

LESSON PLAN

Is That a Fact?

This lesson is part of *USE, UNDERSTAND & ENGAGE: A Digital Media Literacy Framework for Canadian Schools*: <http://mediasmarts.ca/teacher-resources/digital-literacy-framework>.



LEVEL: Grade 4 to 8

DURATION: 45 minutes, plus time for research

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Overview

This is the first lesson in the *Critical Thinking Across the Curriculum* series, though it can also be delivered independently. In it, students learn the difference between facts and opinions, and distinguish between opinions that are entirely subjective and ones that can be supported by facts. They then learn how to construct and evaluate arguments.

Learning Goals

Big ideas/key concepts: Students will understand that...

- Media are constructions: Arguments use facts to support opinions
- Media have social and political implications: Arguments can convince people to change their opinions
- Each medium has a unique aesthetic form: Arguments can be judged based on whether the supporting facts are true and on whether or not they truly support the opinion

Frequent misconceptions to correct:

- To be a fact, something has to be true
- All opinions are equally true

Essential knowledge: Students will learn that...

- Finding and Verifying: We often need to research extra questions to find out whether or not a fact supports an opinion
- Making and Remixing: Arguments are a media form that follows a particular structure to use facts to support opinions

Key vocabulary: Fact, opinion, argument

Performance tasks: Students will be able to...

- Access sources of information to research a question
- Use graphic organizers and other tools to develop a well-supported argument
- Understand the difference between facts and opinions and what makes an opinion more valid or convincing than another
- Engage with difficult questions, including by questioning their own thoughts and beliefs

Preparation and Materials

Prepare to distribute the following handouts:

- *Fact or Opinion?*
- *Arguments*
- *How Do You Know?*

Prepare to distribute the assignment sheet *Truthseeking Trio*

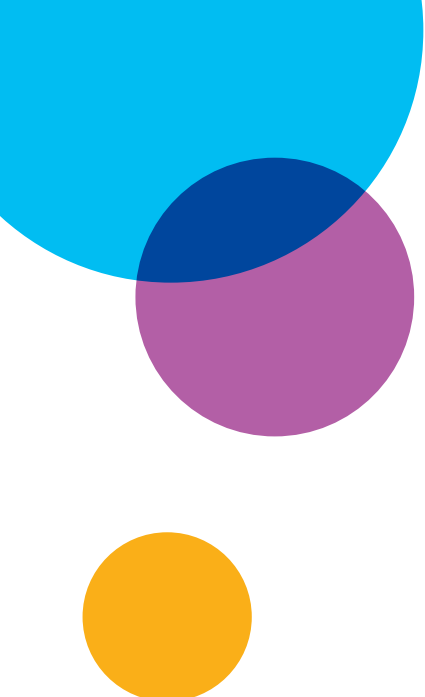
Procedure

FACTS VERSUS OPINIONS

Project or distribute the handout *Fact or Opinion?* and ask students to identify which of these is a statement of fact, and which is an opinion.

1. The moon is round.
2. The moon is beautiful.
3. The moon goes around the Earth.
4. The moon is made of green cheese.
5. The moon was formed when another planet struck the Earth.
6. Going to the moon was humanity's greatest achievement.
7. Going to the moon was a waste of money.

Once students have identified which ones they consider to be facts and which are opinions, have them share their responses and then give the correct answers:

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1. The moon is round – **Fact.**
 2. The moon is beautiful – **Opinion.**
 3. The moon goes around the Earth – **Fact.**
 4. The moon is made of green cheese – **Fact.**
 5. The moon was formed when another planet struck the Earth – **Fact.**
 6. Going to the moon was humanity's greatest achievement – **Opinion.**
 7. Going to the moon was a waste of money – **Opinion.**

Now ask students to compare the sentences you've identified as facts with the ones that are opinions. (You may consider drawing up a two-column chart on the board or have students make one, to group the two categories together visually.)

How are all the fact statements similar to one another? How are all the opinion statements similar? How are the fact and opinion statements similar?

Let students discuss this for a few minutes and then distribute the handout *Facts Versus Opinions* and read through it with the class.

Next, go through the *Fact or Opinion?* handout again and ask students why each one is either a statement of fact or an opinion.

- The moon is round – **Fact:** This can be proven or disproven.
- The moon is beautiful. – **Opinion:** This is something you believe that cannot be proven or disproven.
- The moon goes around the Earth. – **Fact:** This can be proven or disproven by observation and measurement.
- The moon is made of green cheese. – **Fact:** This can be proven or disproven (in this case, disproven!) by observation and testing.
- The moon was formed when another planet struck the Earth. – **Fact:** Scientists think this is the most likely explanation for how the moon was formed, based on other facts we know about it. (For instance, moon rocks are very similar to some rocks found on the Earth.)
- Going to the moon was humanity's greatest achievement: – **Opinion.** This is something you believe that cannot be proven or disproven.
- Going to the moon was a waste of money: – **Opinion.** This is something you believe that cannot be proven or disproven.

ODD ONE OUT

Now list these three opinion statements:

- *The moon is beautiful.*
- *Going to the moon was humanity's greatest achievement.*
- *Going to the moon was a waste of money.*

Ask students:

How are these similar and how are they different?

After a short discussion, tell students that “the moon is beautiful” is the *odd* one out (in other words, which of these does not fit with the other two.)

Now ask:

- What makes it different from the other two?
- If it is different, how are the other two statements similar to one another?

Let students discuss this question for a few minutes and ask:

- If you believed that the moon is beautiful, could anyone ever convince you that *wasn't* true?
- If you believed that going to the moon was a waste of money, could anyone ever convince you *that* wasn't true?

Explain to students that you can't really use facts to convince someone that the moon is beautiful, because we all have different ideas of what “beautiful” is. You *could* use facts to convince someone of the last two opinions. This is called *making an argument*.

ARGUMENTS

Distribute the handout *Arguments* and go through the first page with the class.

Remind students how to remember the difference between facts and opinions from the *Facts Versus Opinions* handout:

- If the question is “*What do you think?*”, the answer is an *opinion*.
- If the question is “*How do you know?*”, the answer is a *fact*.



We can use this to test whether our opinions are supported by facts.

Next, go through *Building Arguments* on the second page of the handout.

Have students work in pairs or small groups to sort the facts listed into ones that support the opinion “Going to the moon was humanity’s greatest achievement,” ones that support the opinion “Going to the moon was a waste of money,” and ones that do not support either opinion.

Have the pairs or groups share their lists. The final list should look like this:

Going to the moon was humanity’s greatest achievement:

- Photos of the Earth, taken from the moon, made many people more aware how fragile the Earth’s environment is.
- Many technologies we use today were developed as part of the space program.
- 400,000 people were involved in the space program and the moon landing.
- People have been imagining trips to the moon since at least the 2nd Century CE.

Going to the moon was a waste of money:

- The first moon landing cost about two and a half billion dollars.
- Chemicals in the rockets that sent astronauts to the moon contributed to climate change.
- Spending time in space is bad for astronauts. It weakens their bones and increases the risks of several diseases.

Does not support either opinion:

- The moon’s gravity is one-sixth as strong as the Earth’s.

Now ask students: Which of these facts provide the *strongest* or most *convincing* argument for each opinion? How can we tell? (There is no right or best answer; the point is to get students thinking about how facts may be stronger or weaker supports for an argument.)

HOW DO YOU KNOW?

Review the first page of the *Arguments* handout with the class as an example of an argument, highlighting the opinion (“We should build a base on the moon”) and the fact used to support it (“there are many minerals on the moon that we could use on Earth.”)

Distribute the handout *How Do You Know?* and divide the class into groups of three. Assign or allow each group to choose one of the following opinion statements (more than one group can work on each statement):

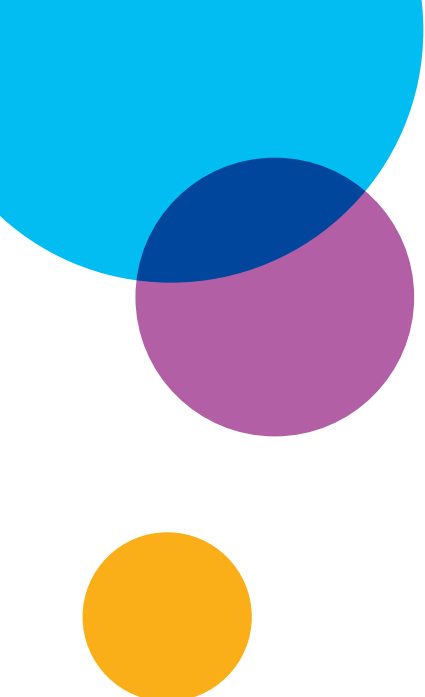
- We should send people to explore Mars.
- We should try to contact space aliens.
- We should build a meteor defense system.
- We should only send robots into space, not people.
- We should clean up space junk.
- We should look for new planets that people could live on.
- We should look for water on the moon.

Have each group write down their opinion statement on the handout before the word “because,” and then give them a few minutes to come up with at least three different facts they can use to complete the sentence, e.g.:

- We should build a base on the moon *because* it has many minerals we could use on Earth.
- We should build a base on the moon *because* it will help us reach other planets.
- We should build a base on the moon *because* it will help us learn how space affects our bodies.

Next, have each group choose which of the sentences they completed seems likely to be the strongest argument, and ask:

- Is the fact correct? How can we find out?
- Does the fact really support the opinion? What *other* questions do we have to answer in order to find out? (Refer again to the first page of the *Arguments* handout.)



Work with each group to make sure they've identified at least three questions that need to be answered.

TRUTHSEEKING TRIO

Now have students research the questions they identified, using the second page of the handout. (You may wish to provide them with resources for doing this or have them use the MediaSmarts [school safe custom search engine](#). If you allow students to do an open search, distribute and go through the MediaSmarts handout [How to Search the Internet Effectively](#).)

Next, have each group present their research to the class. The group members should work together to prepare, but when presenting should take on the following roles:

Role 1 – Pro: They will share all of the evidence they have found in favour of the argument.

After they have presented, ask the other students whether they agree with the “pro” side, whether they disagree, or whether they are unsure. Have them raise their hands to show what they think.

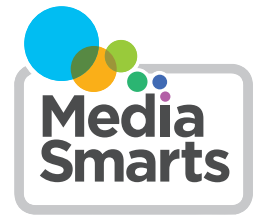
Role 2 – Con: They will share all of the evidence they have found against the argument

After they have presented, ask the other students whether they agree with the “con” side, whether they disagree, or whether they are unsure. Have them raise their hands to show what they think.

Role 3 – Referee: They will give a summary of the two other sides, then explain which the group feels is more valid and why.

After they have presented, ask the other students whether they agree with the referee's judgment, whether they disagree, or whether they are unsure. Have them raise their hands to show what they think.

IS THAT A FACT?



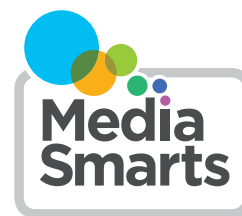
Fact or Opinion?

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Which of these is a statement of fact and which is an opinion?

1. The moon is round.
Fact Opinion
2. The moon is beautiful.
Fact Opinion
3. The moon goes around the Earth.
Fact Opinion
4. The moon is made of green cheese.
Fact Opinion
5. The moon was formed when another planet struck the Earth.
Fact Opinion
6. Going to the moon was humanity's greatest achievement.
Fact Opinion
7. Going to the moon was a waste of money.
Fact Opinion

IS THAT A FACT?



Arguments

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You can never totally prove an opinion is true, but you can sometimes use facts to show that one opinion is *more convincing* than another. This is called making an *argument*.

For instance: "We should build a base on the moon"
(opinion)

Because "there are many minerals on the moon that we could use on Earth" (a fact).

How good an argument is that?

It depends on two things:

First, *are the facts correct?* Are there really valuable minerals on the moon? We'll need to find out.

Next, *do the facts really support the opinion?* To answer that, we'd have to ask questions like:

- How hard would it be to mine the minerals on the moon?
- How hard would it be to get them back to Earth?
- How hard would it be to build and maintain a moon base?
- What could go wrong?

We'll probably need to find a lot more *facts* to answer those questions!

Building Arguments

Take a look at the facts below.

Which of those could you use to support the opinion that *“Going to the moon was humanity’s greatest achievement?”*

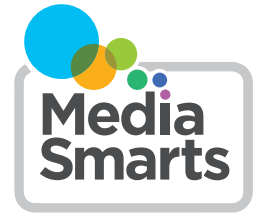
Which could you use to support the idea that *“Going to the moon was a waste of money?”*

Which wouldn’t support *either* opinion?

- The first moon landing cost about two and a half billion dollars.
- The moon’s gravity is one-sixth as strong as the Earth’s.
- Photos of the Earth, taken from the moon, made many people more aware how fragile the Earth’s environment is.

- Many technologies we use today were developed as part of the space program.
- Chemicals in the rockets that sent astronauts to the moon contributed to climate change.
- 400,000 people were involved in the space program and the moon landing.
- People have been imagining trips to the moon since at least the 2nd Century CE.
- Spending time in space is bad for astronauts. It weakens their bones and increases the risks of several diseases.

IS THAT A FACT?



Facts Versus Opinions

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Have you ever heard someone say, “that’s just your opinion?”

Or asked someone, “Is that a fact?”

Maybe you’ve wondered what it means for something to be a *fact* or an *opinion*.

A fact is a statement that can be conclusively proven or disproven, like “the moon is round.” We can use our senses and measurements to tell us that the moon is, in fact, round.

But we didn’t know for a long time that it isn’t *perfectly* round: we needed telescopes to see that it has craters.

We also didn’t know that it’s *a/ways* round. It doesn’t always look round from Earth! That’s because only one side of it reflects light from the sun, and as it orbits around us, we see more and less of that side.

But remember that when we say a statement is a fact, that doesn’t mean that it’s *right*. “The moon is made of green cheese” is a statement of fact, but it’s not true. (We didn’t absolutely *know* it wasn’t true until we sent the first probe in 1959, but we were pretty sure.)

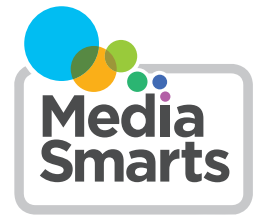
An opinion is something that can’t be proven conclusively, like “we should build a base on the moon.”

Here’s an easy way to remember the difference between facts and opinions:

If the question is “**What do you think?**”, the answer is an **opinion**.

If the question is “**How do you know?**”, the answer is a **fact**.

IS THAT A FACT?



Truthseeking Trio

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You will now research the facts that will tell you if your argument is good or not.

Working together with your group partners, review your answers on the How Do You Know handout and find out:

Is the **main fact** correct?

Where did you find the answer?

How do you know?

Question 3:

Where did you find the answer?

Where did you find the answer?

Does that fact **support the opinion?** Answer the questions you need to be able to know that:

When you've answered these questions, get ready to share your answers with the class.

Question 1:

You should prepare your presentation together. When it's time to present, each of you will have a different job:

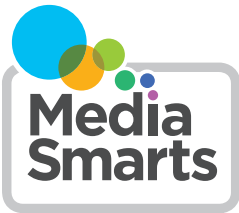
Pro: You will share the answers that suggest your argument is *right*

Con: You will share the answers that suggest your argument is *wrong*

Referee: You will *summarize* the "pro" and "con" sides, and then explain which one you think is more convincing.

Where did you find the answer?

Question 2:



IS THAT A FACT?

How Do You Know?

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Write your group’s **opinion** in the left square, then at least three **facts** you can use to finish the sentence.

I think...

Because...

Because...

Because...

IS THAT A FACT?

Now choose the one that you think is the **strongest** argument.

Is your fact **correct**? How can you find out?

What **other questions** do you have to answer to find out if the fact really **supports the opinion**? List at least three: