



Superheroes of the Open Web

Synopsis: In this hands-on workshop, learners aged 10 and up play, deconstruct and modify websites in order to understand how to create content for, and build, webpages. Participants use the Mozilla Hackasaurus tools to guide them through the process of remixing images, text and style while learning basic web design and programming concepts. Participants experiment with the X-Ray Goggles bookmarklet, a tool that allows users to see and manipulate the HTML and CSS that make up webpages. Using the Goggles and other open source web-based tools, participants will respond to design challenges that offer them a chance to use these newly acquired programming skills.

Duration: This three-part lesson plan can either take one full day or be broken up into separate modules.

Badges

Learning today happens everywhere, not just in the classroom. But it's often difficult to get recognition for skills and achievements that happen outside of school. Mozilla's Open Badges project is working to solve that problem, making it easy for anyone to issue, earn and display badges across the web through a shared infrastructure that's free and open to all.

The result: helping learners everywhere display 21st century skills, unlock career and educational opportunities, and level up in their life and work.

Assessment: A Hackasaurus Superheroes of the Open Web Learning Rubric is available for learner assessment at the end of this section.

1. Big ideas of the day:

- Hacking means changing a piece of something to create something new
- Web designers get inspired by existing websites to come up with new ones
- Webpages are written with HTML and styled with CSS
- Websites are dynamic systems that are easily changeable
- A website designer works with inter-related parts
- Parts of a webpage include HTML, CSS, graphic assets and text content
- The open web is a place where anyone can participate and contribute information



2. Deliverables:

- Participants will learn the concept of hacking through physical exercise and online tools
- Participants will write HTML and constructively think about their roles as webmakers

3. Learning goals:

- Develop a basic understanding of the different parts that make up a webpage
- Develop key web programming vocabulary
- Develop key critical thinking about web terminologies
- Develop an understanding of how participatory media (i.e. the open web) differs from one-directional consumption media (i.e. TV and radio)
- Draw connections between webmaking, content creation and the participatory culture of the open web

4. Skills targeted and learned:

- Identify & alter element tags, which surround content and apply meaning to it
- Remix content of element attributes, which appear inside tags and have their values enclosed in quotation marks
- Remix and create elements, which are the basic building blocks of webpages
- Demonstrate the ability to write a paragraph using HTML and `<p> </p>` tags
- Change one part of a webpage to make a new webpage
- Get inspired by websites and come up with ideas for new projects
- Use the Hackasaurus X-Ray Goggles bookmarklet and demonstrate ability to use its different features
- Understand the concept of URLs and URLs for images

5. Key questions:

- What is hacking? Where can we find examples of hacks?
- How are webpages and websites dynamic systems?
- Which are the fundamental parts of a webpage?
- How does a webpage change when you change one of its parts?
- Why is it important to have open access to the Internet?
- Why is it important that the web is designed by many individuals?
- Why is it important for websites to invite participation?

6. Modules

- Hack the Robot Dance (an icebreaker game)
- Try on your X-Ray Goggles (a web design tool overview)
- Create your own Superhero (a design challenge)

Hack the Robot Dance

1. Overview

The goal of this activity is for learners to understand that hacking has always been a key element in the creative process, and that it is a constructive collaborative activity, not a destructive one. Participants will learn how to hack a popular dance from the 80s to design a brand new dance.

2. Materials you'll need

- Speakers
- Computer with reliable internet connection and unblocked access to YouTube
- Projector
- Video: How To Do The Robot (Totally Rad 80's Dances)
http://youtu.be/E-_iUHY8RBs

3. How to play

- Participants form a circle
- Facilitator plays the “How To Do The Robot (Totally Rad 80's Dances)” video
- Facilitator tells the group that they are now going to hack the dance, starting with examining all of the steps in the dance
- Everyone practices the dance in its entirety
- The first participant finds one step of the dance to change
- The participant demonstrates the hacked dance in the circle
 - The person to the left of the initial hacker must hack that move or repeat it
 - If hacking the move, the person has to demonstrate the new dance move they are adding or replacing
 - Repeat until everyone in the circle has danced
 - When the last person in the circle has made their hack, everyone in the whole circle needs to try out the new dance. If there is extra time, go around the circle again

4. Discussion

After the dance party is over, direct guiding questions to participants to help identify the steps to hacking. Write definition/key words that participants come up with on the board/poster paper.

- How did you hack the dance? Discuss the rules — what were they?



What made the dance fun?

- What actions were you doing while hacking?
Discuss the mechanics and dynamic systems — Break down the activity, first they looked at the dance, then they changed bits and pieces of it until it became a new dance. One person made a change which affected the entire dance.
- What was the goal of the activity?
Discuss goal — creating a new dance by hacking
- What made the dance fun? Discuss creativity and co-developing the project.
- How do you think hacking a dance will be similar to hacking a website?
Discuss what defines hacking and transition onto the next topic

5. Introduction to badges

Explain to participants that they will be able to collect paper badges for their accomplishments throughout the hack jam. At the end of a module, participants will “pledge” or apply for badges to gain specific super powers. They must successfully complete the pledged task in front of a peer mentor or facilitator who will award them the badge to show they’ve earned their superpower.



Photo Credit: Ted x Kids Brussels



Try on Your X-Ray Goggles

1. Overview

The goal is for participants to create their first webpage by hacking and tinkering with an existing webpage. Participants may pledge for two types of badges — the Navigator badge for learners who are new to web browsing and the Remixer badge for learners who are already familiar with web browsing and are moving on to hacking HTML.

2. Materials you'll need

- Computers with high-speed Internet connection
- Computers available for participants/team of participants
- Hackasaurus X-Ray Goggles installed on a modern web browser e.g. FireFox, Chrome, Safari, Opera, with the latest browser versions updated (Please note: Hackasaurus currently does not support Internet Explorer.)
- Projector
- HTML and CSS cheat sheets

3. Facilitator procedure

Demonstrate how to hack the webpage and then go over the steps in a slow, clear manner:

- Tell participants that they will be hacking a website
- Ask participants to call out the name of a website that they regularly visit
- If no one responds or if you have slow Internet, go to google.com because it loads fairly quickly
- Turn on the Goggles. You can do this by clicking on the bookmarklet in your bookmark toolbar
- Using the Goggles, slowly hover the cursor over objects so that participants can see that the tool is inspecting the code and showing the object tags for each object
- Hover over an image or some text on the page and hit “R” on your keyboard
- Keep this screen up so that participants can see that the code is revealed at this stage
- Ask participants for help hacking the code. If you are editing text, ask participants what text they would like to replace the text with; if you are changing an image ask participants to name their favorite musician and do a search for that musician online
- After you have acquired the assets and made the changes, hit the OK button and show everyone the hack
- Now, show everyone how to do this step by step and, whenever possible, refer back to the steps that you defined for hacking with the Hack this Dance module

Break into teams and use the X-Ray Goggles

- Steps:

Turn on the X-Ray Goggles bookmarklet

- Look at the code, point out the tags, attributes and elements
- Find the object tags that you want to change or replace (e.g. `<p>` or ``)
- Change one part of the webpage
- Hack: hit the “commit changes” button to save changes locally on your computer
- Share the hack: hit “T” to publish the new webpage on the Internet

4. Pledging for badges

At this point participants can pledge for either the Navigator or Remixer badge. To qualify for the Navigator badge, participants must:

- Open up the browser
- In the address bar, type: <http://navigator.hackasaurus.org>
- Complete the mission to receive the badge
- Superpower earned: Enhanced web agility

To qualify for the Remixer badge, participants need to complete the following tasks:

- Go to www.google.com
- Using the Goggles, replace the Google logo with an image
- Using the Goggles, change or add text to the webpage
- Superpower: X-ray vision

5. Discussion

At the end of the session, have participants present their new webpages, explain their work process and what they learned.



Defend the open web

1. Overview:

The goal is to introduce participants to an organic, interactive design process for webmaking. Participants will discuss what it means to have an open web and create fictional superhero identities and web assets (websites, content, imagery, etc.) to defend the open web. A prototyping station is available for those kids who may wish to start with an analog version. During the module, participants will pledge for several badges. During the module, participants will pledge for several badges.

2. Materials you'll need

- Computers with reliable Internet connection
- X-Ray Goggles bookmarklet installed
- Supplies for station activities:
 - Computers set up with Hackasaurus tools
 - Paper supplies
 - Scissors
 - Glue
 - Lego™ blocks
 - Markers
 - Camera or computers with image editing software (e.g. Aviary <http://www.aviaryeducation.com/> or other open image editing software)
- A blog or another web-based repository for everyone to post their work such as www.blogger.com, www.wordpress.com or www.tumblr.com





3. Facilitator procedure

Set up the room with several stations for participants to move about organically, including:

- Hacking station — computers set up with Hackasaurus X-Ray Goggles
- Prototyping station — paper supplies, scissors, glues, markers, etc.
- Digital imaging station — camera or computers with digital imaging software

Frame the design challenge by having participants collectively explore problems and strengths of the open web. Engage participants in a discussion about the open web by asking:

- What would your life be like without the web?
- Who made the web?
- How can you tell the web was made by people?

Introduce the concept of the open web:

- No barrier to entry — anyone can use it to make or play
- Transparent — you can see how it is made
- It doesn't break — because it is not "owned" by any person or organization

Introduce the design challenge:

We benefit from an open web where anyone can use, see and manipulate content on the Internet. This is a privilege that we don't want to lose. Every so often there are things that compromise the open web, such as firewalls, or blocking functionality of web browsers. This is something that can be protected — the perfect job for a team of superheroes.

Create a superhero identity to protect the open web:

- Parameters:
 - The superhero must have a name and visual representation
 - The superhero must have a biography
 - What are his/her superpowers?
 - How did he/she get them?
 - How do his/her superpowers help to protect the web?
 - Does the superhero have a nemesis or face a particular challenge?
 - Hack into a news site using the Goggles to write a story about how the character saved or protected the open web

Put the content on a webpage that was created or hacked and present it to the group at the end of the day.

Producer
Wordsmith
Webmaker
Peer Coder
...which one
are you?

Tour the stations

- Have participants visit the various stations and allow them to work either in groups or individually; If possible, it is ideal to have facilitators at each station to support participants

4. Presentations

- Have participants talk about their superheroes and display the work they have done
- Following the presentations, facilitators should direct participants to other resources in their community or online to learn more about hacking and web design/development
- Provide individual constructive feedback during presentations

5. Pledging for badges

At each station, participants should be able to pledge for a Producer, Wordsmith or Webmaker badge and nominate someone for a Peer Coder badge.

To qualify for the Producer badge, participants will need to complete the following tasks:

- Design the visual representation of a superhero
- Prepare content for the web
- Place content on a website
- Superpower: Design Dexterity

To qualify for the Wordsmith badge, participants will need to complete the following tasks:

Participants must complete the following tasks:

- Visit a news website
- Using the X-Ray Goggles, hack into a paragraph on the site
- Write a story about how the participant's character saved or protected the open web
- Superpower: Ciphering

MODULE 3

continued

To qualify for the Webmaker badge, participants will need to complete the following tasks and show a peer mentor or facilitator the website, who will then distribute the badge:

- Open up WebPad at <http://webpad.hackasaurus.org/>
- Using the content that you created (the bio, news article and visual art), create a website
- For some helpful snippets of code that could be included in your site, visit Hackbook at <http://hackbook.hackasaurus.org/>
- Superpower: Enhanced marksmanship

Note: The WebPad and Hackbook are in an experimental state as they're still in development

To qualify for the Peer Coder badge, participants need to be nominated by a peer at the jam. A peer coder is someone who:

- Demonstrates ability to work collaboratively and/or
- Demonstrates ability to code HTML and/or CSS with a collaborator and/or
- Assists another participant with their code
- Superpower: Invincibility

References:

Slideshare presentation on the open web from Mark Surman,
Executive Director of Mozilla Foundation:

<http://www.slideshare.net/guest6177758/i-heart-the-open-web-1768019>

Teaching the open web to teens:

<http://etherpad.mozilla.com:9000/openweb>




Hackasaurus website: www.hackasaurus.org

Aviary On-line Photo Editor: <http://www.aviaryeducation.com/>







MORE OPEN WEB
RESOURCES HERE!

Superheroes of the Open Web Assessment

Badge	Type	Learning Goals	HACKtivities to Complete
 <p>NAVIGATOR</p>	Skill	<ul style="list-style-type: none"> • Understand the location and use of the address bar in the browser • Understand the use of tabbed browsing • Master the “copy” and “paste” function on a computer • Understand the term “HTML” • Gain basic navigation skills of web browsing • Use the mouse to point, click and scroll over objects on the webpage 	<ul style="list-style-type: none"> • Open up a browser • Identify where the address bar is in the browser • Enter a website address in the address bar • Open multiple browser tabs and switch between them • Master “copy” and “paste” function • Using the mouse to scroll over objects on the page
 <p>REMIKER</p>	Skill	<ul style="list-style-type: none"> • Identify and alter element tags, which surround content and apply meaning to it • Remix content of element attributes, which appear inside the opening tag and their value is always inside quotation marks • Remix and create elements, which are the blocks of code that make up webpages • Demonstrate the ability to write a paragraph using HTML and the <code><p></code> <code></p></code> tags • Understand local vs cloud hacking • Understand that there are resources available on the web for developers • Understand what Mozilla means when we say “hack” & “webmaking” 	<ul style="list-style-type: none"> • Go to a website • Using the goggles, replace an image on the site • Using the goggles, change or add text to the webpage • Share hacked page with peers • Revisit hackasaurus.org for hackbook/resource page
 <p>PRODUCER</p>	Specialist	<ul style="list-style-type: none"> • Advanced remixes of html and web browsing/research • Develop basic web production skills 	<ul style="list-style-type: none"> • Design visual representation of your superhero • Prepare content for the web • Place content on a webpage

Badges continued on next page...

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Badge	Type	Learning Goals	HACKtivities to Complete
 WORDSMITH	Specialist	<ul style="list-style-type: none"> • Develop skill of writing for the web • Advanced remixes of html and web browsing/ research 	<ul style="list-style-type: none"> • Visit a website • Use X-ray goggles to hack into a paragraph on the site • Write a story based on superhero created in Producer badge
 SUPER STYLER	Skill	<ul style="list-style-type: none"> • Gain basic understanding of CSS and its functions • Demonstrates ability to impact the design of a webpage using CSS functions 	<ul style="list-style-type: none"> • Incorporate style hacks into their designs by changing the computed style of elements on a page by using Hackasaurus goggles and change the style by clicking "R"
 WEBMAKER	Skill	<ul style="list-style-type: none"> • Demonstrate basic understanding of domain • Understand the box model and selectors • Demonstrates an understanding of DOM 	<ul style="list-style-type: none"> • Open up webpad and build web pages using original content (e.g. bio of superhero) in webpad • Create a website using webpad • Incorporate styles into the hacks • Publish webpage within unique URL
 PEER CODER	Mentor	<ul style="list-style-type: none"> • Demonstrate ability to work collaboratively • Demonstrate ability to create web content that is accessible for other users • Demonstrate ability to code html and/or CSS with a collaborator 	<ul style="list-style-type: none"> • Nomination from a peer during hack jam • Assisted another participant/peer with coding and CSS styling