

Seeing is Not Believing	Grade 4 to 6 – Media Literacy
Lesson Plan	
<p>Learning Outcomes</p> <ul style="list-style-type: none"> • Students will understand how eyes and the brain work together for us to see and interpret the world. • Students will learn how some images we see might not be reality. • Students will learn how to make their own illusions to trick people • Students will learn how to spot something that might not be “real.” 	<p>Overall Expectations</p> <p>Language Curriculum:</p> <p>A1. Transferable Skills demonstrate an understanding of how the seven transferable skills (critical thinking and problem solving; innovation, creativity, and entrepreneurship; self-directed learning; collaboration; communication; global citizenship and sustainability; and digital literacy) are used in various language and literacy contexts</p> <p>A2. Digital Media Literacy demonstrate and apply the knowledge and skills needed to interact safely and responsibly in online environments, use digital and media tools to construct knowledge, and demonstrate learning as critical consumers and creators of media</p> <p>C3. Critical Thinking in Literacy apply critical thinking skills to deepen understanding of texts, and analyze how various perspectives and topics are communicated and addressed in a variety of texts, including digital, media, and cultural texts</p> <p>Science and Technology Curriculum:</p> <p>A1. STEM Investigation and Communication Skills use a scientific research process, a scientific experimentation process, and an engineering design process to conduct investigations, following appropriate health and safety procedures</p> <p>Grade 4 – Light and Sound</p> <p>C2.6 describe how different objects and materials interact with light and sound energy</p> <p>C2.8 identify sensory organs and devices that make use of the properties of light and sound</p> <p>Grade 5 – Human Health and Body Systems</p> <p>B2.2 describe the basic structure and function of vital organs in various systems in the human body</p>

Description

Students will learn, using optical illusions and knowledge of human perception, about misinformation and digital literacy. Students will understand how easily our senses can be deceived, drawing a parallel to how information can be misleading online.

Materials

- Printed or digital versions of optical illusions – See other handouts
- Access to internet for audio illusions – See Additional Resources
- Set up for temperature perception (optional) – See Additional Resources
- Personal devices to have access to the internet with teacher supervision

Introduction

Our senses help us gather information from the world around us. Then, they send that information to our brain. The brain processes it and gives us our perception of what is happening. But sometimes, when there is missing or incomplete information, our brain tries to fill in the gaps. For example, with optical illusions, we might see images that aren't there. With auditory illusions, our brain fills in missing sounds with something we already know—like hearing English words in a different language.

This happens because our brains have evolved to react quickly, which was important for survival. Our brain has learned to work fast and piece together useful information from what our senses pick up. Often, we don't need to know all the details about something; we just need to notice how it's different from before. For example, think about how 12°C on a sunny day feels warm in winter but cool in summer.

Our brain uses something called 'schemata,' which are like folders of knowledge. When we learn something new, the brain tries to fit it into what we already know. But if what we knew before was wrong, it can be hard to change that initial understanding.

We are going to explore how our brains can be tricked using optical illusions or other perception activities. We'll see how easily we can be fooled into seeing, hearing, or feeling something that isn't there. This will help us understand how people can manipulate information to mislead or influence others.

Action

Illusions and Human Perception

Student Activity:

- Have students work in pairs to observe several different illusions. There is a **handout (Student Handout Illusions)**
 - These illusions can be optical, auditory or touch depending on what you have available and any accommodations you may need for your class.
- Students will write down their initial reactions to the illusions.
 - They will do this without discussing with their partner at first.
 - Then, they will discuss the similarities and differences in how they perceive the illusions.
- The teacher can explain the science behind the various illusions and what most people perceive.

- Note – There will be a **separate handout (Teacher Note Illusions)** with explanations of some familiar illusions.
- If you are looking for a more challenging activity, give each student one illusion and have them explore the science behind it to present to the class.

Discussion:

- Guide a discussion on how these illusions show that what we see isn't always accurate or real.
- Relate this to how digital media (videos, images, and information online) can be manipulated to mislead people.

Misinformation in the Digital World

Misinformation is like illusions. It can be designed to deceive or mislead viewers.

Show examples of doctored images, misleading headlines, or deepfakes.

Student Activity:

- Have students work in pairs or small groups to look at examples of real vs. fake images.
 - There is a **handout (Student Handout Illusions)** with examples of historic photos that have been manipulated, but also some more recent viral fake images.
- Ask the students to figure out what might be manipulated in the pictures. Do they think they are real situations. How might the images have been manipulated? Relate it back to how the illusions created misleading perceptions.
- Some questions for the students to ask:
 - What details make this believable or not?
 - What sources can we trust?

The teacher will show the students the steps they should take to help spot mis/disinformation.

SPOT

S- Stop P-Pause O- Observe T- Talk

First, we must stop or slow down and analyze what it is that we are looking at. We don't want to rush into believing something!

Next, we're going to Pause. When we pause and look at the source. We are going to ask ourselves "who is sharing this and what is the purpose of it." This can help gauge the content we are looking at and to understand why we're looking at it.

Observe the pictures! Analyze the pictures and look for any inconsistencies. If you can, you can also check for the source and the author's credentials and, if it comes from a reliable source.

Lastly, we are going to Talk and discuss what we've seen with others. Ask some questions, point out what you might have noticed and try to see if anyone has any pointers or thoughts/perspectives that you might not have considered.

STOP

S- Stop T- Think O- Observe P- Proceed with Caution

Like SPOT, this tool allows us to really consider what we are looking at and gets us to think about it.

First, like SPOT we're going to STOP and take a moment and look at the news article that will be on the board. We're going to look at the title and first think about how real this article can be.

Next, we THINK about the article. There are a few questions we can ask ourselves here: what is the source? Is there some bias in the article? Does it favour one opinion? Why does it exist? When we ask ourselves this it can help us better understand what we're looking at!

Then, we Observe. When we observe, we look for information that doesn't sound right. We look at the source, who wrote the article, and if there are any noticeable grammar or spelling errors in the articles we're looking at.

Lastly, we Proceed with Caution. Once we've completed all the previous steps, we can decide whether we think what we are looking at is legitimate and real or if the article may have been created to confuse or mislead us in some way.

Discussion:

- Guide a discussion of how online platforms can spread false information quickly and why it's important to be critical of what we see and read.
- Why might people or organizations do this? What can we do to not be tricked? Why is it important that we know what really happened?

Consolidation/Extension

Assessment during the activities

- Walk around the classroom and listen to student discussions. Ask probing questions to gauge their understanding of how perception and misinformation are related.
- Peer Feedback: Have students present their thoughts on specific illusions or misinformation examples to the class, with peers providing feedback on their analysis.

Assessment after the activities

- Written Reflection: Ask students to write a short paragraph or create a digital presentation explaining what they learned about optical illusions, human perception, and how this connects to misinformation online.
- Misinformation Fact-Check Project: In small groups, have students find one piece of misinformation online (with guidance) and then fact-check it, presenting their findings.
- Exit Ticket: "Why do you think it's important to question what we see and read online?" and "What can you do to verify if something is true?"

Additional Resources

The Illusions Index: <https://www.illusionsindex.org/>

Explanations of illusions: <https://michaelbach.de/ot/>

Tricking your ears: https://www.perfectcircuit.com/signal/auditory-illusions?srsId=AfmBOoqAKKdy9YZR0ff92eFZxnHA24B5z-PGo5_xhJuNqcy1OkZ0cHhD

Cold or Warm, Can We Really Tell? <https://www.scientificamerican.com/article/cold-or-warm-can-we-really-tell/#:~:text=Warm%20receptors%20will%20turn%20up,and%20decrease%20it%20during%20warming.>