Developing an Active Learning Culture in your School

Schools Curriculum and Assessment (CAS) Group

November 2023

Contents

Introduction

The current climate in schools indicates that passive learning, mental health issues, language acquisition, and the impact of disadvantage are significantly affecting children's learning and outcomes.

The purpose of this document is to outline a variety of strategies that schools can implement, quickly and easily, to support pupils and staff when refocussing on effective learning. This toolkit provides a snapshot of evidence-based, practical ideas to support teachers in the classroom. It is recommended that schools investigate one aspect at a time through staff meetings or peer coaching, trial strategies, review and evaluate to ensure they become fully embedded in practice. This will ensure maximum impact across a whole school.

Further support can be accessed through Lancashire Professional Development Service.

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Culture for Learning

Guiding principles:

- Positive relationships between:
  - adults and children,
  - children and children,
  - adults and adults.

- Fully inclusive

- Explicit teaching of good behaviour **and** learning behaviours

- Risk taking actively encouraged and valued by adults and children

- Children are explicitly taught how to be metacognitive learners

- Explicit teaching of mindset/social and emotional learning, supports children in developing positive 'can do' attitudes to learning

Why:

An effective culture for learning must be in place for high quality teaching and learning to take place and for children to reach their full potential.

"Twenty-five years of neurobiological research tells us that children learn best when they feel loved." Dr Andrew Curren - https://www.independentthinking.co.uk/associates/dr-andrew-curran/

"…the general climate for learning can be improved through the **explicit teaching of learning behaviours***, reducing the need for teachers to constantly 'manage' misbehaviour."*

"Managing a child's misbehaviour **does not necessarily lead to that child learning***: they may be quieter, but not necessarily engaging with the content of the lesson…"*

"…when children improve their learning behaviours, **this skill set can improve both academic achievement and cognitive ability***."* (EEF)

Metacognition and self-regulated learning can add an additional 7 months progress – EEF Toolkit
Teaching and Learning Toolkit | EEF (educationendowmentfoundation.org.uk)

How:

Relationships:

- Research identifies the importance of establishing, maintaining and, if necessary, restoring positive relationships between:
  - adults and children,
  - children and children.

Fully inclusive:

- High expectations of ALL children

- All children are valued, feel valued, and see themselves as an integral part of the school community

- All children are supported in identifying their strengths and own next step to improve.

Explicit teaching of learning behaviours:

- 'Learning to learn' lessons so children are taught the skills to enable them to take responsibility for their own learning e.g., how to manage distractions; how to be an independent learner (as opposed to working independently); how to work collaboratively, how to be resilient etc.

- Regular reviewing of learning behaviours in addition to reviewing the subject learning objective (split screen approach to lessons)

Risk taking:

- Developing an ethos of risk taking

    o Children are safe to have a go and get things wrong (or not be able to do things) without fear of being put down or ridiculed (by adults and/or children)

    o Genuine mistakes are seen as learning opportunities

Explicit teaching of metacognition:

- Helps children to develop awareness of themselves as learners, what helps them learn, how to see challenges positively etc.

- Helps children to connect previous learning experiences with new learning.

Explicit teaching of mindset attitudes and social and emotional learning:

- Helps children to understand their emotional responses to learning and how to acknowledge and address these if required.

- Helps children to understand neural responses and patterns connected to their learning and how to 'retrain the brain'

- Supports children to develop strategies for self-regulation

When:

All the above need to be established, and maintained, as a foundational aspect of teaching and learning in order to underpin every aspect of school life, and beyond.

Variations/Next Steps:

- Audit culture for learning (there is a section on this in the Reflecting on Classroom Practice audit tool)

- Identify areas for action/development

- Where necessary, access CPD

Ideas to start:
• Establish regular 'learning to learn' lessons
• Identify the areas of focus
• These could be 'whole school' and launched each week in assembly
• Reward assemblies could focus on the learning behaviour for that week
• Ensure PSHE lessons are connected, and applied, to everyday teaching and learning (for this reason, it is a good idea for the class teacher to lead PSHE learning)
Further information/courses
• [Reflecting on Classroom Practice Audit Tool](#)
• [Great Teaching Courses](#)
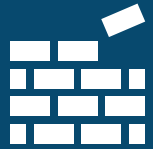
Cognitive Load Theory

Guiding principles:

- Our working memories hold finite information (between 3 and 7 new elements).

- For learning to be encoded into long-term memory, the working memory should not be overloaded.

- Being aware of, and managing, the cognitive load of children can have significant impact on their engagement with learning and, ultimately, how much they remember.

- Intrinsic cognitive load is the load resulting from the inherent complexity of a learning task. Considerations might be:

  o The children's prior knowledge of the task

  o Whether the task is new or familiar

  o The number of intrinsic elements

  o How related the intrinsic elements are (interactivity)

- Germane cognitive load is used to construct schemas and embed learning into long-term memory. To maximise germane cognitive load, intrinsic cognitive load needs to be carefully managed and extraneous cognitive load reduced.

- Extraneous cognitive load is the extra, often unnecessary, demand put on working memory e.g.

  o Sensory – too hot, too cold, too noisy, too much to look at etc.

  o Interruptions in the classroom e.g., internal phone ringing

  o The way in which learning is presented which does not support learning e.g.

    ▪ Too much teacher talk

    ▪ Too much abstract information

    ▪ Too many unnecessary anecdotes/going off at a tangent

    ▪ Unnecessary frills, flashes, music, background noise, irrelevant characters etc. in presentations and animations

    ▪ General classroom distractions

    ▪ Untidy/disorganised classrooms

    ▪ Over-stimulation in the classroom e.g., through colour, amount of 'display', how display is organised etc.

Why:

Cognitive load theory was described by British educationalist Dylan Wiliam as 'the single most important thing for teachers to know' (Wiliam 2017)

How:

- Accurate assessment of prior knowledge to ascertain what children already know and to build on prior learning

- Facilitate children to make connections with what they already know and new learning

- Pre-teach and remind individual/groups of children of previous learning when needed

- Ensure learning is clearly sequenced – throughout the curriculum, through a series of lessons and within a lesson itself

- 'Chunking' and sequencing learning carefully into small steps

- Scaffolding learning

- Use models and worked examples

- Slow down presentations

- Use presentations which do not contain too much information

- Reduce the amount of teacher talk and abstract information

- Provide children time to talk about the learning and elaborate upon this

- Ensure learning environments are tidy, organised, clutter-free and prompts for learning are well-organised and relevant without being overwhelming

When:

All the above need to be established, and maintained, as a foundational aspect of teaching and learning.

Variations/Next Steps:

- When planning learning activities, actively consider the impact of what is being planned on children's' cognitive loads

- Consider the above when monitoring and evaluating teaching and learning

- Consider the above in curriculum planning

- Subject leaders and teachers should consider curriculum sequencing / planning to reduce cognitive load

Ideas to start:

- Is prior learning clearly assessed before starting any new learning?

- How are connections made between previous learning and new learning?

- How are lessons scaffolded to sequence learning and support cognitive load?

- Are any presentations/animations etc. free of extraneous information?

Further information/courses

- See the Great Teaching suite of courses which offers training on the above. This can also be delivered as twilights

  Great Teaching Courses
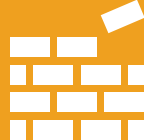
Modelling

Guiding principles:

- Small sequential steps
- An overview of the entire process
- Multiple high-quality examples
- Backward fading
- Teacher 'thinking aloud' the process
- Multiple 'I do, we do, you do' loops
- High expectations – age related, presentation, quantity, spelling etc.
- Adult modelling of learning behaviour, resilience etc.

Why:

"The quickest way to get any well organised knowledge into long term memory is to borrow it from an expert." Oliver Lovell - Cognitive Load Theory in Action.

- To give clear demonstrations of learning.
- To address possible misconceptions.
- To develop independence in learning.
- To enable maximum engagement, accessibility and inclusivity in lessons.

How:

- Break down individual lesson objectives into smaller, sequential components to develop overall understanding of concepts.
- Model success criteria
- Teacher demonstration
- Teacher scribing
- Supported composition
- Teacher thinking aloud the thought process.
- Model the use of scaffolds for learning e.g., working walls, prompts etc.

Backward Fading

- o Start with a complete example and ask children to identify important principles - what do they notice?

o   Then, remove one of the key elements, can the children identify what has been removed and then complete it.

o   Remove a further element for children to then complete.

o   Repeat until children can independently apply their learning to a completely abstract task.
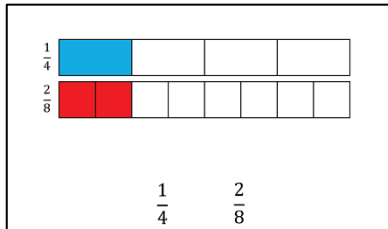
$\frac{1}{4} = \frac{2}{8}$ with pictorial alongside abstract representation

Pictorial representations that the pupil needs to identify and write

$\frac{2}{3} = \frac{4}{6}$

One fraction shown pictorially with the pupil identifying the equivalent fraction pictorially before the abstract representation of $\frac{4}{5} = \frac{8}{10}$
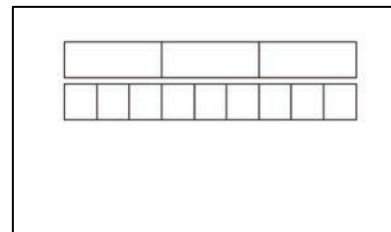
Two bar models in which different equivalent fractions can be shown pictorially prior to writing the abstract representations $\frac{1}{3} = \frac{3}{9}$, $\frac{2}{3} = \frac{6}{9}$ and $\frac{3}{3} = \frac{9}{9}$.

This approach can be used across the curriculum.

When:

- Use at every possible opportunity to allow children to build on their learning in lessons and interventions.

- Use when children have a limited knowledge of a concept

- Use when introducing completely new concepts to children

Variations/Next Steps:

- Once children confidently understand through correctly worked examples, use an incorrect example that helps to address a misconception.

- Use examples and non-examples.

- Encourage deeper learning and oracy through children sharing their thinking with others, when confident to do so.

Ideas to start:

- Backward fading (as set out in the example above)

- Linking concrete, pictorial and abstract representations

- WAGOLLs (What A Good One Looks Like)

- Worked examples

- Explore the 'I' model (in English)

- Teacher demonstration

- Teacher scribing

Further information/courses

- English Courses

- Great Teaching Courses

- Maths Courses
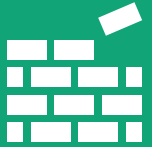
Engagement through talk

Guiding principles:

- Regular opportunities for children to talk about, and reflect on their learning

- Opportunities to connect new learning to prior learning

- Opportunities to practise using, and reinforce, new vocabulary/associated language etc.

- Opportunities to develop higher order thinking such as reasoning, hypothesising, synthesising etc.

- Use of informal and more formal language structures, according to purpose and audience (use of speaking prompts/sentence starters/talk frames can be helpful with this)

- Children may need explicit teaching on how to be a good talk partner; how to take a role in a group; how to respond appropriately to other children's thinking etc.

Why:

- Talk connects learners to the content through actions, reflection and discussion, making children the center of the learning process

- Supports management of cognitive load (a balance of teacher ad child talk)

- Reinforces key vocabulary and language associated with the learning taking place

- Builds confidence

- Develops oracy for different purposes and audiences

- Opportunity for formative assessment

How:

- Train the children. Explicit modelling on the following can be helpful:

    o How to be a good listener

    o How to be a good talk partner

    o How to take a role in a group

    o How to respond to each other's thinking/suggestions etc.

- Highlight key vocabulary you want the children to use when they are talking about their learning

- Provide speaking prompts to scaffold talk such as prompts for taking roles in a group: e.g. manager, recorder, encourager, reporter.
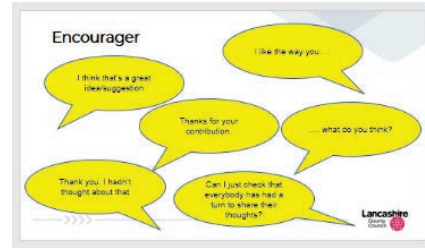
- Praise good examples of talk/use of prompts/responses etc. to reinforce expectations

When:

In EVERY lesson!

Variations/Next Steps:

- Increase the range of talk strategies used in the classroom

- Discuss the impact of these on learning with the children

Ideas to start:

- Talk partners and talk triangles - Learners are paired, or placed in threes, for short, focused discussion activities.

- Home and Away Partners - Children can speak with their home partners for trickier tasks or new learning and speak with their away partners when a task is embedding learning.

- Talk like an Expert – Support children to use subject-specific or academic vocabulary or language structures

- Talking Frames – Record subject-specific vocabulary and more generic academic vocabulary/language structures to scaffold children's talk e.g.

Technical/Subject Specific Words	Useful Academic Words
• Ecosystem • Microorganism • Habitat • Aquatic	• Consists • Affects • Inhabited • Changed

- Thinking time –Research shows that many teachers wait for less than one second when they ask a question! It also shows that increasing wait time to up to seven seconds leads to many benefits for students

o   Tell your class that you are going to provide more thinking time after posing questions. Try leaving 5-7 seconds but the thinking time can vary depending on the complexity of the question.
Further information/courses English courses EMA Courses Great Teaching courses Closing the Vocabulary Gap – Alex Quigley

Inclusive Questioning Strategies

Guiding principles:

- Learning can be described as altering the long-term memory (Sweller 2011).

- The process by which information is transferred from the short-term to the long-term memory is encoding (Weinstein, Sumeracki & Caviglioli 2019).

- Talk encourages children to engage with and participate in the learning.

- All children included in the learning process.

Why:

"Children, we now know, need to talk, and to experience a rich diet of spoken language, in order to think and to learn." Robin Alexander - Towards Dialogic Teaching (2017)

- For learning to occur, children need to *think* about the learning. Daniel Willingham describes memory as "the residue of thought" (Why don't pupil's enjoy school? 2009).

- Asking questions and allowing children to discuss answers enables thinking to take place.

- Discussion allows children to *elaborate* their thinking therefore answers will be of a better quality.

- Responses from many children will allow teachers to assess and adapt learning during lessons.

How:

- Develop a culture for learning with positive relationships between staff and children.

- Children should be encouraged to take risks and not be fearful of making mistakes. Mistakes and misconceptions should be addressed using positive language. Child friendly prompts and sentence stems can support feedback and discussion.

- Staff should teach and model sentences stems, scaffolding children with their answers and responses.

- Children must feel that all contributions are equally important.

- Initially, each strategy should be taught explicitly. Once children are confident and applying the strategies, teachers can just refer to the strategy by name e.g., turn to your partner and 'Think/Pair/Share'.

- Initial strategies may include:

- Thinking time should be allowed before discussion. This will raise expectation that *all* children will have an answer.

- Questions should be appropriately challenging.

- Children should be expected to have an answer following discussions. 'Hands-up' with the correct answer can be discouraged. 'Cold Calling' can be used to encourage all children to respond.

- Initial answers should not be automatically accepted, but children should be encouraged to elaborate and challenge others' answers.

When:

Discussion can and should be used at different points throughout topics and lessons:

- Assessing children's knowledge and understanding before starting a topic.

- Beginning a lesson with a question or discussion on learning from a previous lesson.

- During lessons, to engage children in the teacher modelling and allowing children to demonstrate and explain learning or misconceptions.

Variations/Next Steps:

- Different questioning strategies will support staff to ask more open-ended, challenging questions e.g.

    o Odd-One-Out questions

    o Sometimes / always / never true questions

    o Ordering / ranking questions

    o Multiple choice questions

Ideas to start:

- Recap the importance and purpose of Talk Partners. Ensure all children know who their partner is. Talk Partners could be changed regularly, and children should understand the purpose of this.

- Staff must have effective strategies to draw children back to the whole class again, following discussion in partners or groups.

- Discussion time should be focused and timed.

Further information/courses

- Link to Posters

- See the Great Teaching courses which offer training on the above.

  o Questioning

  o Engaging Children

Prior Knowledge Assessment and Activation

Guiding principles:
- Assessing prior knowledge is essential for identifying what children already know, any misconceptions and gaps which need closing.
- This leads to explicit teaching being pitched appropriately and more effectively.
- Activating prior knowledge supports children to build on what they already know through strengthening existing schemata, and preparing them for new learning.
- Cognitive science research supports the concept that regular recall helps to embed knowledge in the long-term memory.

"If I had to reduce all of educational psychology to just one principle, I would say this: The most important single factor influencing learning is what the learner already knows. Ascertain this and teach him (sic) accordingly." (Ausubel, 1968, p.vi)

Why:
- Prior learning has long been seen as one of the most influential factors affecting learning.
- Identifying gaps in learning is essential to support children to make rapid progress by targeting specific needs.
- EEF(Education Endowment Foundation) research into effective maths and English teaching found that teaching was least powerful when learning was not appropriately pitched. Children could not participate either due to feeling less confident or being disengaged as they already knew and understood the concept.
- Research also shows that there is a strong relationship between prior knowledge and performance. Rosenshine's Principles of Instruction found that effective teachers began lessons/ sessions or sequences of learning with reviews of prior learning, carefully selecting the material that was to be reviewed. This review supported children to strengthen or make connections between ideas that they have learnt.
- EEF research found that taking account of prior learning helped childrens' needs to be met.
- Diagnostic assessment is essential for the above.

'Teachers can help develop the depth and complexity of pupils' mental models. One important way teachers can assist the learning and organisation of information is to adjust their teaching according to the prior knowledge of their pupils.' Early Career Framework.

How:

- Teachers need to be aware of the sequence of learning before and after the unit of work being taught.
- Assess prior knowledge before planning a new unit.
- Activate prior knowledge during the lesson or session.
- Identify whether any children need a pre-teach before the lesson or session starts.
- Support children to make explicit links across learning to develop their schemata.
- Continue to assess and activate prior knowledge within a unit, across a school year and across multiple year groups.

When:

- Before the unit/lesson/sequence of learning starts to enable accurate planning of teaching points and learning activities.
- At the start of the lesson/session/sequence of learning to link ideas and concepts.
- During the lesson/session or sequence of learning to ensure concepts are being understood and linked to prior learning.

Next Steps:

- Audit curriculum provision – how clear is the key knowledge in each unit? Are opportunities for assessment of prior learning explicitly planned for?
- Audit staff knowledge – do staff have a toolkit of ideas and strategies to gather information about children's learning and understanding?
- Do staff effectively use the information that they gather to inform planning and future learning?
- Do staff adapt teaching and learning effectively as a response to assessment within lessons/sessions or sequences of learning?

Ideas to start:

- Organisation of curriculum - deliberate recall built into curriculum plans across school and within units and within the year group.
- Enquiry model – use artefact/pictures to prompt discussion, questions to probe understanding. E.g.,
    - Quick quizzes
    - Multiple choice questions
    - Concept mapping – deliberately trying to link ideas to show related understanding.
    - Retrieval grids
    - Challenges – '*here's a key date tell me what happened. . .*'
    - Exit tickets for the following lesson.
    - Using puppets
    - Talking tubs
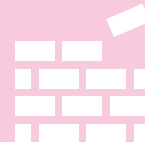   - Agree/disagree cards
    - Knowledge organisers

Further information/courses
Reflecting on Classroom Practice Audit Tool
EEF School Planning support
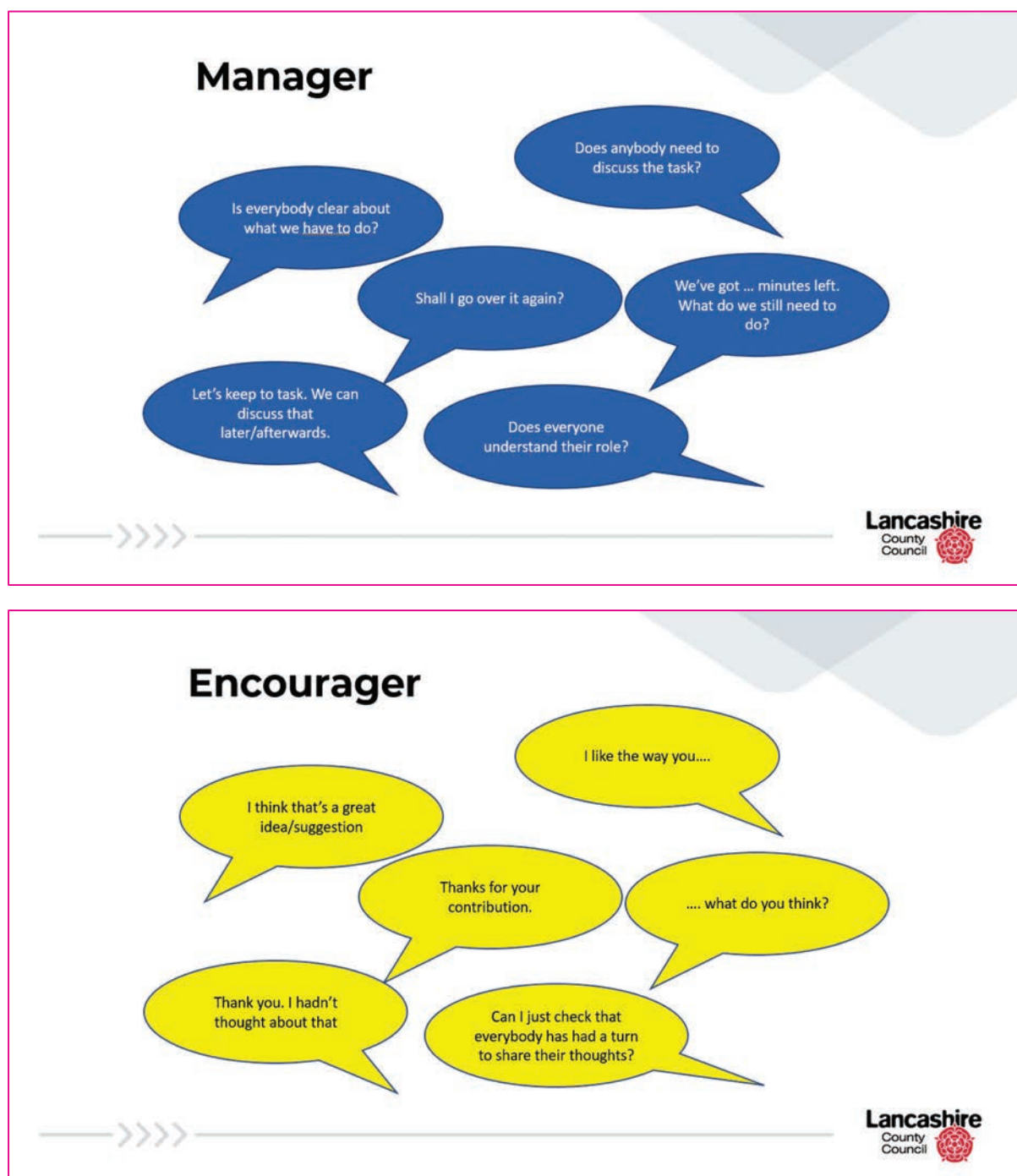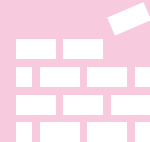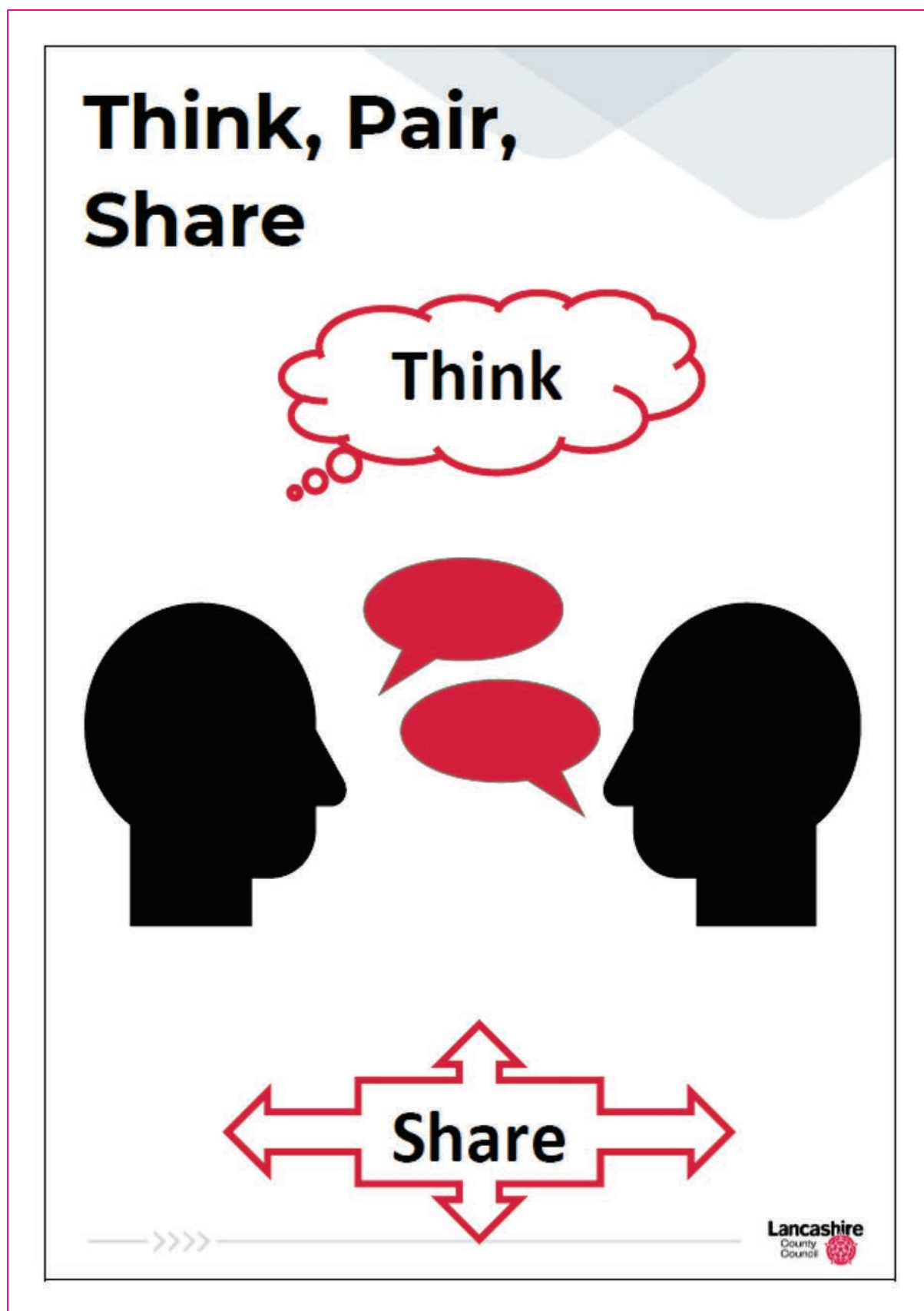What is diagnostic evidence?
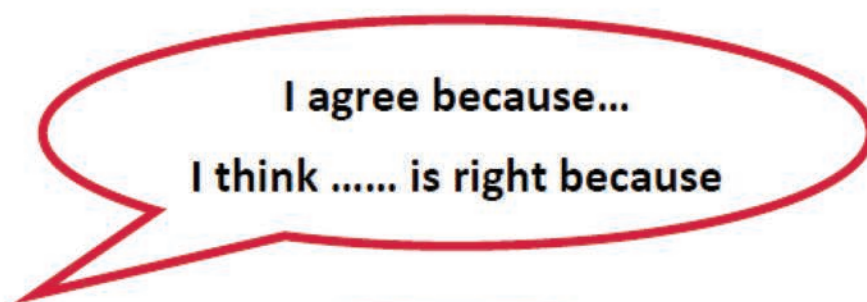
Appendix

Figure 1. Speaking Prompts

Figure 2. Initial Strategies
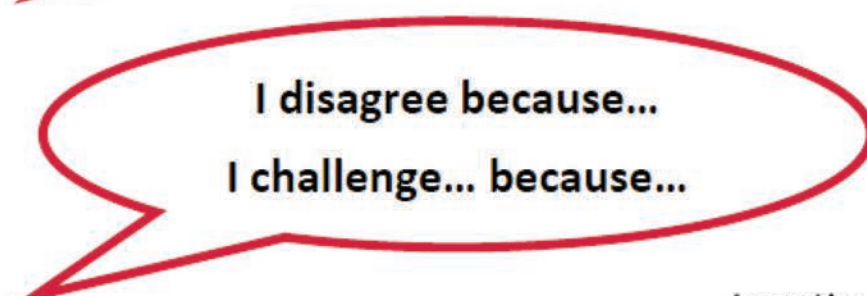
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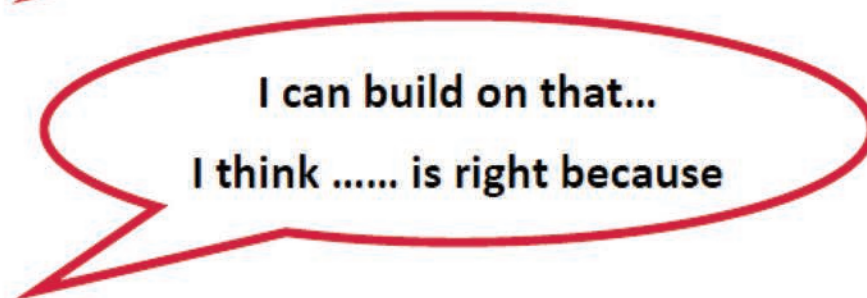
Think

Write / Draw

Hide

Show

Lancashire
County
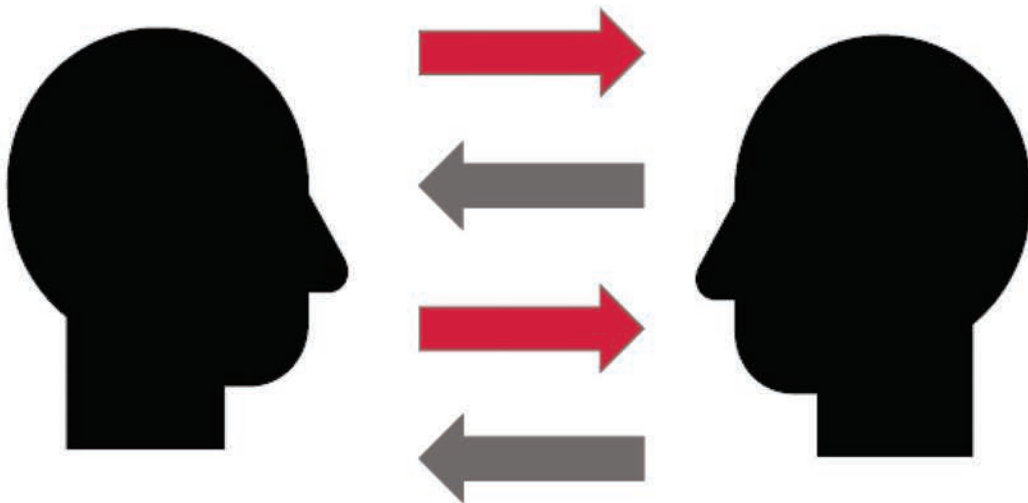Council

Talk Tennis

Think

Share

The Curriculum and Assessment (CAS) Group is made up of representatives from the following Lancashire County Council departments: Current Headteachers in Lancashire Schools, Lancashire Professional Development Service (LPDS), Lancashire Assessment Support Team, Lancashire School Advisory Service, Education Improvement: Equality and Diversity Team, SEND Traded and Lancashire Early Years.

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