

LSF

Learning for a Sustainable Future



LST

L'éducation au service de la Terre



Let's Explore: Misinformation, Disinformation and Science Literacy

Grades 7-12



About LSF

- Canadian charity founded in 1991
- Bilingual (EN/FR)
- Mission: to promote—through education—the knowledge, skills, values, perspectives and practices essential to a sustainable future
- Working at all levels of the education system: students, teachers, administrators, boards, governments, etc.

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Our Learning Goals for Inquiry

- Students will learn strategies to evaluate visual, text and social media for validity, misinformation and disinformation
- Students will understand the importance of their responsibility as critical thinkers and as Digital Citizens
- Students will apply their understanding of the scientific method and basic methods of science denial and media misinformation
- Students will demonstrate their knowledge and skills through active learning activities and a culminating task.



Activity 1: Information Ecosystem

Where do you get the information that forms your point of view?



Inquiry Activity 1: 5-8 minutes

Where do you get the information that forms your point of view?

Consider the sources in your “information ecosystem”

- School
- Outside school - home and community
- Online



Think Write Pair Share

THINK 
WRITE... 
PAIR 
SHARE 

- What sources of information do you often use to learn about a research topic or current event?
- Write down as many as you can think of in 1 minute.
- Share your list with a partner.

What makes a Validated or Fact-Based Sources?

- Author has relevant credentials and expertise and the publisher is established ie academic journals, fact-checked news outlet, government reports
- Evidence is referenced with sources and citations
- The information is objective, balanced and impartial with the purpose to inform or educate
- The information is current
- The information can be confirmed by checking references

Your Information Ecosystem



Which sources would you say are validated fact-based information and which ones are more opinion-based persuasive sources?

Sort your sources:

Mark F for Fact and O for opinion

What kinds of sources do you rely on most for factual information?

Does it matter? Why or Why Not?

Let's Explore Misinformation Disinformation and Science Literacy

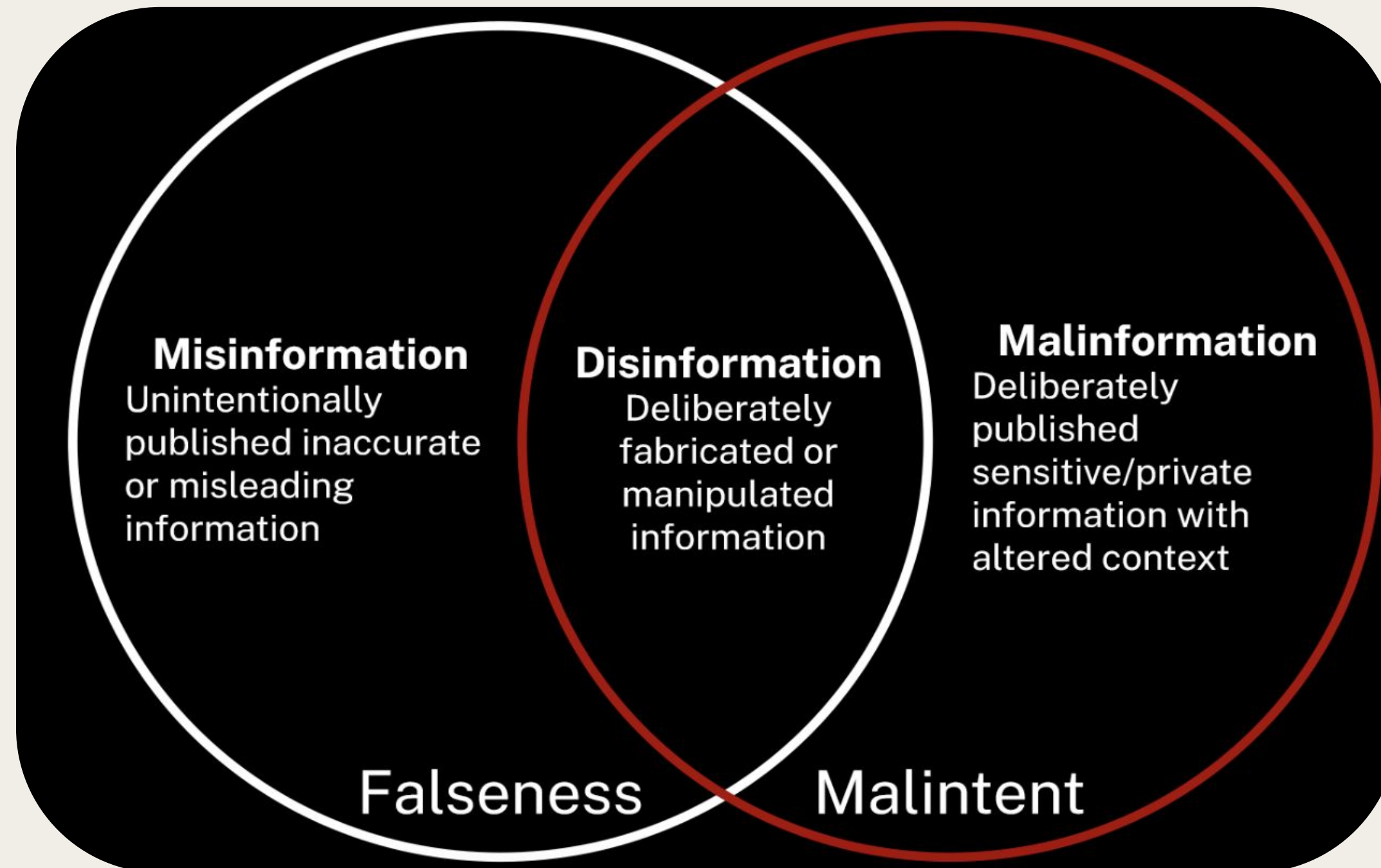
Our Inquiry Questions:

- How do we build our knowledge and perspectives?
- What sources can we trust?
- What strategies and digital tools help us find, use and share valid information, especially about science?



Sources Matter!

What tools help us make sure it's real?



Is the information credible?





Activity 2:

Spot the Fake

Look closely at the next few photos and decide if they are real or fake. **Why?**







TRUE

“This really is a bicycle that got stuck in a tree that grew around it, in Washington state. However, many people mistakenly claim that it has been there since World War I: in fact it was left there around 1954.”





FAKE

“This photo is entirely staged, with the bear added by Photoshop.”





TRUE

“This photo really does capture a weasel riding on the back of a woodpecker – probably in an attempt to kill it. The woodpecker threw the weasel off moments later and escaped.”

Fact Checking Tools

1. **Use Fact Checking Tools** (e.g., [Snopes.com](https://snopes.com) or www.bit.ly/fact-search)
2. **Find the Source** (e.g., follow the links, use a search engine such as Google)
3. **Verify the Source** (e.g., does it really exist?, is it a reliable site?)
4. **Check Other Sources**



Source: mediasmarts.ca

Check using the 5 C's of Critical Consumption

- **Context** uses updated primary research/data/info?
- **Credibility** uses valid experts and fact-checked sources?
- **Construction** is it news, biased propaganda, advertising?
- **Corroboration** are the sources legit?
- **Compare** how do other trusted sources cover this?

AI is making Fake photos and videos harder to spot!

Videos online are a big source of misinformation created to manipulate, confuse and persuade us.

- What questions or ideas come to mind from this video?
- Why is it important for students to learn about this problem at school?
- What are the reasons fake videos are made?
- What might be the consequences of students believing fake videos?

Note: The BBC is considered a trusted source of information.





Activity 3: So What?

Activity 3: So What?

- Discuss and Draw Your Group's Ideas
- What are some possible consequences of believing and sharing unverified AI or faked information?

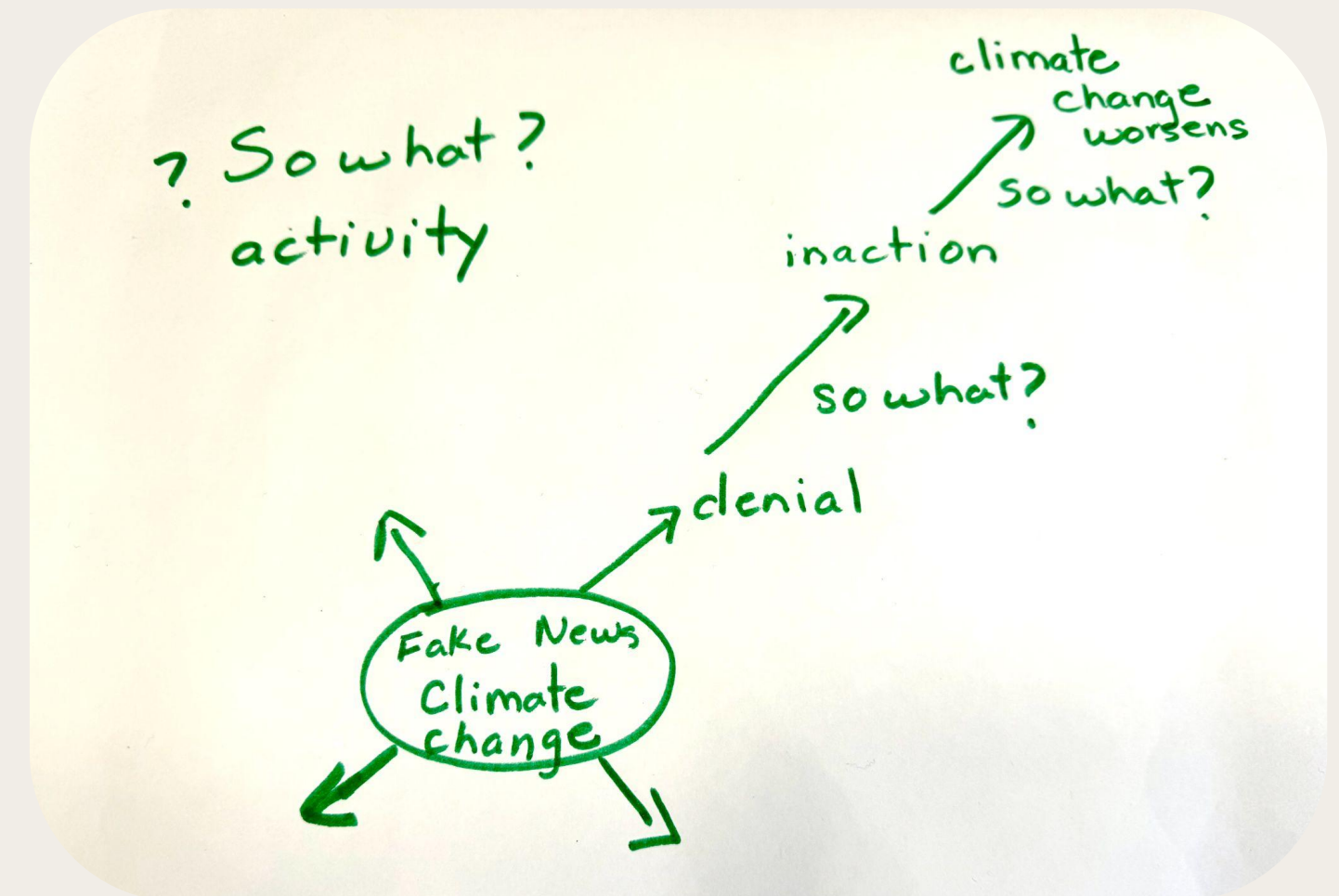
Group Topic Choice

- Science/Health
- News Events
- Political and
- Election Info
- Consumer Info
- Food Info
- Climate Change info

Group Activity: So What?

Use Chart Paper

- Write your Fake News topic in the centre
- Draw a line and write a possible consequence of believing fake news
- Add a so what? and consider what might happen next
- Repeat for other possible consequences.



Next Step

For the topic your group discussed, find 2 sources of information you would **trust**.

- Cite the source
- Why do you trust this/these source(s)?
- Be ready to share!

Recap what we learned today

Digital Citizenship

Helpful Questions to Ask Yourself

- Am I about to share, tag, like, follow, retweet, forward this?
- Could someone base an important decision (their health, career, travel) on this?
- Is it about a “hot” or controversial issue?
- Does this seem “too good to be true”?



***THIS POST
CONTAINS
MISINFORMATION***

Ticket Out the Door!

- On your sticky note or paper, write one insight, idea or strategy that you will take with you when you are viewing, reading or sharing information.
- Hand this in before you leave

Let's Review



In These Lessons You Have Learned To...

- Fact Check the Info
- Find the Source: When? Where? Who?
- Verify the Source: Valid and Reliable?
- Find Other Sources with the Same Information



Extension Activities

1. Green Learning's *Spot the Troll* Workshop
 2. Science Literacy & The Five C's of Credibility
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Spot the Troll Workshop

Based on GreenLearning's Climate Policy Quest Program, their "Spot the Troll" webinar focuses on the impact of misinformation on climate policy. This workshop is a great next step to explore and critically evaluate the impacts of mis and disinformation.

Science Literacy & The Five C's of Credibility

In groups of 2-3, read an article about walking 10,000 steps from the following slides. Then use each of the 5 Cs to determine their credibility by doing some of your own research.

Science Literacy

These are some sites you might want to explore to assist with your task. Be sure to record your group's summary for each "C".

- [What Happens When You Walk 10,000 Steps](#)
- [10,000 Steps a Day - Or Fewer?](#)
- [Science Confirms 10,000 Steps](#)
- [Do You Really Need 10,000 Steps?](#)
- [Kellogg Launches Cereal & Exercise Health Initiative](#)
- [Where Did 10,000 Steps Come From?](#)

The 5 Cs of credibility

- **Context:** uses updated primary research/data/info?
- **Credibility:** uses valid experts and fact-checked sources?
- **Construction:** is it news, biased propaganda, advertising?
- **Corroboration:** are the sources legit?
- **Compare:** how do other trusted sources cover this?

Example - 10,000 Steps, The “Magic Pill”

In 1965 the idea of walking 10 000 steps was introduced as an ideal number of paces to walk in a day to optimize health - and this has been a belief that has continued for decades.

“10,000 steps might really be the ‘magic pill’ everyone is seeking.”

“Studies in JAMA show that walking 10,000 steps can improve cardiovascular health and reduce risks of both dementia and cancer better than any pill or injection currently available.” This research professor concludes with multiple ideas of working your way up to the 10 000 step goal.



Article written on December 6, 2022 by Kay Hawes on the KU Medical Centre, [University of Kansas website](#)

“Kellogg Helps Canadians Count Steps”

Kellogg Canada is once again giving away step counters in its Special K cereal products, renewing the giveaway it ran in 2004.

More than one million counters have been inserted in specially marked boxes of the brand’s Original, Red Berries, Vanilla Almond, Chocolatey Delight, and Fruit and Yogurt cereals.

Customers who receive a counter are encouraged to walk more and track the number of steps they take during the day in the hopes of reaching 10,000 a day.”

Written by Jeromy Lloyd on December 4, 2008 on the site marketing.ca: [Kellogg Helps Canadians Count Steps](http://marketing.ca)



Fake News: How to Spot It

5 C's:

1. Context
2. Credibility
3. Construction
4. Corroboration
5. Compare



Follow-up Assignment

Option: Posters

- Working in groups of 2 (3 max.) as determined by your teacher, you will make a **detailed, illustrated poster** for one of the strategies you have learned about today.
- You will be assigned either one of the 5 Cs or one of the letters in the acronym FLICC (Spot the Troll Workshop).
- A poster relies on its images and brief words while still conveying a key message, so plan your work carefully prior to starting. Include Why this is important.
- Finally, decide where you will display your finished product, such as in your class, hallway, office or library.

Resources for Teachers

[Digital and Media Curriculum by Province - Mediasmarts.ca](#)



[Cranky Uncle Videos](#)

[Green Learning](#)

[How to Understand Mis, Dis & Malinformation Video](#)

[Let's Talk Science](#)

[Mediasmarts.ca- Digital Toolkits and Lessons](#)

[Mis & Disinformation Lesson Gr.7-8](#)

[Social Media Gr. 9 Lesson](#)

[Spot the Troll Workshop Gr.9-12](#)

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Canada 

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