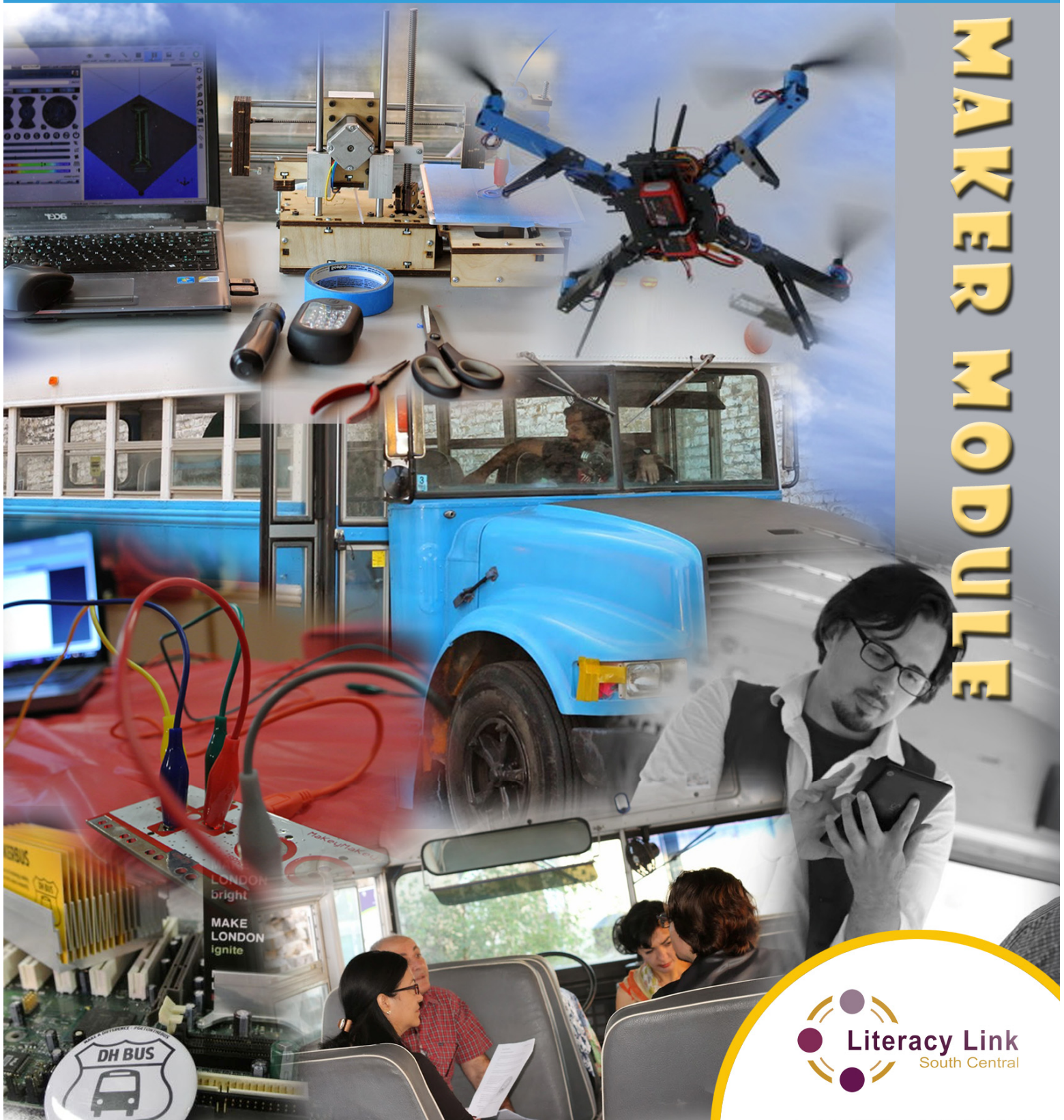




AUGMENTED REALITY

MAKER MODULE



These Maker Modules were prepared for the Literacy Link South Central project “Using Technology to Facilitate Connections between Literacy and the Broader Community” (2014).

Maker Modules available in this series include:

Augmented Reality	Leap Motion	QR Codes
Bluetooth	Macrophotography	Tiny Scan
Dropbox	MaKey MaKey	Word Lens
Evernote	Portable Podcasting	The World of 3D

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**EMPLOYMENT
ONTARIO**

Introduction

To successfully complete this MakerBus Module, you will need:

1. **Notes to the Literacy Practitioners**
2. **Augmented Reality Pre Visit**
 - estimated time 10 minutes
 - optional pre visit lesson, “Downloading and Deleting Applications (app)”
3. **Augmented Reality MakerBus Module**
 - estimated time 15 minutes
 - # of pages: 2 (double sided)
4. **Augmented Reality Post Visit**
 - estimated time 15 minutes
5. **Evaluations Forms (optional)**
 - learners’ feedback is done on the bus
 - practitioners’ feedback to be submitted at a later date
6. **Equipment List:**
 - smartphones with Layar and Metro app installed
 - tablets with Layar and Metro app installed
 - Layar compatible material
 - Metro newspapers



Notes to the MakerBus Facilitator: For this Module, students will be asked to download an app on their own smartphones or tablets. Some learners may be hesitant to do this, so additional devices may be needed. For those learners who would like to download it onto their own phones, some may have photos or documents selected that they would like to save. If possible accommodate this.

All instructional materials are available on the Literacy Link South Central (LLSC) Website, should you need additional copies. Please visit: <http://www.llsc.on.ca/>.

Notes to Literacy Practitioners:

Learning Objectives:

1. Understand the basics of Augmented Reality (AR)
2. Interact with AR
3. Use the Metro app

Notes to Practitioners:

The Pre Visit for this lesson allows you to determine your learners' prior knowledge of AR. If any of them are familiar with it, it will give them an opportunity to share their knowledge, hopefully building their confidence. It also talks about what Augmented Reality is, and uses a video to help learners imagine the possibilities. This Pre Visit will better prepare your learners for the time on the Bus, where they will be able to experiment with an AR app. The Pre Visit is expected to take around 10 minutes.

Competencies include: A1.2; A2; A3; B1; B2.1/2/3; D1/2.

Their time on the bus will give learners the opportunity to interact with AR technology.

While on the Bus, allowing learners to teach you what they have learned is a great way to build their confidence, reinforce their learning, and allow you to benefit from their learning as well. The MakerBus Module addresses competencies: A1.2/3; A2.1/2/3; A1.3, D3.

The Post Visit encourages learners to think about the potential impact of this technology, both positive and negative. By discussing this in small groups and then sharing with the group as a whole, "Engaging with Others" (Competency F) is encouraged. Thinking critically about technology elevates the learner from being a passive consumer, to an active participant in its use. Expected time for the Post Visit is 10 minutes, but may be longer if considerable discussion is generated. Competency B2 is addressed, but levels will vary depending on the length of the written answers.

Augmented Reality Pre Visit Activity

Learner Handout

Discuss the following:



1. Have you seen any of these images before?
2. Do you know what these are? If you do, please explain it to your classmates.
3. What does the word “augmented” mean? If you don’t know, please look it up. Talk to your classmates about the various definitions you have found.
4. What does “virtual” mean? If you are not sure, please look it up. Again, share the definitions you have found with your classmates.
5. Kevin Bonsor explains, “**augmented reality**, blurs the line between what's real and what's computer-generated by enhancing what we see, hear, feel and smell.”¹ To better understand this idea, watch the following 90 seconds YouTube video: <https://www.youtube.com/watch?v=ZR4eSmmPCxg>
6. Take a moment to think about this technology. How is it likely to change how we interact with the world?

¹ (Bonsor, Kevin. "How Augmented Reality Works" 19 February 2001. HowStuffWorks.com. <<http://www.howstuffworks.com/augmented-reality.htm>> 14 July 2014)

Take a moment to think
about this technology



Augmented Reality (AR) MakerBus Module

Reality is what we experience through our senses like our eyes and to “augment” something is to add to it . . . to make it better or to give you something more. The internet is full of information, and Augmented Reality (AR) is about blending both your senses and the internet to give you more. AR adds graphics, videos and displays extra digital content to books, magazines and ads. With a smartphone or tablet, you are able to explore the world differently using AR application (apps).



You will learn:

1. the basics of Augmented Reality
2. different AR apps
3. to use the Metro app



Part 1: Augmented Reality basics




Augmented Reality has been around for 30 years although it use to be very expensive and used mostly by scientists. Today, we have handheld AR technology that is free and can be used by everyone. AR is portable and uses your device’s camera and the internet to work.

The basic idea of Augmented Reality is to superimpose graphics or videos over a real-world environment, in real time. Superimpose is a common word used in regard to Augmented Reality. Superimpose is placing or layering one thing over another, typically so that both are still visible. Augmented Reality is being used in sports casting and replays, architecture, education, the medical field and in everyday settings like posters, magazines and advertisements.

Augmented Reality (AR) applications (apps) use your device's camera and GPS capabilities to gather information about what you are looking at or where you are. AR apps then show you additional information, superimposing this it on your device's screen.

Part 2: Different AR apps

The following apps are free and available on both Android and Apple:

		
Layar is the “world’s #1 AR app”. Layar’s main focus is advertisements in magazines and other printed material.	Aurasma is the “only app that lets you create” and share your own augmented reality creations on your device.	Wikitude is the “best Augmented Reality browser” which helps you see more of what is around you.

There are many other AR apps including iRiS by Ad-Dispatch (Canadian company).

There are no universal AR apps. Look for a specific AR logo and use that app to get the digital content available.



Part 3: Use the Metro App

AR is being superimposed on printed material everywhere. Metro News has integrated AR in their printed papers, which allows the reader to see more pictures or information than the limited space available in a printed copy. The Metro App is free and available for both Android and Apple devices

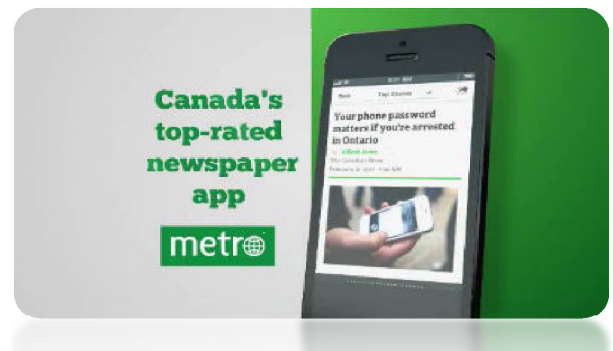
Note:

The print version of Metro News London is now discontinued although it remains available in other cities.

The Metro application (app) is needed for this task. MakerBus devices have the app already downloaded and ready for use. If you are interested in learning how to download using your own device, please ask for the Downloading and Deleting lesson.

To experience AR in the Metro News:

1. Open Metro App and tap the AR icon in the top right corner
2. Hold your device over any image in the Metro news with the AR logo
3. Make sure you wait for the green scanning bar to read the image
4. The AR content will appear on your device's screen. By tapping the arrows on the left and right side of the image, you are able to see more digital content.



Tips and Tricks: once the AR (augmented reality) content appears on your device's screen, you can lean the screen towards you to "pop" the image. This will allow you to freely view the digital content away from the newspaper.

Try it out:

There is lots of AR interactive content in the Metro News. Let's take another opportunity to try your new skill:

1. find the Metro AR symbol in the newspaper
2. scan the digital content with Metro Application (app) on your device
3. "pop" the digital content



If time allows, teach your literacy Practitioner(s) what you learned. If they are able to follow your instructions, then you have learned a new skill. Congratulations!

If you could use AR to develop a new product, what would you create?

You'll notice more AR content available in the next few years. Your new skill will help you enjoy a new way to interactive with the physical world!



Augmented Reality Post Visit Activity

Learner Handout

In groups of three:

1. Discuss the positive uses of Augmented Reality. What are the benefits?

2. List the benefits, or advantages to the person/company using this as a marketing tool. What advantage does it give them over their competitors?

3. Can you think of any concerns or issues arising out of the use of this technology?
Is there potential for misuse?

4. Share your discussions with the class as a whole.
