

From the right -to-know to the need to act.

What's the "new" WHMIS and B.C.'s safer substitution regulation?



So you can be even more prepared.

What's new with WHMIS?

Chemicals do matter. That's why all workers in Canada have a need – and right – to know about the hazards of chemical products used at work. It's been the law across the country since 1988, when the Workplace Hazardous Materials Information System (WHMIS) took effect.

WHMIS says that chemical manufacturers and distributors must supply information about their products using labels and material safety data sheets (MSDSs). Workers must be trained about the hazards and how to use the labels and MSDSs; they also must have access to the data sheets. This applies to all cleaning products used in the workplace.

New rules are on the horizon. Canada is co-ordinating **changes to WHMIS** with the new global worker right-to-know system called the **GHS** (Globally Harmonized System for the Classification and Labelling of Chemicals).

The changes take effect gradually between June, 2015 and December, 2018. In this transition phase, you will see the older WHMIS labels and data sheets and the newer ones. The newer labels and information sheets – now called safety data sheets or SDSs – will look a bit different, partly because some symbols – now called pictograms – will change.

The requirements to disclose hazard information will be basically the same as WHMIS 1988. Improvements include

standard hazard statements and information on the labels, which now will be used around the world (since this is an international agreement).

Again, like the original WHMIS, Canadians have slightly different rules than they do in the United States. This means – again – that US data sheets and labels cannot be used in Canadian workplaces – unless they comply with Canadian requirements. This includes having bilingual label information, and classifying some carcinogens at 0.1 percent in the product instead of one percent. The differences between Canada and the States are described at <http://www.hc-sc.gc.ca/ewh-semt/occup-travail/whmis-simdut/ghs-sgh/classification/hazardous-products-produits-dangereux/variances-ecarts-eng.php>.

What are the new hazard symbols? What do they mean?











Workers must be trained about what's new with the WHMIS 2015 labels and data sheets, particularly the changed hazard symbols. This is a start, presenting the basics.

The WHMIS 2015 hazard **pictograms** (see all of them on the following page) must be on the new label and data sheet. (Remember that WHMIS 1988

symbols and MSDSs still can be used until December, 2018.)

In the new system, a manufacturer or distributor decides – classifies – the effects that the product may have on your health or the environment. Each class has several kinds of hazards, and one product can fit in several classes.

Figure 2.1

	Exploding bomb (for explosion or reactivity hazards)		Flame (for fire hazards)		Flame over circle (for oxidizing hazards)
	Gas cylinder (for gases under pressure)		Corrosion (for corrosive damage to metals, as well as skin, eyes)		Skull and Crossbones (can cause death or toxicity with short exposure to small amounts)
	Health hazard (may cause or suspected of causing serious health effects)		Exclamation mark (may cause less serious health effects or damage the ozone layer*)		Environment* (may cause damage to the aquatic environment)
	Biohazardous Infectious Materials (for organisms or toxins that can cause diseases in people or animals)				

For example, the ingredients of many cleaning or disinfecting products have possible health effects if inhaled or absorbed through the skin; they all fit in the health hazard pictogram. Some also can burn skin or eyes – represented in the corrosion pictogram.



The **health hazard pictogram** will be seen on many labels and data sheets. The GHS/WHMIS 2015 classes and categories for this pictogram are:

- respiratory sensitizer (Categories 1, 1A, 1B)
- germ cell mutagenicity (Categories 1, 1A, 1B, 2)
- carcinogenicity (Categories 1, 1A, 1B, 2)
- reproductive toxicity (Categories 1, 1A, 1B, 2)
- specific target organ toxicity: one exposure (Categories 1, 2)
- specific target organ toxicity: repeated exposures (Categories 1, 2)
- aspiration (Category 1)

Simply put, these health hazard classes – the effects – are for potential long-term or chronic harm, including cancers, damage to male or female reproductive health or their offspring, respiratory or skin allergies, or damage to internal organs (e.g., liver, kidneys, heart). See the glossary in Appendix 2 for definitions.

The categories describe how strong the effects can be, based on the evidence used. Category 1 (and its subdivisions) is the strongest and requires the word “Danger” on the label.

Category 2 is less so and must be labelled with “Warning”. In both cases, these “signal words” tell you exposure to the product **should be avoided**.

So, does whatever is in a product cause all those health problems?

No. It just means that at least one chemical ingredient has the potential to cause at least one of those effects. (Depending on use and exposure, the risk of this effect can range from low to high. See the discussion about the differences between “hazard” and “risk” at http://www.ccohs.ca/oshanswers/hsprograms/hazard_risk.html.) The system is designed to tell you what each possible health effect is; that information’s in the hazard statement on the label.

Say you’re using a chemical disinfectant, and one ingredient in the SDS can seriously affect your breathing if you become allergic to it, (i.e. the effect is respiratory sensitization.) The label will say: *Warning: may cause breathing difficulties if inhaled*. The SDS also will have this, and more, information.

➔ What other hazard symbols might you see on cleaning products?



The **exclamation mark** pictogram covers classes for **immediate or acute effects**. They are:

- acute toxicity: oral (through the mouth), dermal (skin), inhalation (breathing) (Category 4)
- skin corrosion/irritation: skin irritation (Category 2)
- serious eye damage/eye irritation: eye irritation (Categories 2, 2A)
- skin sensitizer (skin allergy) (Categories 1, 1A, 1B)
- specific large organ toxicity: single exposure (Category 3)



The **corrosion pictogram** covers **burn-type acute or immediate effects**:

- corrosive to metals (Category 1)
- skin corrosion/irritation: skin corrosion (Categories 1, 1A, 1B, 1C)
- serious eye damage/eye irritation: serious eye damage (Category 1)



The familiar **skull and crossbones** is for general **acute or immediate effects**:

- acute toxicity
- oral (Categories 1, 2, 3)
- dermal (Categories 1, 2, 3)
- inhalation (Categories 1, 2, 3)



Finally, effects on the waters around us (the **aquatic environment**) have their pictogram too.

What are the new labels? What are they supposed to say?

CCOHS materials include a sample label (see it at the right).

Notice there is no hatched border, like the old WHIMIS labels. It also has the new hazard symbols and standard hazard warnings.

This theoretical product contains something that irritates skin; it's also very toxic if swallowed. But it doesn't say what ingredients cause these hazards or even what's in the product. Those are on the data sheet.

Product K1 / Produit K1



Danger

Fatal if swallowed.
Causes skin irritation.

Precautions:

Wear protective gloves.
Wash hands thoroughly after handling.
Do not eat, drink or smoke when using this product.

Store locked up.
Dispose of contents/containers in accordance with local regulations.

IF ON SKIN: Wash with plenty of water.
If skin irritation occurs: Get medical advice or attention.
Take off contaminated clothing and wash it before reuse.
IF SWALLOWED: Immediately call a POISON CENTRE or doctor.
Rinse mouth.

Danger

Mortel en cas d'ingestion.
Provoque une irritation cutanée.

Conseils :

Porter des gants de protection.
Se laver les mains soigneusement après manipulation.
Ne pas manger, boire ou fumer en manipulant ce produit.

Garder sous clef.
Éliminer le contenu/récipient conformément aux règlements locaux en vigueur.

EN CAS DE CONTACT AVEC LA PEAU : Laver abondamment à l'eau.
En cas d'irritation cutanée : Demander un avis médical/consulter un médecin.
Enlever les vêtements contaminés et les laver avant réutilisation.
EN CAS D'INGESTION : Appeler immédiatement un CENTRE ANTIPOISON ou un médecin.
Rincer la bouche.

Unfortunately, in making the new WHMIS rules fit with the Canada-US **agreement** to harmonize right-to-know systems, the Canadian government dropped the old rule saying the label must refer you to see the data sheet. So, all workers need access to the SDS where they can look for other important information.

How are data sheets different?

Most products used at work must have data sheets prepared by the manufacturer or distributor, providing detailed information about ingredients, properties and precautions. New **Safety Data Sheets** (SDSs) have 16 sections with required kinds of information in each. The order must be the same too.

(Under the Canada-US harmonization agreement about right-to-know, the environmental information on labels and SDS is optional, even though an ingredient may be a serious environmental hazard. Our *Tools for Informed Substitution* project includes environmental hazards because they are an important reason for choosing less toxic products.)

Workers must be trained about how to read them, and the labels that go with them, before they use a product. With this in mind, CCOHS has **advice** about **what every worker should know about using a SDS:**

*Always be familiar with the hazards of a product **before** you start using it.*

You should look at an SDS, match the name of the product on the container to the one on the SDS, know the hazards, understand safe handling and storage instructions, as well as understand what to do in an emergency.

You can think of the SDS as having four main purposes. It provides information on:

- a. Identification:** for the product and supplier.*
- b. Hazards:** physical (fire and reactivity) and health.*
- c. Prevention:** steps you can take to work safely, reduce or prevent exposure, or in an emergency.*
- d. Response:** appropriate responses in various situations (e.g., first-aid, fire, accidental release).*

For most people who work with hazardous products, you should always:

- *read the name of the product (Section 1),*
- *know the hazards (Section 2)¹,*
- *understand safe handling and storage instructions (Section 7), and*
- *understand what to do in an emergency (Sections 4, 5 and 6)*

Data sheets used to be kept in binders. What if they're kept on a computer now?

You must have “readily available” access to them at all times, wherever they are. British Columbia’s health and safety regulations **say** that employers will have to work with the joint health and safety committee to ensure this happens. There also should be at least one worker representative on each shift who can help workers get data sheets if need be.

Does WHMIS apply to every product used at work? At home?

Sometimes a product may not come with a WHMIS data sheet, or WHMIS labels don’t appear on a product. Data sheets may not list chemical ingredients, or they may only list some. What’s going on?

WHMIS does not require complete information about all chemical products that may be used on the job. There are four ways in which this occurs:

1. WHMIS doesn’t cover the type of product;
2. one or more ingredients do not meet the WHMIS definition of hazardous;

3. the ingredient is a “trade secret”; or
4. sections 12 – 15 of the SDS could have additional regulatory information and disposal information but they may be blank because they are “optional” in Canada and the USA.

1. Exclusions from WHMIS 2015

Fragrances and flavours have been included in WHMIS 2015. (Fragrances are common in cleaning products.) Otherwise, excluded products are the same as in the original regulation. (The full **GHS** international agreement does not exclude any kind of ingredients or

¹Information about ingredients is in Section 2, with more in Section 12. Environmental hazards are spelled out in Section 12, which does not have to be filled in under WHMIS 2015.

products. Both the Canadian and US right-to-know laws continue to exclude some things.)

Often covered by other pieces of federal legislation, the excluded items are:

- explosives (as defined in the **Explosives Act**);
- cosmetics, devices, drugs or food as defined in the **Food and Drugs Act**.
- pesticides (defined as “pest control products” in the Pest Control Products Act)
- consumer products (defined in the Canada Consumer Product Safety Act);
- wood or products made of the material;
- nuclear substances that are radioactive and come within the meaning of the Nuclear Safety and Control Act;
- hazardous waste (hazardous product sold for recycling or recovery or intended for disposal);
- tobacco and tobacco products (see the Tobacco Act); and
- “manufactured articles”.

This means WHMIS 2015 may not cover some chemicals used in your workplace or job. Cleaning products will not have

WHMIS 2015 data sheets and labels when they are considered “consumer products” or pesticides.

Fortunately, British Columbia goes beyond WHMIS to require right-to-know **coverage for all chemicals** used by or around workers. Section **5.2** of the Occupational Health and Safety **Regulation** (see box below) is a strong requirement, one of the best in Canada.

Did you know?

Disinfectants are “pesticides”

Some cleaning products – especially disinfectants – are considered pesticides because at least one of their ingredients is designed to kill germs. Therefore, under the WHMIS 2015 rules, the manufacturer or distributor does not have to provide WHMIS 2015 SDSs or labels. That’s the law; good practice is that they do, so always ask for them.

This section in the BC regulation applies to employees who are, or may be, exposed to any chemical that could harm them. It says the employer must give the workers information about the chemicals’ names, their possible effects and precautions for using them. If data sheets and labels aren’t available, they must do it another – equivalent – way. Otherwise, workers should not use the product, without getting

the information, just like they can't use other things without the proper WHMIS labels, SDSs and training.

2. Not all chemicals are considered hazardous under WHMIS

Not all chemicals are hazardous, using the WHMIS criteria. They may not fit in one of the new classes or they may not be considered hazardous if they are present in very low concentrations (under 0.1 percent for carcinogens, germ cell mutagens, and respiratory and skin sensitizers; less than one percent for other kinds of hazards).

Because of this, the data sheets for many less toxic and third-party certified environmentally-friendly products may not list all the chemical ingredients.

3. Trade secrets aren't so secret in Canada

It is illegal to just say "trade secret" in the ingredient disclosure section of a data sheet (Section 2); that's what Canada's Hazardous Materials Information Review Act (**HMIRA**) says. Manufacturers and distributors can apply for a partial exemption under the Act for a product ingredient, saying a chemical name or names are "confidential business information".

5.2 General information requirement from the BC Occupational Health and Safety Regulation

If a worker is or may be exposed to a chemical agent, or biological agent designated as a hazardous substance in section 5.1.1, which could cause an adverse health effect, the employer must ensure that

- (a) the identity of the chemical agent or biological agent, its possible effects on worker health and safety and any precautions required to protect the health and safety of the worker are clearly indicated by labels, MSDSs, or other similar means,
- (b) the information required by paragraph (a) is clearly communicated to the worker,...

Figure 2.2
SDS for Goof Off Graffiti Remover VOC spray.

SAFETY DATA SHEET		Page: 1
Goof Off Graffiti Remover VOC Spray		Printed: 01/06/2015 Revision: 12/23/2014 Supersedes Revision: 11/06/2013
1. PRODUCT AND COMPANY IDENTIFICATION		
Product Name:	Goof Off Graffiti Remover VOC Spray	
Company Name:	W. M. Barr 2105 Channel Avenue Memphis, TN 38113	Phone Number: (901)775-0100
Web site address:	www.wmbarr.com	
Emergency Contact:	3E 24 Hour Emergency Contact	(800)451-8346
Information:	W.M. Barr Customer Service	(800)398-3892
Intended Use:	Removal of paint, marker, crayon, ink, lipstick, nail and shoe polish, and candle wax.	
Synonyms:	FG670, FG672, FG672W	
2. HAZARDS IDENTIFICATION		
Flammable Gases, Category 1 Flammable Aerosols, Category 1 Gas Under Pressure, Compressed gas Flammable Liquids, Category 2 Skin Corrosion/Irritation, Category 2 Serious Eye Damage/Eye Irritation, Category 1 Skin Sensitization, Category 1 Germ Cell Mutagenicity, Category 1A Toxic To Reproduction, Category 1B Target Organ Systemic Toxicity (single exposure), Category 3 Aspiration Toxicity, Category 1		

Health Canada must check out the claim. If it is legitimate, the company data sheet still must include the ingredient's general chemical identity and a HMIRA registration number. The data sheet also must include all the hazard information about the "confidential" ingredient(s).

Bottom line: if you don't see a HMIRA registration number for a "trade secret" or "confidential business information", don't use the product. Report this to the employer and your health and safety representative.

To answer the question then, WHMIS 2015 doesn't cover consumer products – and some other kinds of products – used in workplaces. BUT, British Columbia's right-to-know law goes further. It says you must get information and training about all chemicals used in the province's workplaces.

If you want information about products for your home, many manufacturers have data sheets on line. You also can look for certified environmentally-responsible or "eco" products for many categories.

How can you use a SDS to get to safer substitutes? Moving from right-to-know to action.

You can go further than CCOHS' basic advice about the right-to-know. Employers, workers, unions, and procurement staff can use the information about ingredients and their hazards to find safer, less toxic substitutes.

This principle of informed substitution ensures that the use of less toxic products have been verified and shown to be actually safer than what it is being replaced. It's used more and more in these days of "greening" workplaces, and reducing the use of toxic substances in our homes, workplaces and environments.

The hazard symbols, (e.g., the exploding chest, dead tree and fish) can be the trigger to start looking for less toxic products or a different way to do the task. If a SDS says that a chemical ingredient has the potential to be a serious hazard to your health and/or the environment, or you screened your chemical using the tools presented in Section 3, B.C. health and safety regulations require that safer substitutes should be used, if they're available.

For example, see the first page of a full **SDS** for a highly toxic graffiti remover in Figure 2.2. The hazard symbols and statements say it contains a

5.55 Type of controls

(1) If there is a risk to a worker from exposure to a hazardous substance by any route of exposure, the employer must eliminate the exposure, or otherwise control it below harmful levels and below the applicable exposure limit established under section 5.48 by

- (a) substitution,
- (b) engineering control,
- (c) administrative control, or
- (d) personal protective equipment.

(2) When selecting a suitable substitute, the employer must **ensure that the hazards of the substitute are known**, and that the risk to workers is reduced by its use.

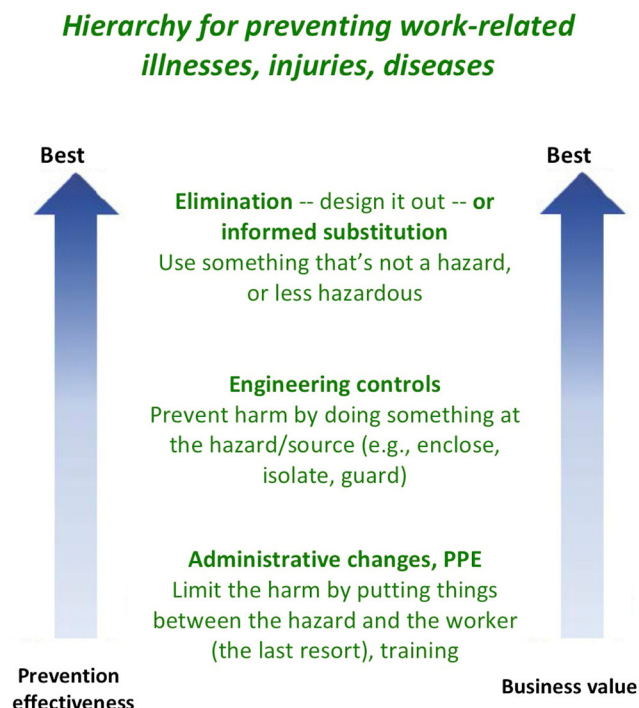
(3) The use of personal protective equipment as the primary means to control exposure is permitted only when

- (a) substitution, or engineering or administrative controls are not practicable, or
- (b) additional protection is required because engineering or administrative controls are insufficient to reduce exposure below the applicable exposure limits, or
- (c) the exposure results from temporary or emergency conditions only.

reproductive toxin and a skin sensitizer, and it's highly toxic. Using on-line tools, we found it had lots of hazardous ingredients, making it a priority target for informed substitution.

This isn't just a good idea. It's the law in British Columbia. Regulation 5.55 is

Figure 2.3 The hierarchy of prevention for work-related illnesses, injuries, diseases



one of the best in Canada when it comes to informed substitution (see at left). In clear language, it says:

If a hazardous substance can affect a worker – however it gets into their body – the employer must get rid of the hazard or make sure it is not present in a way that will harm workers.

To make this happen, the first – and most effective – choice is substitution. It can't be just any alternative. A "suitable" substitute must have fewer hazards, and they must be known (i.e., it must be **informed substitution**).

Personal protective equipment is the last resort. It can only be used if substitution is not possible (“practicable”), other measures are not practicable or don’t work well enough, or in a temporary or emergency situation.

Regulations 5.55 (and its related regulation, [5.57](#)) use what some call the “hierarchy of controls”. Figure 2.3 emphasizes the prevention principles behind informed substitution in what we call a *hierarchy of prevention*.

Where can you get more information?

To implement WHMIS 2015, British Columbia has [changes](#) for the Occupational Health and Safety Regulation. They are based on a national model that all provinces are using.

CCOHS has more information about:

- [general](#) aspects of WHMIS 2015 and [fact sheets](#) about different aspects of the system;
- the [GHS](#);
- hazard [classes and categories](#);
- [pictograms](#);
- [safety data sheets](#) (SDSs);

- supplier and workplace [labels](#);
- “trade secrets” or “confidential business information” – described as [generic chemical identity](#); and
- [education and training](#).

Also check:

- information about WHMIS 2015 and the GHS from [Health Canada](#);
- British Columbia’s Occupational Health and Safety Regulation as an [app](#); and
- changes to the Regulation, posted on the Worksafe BC [website](#) and specific ones about WHMIS 2015 [here](#).

What’s next? Prioritizing the most hazardous cleaning products for substitution.

We have a right to know. Data sheets and labels will give us some information, as will training. British Columbia has clear regulations that promote substitution and information about any hazardous chemicals. Are there independent sources that can tell us more about the hazards of chemicals? What about this informed substitution idea?

Section 3 has answers. It focuses on on-line tools to help you identify the most hazardous ingredients and check out less toxic ones for informed substitutes.



TOOLS FOR INFORMED SUBSTITUTION

HOW DO YOU FIND SAFER CHEMICALS FOR THE WORKPLACE?

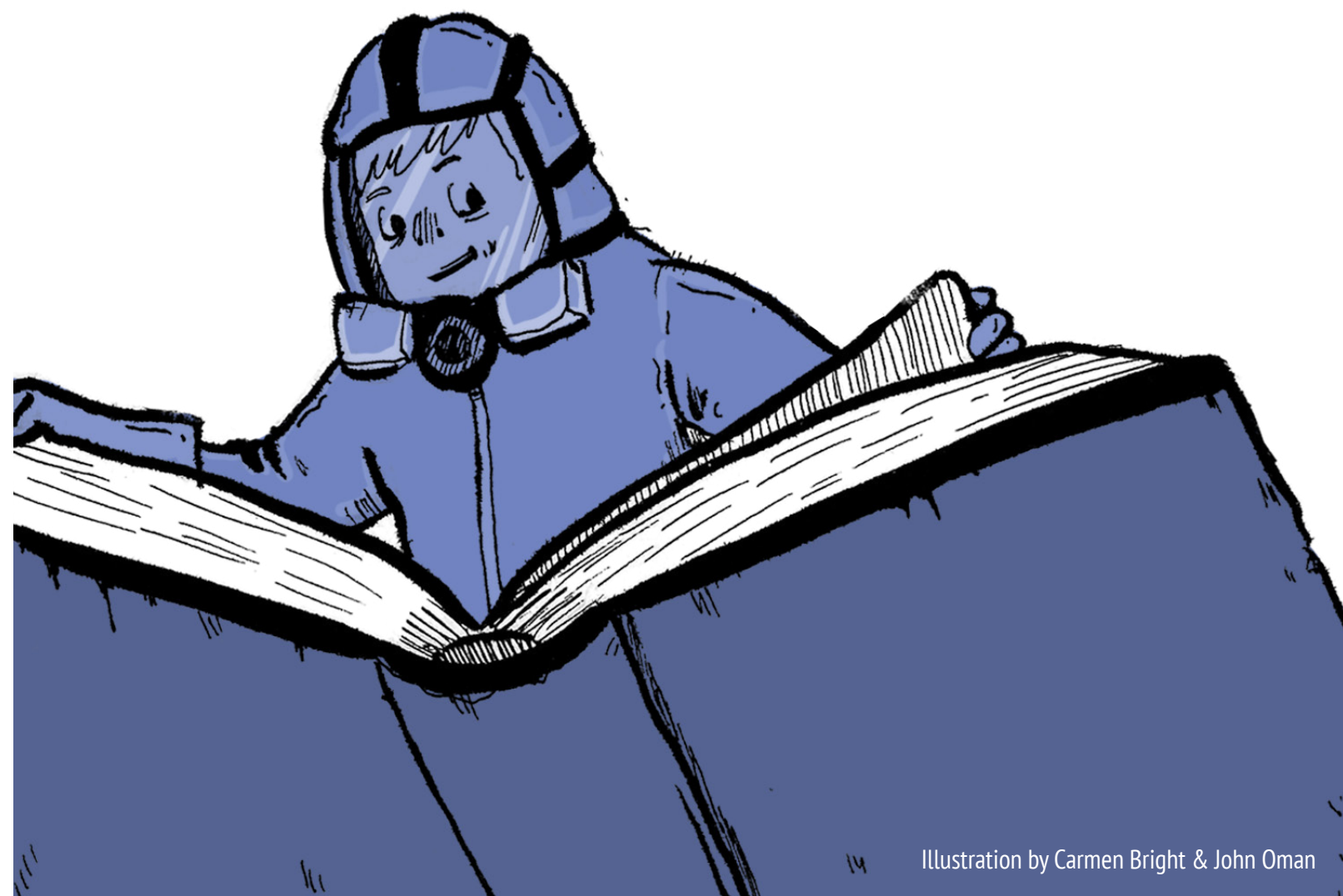


Illustration by Carmen Bright & John Oman

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