Teach thinking, not a search habit

Ages 6–11 • Private preparation and shared classroom display

Core activity: Evaluate the Claim

Invite independent thinking, then evaluate a relevant claim. Choose observation, books, peers, teachers or reviewed AI only when it serves the learning goal. A difficult question is never a cue to open AI.

Prepare privately: Teacher setup

Choose a learning context (discovery or review), age band and activity type. For a custom claim, enter a suitable question, source, independent evidence, feedback and transfer task. Check suitability and remove personal details. Prepare a non-AI route.

Classroom display

Show the question before the claim. Give all pupils time to think. Only then show the selected claim and disclose its actual source. Do not show source-selection controls to pupils. Use physical cards, oral, written or drawn responses.

Flexible thinking prompts

STOP, ASK, CHECK and DECIDE are optional prompts, not a required sequence. Return to questions as needed. Accept uncertainty; reward evidence, explanation and justified revision.

Safety and respect

Use an authorised adult account only for a clear AI-literacy purpose. Preview AI content and check against independent evidence. No pupil accounts or identifying data. Obtain permission for peer contributions; challenge the claim, not the person.

After the activity

Invite an independent explanation or transfer without AI. Use the formative observation rubric. Record actual opportunities and support; do not infer effectiveness from a single lesson.

Give pupils time to think before choosing a prepared claim or another source. In the bird activity, reveal each illustration separately, invite predictions and check facts using a reliable source. Let pupils invent and evaluate their own claims without AI.

One activity. Two contexts.

Home partnership supports both, rather than adding a mandatory intervention.

Discover new knowledge

Ask a question; give pupils time to reason. Choose observation, discussion, a book or a relevant claim only when useful. Invite questions and evidence. Explore the lesson and return to the opening question for pupils' own conclusions.

Review prior learning

In the 30-minute review, ask retrieval questions on taught material. Invite independent responses. If helpful, restate a volunteered peer answer without naming the pupil. The class assesses the claim, not the person. Provide feedback, a real example and a fresh transfer question.

30-minute review example

0–5 min: recall; 5–12 min: selected peer claim and reasons; 12–22 min: evidence and feedback; 22–30 min: independent application. Adapt or omit a phase according to learning needs.

No automatic AI step

A correct, wrong or missing answer is not a signal to open AI. Use other sources first when they serve the goal. In selected AI-literacy tasks, compare reviewed AI claims with independent evidence.

Flexible prompts

STOP: pause. ASK: clarify. CHECK: seek appropriate evidence. DECIDE: explain or defer. Move between them as needed.

The four flexible prompts guide pupils during learning. The seven observable competencies help teachers notice and nurture independent, evidence-informed thinking; they are not additional steps.

Animal clues

Ages 6–8 • English • 30-minute adaptable lesson

Learning objective

Use all, some and not all; justify an answer with a counterexample.

Opening question

Can every bird fly? Give pupils time to think before selecting a claim or another source.

Discover new knowledge

Reveal a sparrow, an ostrich and a penguin one at a time (see illustrated cards on page 3). Ask: “Is it a bird? Can it fly? What makes you think so?” Invite predictions before checking a verified picture book or factual cards. AI illustrations are prompts, not evidence.

Review prior learning

Recall bird vocabulary. With permission, restate a volunteered answer anonymously. Invite the class to evaluate it, or use the prepared claim when helpful.

Optional prepared claim

All birds can fly because they have wings. (Teacher-created practice statement.)

Bring the ideas together

Invite pupils to name another flightless bird (e.g., kiwi or emu). Ask: “What is your conclusion now? Can you explain why?” Teacher key: ostriches and penguins are counterexamples to the claim that all birds can fly.

Think independently and transfer

Display All… / Always… / Every… / Never… . Invite pupils to invent a claim about animals or nature. The class responds with cards, asks for evidence or names a counterexample. Then ask: “Can every animal with wings fly?” Observe reasoning, not card colour; no AI is needed.

Evaluate the Claim

Animal clues • Use words, drawings or oral explanation.

My first idea

Can every bird fly?

_____

_____

A claim to evaluate

All birds can fly because they have wings.

My judgement

[ ] I agree [ ] I'm not sure [ ] I disagree

What makes me think so?

_____

_____

What could I check?

_____

_____

My own conclusion

_____

_____

Try a new question

Can every animal with wings fly? Explain using an example.

Explore the lesson

Show one picture at a time. Ask before checking. Cover the other pictures or cut along the card edges.



Sparrow

Is it a bird? Can it fly?
What makes you think so?

AI-generated illustration • Not evidence.
Check using a trusted picture book or factual cards.



Ostrich

Is it a bird? Can it fly?
What makes you think so?

AI-generated illustration • Not evidence.
Check using a trusted picture book or factual cards.



Penguin

Is it a bird? Can it fly?
What makes you think so?

AI-generated illustration • Not evidence.
Check using a trusted picture book or factual cards.

Shadows

Ages 6–8 • Science • 30-minute adaptable lesson

Learning objective

Use observation to support a claim about shadows.

Opening question

Does a shadow always have the same length?

Discover new knowledge

Elicit predictions. Explore with a torch before or after the optional claim. Ask pupils to compare observations and explain the result in their own words.

Review prior learning

Ask pupils to recall what happened in the torch experiment. Evaluate a volunteered explanation, revisit the observation if needed, and pose a new shadow question.

Optional prepared claim

A shadow can change length when the light moves. (Teacher-created practice statement; not an actual pupil or AI quote.)

Independent evidence and teacher key

Use a torch and an upright pencil. Keep the pencil fixed and move the torch higher or lower. Observe and compare shadow length. Shadow length can change as the light position changes.

Transfer and assessment

How could you make a longer shadow with the same pencil? Observe whether pupils explain, question and revise based on evidence. Do not grade card colour alone.

Evaluate the Claim

Shadows • Use words, drawings or oral explanation.

My first idea

Does a shadow always have the same length?

_____

_____

A claim to evaluate

A shadow can change length when the light moves.

My judgement

[ ] I agree [ ] I'm not sure [ ] I disagree

What makes me think so?

_____

_____

What could I check?

_____

_____

My own conclusion

_____

_____

Try a new question

How could you make a longer shadow with the same pencil?

Pencil boxes

Ages 9–11 • Mathematics • 30-minute adaptable lesson

Learning objective

Explain multiplication with equal groups and compare strategies.

Opening question

Three boxes contain six pencils each. How many pencils are there?

Discover new knowledge

Give counters and ask pupils to model equal groups independently. Use a claim only if comparison serves the objective.

Review prior learning

Ask the retrieval question. Restate a volunteered answer anonymously or use the prepared claim. Invite pupils to compare calculations, correct misconceptions and transfer.

Optional prepared claim

There are 18 pencils in total. (Teacher-created practice statement; not an actual pupil or AI quote.)

Independent evidence and teacher key

Draw three groups of six. Count 6 + 6 + 6 = 18, or write 6 × 3 = 18.
There are 18 pencils. The calculation and drawing support the claim.

Transfer and assessment

Four boxes contain seven pencils each. Show two ways to find the total. Observe whether pupils explain, question and revise based on evidence. Do not grade card colour alone.

Evaluate the Claim

Pencil boxes • Use words, drawings or oral explanation.

My first idea

Three boxes contain six pencils each. How many pencils are there?

_____

_____

A claim to evaluate

There are 18 pencils in total.

My judgement

[ ] Supported [ ] Needs checking [ ] Unsupported

What makes me think so?

_____

_____

What could I check?

_____

_____

My own conclusion

_____

_____

Try a new question

Four boxes contain seven pencils each. Show two ways to find the total.

Who agrees?

Ages 9–11 • English / information literacy • 30-minute adaptable lesson

Learning objective

Distinguish an unsupported generalisation from evidence.

Opening question

What would you need to know before saying most pupils prefer apples?

Discover new knowledge

Discuss preferences without collecting names. Invite questions about what would count as evidence. Compare small examples and defer conclusions if evidence is missing.

Review prior learning

Review words such as most, some and all. Evaluate a peer’s volunteered generalisation respectfully and ask what data would be needed.

Optional prepared claim

Most pupils in this school prefer apples. (Teacher-created practice statement; not an actual pupil or AI quote.)

Independent evidence and teacher key

Ask who was surveyed, how many pupils answered, and how many chose apples. One friend’s opinion cannot establish what most pupils prefer. There is not enough evidence. A suitable survey could help; a conclusion may remain uncertain.

Transfer and assessment

A poster says most children like one game. What would you ask? Observe whether pupils explain, question and revise based on evidence. Do not grade card colour alone.

Evaluate the Claim

Who agrees? • Use words, drawings or oral explanation.

My first idea

What would you need to know before saying most pupils prefer apples?

_____

_____

A claim to evaluate

Most pupils in this school prefer apples.

My judgement

[ ] Supported [ ] Needs checking [ ] Unsupported

What makes me think so?

_____

_____

What could I check?

_____

_____

My own conclusion

_____

_____

Try a new question

A poster says most children like one game. What would you ask?

Think before trust

Four flexible thinking practices — not four compulsory steps.

STOP

Pause. What do I already know?

DECIDE

Explain or say not sure.

Independent thinking

ASK

What is unclear?

CHECK

What evidence can I find?

Move between prompts whenever helpful. Challenge the claim, not the person. Think before seeking help; AI is optional, never the default.

Three ways to judge a claim

Ages 6–8 • Colour + words and symbols • Print and cut along the rows.

✓ I AGREE

I have a reason to agree.

? I'M NOT SURE

I need more information.

× I DISAGREE

I have a reason to disagree.

Teacher reminder: Agreeing or disagreeing requires a reason or evidence. Praise thoughtful uncertainty and justified changes of mind. The vote concerns the claim, never the person.

Three ways to judge a claim

Ages 9–11 • Colour + words and symbols • Print and cut along the rows.

✓ SUPPORTED

I have evidence supporting the claim.

? NEEDS CHECKING

I need more information before deciding.

× UNSUPPORTED

Evidence shows that the claim is not correct.

Teacher reminder: Agreeing or disagreeing requires a reason or evidence. Praise thoughtful uncertainty and justified changes of mind. The vote concerns the claim, never the person.

Observe reasoning, not speed

Seven formative indicators • Not a validated measurement instrument.

0 = not demonstrated despite opportunity; 1 = substantial support; 2 = brief prompt; 3 = independently; N/O = no opportunity (do not score as zero). Record one code per behaviour; do not calculate a research score without validation.

Independent thinking

Attempts an explanation before seeking help.

Code: _____ Evidence / context: _____

Questioning

Asks a relevant question about the claim or its basis.

Code: _____ Evidence / context: _____

Source selection

Chooses a suitable source and explains why it is appropriate; AI is not assumed necessary.

Code: _____ Evidence / context: _____

Evidence seeking

Identifies or checks independent evidence relevant to the claim.

Code: _____ Evidence / context: _____

Stop, Ask, Check and Decide guide pupils as flexible prompts. The seven thinking competencies help teachers observe and nurture independent, evidence-informed thinking in any lesson. They are not seven additional steps.

Observe reasoning, not speed

Seven formative indicators • Not a validated measurement instrument.

0 = not demonstrated despite opportunity; 1 = substantial support; 2 = brief prompt; 3 = independently; N/O = no opportunity (do not score as zero). Record one code per behaviour; do not calculate a research score without validation.

Reasoning

Connects evidence to a judgement in words, drawings or examples.

Code: _____ Evidence / context: _____

Belief revision

Maintains or revises a judgement for a reason, including after conflicting evidence.

Code: _____ Evidence / context: _____

Independent judgement

Explains a conclusion or defers it when evidence is insufficient, including in a non-AI task.

Code: _____ Evidence / context: _____

Transfer check (without AI)

Offer a new comparable task without AI. Record how the pupil selects a source, reasons and explains. Do not equate language proficiency, silence or speed with thinking ability.

Evaluation boundaries

Record support and opportunity. Do not infer cognitive surrender from a single answer. Formal research requires ethics approval, appropriate consent and assent, secure data handling, expert review and reliability/validity checks.

Reflect on classroom practice

Complete after a real lesson. Do not enter children’s identifying details.

Date / context / objective

_____
_____

Why was the source chosen?

_____
_____

What reasoning did pupils demonstrate?

_____
_____

Did pupils show reliance on an authority or source?

_____
_____

What will I change next time?

_____
_____

Safeguards and evidence

Record only authorised, anonymised observations. Note limits and alternative explanations.

Record what happened

Keep locally and securely; no pupil names or identifying information.

Session date / age band / subject

_____

Learning context and objective

_____

Sources used and rationale

_____
_____

Pupil responses and evidence (anonymised)

Initial ideas: _____
Reasoning or revised judgement: _____
Transfer task: _____

Teacher feedback / adjustment

_____
_____

Documentation status

[ ] Classroom practice record [ ] Research data collected under appropriate approval
Permission and limitations: _____

Thinking begins at home

Parent guide • Ages 6–11

1. Understand

AI can provide useful information but may be inaccurate, biased or overly convincing. Overreliance may reduce opportunities for children to practise reasoning. The extent of long-term effects in primary-age children remains a research question.

2. Set boundaries

Do not encourage independent generative-AI chatbot use or use AI to do homework for children. Follow age requirements and school guidance. Adults may discuss AI safely and use reviewed examples where appropriate.

3. Understand TBT at school

Teachers use Evaluate the Claim in discovery and review. Children learn to question information from many sources. AI is optional, and children do not need accounts or devices.

4. Reinforce thinking without AI

Ask: What have you tried? What makes you think so? How could we check? Can you explain it in your own words? Allow time to think; praise effort and justified revision.

5. Partner with teachers

Share observations about independent thinking and help-seeking. Do not send children’s personal information to AI services. Discuss any concerns with the school.

Tư duy bắt đầu từ gia đình

Cẩm nang phụ huynh • Trẻ 6–11 tuổi

1. Hiểu đúng về AI

AI có thể hữu ích nhưng cũng có thể sai, thiên lệch hoặc tạo câu trả lời nghe rất thuyết phục. Quá lệ thuộc AI có thể làm giảm cơ hội luyện tư duy của trẻ; tác động lâu dài ở lứa tuổi tiểu học còn cần nghiên cứu.

2. Thiết lập giới hạn

Không khuyến khích trẻ tự dùng chatbot AI tạo sinh hoặc dùng AI làm thay bài tập. Tuân thủ quy định độ tuổi và hướng dẫn nhà trường. Người lớn có thể trao đổi, sử dụng ví dụ đã kiểm duyệt khi phù hợp.

3. Hiểu TBT tại trường

Giáo viên dùng hoạt động đánh giá nhận định trong khám phá và ôn tập. Trẻ học cách chất vấn thông tin từ nhiều nguồn; AI không bắt buộc và trẻ không cần tài khoản hay thiết bị riêng.

4. Củng cố tư duy tại nhà

Hỏi con: Con đã thử cách nào? Vì sao con nghĩ vậy? Mình kiểm tra bằng cách nào? Con giải thích bằng lời của mình được không? Ghi nhận nỗ lực và khả năng tự sửa sai.

5. Đồng hành cùng giáo viên

Trao đổi về thói quen tư duy độc lập và tìm kiếm trợ giúp của con. Không gửi dữ liệu cá nhân của trẻ lên AI. Thảo luận với nhà trường nếu có lo ngại.

Evidence-informed by design

Selected reading • These sources inform design; they do not establish TBT effectiveness.

Cognitive surrender

Shaw & Nave (2026), Thinking—Fast, Slow, and Artificial (working paper).
Read source ↗

Epistemic vigilance

Sperber et al. (2010), Epistemic Vigilance.
Read source ↗

Critical thinking

Facione (1990), The Delphi Report.
Read source ↗

Metacognition

Flavell (1979), Metacognition and cognitive monitoring.
Read source ↗

Guided inquiry

Lazonder & Harmsen (2016), Meta-analysis of inquiry-based learning.
Read source ↗

Retrieval practice

Roediger & Karpicke (2006), Test-enhanced learning.
Read source ↗

School–home partnership

Education Endowment Foundation, Working with Parents to Support Children’s Learning.
Read source ↗

Age-appropriate AI

UNESCO (2023), Guidance for generative AI in education and research.
Read source ↗

Building on ongoing Think Before Trust classroom practice reported by the project team in EAS Education’s primary English sessions (ages 6–11), a structured 8–12-week cohort evaluation for pupils aged 9–11 is scheduled to run through February 2027, incorporating pre/post, delayed and non-AI transfer tasks. Before formal research data collection, obtain appropriate ethics approval, parent or guardian consent and child assent; validate instruments for research use. This design note does not report completed evaluation findings.

Stop, Ask, Check and Decide are flexible prompts for pupils. The seven thinking competencies are observable behaviours for teachers, not seven extra steps. Both discovery and review provide opportunities to observe them.