
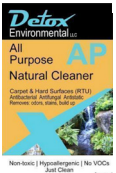












## ***More resources about hazardous chemicals and informed substitution***





# What are informed substitutes for the toxic products we found?<sup>1</sup>




PRODUCT	MANUFACTURER/ SUPPLIER	SCREENING RESULT (PHAROS)	HAZARD(S)	SAFER SUBSTITUTES/ALTERNATIVES		
				ECOLOGO	GREEN SEAL	OTHERS
<b>0026-PS Scrub'n Shine Creme Cleanser</b>	Armstrong Manufacturing Inc.	LT-1 (probable GreenScreen Benchmark 1) plus LT-P1	One ingredient – lauric acid diethanolamide, a.k.a. cocamide diethanolamine – is a carcinogen (on the IARC and Prop 65/ California EPA lists)	<p><u>EcoPure</u></p>  <p><u>Detox Environmental LLC/ Detox Natural Cleaner: All Purpose (AP)</u></p>  <p>Other <u>options</u> are available.</p>	<p><u>Evolve All Purpose Cleaner</u></p> 	


<sup>1</sup>The Tools for Informed Substitution final report has the complete list of all products screened during the project. The list includes chemical ingredients, hazards found, screening results and related notes.

PRODUCT	MANUFACTURER/ SUPPLIER	SCREENING RESULT (PHAROS)	HAZARD(S)	SAFER SUBSTITUTES/ALTERNATIVES		
				ECOLOGO	GREEN SEAL	OTHERS
<b>Debonaire Anti-bacterial foaming skin cleanser</b>	Deb Canada	GreenScreen Benchmark 1 (which means avoid as this is a chemical of high concern)	One ingredient – triclosan – is very toxic in water, bioaccu-mulates, and is endocrine active.  <b>NOTE:</b> Anti-bacterial hand soaps are not necessary. All-purpose hand cleansers are just as effective – and without toxic ingredients.	<u>GreenEarth® Foaming Skin Cleanser</u>   <u>Chemotec Foam Soap fragrance free</u> 	<u>LHS 77 Liquid Hand Soap</u>   <u>More Green Seal hand cleansers are available.</u>	
<b>Block &amp; Screen XL urinal screens</b>	Fresh Products	Unknown. “trade secret” claimed. Not registered so do not use.	Unknown. “trade secret” claimed. Not registered: do not use	<u>Avmor EP74 bowl urinal porcelain cleaner</u>   <u>Prism Care Biological Urinal Blocks</u> (already on Bee-Clean list)   <u>Other Ecologo urinal cleaners and screens are available.</u>	  <u>CoreCraft Ready to Use Urinal Cleaner</u>  <u>Other Green Seal urinal cleaners and screens are available</u>	

PRODUCT	MANUFACTURER/ SUPPLIER	SCREENING RESULT (PHAROS)	HAZARD(S)	SAFER SUBSTITUTES/ALTERNATIVES		
				ECOLOGO	GREEN SEAL	OTHERS
<b>Gelcon floor cleaner/restorer</b>	Gelcon	LT-1	Contains d-limonene (by another name), which is a persistent, bioaccumulative toxicant in the environment, and has sensitizing effects on people.	 <p><u>Enviro-Solutions ES95</u></p> <p>More Ecologo floor cleaners are available</p>	<p><u>Eco Floor Cleaner E32/S32</u></p> <p>More Green Seal floor cleaners are available</p>	
<b>INO Dust mop treatment</b>	Dissan Maintenance Products	LT-1	Odorless mineral spirits are on the IARC cancer list (1B). EU restricts use. Also a mutagen.			<p>No need for chemical additives. Use micro-fiber mops</p> <p>like <u>Bona Hardwood Floor Mop Curve®</u></p> 
<b>INO Furniture polish</b>	Dissan Maintenance Products	LT-1	Butane is on the IARC cancer list (1A), mutates genes, and is flammable.	 <p><u>Bona Wood Furniture Polish</u></p> <p>(Note: this is <u>GreenGuard Gold</u> certified, another UL certification)</p>	None listed.	

PRODUCT	MANUFACTURER/ SUPPLIER	SCREENING RESULT (PHAROS)	HAZARD(S)	SAFER SUBSTITUTES/ALTERNATIVES		
				ECOLOGO	GREEN SEAL	OTHERS
<b>INO Graffiti Remover</b>	INO Solutions	GreenScreen Benchmark 1 (which means avoid as this is a chemical of high concern).	Five other ingredients are LT-1 (probable GreenScreen Benchmark 1) Five are on the IARC cancer list (1A, 2A, 2B). Other effects are reproductive and developmental, neurotoxicity, skin irritation, water toxicity.	<u>CG310 Green Graffiti Remover</u>  Ecologo has <u>other graffiti removers</u> .	<u>Ecologic E49 Graffiti Remover</u> (and it's also a DfE Safer Choice) 	<u>SF Approved</u> has useful information about choosing graffiti removers.
<b>KaiBOSH Disinfectants/ sanitizer</b>	Kalvac, Inc.	LT-1 (two ingredients) LT-P (one ingredient)	One ingredient is on several cancer lists. Skin and respiratory sensi-tisers, asthmagen. One ingredient affects reproduction	<u>Oxivir Ready to use Spray</u>  <u>Oxivir All purpose</u>  (both made by Diversey)		SF Approved: Try <u>microfiber mops and cloths</u> , which can get rid of 99% of bacteria with plain water.  Also see <u>asthma-safe disinfectants</u> from Green Schools and Green Purchasing Institute.

PRODUCT	MANUFACTURER/ SUPPLIER	SCREENING RESULT (PHAROS)	HAZARD(S)	SAFER SUBSTITUTES/ALTERNATIVES		
				ECOLOGO	GREEN SEAL	OTHERS
<b>Ultra General Care/ Ultraseptic 885</b>	Ultra Chem USA Inc.	LT-P1 (four ingredients)	One ingredient – a “quat” – causes respiratory sensitization/ asthma. Also high acute aquatic toxicity.	<u>Diversey Care Oxivir Plus</u> 		See the <u>asthma-safe disinfectants</u> from Green Schools and Green Purchasing Institute.
<b>Ultra General Cleaning/ Q128</b>	Ultra Chem USA Inc.	LT-P1 (four ingredients)	One ingredient – a “quat” – causes respiratory sensitization/ asthma.	ECO Neutral Disinfectant (Buckeye)		See the <u>asthma-safe disinfectants</u> from Green Schools and Green Purchasing Institute.
<b>Carpet Spot and Stain Remover</b>	Wood Wyant	LT-P1	Isobutane is a carcinogen	<u>Enviro-Solutions / ES92 H202 Carpet Stain &amp; Spot Remover</u>   More Ecologo substitutes are available.	<u>Dyna Force 77 with Biosolv</u>   Other Green Seal carpet cleaners are available.	

PRODUCT	MANUFACTURER/ SUPPLIER	SCREENING RESULT (PHAROS)	HAZARD(S)	SAFER SUBSTITUTES/ALTERNATIVES		
				ECOLOGO	GREEN SEAL	OTHERS
<b>CaviWipes</b>	Metrex Research	LT-P1	A “quat” in this is an eye and skin irritant, may cause asthma and is an aquatic toxicant.	<u>Diversey Oxivir® TB Disinfectant Cleaner Wipes</u> 		See the <u>asthma-safe disinfectants</u> from Green Schools and Green Purchasing Institute.
<b>Chewing Gum Remover</b>	Dustbane	LT-P1	Isobutane is a carcinogen	No Ecologo option found.	No Green Seal option found.	Remove physically until a less toxic substitute is found.

## ***A glossary of terms related to cleaning products<sup>1</sup>***

**Accelerated hydrogen peroxide:** hydrogen peroxide in synergy with a blend of commonly-used ingredients that accelerate the disinfectant activity.

**Acute:** health conditions characterised by sudden onset and of finite duration. In addition, they tend to severely restrict the subject's usual daily activities. The sudden-onset health effects – such as rashes, breathing problems, or headaches – are felt or noticed almost immediately, often within minutes or hours after exposure to a product or environment.

**Antibiotic:** a medicine designed to kill or slow the growth of bacteria and some fungi. Antibiotics are commonly used to fight bacterial infections but cannot fight infections caused by viruses.

**Anti-bacterial:** a term used to describe substances that kill or slow the growth of bacteria when treating human and environmental surfaces, including those that aid in proper hygiene. Examples of anti-bacterial-containing commercial products include hand soaps, gels, and foams, and dishwashing detergents.

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<sup>1</sup>Thanks to Carol Westinghouse of Informed Green Solutions for permission to adapt the “Handbook definitions” from *Cleaning for Healthier Schools: Infection Control Handbook 2010*. Not all these terms are used in the toolkit. Those that aren't appear often in materials about cleaning products.



**Anti-microbial:** a general term used to describe substances (including medicines) that kill or slow the growth of microbes. Examples of anti-microbial agents include the following:

- Tetracycline (an antibiotic that treats urinary tract infections)
- Oseltamivir or Tamiflu® (an anti-viral that treats the flu)
- Terbinafine or Lamisil® (an anti-fungal that treats athlete's foot)

**Anti-microbial pesticide:** any chemical substance that can be used to kill microorganisms. These products are used to disinfect and sanitise, and to reduce the growth or development of microbiological organisms

**Antiseptics and germicides:** substances used to prevent infection on living tissue by inhibiting the growth of microorganisms. Because these products are used in or on living humans or animals, they are considered drugs and therefore regulated by the Health Canada and the US Food and Drug Administration.

**Asthma:** a chronic inflammatory disease that results from a complex interplay between environmental and genetic factors. The disease causes inflammation, with recurrent episodes of wheezing, chest tightness, cough, shortness of breath, and/or difficulty breathing. After asthma develops, the airways of the lungs become more responsive to a variety of stimuli. If left untreated, the resulting inflammation may lead to irreversible changes in the structure of the lung.

**Asthmagens:** substances capable of causing new-onset asthma. The Association of Occupational and Environmental Clinics (AOEC) has established criteria for determining whether a substance is an asthmagen.

**Bacteria:** micro-organisms that are found on our skin, in our digestive tract, in the air, and in the soil. Most are harmless (non-pathogenic). Many are helpful because they occupy ecological niches (both within our bodies and in the external environment) that could be occupied by harmful bacteria. These helpful strains keep harmful micro-organisms in check. They also help our digestive system to function effectively and stimulate the development of a healthy immune system. Beneficial bacteria are also used in the fermentation process that creates bread, wine, cheese, yogurt, and other foods and beverages.

**Bactericide:** a pesticide used to control or destroy bacteria, typically in the home, in schools, or on hospital equipment.

**Chronic:** health conditions in which the onset may not be noticed and characterised by a gradual progression of symptoms or by problems of a more permanent nature resulting from a series of acute conditions. Daily activities may or may not be restricted during any given period, although there is usually a more general series of activity limitations.

**Cleaning:** the removal of foreign material (e.g., soil and organic material) from surfaces and objects, normally accomplished with detergents or soaps. Cleaning is required prior to disinfection processes, so they can be most effective.

**Corrosive:** a corrosive material is a highly reactive substance that causes obvious damage to living tissue. Corrosives act directly by chemically destroying the tissue (oxidation) or indirectly by causing inflammation. Acids and bases are common corrosive materials and are sometimes referred to as caustics. Typical examples of acidic corrosives are hydrochloric (muriatic) acid and sulfuric acid. Typical examples of basic corrosives are sodium hydroxide (lye) and ammonia.

**Detergent:** a substance that aids in the removal of dirt. Detergents act mainly on the oily films that trap dirt particles. Detergent molecules have a hydrocarbon portion that is soluble in oil and an ionic portion that is soluble in water. Bridging the water and oil phases, the detergent acts as an emulsifier, breaking the oil into tiny droplets and suspending them in water. The disruption of the oil film allows the dirt particles to be washed away.

**Disinfectant:** a chemical or physical agent used on hard inanimate surfaces and objects to destroy or irreversibly inactivate vegetative micro-organisms, viruses, and infectious fungi and bacteria, but not necessarily their spores.

**Disinfection:** a process that is used to reduce the number of viable micro-organisms on a surface but that may not necessarily inactivate all microbial agents (e.g., spores and prions).

**Efficacy:** a measure of the ability to achieve desired results. Disinfectants are registered for their ability to kill certain microbes, and efficacy in this case relates to the percentage of target microbe(s) that are killed or removed.

**Endocrine disruptor:** an external agent that interferes in some way with the role of natural hormones in the body. Such an agent might disrupt the endocrine system by affecting any of the various stages of hormone production and activity; for example, by preventing the synthesis of hormones, by directly binding to hormone receptors, or by interfering with the natural breakdown of hormones. (For more about endocrine disruptors, see the Endocrine Disruption Exchange.)

**Fecal coliform bacteria:** bacteria found in the intestinal tracts of mammals. When present in water or sludge, it is an indicator of pollution and possible contamination by pathogens.

**Fungus:** a plant that has no leaves, flowers, or roots. Examples of fungi (or funguses) are mushrooms, molds, mildews, and yeasts.

**Microbe:** a collective name for microscopic organisms including bacteria (e.g., *Staphylococcus aureus*), viruses (e.g., influenza A and B, which cause the flu), fungi (e.g., *Candida albicans*, which causes some yeast infections), and some parasites (e.g., *Toxoplasma* species, which cause toxoplasmosis).

**Microbial pesticides:** micro-organisms that are used to kill or inhibit pests such as insects or other micro-organisms. Sometimes these microbes are effective simply by increasing in number, using the pests' food supply, and invading their environment.

**Micro-organisms:** bacteria, yeasts, simple fungi, algae, protozoans, and a number of other organisms that are microscopic in size. Most are beneficial, but some produce disease. Others are involved in composting and sewage treatment.

**Pathogen:** any organism or infectious agent capable of causing disease or infection.

**Pesticide:** a substance intended to repel, kill, or control any species designated a "pest," including weeds, insects, rodents, fungi, bacteria, or other organisms. The family of pesticides includes herbicides, insecticides, rodenticides, fungicides, and bactericides.

**Pesticide residue:** pesticides that may remain on or in the plant, food crop, soil, container, equipment, handler, and so forth, after application of the pesticide.

**Quaternary ammonium compounds (QACs or quats):** chemicals that have a similar chemical structure and are known for their disinfectant and detergent properties. Quats are the active ingredients in many disinfectant products used in schools. They are effective against some bacteria, viruses, fungi, and algae. Product labels specify the microbes they target. One example of a QAC is benzalkonium chloride.

**Registrant:** a pesticide manufacturer that has registered a pesticide product.

**Registration:** a formal listing with the EPA (in the USA) or Health Canada of a new pesticide before its sale or distribution. Both are responsible for pre-market licensing of pesticides on the basis of data that demonstrate that there are no unreasonable adverse health or environmental effects when applied according to approved label directions.

**Respiratory sensitiser:** a substance that induces hypersensitivity of the airways following inhalation of the substance.

**Sanitiser:** a product used to reduce (but not necessarily eliminate) microorganisms (usually bacteria) in the inanimate environment to levels considered safe, as determined by public health codes or regulations. Sanitisers include food-contact and non-food-contact products.

**Sensitiser:** a substance that can produce an allergic reaction in the skin or respiratory tract in some individuals. Skin sensitisation is called allergic dermatitis. Respiratory sensitization can include rhinitis (hay fever) and/or asthma. These reactions occur after re-exposure to the same substance after initial sensitisation exposure has occurred.

**Sterilisation:** a validated process used to render a surface or instrument free from all viable microorganisms.

**Viruses:** micro-organisms that are smaller than bacteria and cannot grow or reproduce apart from a living cell. They invade living cells and use the cell's chemical machinery to stay alive and to replicate themselves. Thus, to survive and reproduce, they must invade a host cell (animal, human, plant, or bacteria). Virus infections may be spread by way of the air, by contact with surfaces, and by the exchange of body fluids.

# Table 1:

## Recommended labeling programs

Source: Healthy Cleaning & Asthma-Safer Schools: A How-To Guide

OCTOBER 2014

Debbie Shrem, Justine Weinberg, Jennifer Flattery

Cleaning for Asthma-Safe Schools Project Work-Related Asthma Prevention Program

Occupational Health Branch California Department of Public Health

<http://www.cdph.ca.gov/programs/ohsep/Pages/Asthma.aspx>

**Level 1: Prohibits the most asthma-causing chemicals (safest and healthiest options)\***

### Recommended third-party certified cleaning products

#### UL ECOLOGO UL 2759: Hardsurface Cleaners

(General purpose/bathroom cleaners, dish detergents, degreasers, and other cleaning products for household, institutional, and industrial use)

#### UL ECOLOGO UL 2795: Carpet and Upholstery Cleaners

(carpet cleaners, carpet spot and stain removers, and upholstery care products)

#### Green Seal GS-37: Cleaning Products for Industrial and Institutional use

(General purpose, restroom, glass, and carpet cleaning products)

#### Green Seal GS-53: Specialty Cleaning Products for Industrial and Institutional use

(Dish soaps, graffiti removers, car cleansers, deck/outdoor cleaners, odor removers, polishes, and waxes)



\*UL ECOLOGO prohibits asthmagens that cause allergic-type asthma. Green Seal allows the use of enzymes, which can cause allergic-type asthma. WRAPP recommends only Green Seal certified products that do not contain enzymes.

## *Level 2: Prohibits some asthma-causing chemicals\*\**

### **Design for the Environment (DfE)**

DfE's criteria prohibit chemicals that may cause cancer or have developmental, reproductive, or neurotoxicity issues and limit some asthma-causing agents. For a list of products, visit:

<http://www.epa.gov/dfe/products>



### **Design for the Environment Antimicrobial Pesticide Pilot Project**

Labels environmentally preferred disinfectants. DfE's criteria prohibit chemicals that may cause cancer, endocrine disruption, and are unlikely to cause developmental, reproductive, mutagenic, or neurotoxicity issues. Prohibits sodium hypochlorite (bleach) and quaternary ammonium compounds. This is the only labeling program available for disinfectants.

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**\*\*Prohibits some asthmagens that can cause allergic-type asthma**

## *Level 3: Do not prohibit asthma-causing chemicals . May still be a healthier choice than uncertified products .*

### **Carpet and Rug Institute products help limit or get rid of asthma triggers**

#### **Green Label Plus**

Tests VOC emission levels for carpet and adhesive products for a variety of chemicals. Does NOT prohibit ingredients that cause asthma. This is the only labeling program for carpets and adhesives.

#### **Seal of Approval for Residential Use Vacuums**

Measures soil removal, dust containment, and surface appearance change. This is the only labeling program for vacuums.

**These third-party certified products may contain ingredients that cause asthma . However, they do not contain ingredients that are known to cause cancer or reproductive harm, and they contain fewer VOCs and cause less pollution .**

**Green Seal GS-8:** Cleaning Products for Household Use

**Green Seal GS-34:** Cleaning and Degreasing Agents

**Green Seal GS-40:** Floor-Care Products for Industrial and Institutional Use

**UL ECOLOGO UL 2767:** Paint and Varnish Removers

**UL ECOLOGO UL 2792:** Biologically-Based Cleaning and Degreasing Compounds

**UL ECOLOGO UL 2777:** Hard Floor Care Products

**UL ECOLOGO UL 2780:** Urinal Blocks





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# TOOLS FOR INFORMED SUBSTITUTION

HOW DO YOU FIND SAFER CHEMICALS FOR THE WORKPLACE?

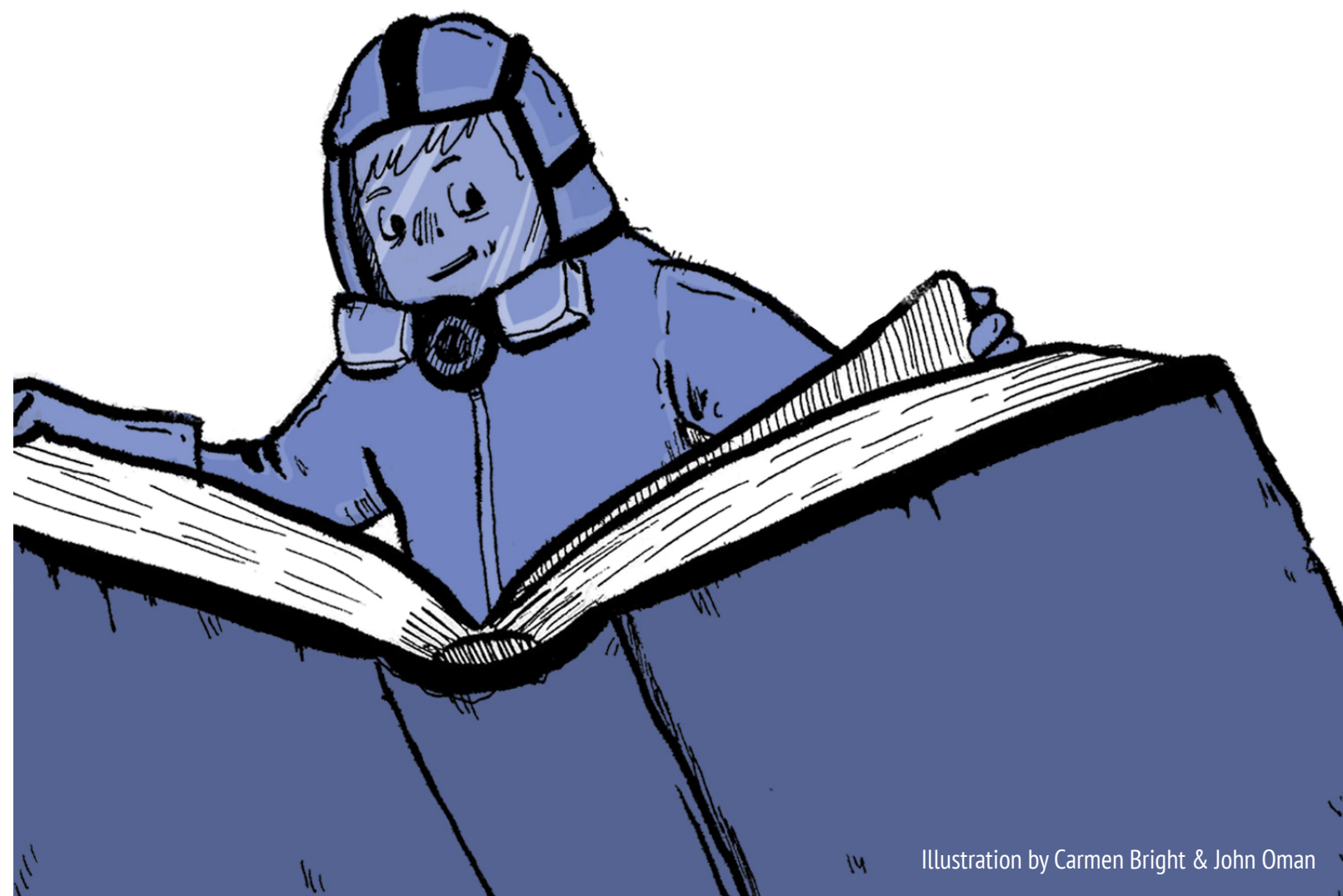


Illustration by Carmen Bright & John Oman

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