Nature Fact or Fiction – Evaluating Information Sources

LOVE OUTDOOR LEARNING

Curriculum Links

Scotland

To help me develop an informed view, I am learning to recognise the difference between fact and opinion.
LIT-08

UK

 distinguish between statements of fact and opinion

Key Concept

I can evaluate information to determine whether it is true, false, or needs more research.

Background

Misinformation is common in everyday life, and not everything we hear is true. This lesson teaches learners to question, verify, and evaluate information by distinguishing between facts, false claims, and statements that require further investigation. Learners will assess nature-related statements, discussing what makes a source trustworthy and how to check facts using observation and research. By exploring, discussing, and investigating, learners will develop curiosity, skepticism, and critical thinking skills—essential for responsible information sourcing in all areas of learning.

Resources

- Fact or Fiction Statement Bank (see below)
- Reference materials (optional, e.g., books, posters, internet access)
- Magnifying glasses (optional, for investigating outdoor claims)

Wider Skills

- Critical thinking: Learners question and evaluate information rather than accepting it at face value.
- Research skills: They practice fact-checking and source evaluation.
- Communication: Learners explain why they believe something is true or false.
- Environmental awareness: Encourages deeper understanding of nature and its processes.

Metaskills

- Sense-making: Learners use logic and observation to assess the accuracy of statements.
- Curiosity & Exploration: Encourages learners to investigate claims rather than just accepting or rejecting them.
- Self-management: Develops patience and thoughtfulness when working through information.

Lesson

Introduction (10 minutes) – Truth or Myth?

- Gather learners in a circle outdoors and introduce the idea that not everything we hear is true.
- Ask:
  - Have you ever heard something that turned out to be false?
  - Where do we get information from? How do we know if it's reliable?
- Explain that today, learners will be fact-checkers, deciding whether nature-related statements are true, false, or need more research.

Main Activity (30–40 minutes) – Fact or Fiction?

Part 1: Evaluating Statements (15–20 minutes)

- Read aloud a statement from the Fact or Fiction Bank (or hand out cards with different statements).
- Learners must decide:
  - FACT – The statement is true.
  - FICTION – The statement is false.
  - NEEDS MORE RESEARCH – They are unsure and need to investigate.
- Learners explain their reasoning—why do they think it's true or false?

Part 2: Investigating Claims (10–15 minutes)

- Learners work in pairs or small groups to verify some of the "Needs More Research" statements. They can:
  - Observe their surroundings (e.g., Do all leaves have veins? Do birds always fly south for winter?).
  - Use books, posters, or the internet (if available).
  - Discuss with peers and consider multiple sources before deciding.

Part 3: Sharing Findings (10 minutes)

- Learners present one statement they investigated and what they found out.
- The class discusses:
  - What made some facts easy to check and others harder?
  - How can we tell if a source is trustworthy?

Plenary (10 minutes) – What Have We Learned?

- Reflect on:
  - Why do people sometimes believe false information?
  - How can we check if something is true?
  - How can we apply these skills in everyday life?

Key discussion questions:

- What makes a source trustworthy?
- How can we fact-check information?
- Why do myths and false information spread?
- How does misinformation about nature affect conservation and wildlife?

Assessment

Evaluating statements effectively:
Learners should think critically about the accuracy of statements and explain their reasoning. Success is shown when they use logical reasoning, prior knowledge, or evidence-based thinking to assess information.

Engagement in research:
Learners should actively seek ways to verify claims, demonstrating curiosity and a willingness to investigate beyond surface-level answers.

Participation in discussion:
Learners should contribute thoughtful ideas, challenge assumptions, and listen to others' reasoning. Success is shown when they engage in respectful debate and reflection.

Reflective thinking:
Learners should demonstrate awareness of how misinformation spreads and describe ways to check facts in everyday life.

Follow-up task (optional):
Learners can:

- Find their own nature-related statement to fact-check at home.
- Create a "True or False" quiz for their classmates.
- Illustrate a common nature myth and write an explanation debunking it.

Notes

Choosing Statements:
Ensure statements are age-appropriate and not too complex. For younger learners, stick to observable facts (e.g., "Do all trees lose their leaves?"). For older learners, introduce more abstract or research-based claims (e.g., "Do all bees die after they sting?").
If possible, include real-world myths or misconceptions learners may have heard to make the lesson more relevant.

Encouraging Debate:
If learners disagree on whether something is fact or fiction, encourage them to explain their reasoning rather than just guessing.
Allow them to change their minds if they hear convincing arguments from peers.

Notes

CAvoiding Guesswork:
Some learners may be tempted to randomly guess true or false instead of reasoning through the statement.
Encourage them to ask: How could we prove or disprove this?
Give clues if needed (e.g., "Think about where mushrooms grow. Do we eat all mushrooms?").

Investigating the 'Needs More Research' Statements:
Have a few reference materials available (e.g., posters, books, digital resources) to allow learners to fact-check in real time.
If working outdoors, encourage learners to use direct observation when possible (e.g., looking at different trees to answer a question about leaves).

Managing Time & Engagement:
If attention starts to wane, incorporate movement—learners can run to one side of the playground for "fact" and the other for "fiction" instead of just answering verbally.
For large groups, split into smaller teams and assign different statements to each team before coming back together to share findings.

Extending Learning:
As a follow-up, learners could:

Design their own nature quiz for their classmates.
Interview family members to see if they believe any myths from the lesson.
Investigate an outdoor myth and present their findings (e.g., "Do cows really lie down before it rains?").

Younger Classes

- Use simple, visual statements – Show pictures (e.g., "Do all trees lose their leaves?" with a photo of an evergreen and a deciduous tree).
- Encourage hands-on verification – Let them touch, smell, or observe objects to find answers.
- Ask yes/no questions instead of explanations – Keep discussions short and interactive to maintain engagement.
- Make it a movement-based activity – Instead of discussing, have them run to one side for "fact" and another for "fiction".

Older Classes

- Encourage deeper questioning – Challenge them to ask "How could we prove this?" rather than just deciding true/false.
- Introduce bias discussion – Talk about how misinformation spreads, especially online.
- Assign research-based follow-ups – Have them write a mini research summary or create a myth-busting poster.
- Introduce citation skills – Ask them to find at least one credible source for their findings.

Statements

These statements are grouped into three categories:
✅ True Statements (Fact) – Scientifically verified information.
❌ False Statements (Fiction) – Common myths or misconceptions.
❓ Needs More Research (Debatable or Partially True) – Statements that are partially true, dependent on conditions, or require deeper investigation.

✅ True Statements (Fact) – Scientifically Verified Information
Scotland has the most red squirrels in the UK.
Due to conservation efforts and the decline of grey squirrels in some areas, Scotland remains the main stronghold for native red squirrels.

The Scottish wildcat is one of the rarest mammals in the UK.
The species is critically endangered, with fewer than 300 pure Scottish wildcats thought to remain in the wild.

Some Scottish lochs never freeze in winter because they are so deep.
Loch Ness rarely freezes due to its depth (over 200m) and the constant mixing of warm and cold water layers.

The thistle is the national flower of Scotland.
The thistle has been a Scottish symbol for over 500 years and is associated with Scotland's fight against Norse invaders.

Some birds, like the Arctic tern, migrate from Scotland to Antarctica every year.
Arctic terns travel up to 70,000 km per year, experiencing two summers instead of one.

The River Tay is the longest river in Scotland.
It stretches 188 km (117 miles) from western Scotland to the North Sea.

Pine martens, once nearly extinct in Scotland, are making a comeback.
Pine martens, small predators related to otters and badgers, have increased in population due to legal protections.

Scottish midges are most active in the early morning and evening.
These tiny biting insects prefer humid, low-wind conditions and are most bothersome in summer.

Golden eagles can be found in the Scottish Highlands.
Scotland is home to around 500 breeding pairs, mostly in remote mountain areas.

Scotland has more than 30,000 freshwater lochs.
The exact number is unknown, but estimates suggest at least 31,000 lochs and lochans across Scotland.

❌ False Statements (Fiction) – Common Myths & Misconceptions

The Loch Ness Monster has been scientifically proven to exist.

No scientific evidence supports Nessie's existence, though many people claim to have seen it.

All mushrooms growing in Scotland's forests are poisonous.

While some mushrooms are toxic, many are edible, like chanterelles and cep mushrooms.

You can hear bagpipes from over 10 miles away.

The sound of bagpipes carries well outdoors but typically fades after a few hundred metres.

Haggis is a real animal that lives in the Scottish Highlands.

A fun myth, but haggis is a traditional dish made from sheep's heart, liver, and lungs.

Cows always lie down when it's about to rain.

Cows lie down for many reasons, including rest and digestion, not just weather changes.

Wolves still roam wild in Scotland.

Wolves were hunted to extinction in Scotland by the 1700s, though there are discussions about reintroducing them.

You can see the Northern Lights every night in Scotland.

The Aurora Borealis is visible only on clear nights with strong solar activity, mainly in northern Scotland.

All birds migrate south for winter.

Some, like robins and crows, stay in Scotland year-round.

Every Scottish castle is haunted.

Many Scottish castles have ghost stories, but there is no scientific proof of hauntings.

Bagpipes were invented in Scotland.

They were used in Ancient Egypt and Rome before arriving in Scotland.

❓ Needs More Research (Debatable or Partially True Statements)

The Loch Ness Monster could be a surviving dinosaur.

While unlikely, some researchers suggest Nessie sightings may be misidentified large fish or floating debris.

All Scottish mountains over 3,000 feet are Munros.

A mountain must meet specific criteria to be classified as a Munro (there are 282 official Munros).

Beavers were reintroduced to Scotland, but they have no impact on the environment.

Beavers change their surroundings by building dams and creating wetland habitats, which can benefit or disrupt ecosystems.

A bagpiper was once sent into battle to scare enemies.

Historically, Scottish armies used bagpipers to motivate soldiers and intimidate opponents, though this was not their primary role.

Ben Nevis was once an active volcano.

Scientists believe Ben Nevis was formed from the remains of an ancient collapsed volcano over 400 million years ago.

If you whistle in the Scottish Highlands at night, fairies will take you away.

A Scottish folklore belief about supernatural beings called the Seelie Court.

All Scottish rivers flow into the North Sea.

Some flow west into the Atlantic Ocean instead.

Salmon return to the exact river they were born in.

Most salmon navigate back to their birthplace using earth's magnetic fields, but some end up in different rivers.

Scotland has more deer than people.

There are around 1.8 million wild deer in Scotland, compared to a population of 5.4 million people, so this depends on the region.

The Stone of Destiny gives special powers to the monarch.

Historically, Scottish kings were crowned on this stone, but it holds symbolic power rather than supernatural abilities.