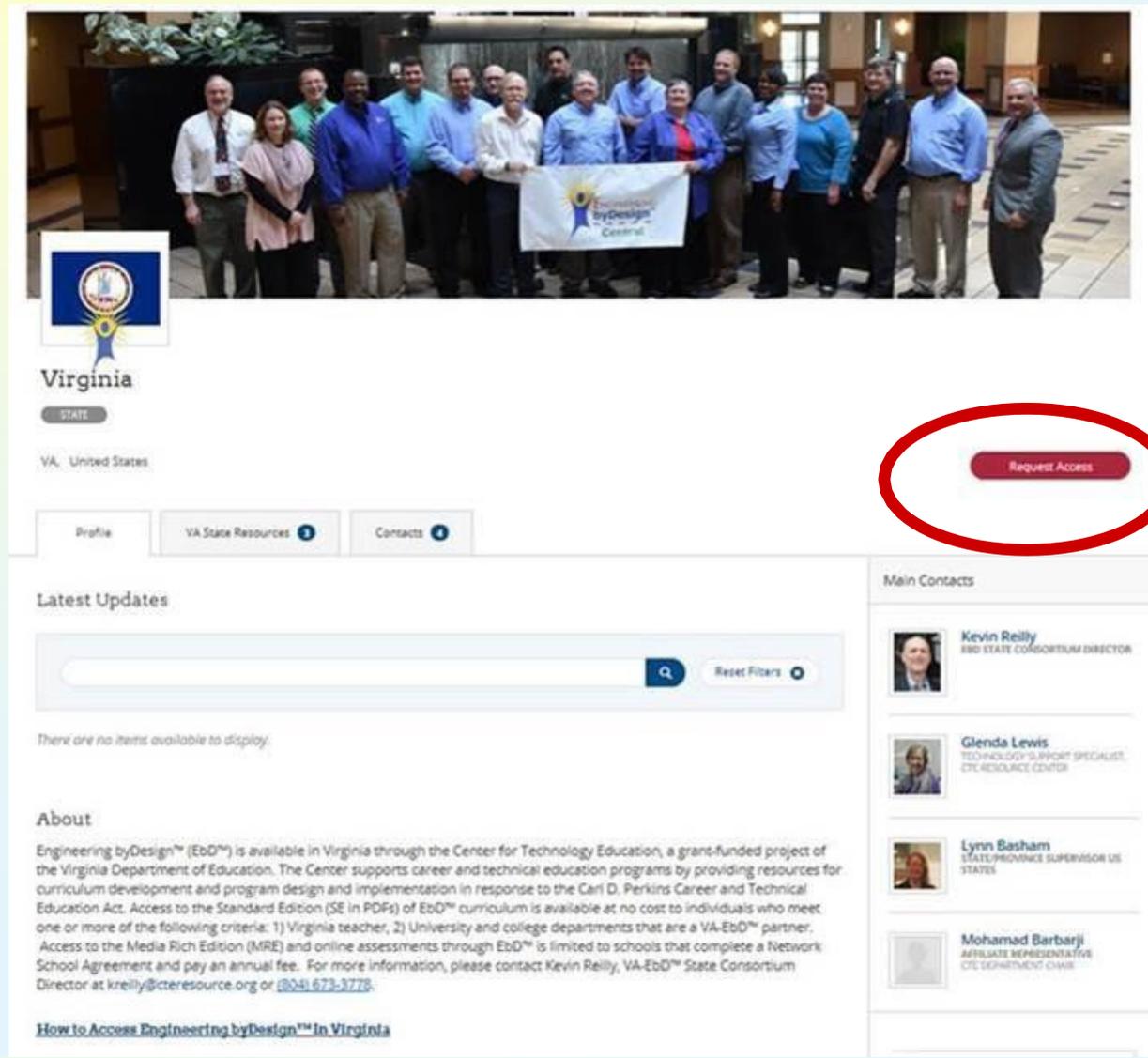
LEARN MORE | STEM CENTER

**UPCOMING A CONFERENCE**

MARCH  
2-4 2016  
WASHINGTON, DC

LEARN MORE | REGISTER

# Click on Request Access Button



The screenshot shows the Virginia Engineering byDesign™ website. At the top is a large group photo of staff members holding a banner that reads "Engineering byDesign™ Central". Below the photo is the Virginia logo and the text "Virginia STATE". The location is listed as "VA, United States". A navigation bar includes "Profile", "VA State Resources 3", and "Contacts 4". A red circle highlights the "Request Access" button in the top right corner. The "Latest Updates" section is empty, displaying "There are no items available to display." The "About" section describes the program's availability in Virginia through the Center for Technology Education, supported by the Virginia Department of Education. It lists access criteria: 1) Virginia teacher, 2) University and college departments that are a VA-EbD™ partner. It also mentions access to the Media Rich Edition (MRE) and online assessments through EbD™, limited to schools that complete a Network School Agreement. For more information, it provides contact details for Kevin Reilly, VA-EbD™ State Consortium Director, at kreilly@cteresource.org or (804) 673-3778. The "Main Contacts" section lists three individuals: Kevin Reilly (EBO STATE CONSORTIUM DIRECTOR), Glenda Lewis (TECHNOLOGY SUPPORT SPECIALIST, CTC RESOURCE CENTER), and Lynn Basham (STATE/PROVINCE SUPERVISOR US STATES). A fourth contact, Mohamed Barbarji (AFFILIATE REPRESENTATIVE, CTC DEPARTMENT CHAIR), is partially visible at the bottom.

Virginia  
STATE

VA, United States

Profile VA State Resources 3 Contacts 4

Request Access

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](mailto:kreilly@cteresource.org) or [\(804\) 673-3778](tel:8046733778).

[How to Access Engineering byDesign™ In Virginia](#)

Main Contacts

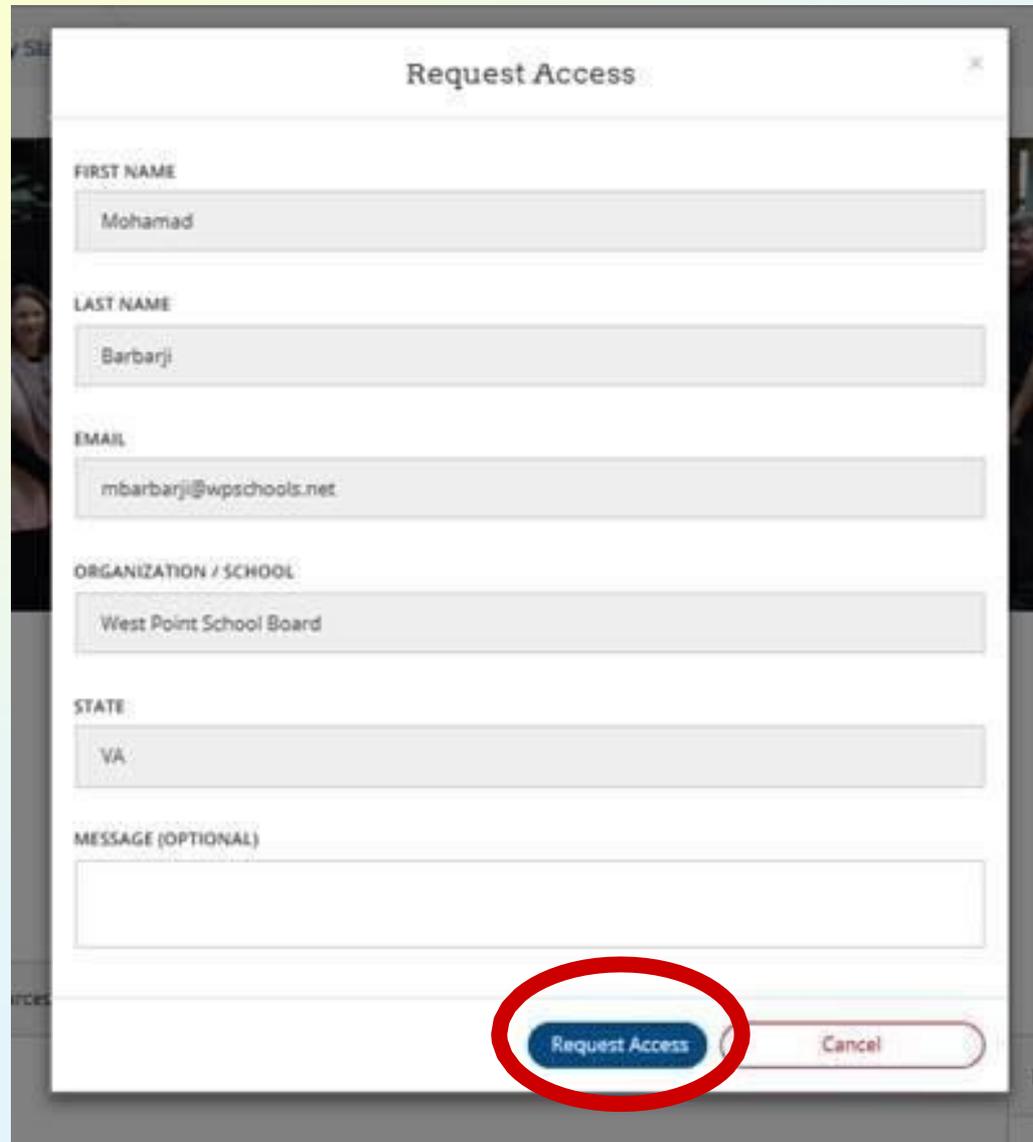
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CTC RESOURCE CENTER

Lynn Basham  
STATE/PROVINCE SUPERVISOR US  
STATES

Mohamed Barbarji  
AFFILIATE REPRESENTATIVE  
CTC DEPARTMENT CHAIR

# Complete the Form and Submit



The image shows a 'Request Access' form with the following fields and values:

- FIRST NAME:** Mohamad
- LAST NAME:** Barbarji
- EMAIL:** mbarbarji@wpschools.net
- ORGANIZATION / SCHOOL:** West Point School Board
- STATE:** VA
- MESSAGE (OPTIONAL):** (Empty text area)

At the bottom of the form, there are two buttons: 'Request Access' (highlighted with a red circle) and '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.

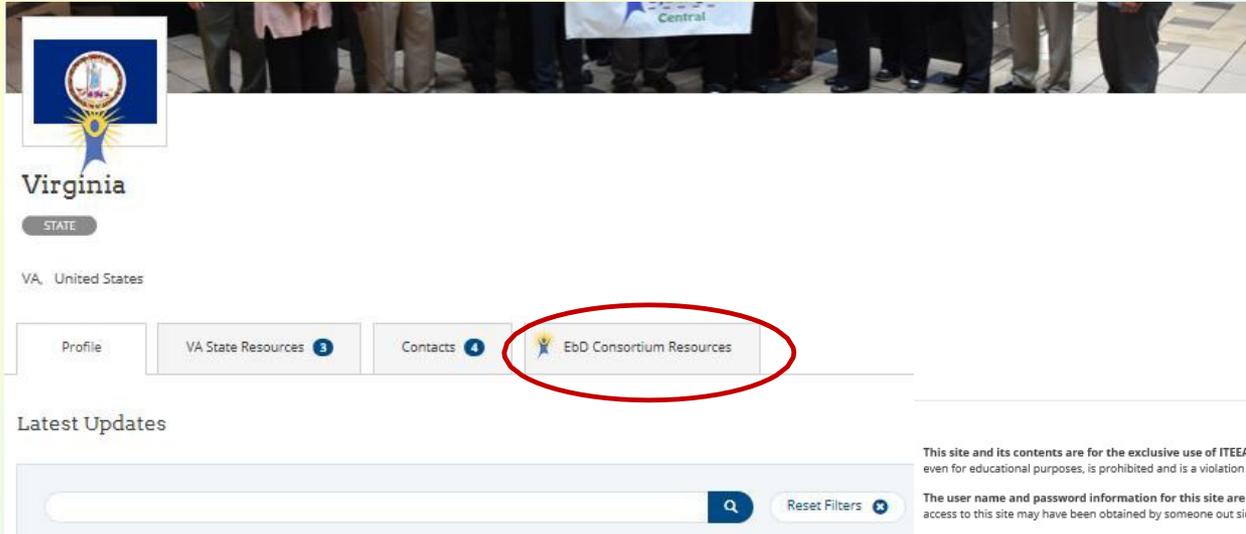
# Reply Email from Access Request

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](mailto: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 the EbD Consortium Resources tab.

Latest Updates

Click I Agree on the user agreement screen.

Join Consortium

Virginia Educator Use Only

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**The user name and password information for this site are for the sole use of representatives in the participating ITEEA Consortium state.** In the event that direct access to this site may have been obtained by someone out side of Virginia, ITEEA will be notified so that the user name/password may be changed.

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**All other terms and conditions in the state License Agreement apply.** For a complete understanding of the state license agreement, users should consult the Virginia ITEEA Consortium representative or ITEEA.

I agree

# Downloading a Course

Virginia  
STATE

VA, United States

Profile VA State Resources 3 Contacts 4 EbD Consortium Resources 3

Search [magnifying glass icon] Reset Filters [x icon]

Consortium years [dropdown arrow icon]

SORT BY DATE [dropdown arrow icon] NAME [dropdown arrow icon]

Displaying 1 - 3 of 3 Records per Page 10 [dropdown arrow icon]

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

PUBLICATION More Info

**Standard Edition**

RELEASE DATE 01/01/2015

Click the course title.

PUBLICATION

**EbD-TEEI**  
More Info

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

**Standard Edition**

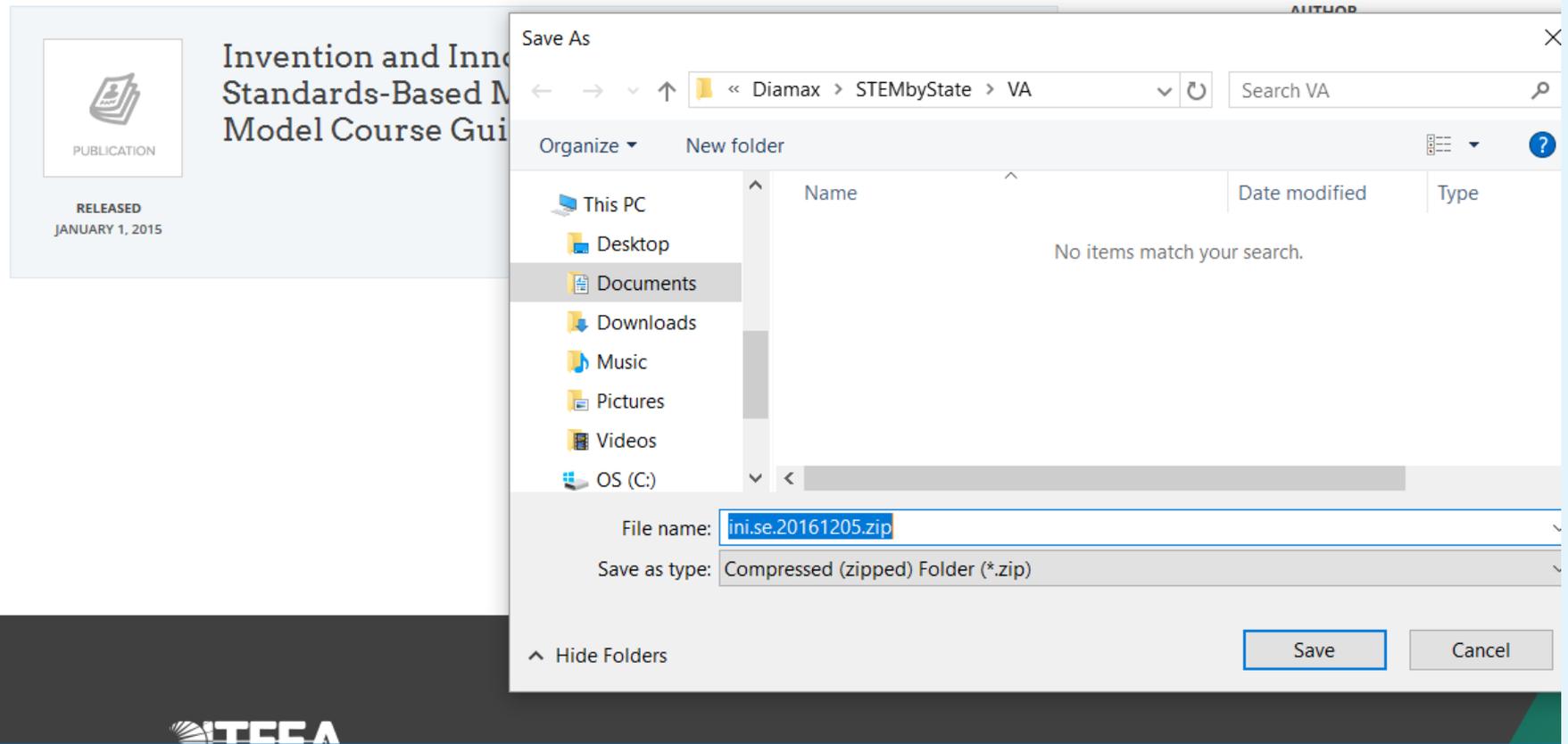
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JANUARY 1, 2015

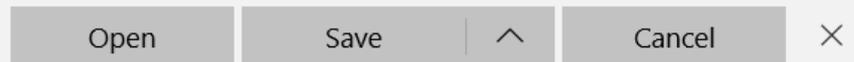
**Advanced**

Click the download button.

# Downloading a Course

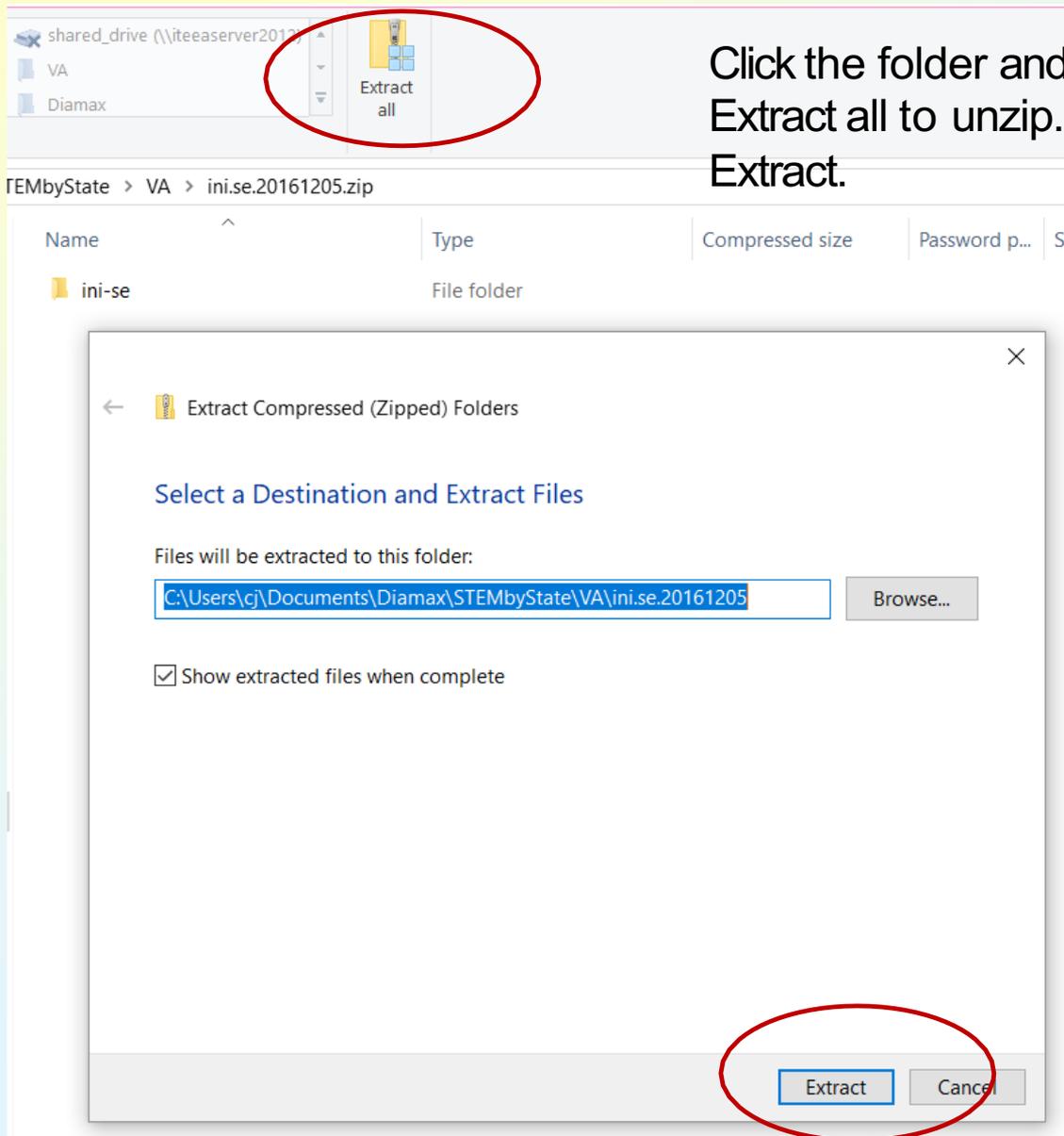


What do you want to do with ini.se.20161205.zip (40.5 MB)?  
From: iteea.org



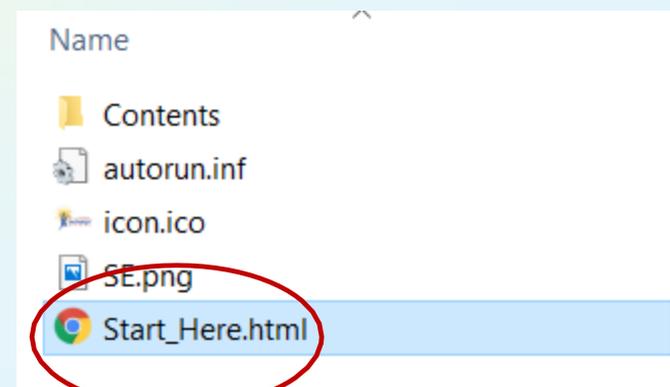
Download the ZIP file and save as to the appropriate folder on your computer.

# Unzipping Your File



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

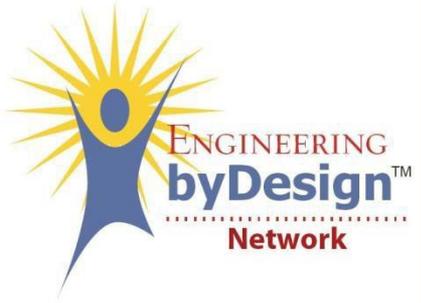
Click the Start\_Here.html to open the course.



# 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](mailto:kreilly@cteresource.org)

