Defining and Finding Open Educational Resources (OER)

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Overview

- What is “open” - why you should care?
- Categories of “open”
- Focusing on Open Educational Resources (OER)
- Ownership considerations
- MERLOT – the OER Gateway

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why OPEN EDUCATION matters

Enables instructors and researchers to reuse, recycle, and/or build upon other people's work, materials, expertise

Provides students with a potential infinity of high quality learning resources

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Categories of Open

1. Open Source (OS)
2. Open Access (OA)
3. Open Source Hardware, Open Data, etc.
4. Open Educational Resources (OER)
   - Open Courseware (OCW)
   - Open Textbooks
   - (Open) Learning Objects

OS ≠ OA ≠ OER ≠ OSH ≠ OD (etc)

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Open Source

- Concerns software
  - Linux
  - Lucene
  - Moodle
  - Canvas (without support)
  - Instances of freeware
  - Spring Framework, Apache Web Server, Apache Tomcat, MySQL

… and so many more...

Open Access

- It's traditional print material
- Started with journal articles – usually peer reviewed
- Trend is to include online textbooks
- Readers can retrieve articles without financial or access barriers
- No fees, registration, or membership
- Proponents argue:
  - It's on the WWW, so it should be free!
  - Researchers contribute articles & review for free → their employers shouldn't have to pay to access the articles
  - Research funded by government agencies should be available for free

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FAQs

Basic information about open access (OA)

What is the difference between "free" content and "open access" content?

Free content usually consists of editorial matter such as tables of contents, covers, advertisements, etc. This content is available to all within IEEE *Xplore* and it is not supported by article processing fees.

OA content is technical in nature, peer reviewed, supported by article processing fees, and available to all.

What do the terms "green" and "gold" open access refer to?

"Green" open access refers to practice of depositing a version of an article in a repository. Usually, that article version will be freely accessible to the public. If (for example) an author posts the accepted version of his or her NIH-funded article to PubMed Central, that article is said to be available through green open access.

Open Educational Resources (OERs)

- "Open Educational Resources" – term first adopted at UNESCO 2002 Forum, funded by Hewlett Foundation, on Impact of Open Courseware for Higher Education in Developing Countries

- Digitized teaching and learning materials offered freely and openly for educators, students, and self-learners to i) use and re-use ii) without charge for teaching, learning, and research

- OER reside in the public domain iii) released with an intellectual property license that permits free use or re-purposing by others.

Open Educational Resources

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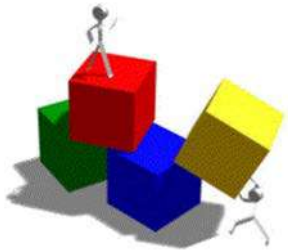
Some Kinds OERs

Online Courseware

Online Textbooks

Online Learning Objects



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Learning Objects

A new way of thinking about learning content. Traditionally, content comes in a several hour chunk. Learning objects can be much smaller units or building blocks for instruction and learning, typically ranging from 2-15 minutes to much longer.

They:

- Are self-contained – each learning object can be taken or used independently.
- Are tagged with "metadata" – every learning object has descriptive information allowing it to be easily found by a search.
- Can be aggregated – learning objects can be grouped into larger collections of content, including traditional course structures.
- Are reusable – a single learning object may be used in multiple contexts for multiple purposes.

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Learning Object Standards

- IEEE Learning Technology Standards Committee (LTSC) P1484
- Sharable Content Object Reference Model – SCORM
- Advanced Distributed Learning (ADL) Initiative
- IMS (Instructional Management System) Global Learning Consortium
- AICC: The Aviation Industry CBT (Computer-Based Training) Committee
- PROMETEUS: PROmoting Multimedia Access to Education and Training in EUropean Society
- The Dublin Core: Metadata for Electronic Resource

Everything You Ever Wanted to Know About Learning Standards But Were Afraid to Ask. –Hodgins & Conner
http://www.linezine.com/2.1/features/wheyewtkls.htm

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Learning Object Definitions*

- “Any entity, **digital** or non-digital, that may be **used** for learning, education or training” (IEEE)
- “Any **digital** resource that can be reused to support learning”(David Wiley)
- "A **digital** self-contained and reusable entity, with a clear educational purpose, with at least three internal and editable components: content, learning activities and elements of context. The learning objects must have an external structure of information to facilitate their identification, storage and retrieval: the metadata” (Chiappe, et al)
- “Web-based interactive chunks of e-learning designed to explain a stand-alone learning objective” (RLO-CETL)
- “A **digitized** entity which can be used, reused or referenced during technology supported learning” (Daniel & Mason)

*Wikipedia

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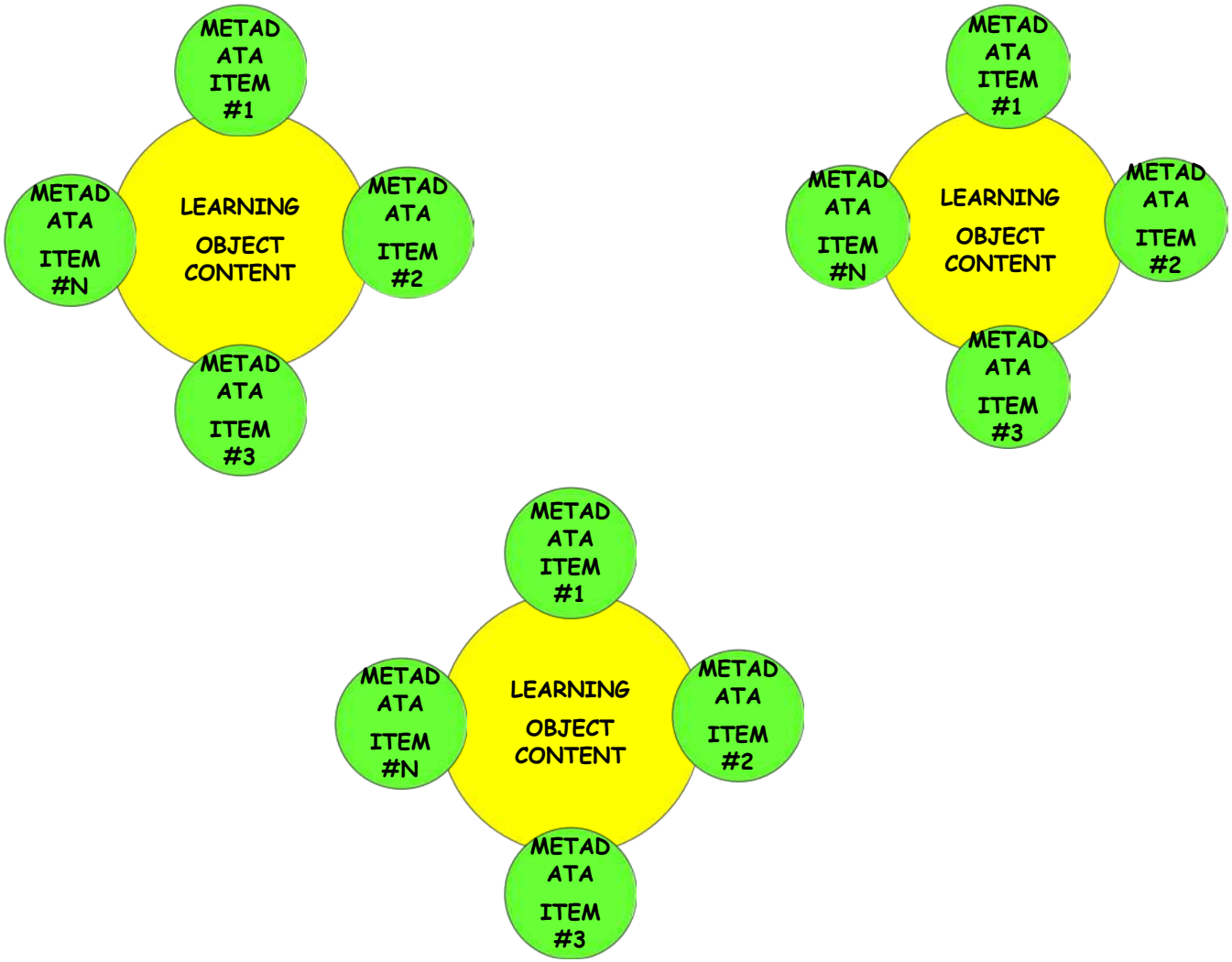
Individual Learning Objects



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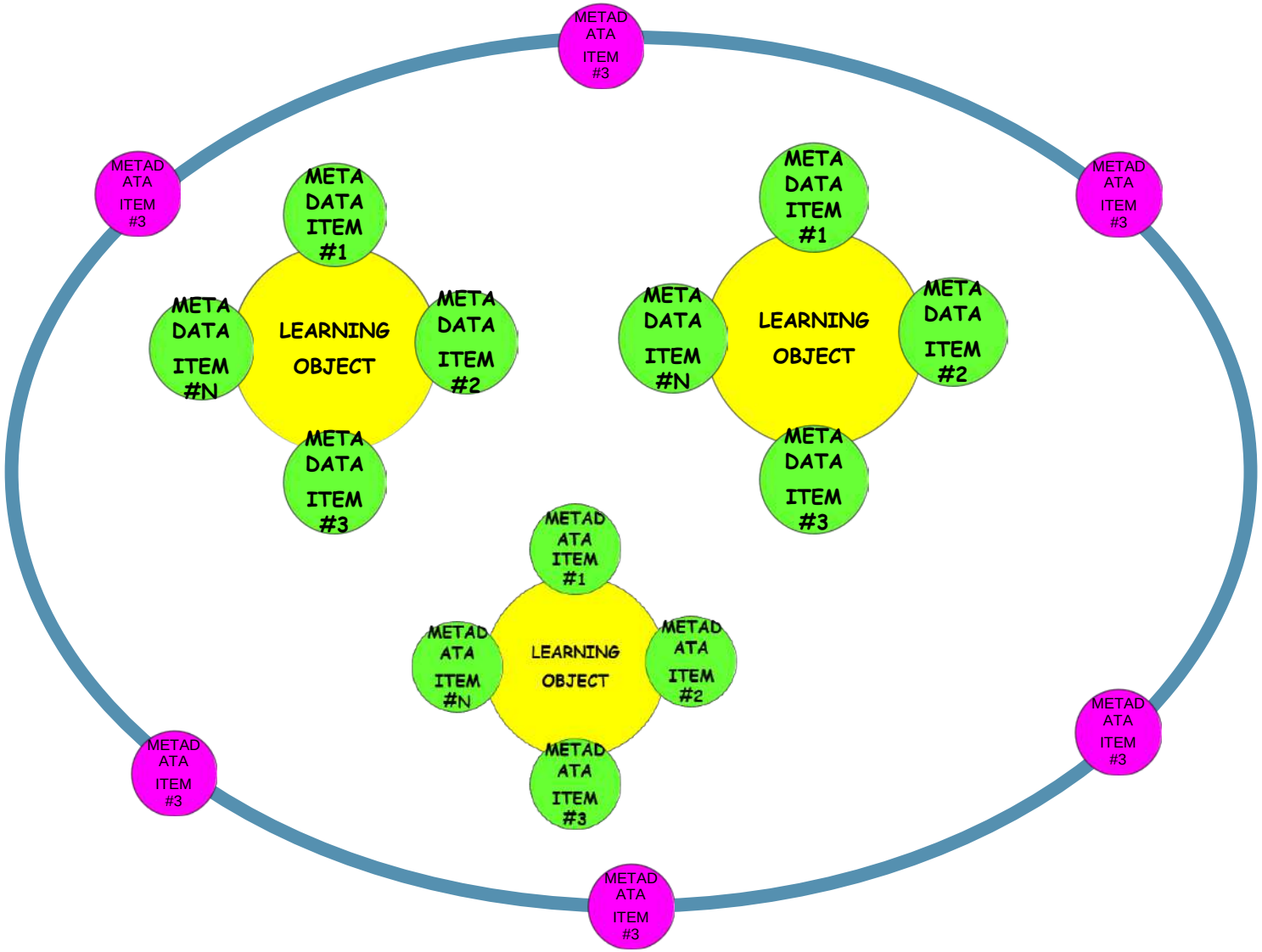
Individual Learning Objects Aggregated to Form New Learning Object



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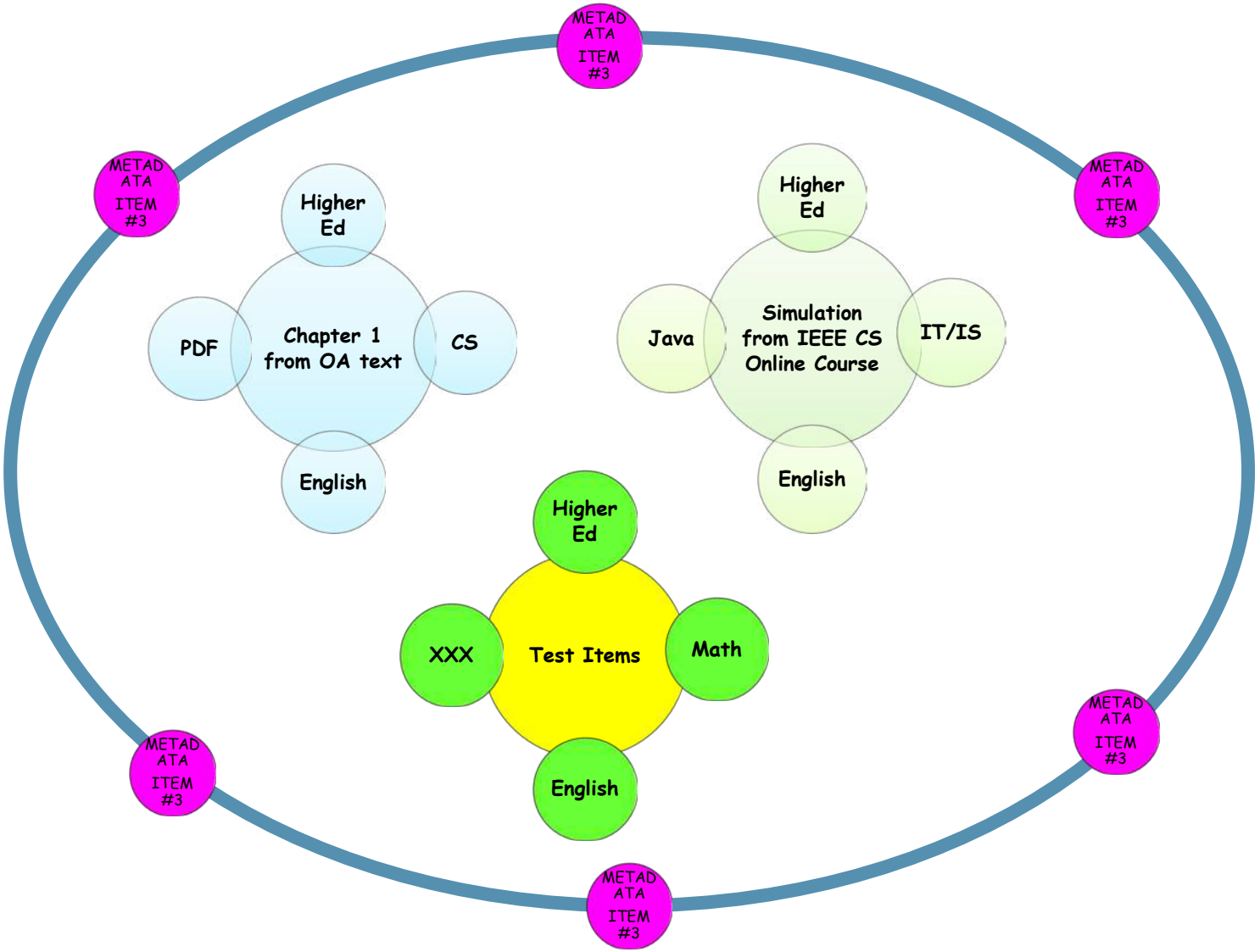
Individual Learning Objects Aggregated to Form New Learning Object Module



Learning Object “Rights”

- Who owns “open” (OER) learning materials?
- What are the rights of the developer?
- What rights does an instructor have to use, to copy, to change a “discovered” learning material?
- Do these rights vary internationally?

How do you know any of this if you find a material on the WWW?

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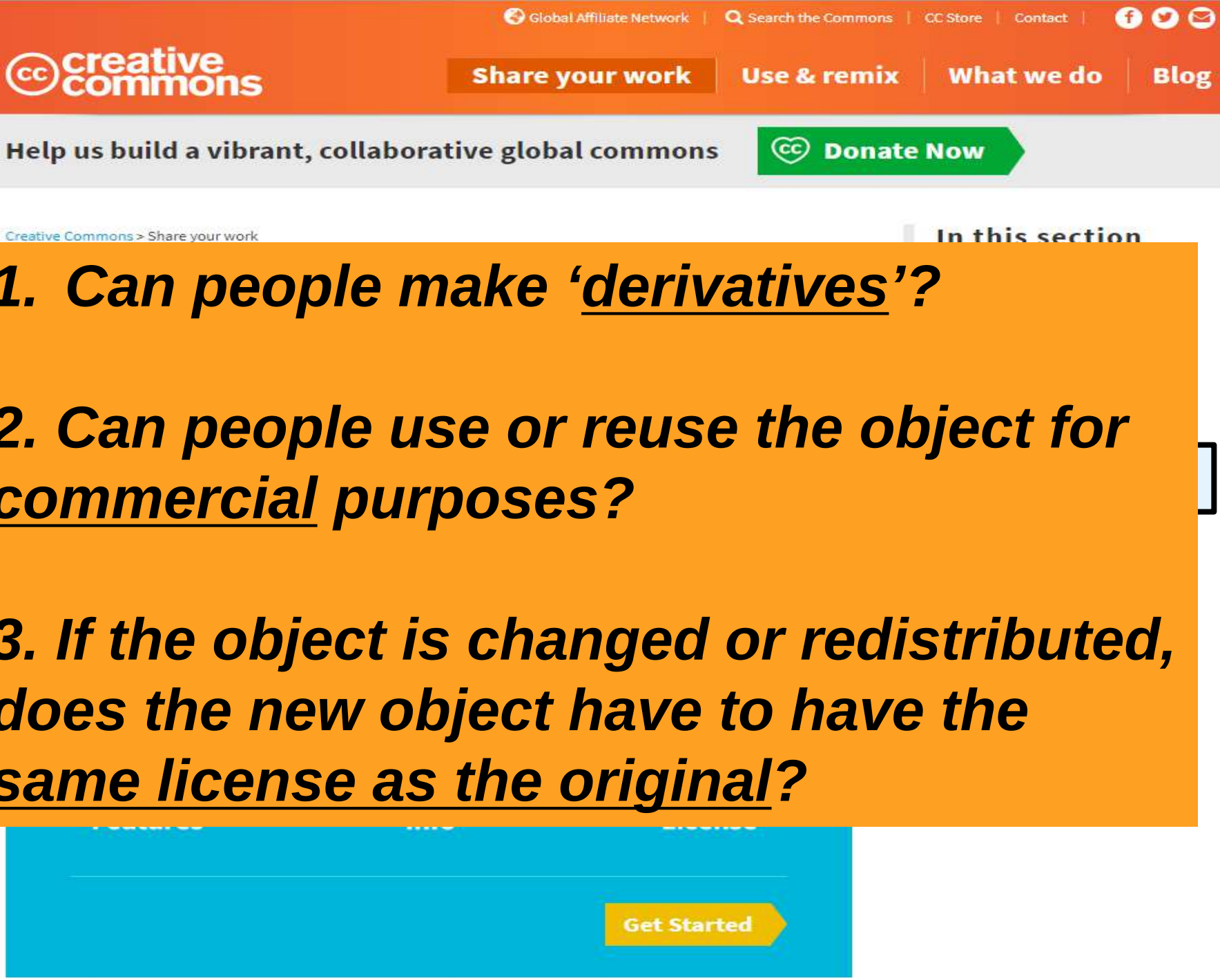
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SEARCHING FOR OERs

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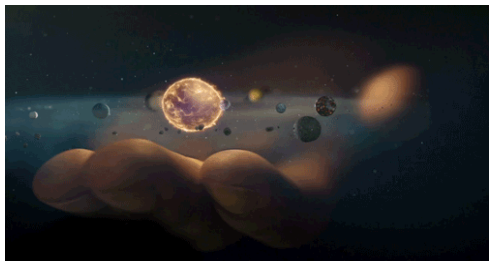
The MERLOT Vision

To be a premiere online community where faculty, staff, and students from around a continually changing world share their learning materials and pedagogy.



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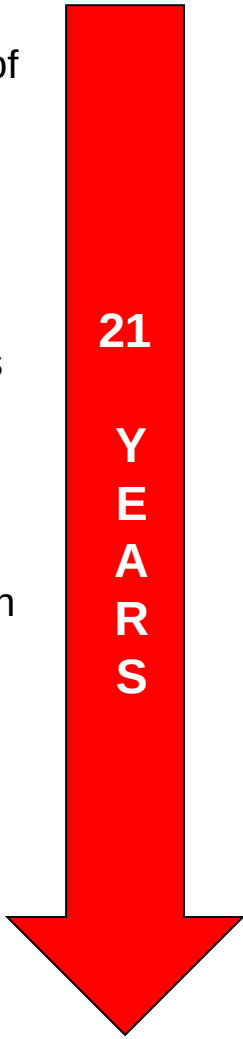
Brief History of MERLOT

- 1997 - MERLOT developed and hosted at Cal State University, Sonoma
- 1999 - University of Georgia System, Oklahoma State Regents for Higher Ed, Univ of North Carolina System, and California State University System formed MERLOT 'cooperative'
- 2000 - January – MERLOT cooperative sponsored 48 Biology, Physics, Business and Teacher Education faculty (12 from each system) to develop peer review standards/processes for on-line teaching-learning materials
  - April - other Higher Ed sys/institutions invited to join MERLOT cooperative.
  - July - 23 Higher Ed systems/institutions become MERLOT Institutional Partners
  - New release of MERLOT website
- 2006 (August) - – 3rd release of MERLOT of website
- 2007 (June) - – 47,000+ members and 17,000 materials
- 2009 (November) – Content Builder part of MERLOT (from Carnegie)
- 2011-2012 - Over 100,000 members and 35,000 materials. - Released Translation Tool
  - Content Builder and Web Services upgrades and new Web services
- October 2013 -
  - MERLOT II released at Educause 2013. Over 42,500 materials and 117,000 members
- June 2014
  - Released new Material and Member detail pages
  - Released new Join and contribute wizards
- **Through 2Q2018 – materials ≈81,000; ≈ 156,000 members; ≈ 1.25M+ visits/annually**



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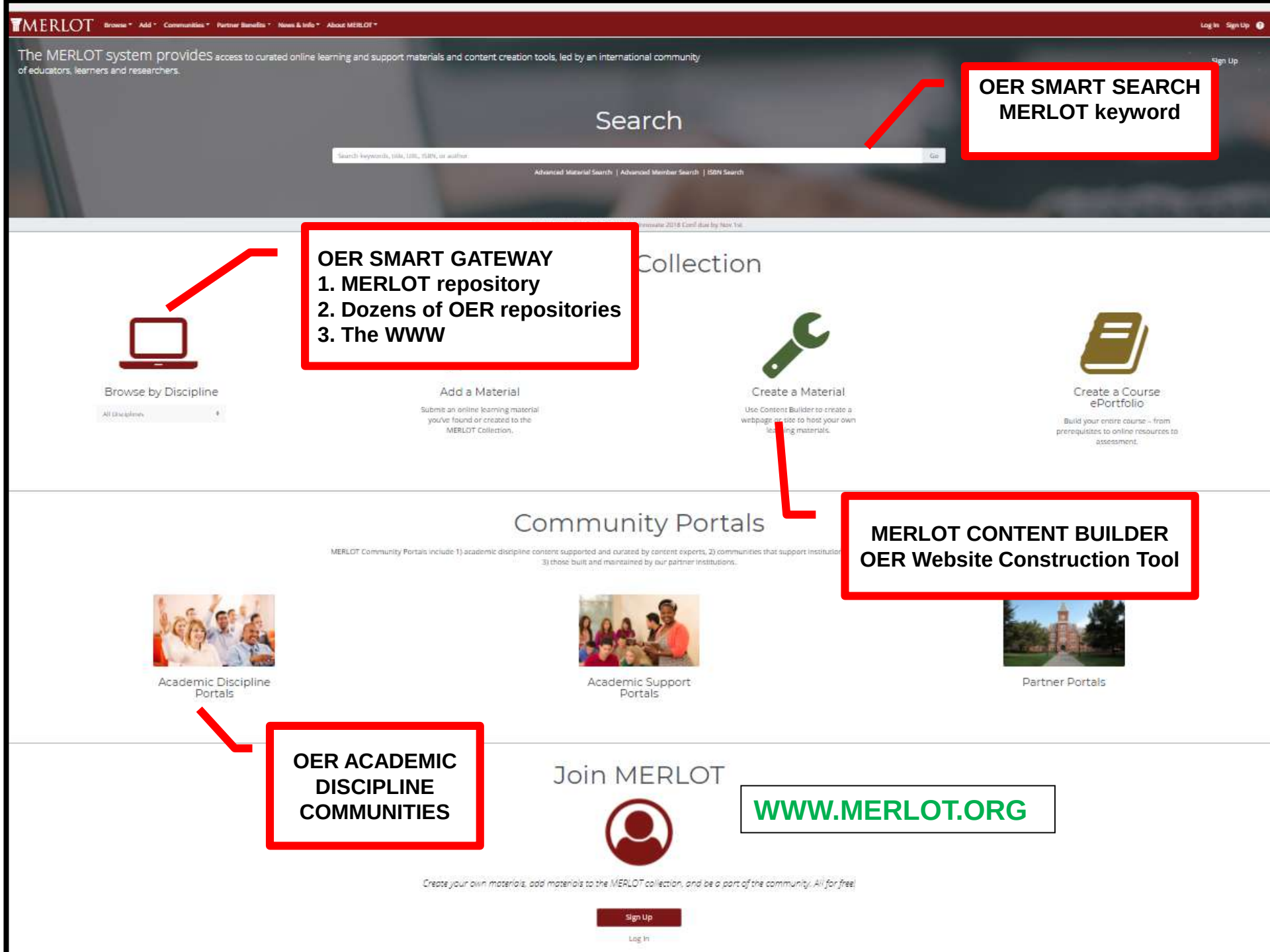
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MERLOT Community Portals include 1) academic discipline content supported and curated by content experts, 2) communities that support institution
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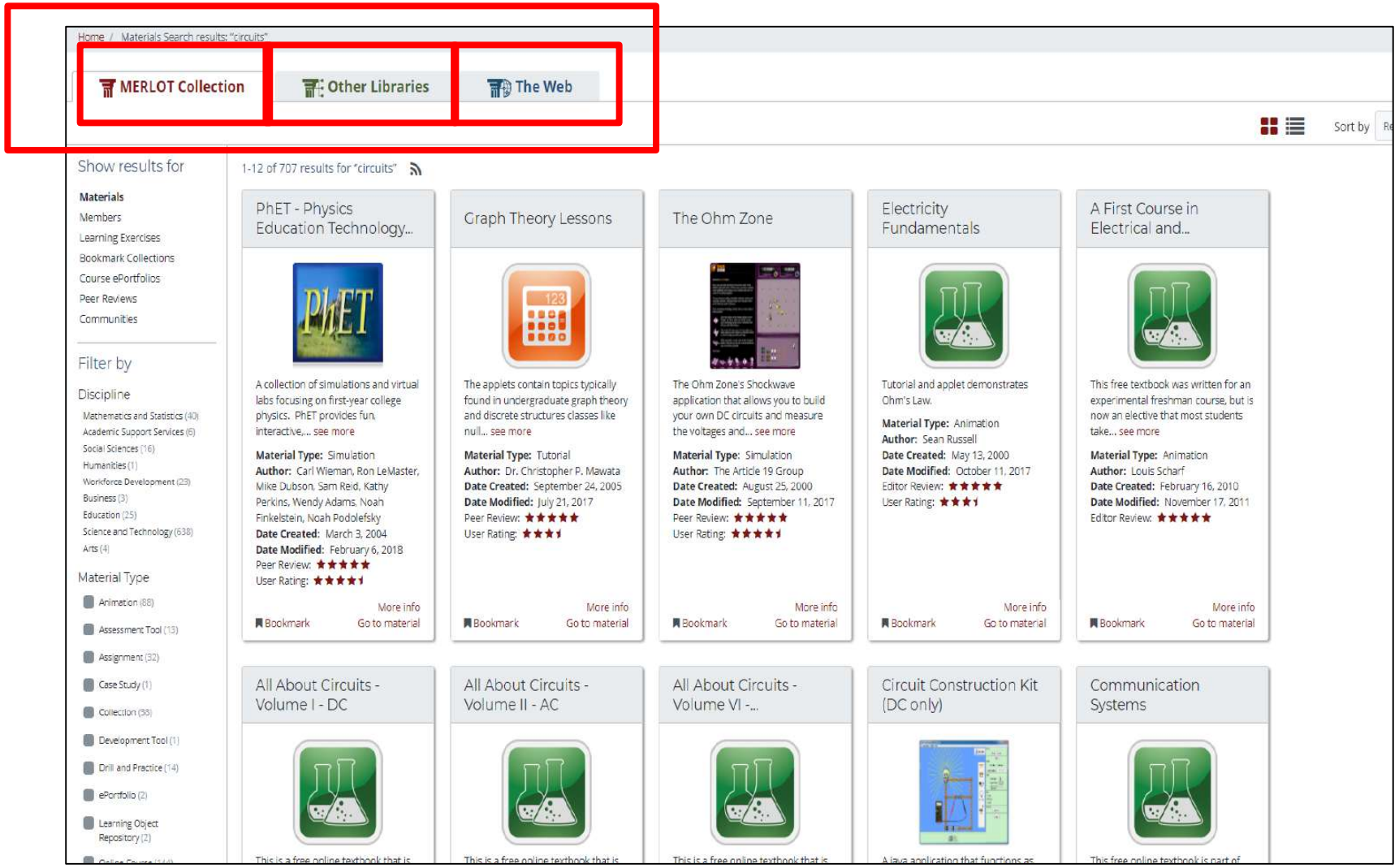

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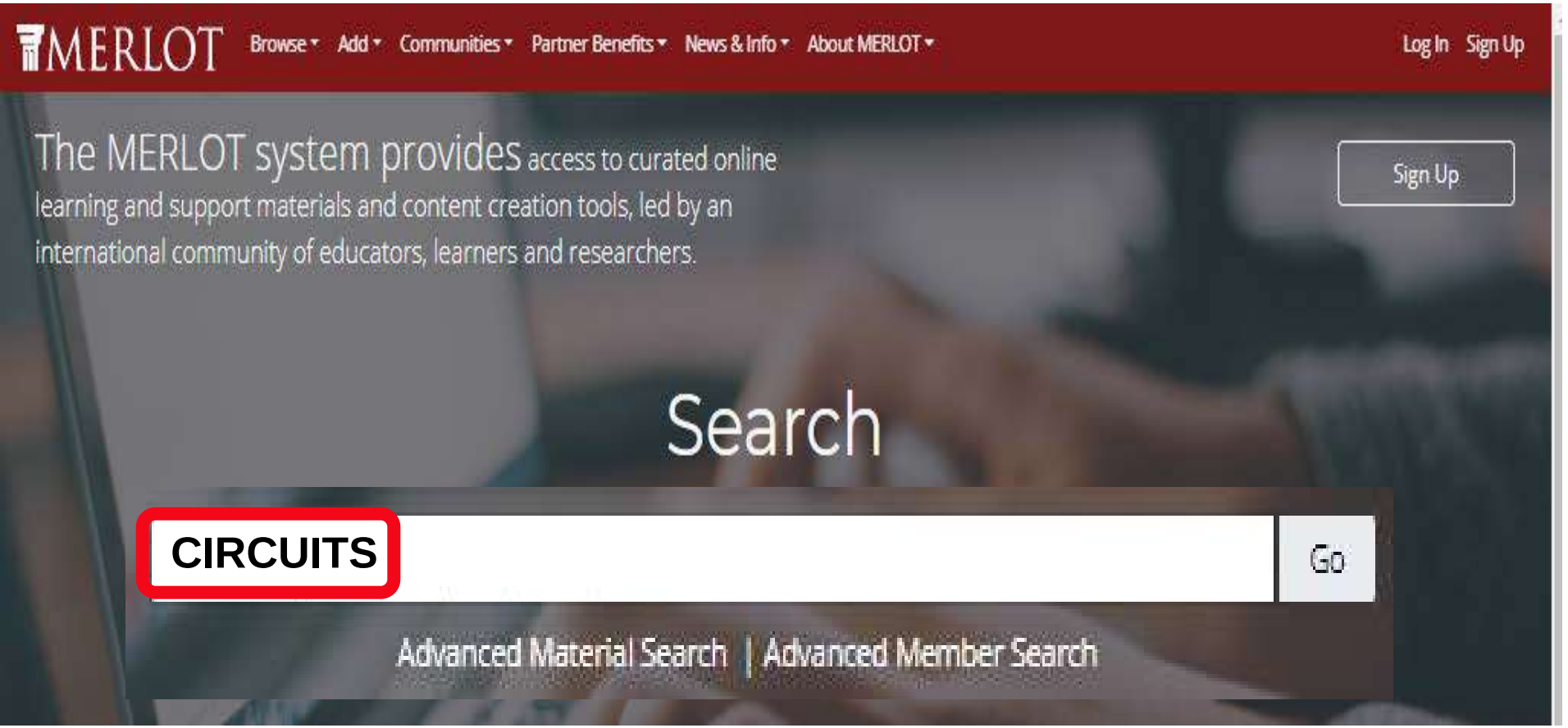

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Animation (88)
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Collection (38)
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ePortfolio (2)
Learning Object Repository (2)

1-12 of 707 results for "circuits"

PhET - Physics Education Technology...

A collection of simulations and virtual labs focusing on first-year college physics. PhET provides fun, interactive,... see more

Material Type: Simulation
Author: Carl Wieman, Ron LeMaster, Mike Dubson, Sam Reid, Kathy Perkins, Wendy Adams, Noah Finkelstein, Noah Podolefsky
Date Created: March 3, 2004
Date Modified: February 6, 2018
Peer Review: ★★★★★
User Rating: ★★★★½

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Graph Theory Lessons

The applets contain topics typically found in undergraduate graph theory and discrete structures classes like null... see more

Material Type: Tutorial
Author: Dr. Christopher P. Mawata
Date Created: September 24, 2005
Date Modified: July 21, 2017
Peer Review: ★★★★★
User Rating: ★★★½

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The Ohm Zone

The Ohm Zone's Shockwave application that allows you to build your own DC circuits and measure the voltages and... see more

Material Type: Simulation
Author: The Article 19 Group
Date Created: August 25, 2000
Date Modified: September 11, 2017
Peer Review: ★★★★★
User Rating: ★★★★½

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Electricity Fundamentals

Tutorial and applet demonstrates Ohm's Law.

Material Type: Animation
Author: Sean Russell
Date Created: May 13, 2000
Date Modified: October 11, 2017
Editor Review: ★★★★★
User Rating: ★★★½

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A First Course in Electrical and...

This free textbook was written for an experimental freshman course, but is now an elective that most students take... see more

Material Type: Animation
Author: Louis Scharf
Date Created: February 16, 2010
Date Modified: November 17, 2011
Editor Review: ★★★★★

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All About Circuits - Volume I - DC

This is a free online textbook that is

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Circuit Construction Kit (DC only)

A Java application that functions as

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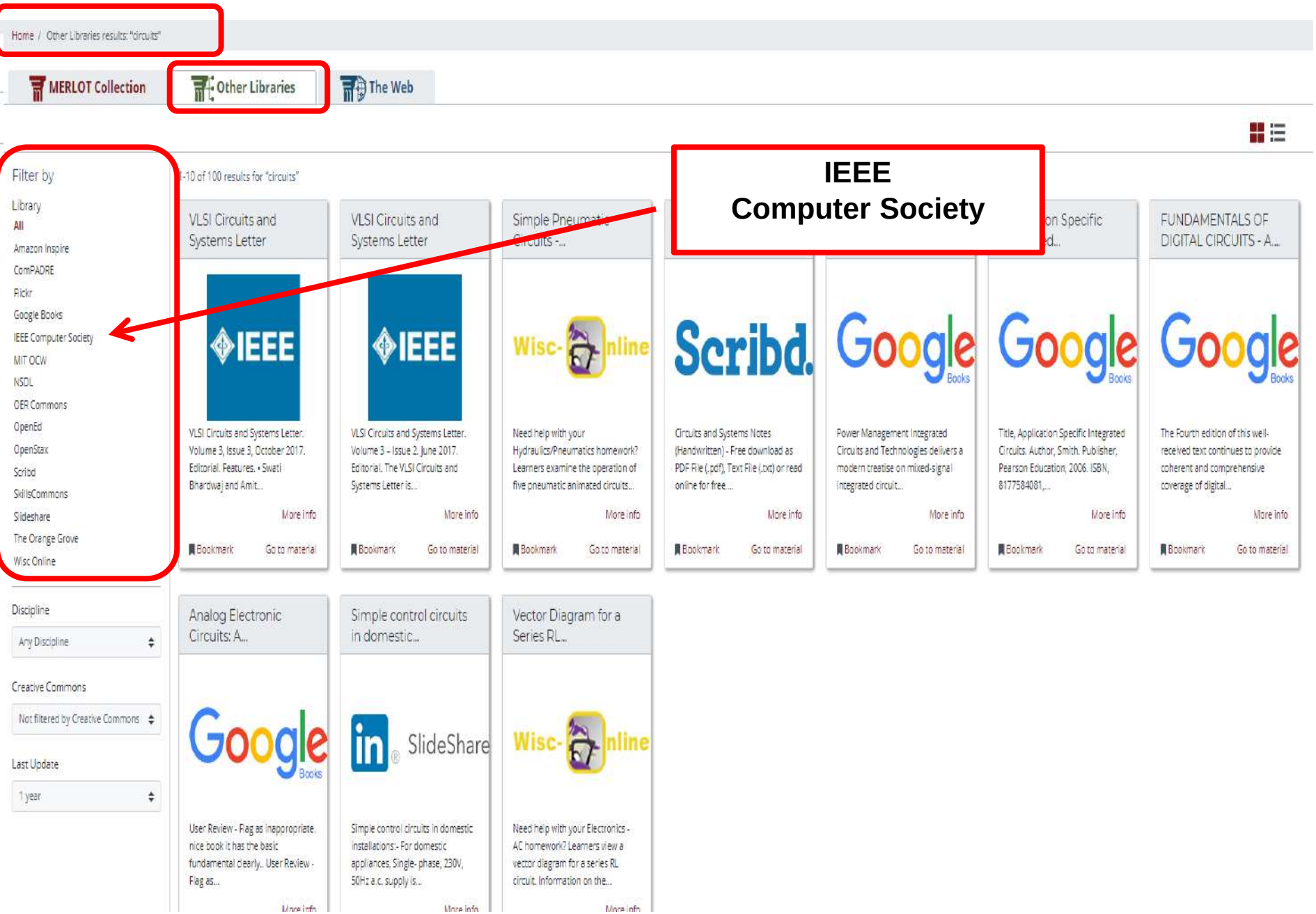
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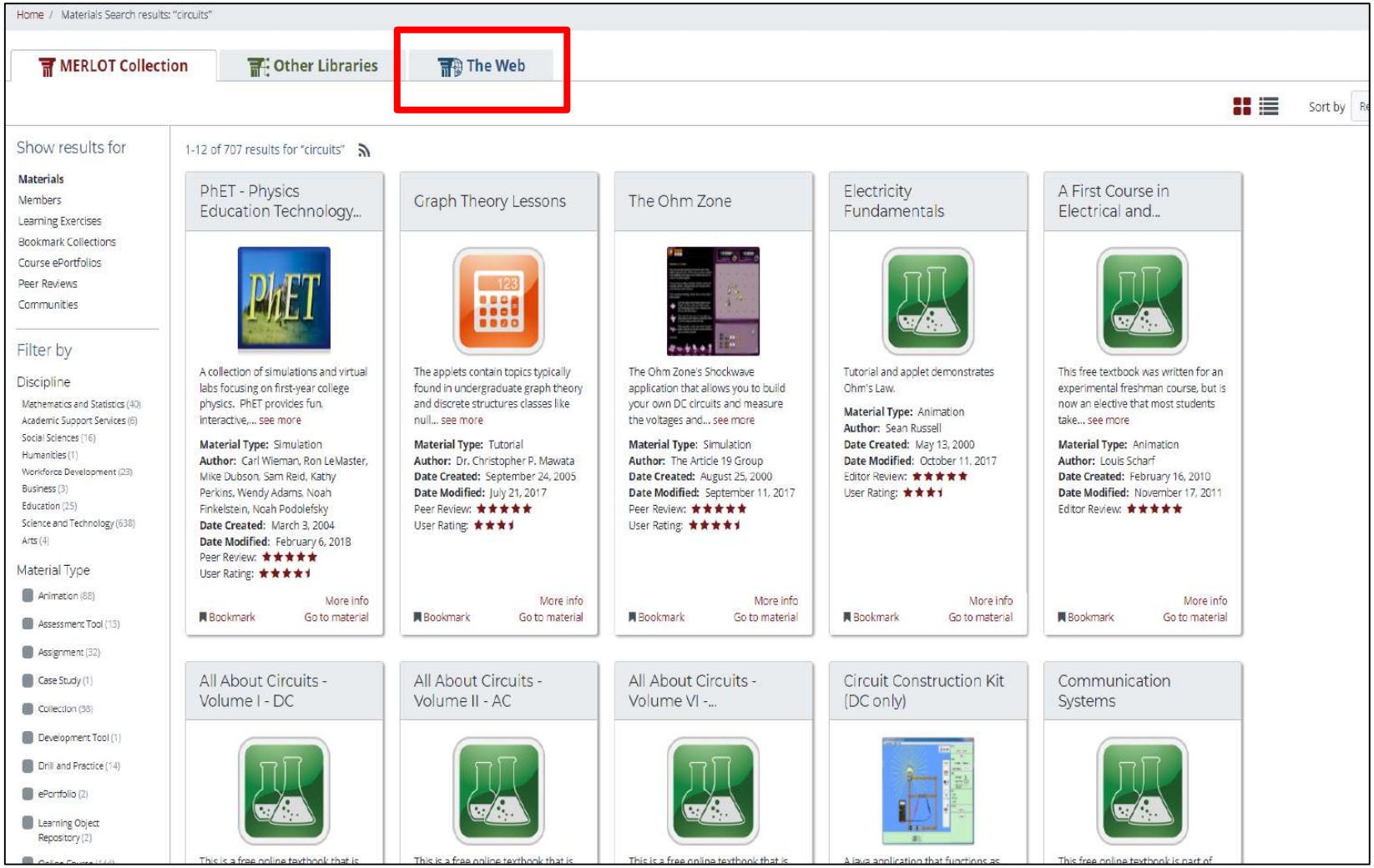

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Material Detail

Circuit Construction Kit (DC only)

A java application that functions as simple DC circuit simulator. Available components are batteries, bulbs, swithches, and connecting wire. Component values can be varied by the user. Meters to measure voltage and current are available..

Disciplines:
Science and Technology / Physics / Electricity and Magnetism

More...

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Quality

Peer Review ★★★★★
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More about this material

Material Type: Simulation
Date Added to MERLOT: November 29, 2004
Date Modified in MERLOT: December 30, 2017
Author: The PhET Project, University of Colorado
Submitter: Terry Bradfield
Primary Audience: High School, College General Ed
Technical Format: Website, Java Applet

Mobile Compatibility: Not specified at this time
Technical Requirements: Requires Java Runtime Environment
Language: English
Cost Involved: unknown
Source Code Available: unknown
Accessibility Information Available: no
Creative Commons: no

Browse...

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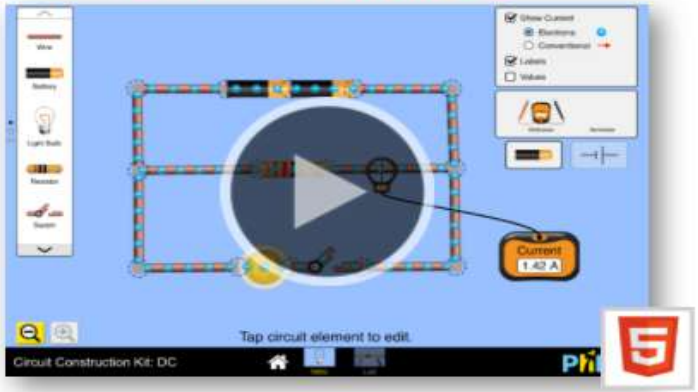
Circuit Construction Kit: DC



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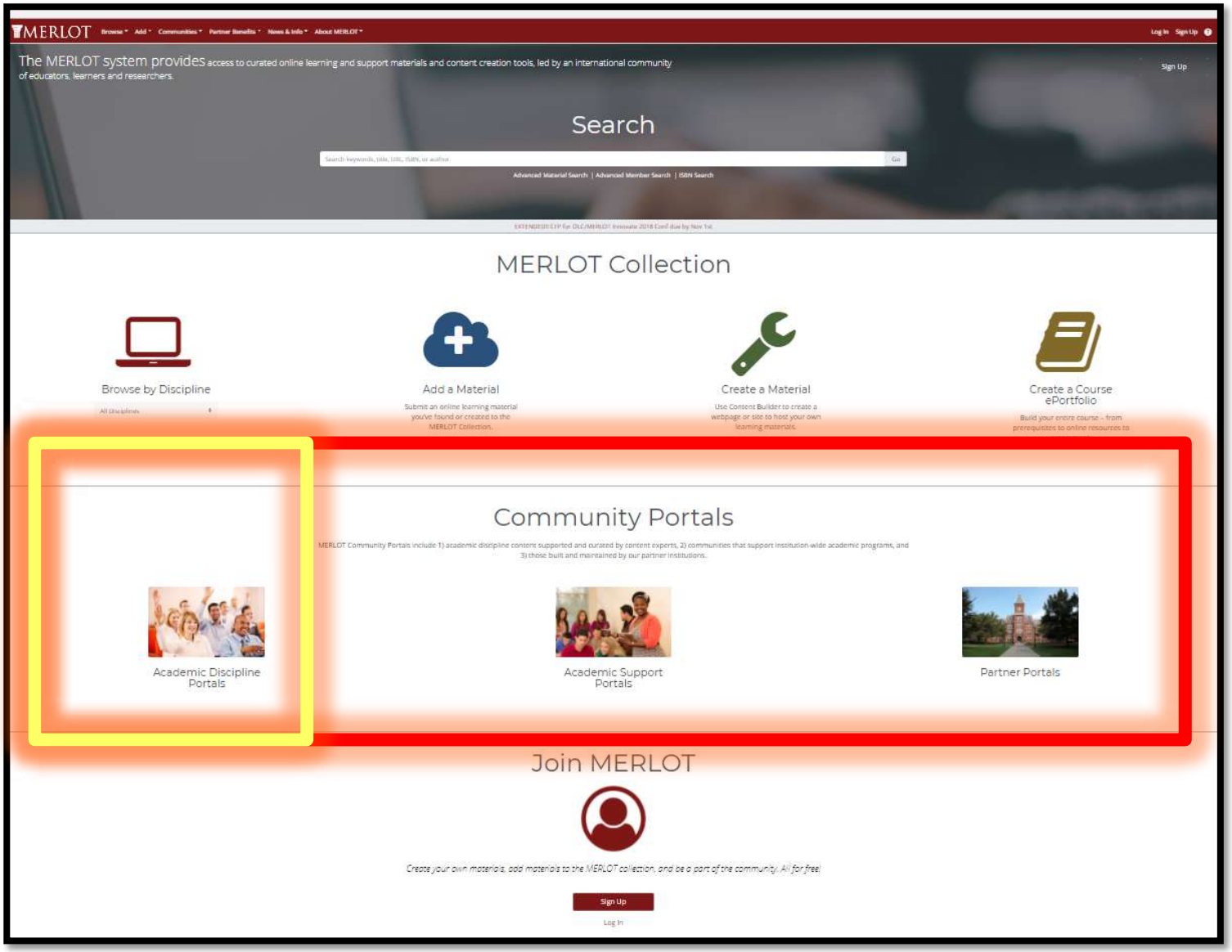

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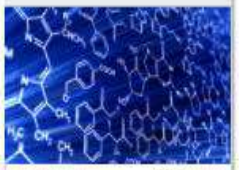

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MERLOT´s International Utility

- Materials can be submitted in any language
- MERLOT can be searched for materials in any language using any country's keyboard
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- With MERLOT's APIs any web application in any language can interface directly to MERLOT functionality, bypassing default English language implementation

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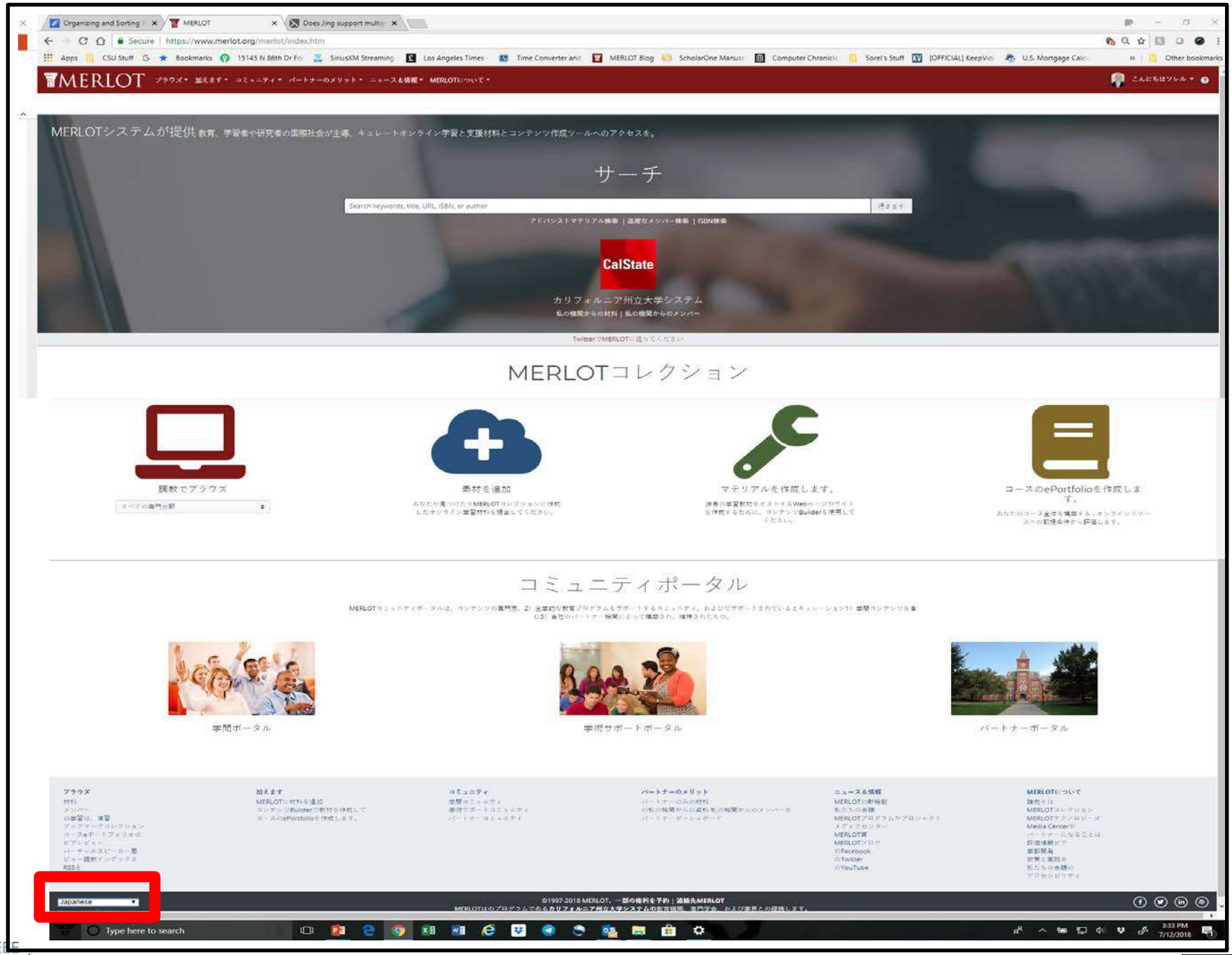
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