



**Ambition
Institute**

Early Career Training Programme

Clinic 4: Thinking hard Participant Workbook (Secondary)

**KEEP
GETTING
BETTER**

Name:

Session date:

Contents

Pre-clinic tasks 4

Teaching problem 9

I do 11

We do..... 14

Option A: Non-example.....21

Option B: Practice/Planning task23

Option C: I Do 225

Close.....27

References.....28

Pre-clinic tasks

The following tasks are to be completed before you attend Clinic 4. This should take no longer than 30 minutes to complete.

In Clinic 4, you will read and analyse 3-4 scenarios that consider the following teaching problem across a range of contexts:

How can teachers support all pupils to extend their thinking?

The scenarios will exemplify the four module principles below, demonstrating how teachers can support all pupils to extend their thinking.

Module principle	Description
Plan a knowledge-rich curriculum	In order to think critically, pupils need secure background knowledge. By specifying content meticulously in our curriculum, we can focus on building detailed mental models.
Sequence content so it logically builds	The curriculum best supports pupils to acquire well-connected mental models when content within it is logically sequenced. Sequence content so that it builds according to the logic of the subject matter. Develop understanding by linking new content to what pupils already know and can do.
Use questioning to deepen understanding	Pupils' understanding is strengthened when they are encouraged to explain, discuss and reflect on their thinking. Ask purposeful, open questions that support pupils to deepen and articulate their thinking in lessons.
Scaffold for success	The design of the task should enable all pupils to access it and experience challenge. Where pupils need scaffolds to successfully complete the task, their use should be carefully modelled at an appropriate point. Teachers should plan to remove scaffolding when pupils are ready, so that they experience independent learning.

These module principles are relevant to all teachers and can be applied across all contexts, regardless of phase, subject or setting.

The following two tasks will help you to familiarise yourself with the module principles before you attend the clinic. During the clinic, you will build on this prior knowledge by exploring the module principles in greater depth with the support of your facilitator, before applying these to your own practice.

Task 1

- Read the scenario below.
- Answer the questions, using the module principle as a guide.

Ms Phelan is a science teacher at a large secondary school. Her Year 7 class has recently begun a new chemistry unit on *Atoms, Elements and Compounds*. This unit is designed to build students' foundational understanding of key chemical concepts through a carefully sequenced series of lessons.

The first lesson in the unit focused on elements, drawing on students' prior knowledge of particles. In this lesson, students were introduced to the idea that elements are substances composed of only one type of atom and how these are represented in diagrams. The second lesson developed this understanding further by introducing atoms and their basic structure. Students learned that atoms are the smallest units of elements and explored basic atomic structure.

Ms Phelan is now planning the third lesson in the sequence, which focuses on introducing the Periodic Table. As part of her planning, she carefully considers what her pupils already know and how this prior knowledge can be used to support new learning. She recognises the importance of helping students link knowledge across lessons so that understanding develops logically throughout the unit.

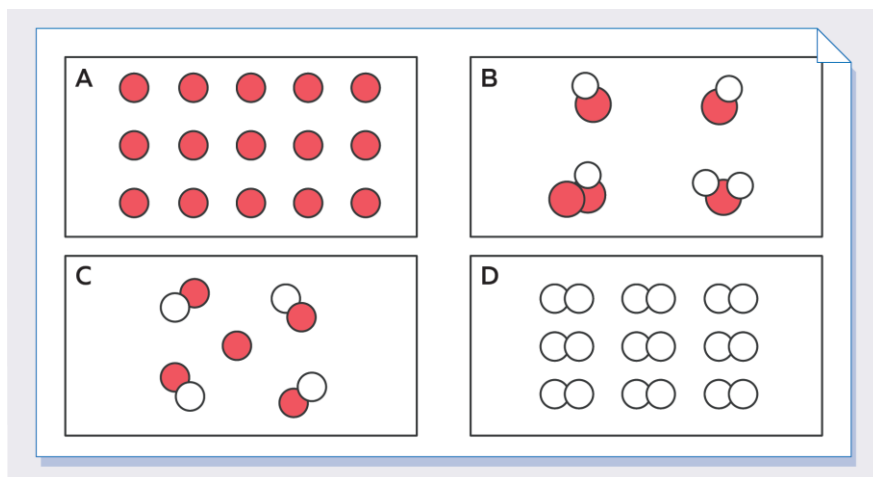
She revisits the learning objective for the lesson and identifies the key knowledge pupils will need. To support her explanations and help pupils build secure understanding, she plans to explicitly highlight key vocabulary and definitions. These definitions are also provided on students' worksheets:

- **Element:** A substance made of only one type of atom
- **Atom:** The smallest particle of an element that can exist
- **Periodic Table:** Contains all known elements, organised into rows and columns

Ms Phelan plans a worksheet - based task designed to deepen pupils' thinking and encourage them to apply their knowledge:

The diagram below (A-D) represent four different substances.

1. Identify which substances are elements (**✓**) and which substances are not elements (**x**).



2. Which of these substances **would** be found in the periodic table and why?
3. Which of these substances **would not** be found in the periodic table and why?

The following sentence starters are presented on the board during the task:

Sentence starters:

I think ____ would be found in the periodic table because...

I think ____ would not be found in the periodic table because...

For Question 1, students are given time to work independently on the task. Their responses are then quickly shared with Ms Phelan using mini whiteboards, allowing her to assess pupils' understanding of elements in real time. This provides immediate insight into any misconceptions before beginning the remaining questions. Students are then given the opportunity to discuss their ideas for Questions 2 and 3 with a partner. During this time, Ms Phelan circulates the classroom, listening to discussions, identifying misconceptions and assessing her students' understanding.

She then selects pupils to share their reasoning with the class, using their responses to inform further discussion.

Where students may require additional support, she reminds them of the importance of challenge and error in learning. She then directs them back to the definitions and sentence starters provided. She also uses targeted questioning to help them connect new learning to prior knowledge should they need it, for example:

- *"Thinking back to our lesson on elements, if the circles have different colours, what does that show?"*
- *"What type of substance would we find in the Periodic Table?"*

Ms Phelan gives pupils some additional thinking time for these more challenging questions before asking for a response. By planning these follow-up questions in advance, Ms Phelan is able to deepen students' understanding and strengthen connections between key concepts across the unit.

After reading the scenario, reflect on the following questions and respond, using the table below:

Module Principle	Question(s)	Response
Plan a knowledge-rich curriculum	What is the key knowledge that pupils need to learn?	

Sequence content so it logically builds	Is this knowledge sequenced in a logical way? How?	
Use questioning to deepen understanding	What questions have been asked by the teacher to deepen pupils' thinking?	
Scaffold for success	What scaffolds are used to enable all pupils to access it?	

Task 2

- Take a moment to reflect on the module principles for this clinic.
- Consider a recent conversation that you have led with others. This might include conversations with parents, colleagues, TAs, SENCOs, DSL or external agencies.
- Complete the table, reflecting on your experience.

Example: This is completed example for the first two module principles to support your thinking.

Module principle	Do you feel that you applied this module principle?	If yes, how did this module principle support your practice?	If no, what might you do next time to use this module principle?
Plan a knowledge-rich curriculum	Yes	Having studied the curriculum plan, I knew the key knowledge for the lessons in this unit. This meant that I could make sure pupils regularly retrieved this knowledge as part of Do Now tasks, to help it become more secure.	
Sequence content so it logically builds	No		I planned the sequence of content so that new material would build on previous learning, but I didn't explain

			this to pupils as I thought it would already be clear. Next time I could begin the lesson by explaining how the new learning will build on what pupils have studied previously, and how they can use what they have learned before to help them in the upcoming lesson.
--	--	--	---

Module principle	Do you feel that you applied this module principle? (Y/N)	If yes , how did this module principle support your practice?	If no , what might you do next time to use this module principle?
Plan a knowledge-rich curriculum			
Sequence content so it logically builds			
Use questioning to deepen understanding			
Scaffold for success			

Teaching problem

How can teachers support all pupils to extend their thinking?

Paired discussion

Reflect on your experiences of supporting pupils to think hard.

Questions:

1. Why is it important for pupils to think hard?
2. How can we support pupils to think hard through talk tasks?
3. How can we scaffold challenging tasks so they are accessible for all?

Notes:

What are module principles?

Module principles are the components of an approach that can be applied across all subjects, phases or settings. They serve as a guide for what good practice is likely to look like.

Module principles for extending pupils' thinking and supporting them to think hard.

Module principle	Description
Plan a knowledge-rich curriculum	In order to think critically, pupils need secure background knowledge. By specifying content meticulously in our curriculum, we can focus on building detailed mental models.
Sequence content so it logically builds	The curriculum best supports pupils to acquire well-connected mental models when content within it is logically sequenced. Sequence content so that it builds according to the logic of the subject matter. Develop understanding by linking new content to what pupils already know and can do.

Use questioning to deepen understanding	Pupils' understanding is strengthened when they are encouraged to explain, discuss and reflect on their thinking. Ask purposeful, open questions that support pupils to deepen and articulate their thinking in lessons.
Scaffold for success	The design of the task should enable all pupils to access it and experience challenge. Where pupils need scaffolds to successfully complete the task, their use should be carefully modelled at an appropriate point. Teachers should plan to remove scaffolding when pupils are ready, so that they experience independent learning.

I do

Scenario

Miss Osman is an English teacher. Her year 10 class are mid-way through a unit on poems about identity. In previous lessons, pupils have explored the theme of identity across a range of poems, developing their understanding of structural and literary concepts such as stanza, tone, voice, perspective and imagery.

Miss Osman has considered how this lesson builds logically on what they have already learned and how it prepares them for future learning. In this lesson, pupils will have the opportunity to apply their understanding and analysis to an unseen poem. Ultimately, she wants to prepare pupils to analyse unfamiliar texts with increasing confidence and independence.

Miss Osman has thought carefully about the background knowledge and key vocabulary that pupils need to access and analyse the chosen poem. She begins the lesson by revisiting the key vocabulary, from a word bank in pupils' exercise books, and prompts them to refer to it in their discussions. After reading the poem aloud, Miss Osman puts the following question on the board and models to the class:

"What do you think this poem is about and why do you think that?"

Miss Osman: Let's start by thinking about that this poem is about. I'm going to show you how I might answer this question. Amaan, can you ask me the questions please?

Amaan (pupil): What do you think this poem is about Miss Osman?

Miss Osman: I think the poem is about culture and identity. My first instinct is that the speaker feels conflicted, like they don't quite fit in where they currently are and they miss the culture of their home.

Amaan (pupil): Why do you think that?

Miss Osman: There's a line that says, 'I go between two worlds.' That sounds like they're not sure where they belong. [Turns to the class] Notice how I used evidence from the poem to support my answer. That's what I'd like you to do in your own discussions. Now, I'd like you to turn to your partner and share what you think the poem is about and why. Partner A will ask the question first and Partner B will answer. Then, we'll swap.

During the partner talk task, EAL pupils are sensitively partnered with supportive peers who she knows will speak with clarity and precision. After this, Miss Osman presents pupils with a set of questions, along with prompts to support and extend thinking. She asks pupils work through each question in turn to analyse the poem, using pair talk before whole-class

discussion. She reads each question aloud before pupils are given some independent thinking time before discussing it in pairs:

Question	Follow-up prompts
Who is the speaker in this poem?	> How do you know that? > Which words or phrases give you clues or evidence of this?
What message do you think the poet is trying to communicate?	> How do you know that? > How might they feel, and why? > Can you find a word or phrase that supports your idea?
Which words or phrases stand out to you, why?	> What effect do they have on the reader? > How does it link to the theme or title of the poem?
How does the presentation of identity in this poem compare or contrast with the other poems we have read?	> What is similar or different about how identity is explored? > Can you give examples from other poems to support your answer? > Does this poem use similar language devices to one we have already studied? Does it use them to convey the same ideas and attitudes or different ones?

During the discussion, Miss Osman circulates the room. Where pupils need more support, she reminds them of the importance of challenge and error in learning. She then encourages them to read the stanza with her to help them spot key words or phrases, discuss their meaning, and build a fuller answer using evidence from the text. She makes a note of pupils' responses and ideas to draw out during the whole-class feedback.

Task: Take notes while the facilitator models how the module principles appear in the first scenario.

Module Principle	Response
Plan a knowledge-rich curriculum	
Sequence content so it logically builds	
Use questioning to deepen understanding	
Scaffold for success	
Other notes:	

We do

There are two 'We do' scenarios. Read and analyse each scenario with the following questions in mind. Use the table below the scenarios to write your response.

1. Where can you see evidence of the module principles in the scenario?
2. What impact do the module principles have on the teacher's actions and practice?

We do – Scenario 1

Ms Phelan is a science teacher at a large secondary school. Her Year 7 class has recently begun a new chemistry unit on *Atoms, Elements and Compounds*. This unit is designed to build students' foundational understanding of key chemical concepts through a carefully sequenced series of lessons.

The first lesson in the unit focused on elements, drawing on students' prior knowledge of particles. In this lesson, students were introduced to the idea that elements are substances composed of only one type of atom and how these are represented in diagrams. The second lesson developed this understanding further by introducing atoms and their basic structure. Students learned that atoms are the smallest units of elements and explored basic atomic structure.

Ms Phelan is now planning the third lesson in the sequence, which focuses on introducing the Periodic Table. As part of her planning, she carefully considers what her pupils already know and how this prior knowledge can be used to support new learning. She recognises the importance of helping students link knowledge across lessons so that understanding develops logically throughout the unit.

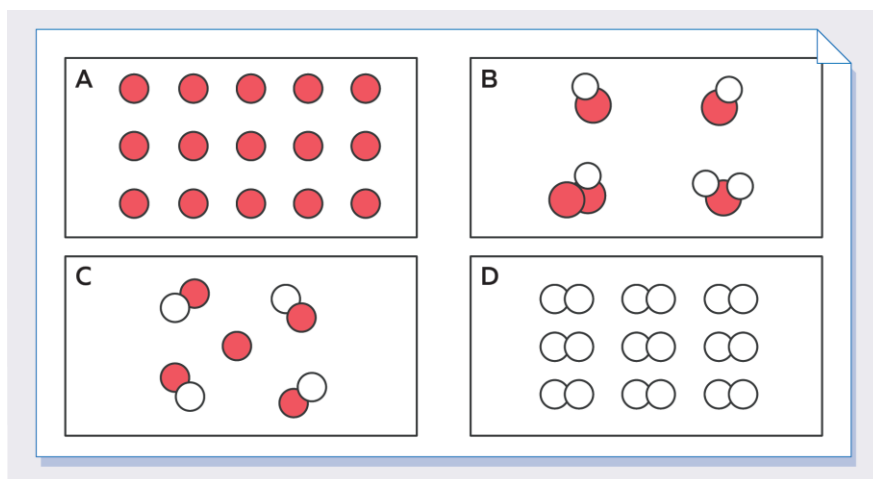
She revisits the learning objective for the lesson and identifies the key knowledge pupils will need. To support her explanations and help pupils build secure understanding, she plans to explicitly highlight key vocabulary and definitions. These definitions are also provided on students' worksheets:

- **Element:** A substance made of only one type of atom
- **Atom:** The smallest particle of an element that can exist
- **Periodic Table:** Contains all known elements, organised into rows and columns

Ms Phelan plans a worksheet - based task designed to deepen pupils' thinking and encourage them to apply their knowledge:

The diagram below (A-D) represent four different substances.

4. Identify which substances are elements (✓) and which substances are not elements (x).



5. Which of these substances **would** be found in the periodic table and why?
6. Which of these substances **would not** be found in the periodic table and why?

The following sentence starters are presented on the board during the task:

Sentence starters:

I think ____ would be found in the periodic table because...

I think ____ would not be found in the periodic table because...

For Question 1, students are given time to work independently on the task. Their responses are then quickly shared with Ms Phelan using mini whiteboards, allowing her to assess pupils' understanding of elements in real time. This provides immediate insight into any misconceptions before beginning the remaining questions. Students are then given the opportunity to discuss their ideas for Questions 2 and 3 with a partner. During this time, Ms Phelan circulates the classroom, listening to discussions, identifying misconceptions and assessing her students' understanding.

She then selects pupils to share their reasoning with the class, using their responses to inform further discussion.

Where students may require additional support, she reminds them of the importance of challenge and error in learning. She then directs them back to the definitions and sentence starters provided. She also uses targeted questioning to help them connect new learning to prior knowledge should they need it, for example:

- *"Thinking back to our lesson on elements, if the circles have different colours, what does that show?"*
- *"What type of substance would we find in the Periodic Table?"*

Ms Phelan gives pupils some additional thinking time for these more challenging questions before asking for a response. By planning these follow-up questions in advance, Ms Phelan is able to deepen students' understanding and strengthen connections between key concepts across the unit.

We do – Scenario 2

Mr Howells is teaching his Year 9 tutor group about healthy relationships in PSHE. Pupils have built on their previous understanding of different types of relationships, including friendships, family and romantic relationships. They have also explored concepts such as boundaries, trust and respect.

Mr Howells has thought carefully about what pupils already know and how he can help them apply what they have learned by making reasoned judgements about real-life scenarios. He begins the lesson by revisiting key ideas from previous sessions, asking:

“What are some qualities of a healthy relationship?”

Pupils recall terms such as trust, respect, honesty, support and good communication. Mr Howells lists these on the board, reinforcing the vocabulary and linking back to earlier discussions.

Next, he shares a series of short scenarios for pupils to consider. He reads aloud the first one and shares his thinking, modelling how to use the talk frame:

“Alex’s friend regularly puts him down in front of others, saying it’s just a joke. I’m going to use our discussion frame to help me organise my thoughts. First, I’ll consider if this behaviour is healthy or unhealthy. I think this behaviour is unhealthy because it shows a lack of respect for Sam’s feelings and can damage his confidence and wellbeing. Even if it is called a joke, it crosses boundaries and can make Alex feel uncomfortable or hurt. A healthy relationship would involve treating each other with kindness and respect, especially in front of others. One way to respond could be for Alex to speak to his friend privately and explain how these comments make him feel and to stop making the jokes. If Alex finds it difficult to talk to his friend, he might choose to speak to a trusted adult for advice or support.”

Mr Howells then introduces further scenarios that require pupils to consider possible actions, such as setting boundaries, seeking support, or helping a friend. He provides a talk frame on the board to support their discussions:

- I think this behaviour is healthy/unhealthy because...
- A healthy relationship would look like...
- One way to respond could be...

Pupils are already familiar with think-pair-share, so he reminds them that they will have time to think first, then discuss in pairs, before sharing their ideas with the class. As he circulates and pupils give their responses, he pushes their thinking by asking to follow-up questions such as “How might this behaviour affect someone’s wellbeing?” and “Why might it feel difficult to respond in this situation?”. Mr Howells gives pupils some additional thinking time and encouragement to “have a go” at these more challenging questions before asking for a response. To finish the lesson, he brings pupils together to share their reflections and encourages pupils to consider how they might use what they have learned to support themselves and others, both in and out of school.

Analysis		
Module Principle	We do scenario 1	We do scenario 2
Plan a knowledge-rich curriculum		
Sequence content so it logically builds		
Use questioning to deepen understanding		
Scaffold for success		
Other notes:		

Task: share in pairs.

Notes:

Task: share with the group.

Reflect and record: Reflect on the group discussion and record your final thoughts on the 'we do' scenarios.

Notes:

Option A: Non-example

Read and analyse

Mr Howells is teaching his Year 9 tutor group about healthy relationships in PSHE. Pupils have built on their previous understanding of different types of relationships, including friendships, family and romantic relationships. They have also explored concepts such as boundaries, trust and respect.

Mr Howells has thought carefully about what pupils already know and how he can help them apply what they have learned by making reasoned judgements about real-life scenarios. He begins the lesson by reading aloud a scenario and shares his thinking:

“Alex’s friend regularly puts him down in front of others, saying it’s just a joke. I’m going to use our discussion frame to help me organise my thoughts. First, I’ll consider if this behaviour is healthy or unhealthy. I think this behaviour is unhealthy because it shows a lack of respect for Alex’s feelings and can damage his confidence and wellbeing. Even if it is called a joke, it crosses boundaries and can make Alex feel uncomfortable or hurt. A healthy relationship would involve treating each other with kindness and respect, especially in front of others. One way to respond could be for Alex to speak to his friend privately and explain how these comments make him feel and to stop making the jokes. If Alex finds it difficult to talk to his brother, he might choose to speak to a trusted adult for advice or support.”

Mr Howells then introduces further scenarios that require pupils to consider possible actions, such as setting boundaries, seeking support, or helping a friend. He provides a talk frame on the board to support their discussions:

- I think this behaviour is healthy/unhealthy because...
- A healthy relationship would look like...
- One way to respond could be...

Pupils are already familiar with think-pair-share, so he reminds them that they will have time to think first, then discuss in pairs, before sharing their ideas with the class. As he circulates and pupils give their responses, he listens carefully and helps them summarise their thoughts. To finish the lesson, he brings pupils together to share their reflections and encourages pupils to consider how they might use what they have learned to support themselves and others, both in and out of school.

Answer the following questions:

1. Which of the module principles are **not** present in this scenario? (there may be more than one)

- > Plan a knowledge-rich curriculum
- > Sequence content so it logically builds
- > Use questioning to deepen understanding
- > Scaffold for success

Provide your reasoning for the missing module principle(s):

2. What impact does the missing module principle have on the scenario?

Option B: Practice/Planning task

Task:

1. Identify an upcoming lesson that you are going to teach.
2. Identify the content you want pupils to think hard about.
3. Plan a sequence of questions that logically builds from consolidation to stretching pupils thinking.
4. Consider the scaffolds that pupils might need to access the task and answer the questions.

Module Principle	Prompt questions:
Plan a knowledge-rich curriculum	Have you specified exactly what it is that you want pupils to learn?
Sequence content so it logically builds	Does the content build in a way that is logical for the subject matter? Have you built on pupils' prior knowledge?
Use questioning to deepen understanding	Do the questions get pupils to think about the most important ideas or concepts in the lesson? Do the questions encourage pupils to extend their thinking? Do the questions build in complexity?
Scaffold for success	What do you think are likely barriers to pupils accessing the task? How will you use scaffolding to support all pupils to access the task? How might the scaffolds you use be faded, or removed, over time?

Plan:

Share your planning task with a partner, ask them to provide feedback on the prompt questions.

Module Principle	Prompt questions:
Plan a knowledge-rich curriculum	Have they specified exactly what it is that they want pupils to learn?
Sequence content so it logically builds	Does the content build in a way that is logical for the subject matter? Have they built on prior knowledge?
Use questioning to deepen understanding	Will the questions get the children to think about what you want them to? Do the questions encourage pupils to extend their thinking? Do the questions build in complexity?
Scaffold for success	What do they think are likely barriers to pupils accessing the task? How have they use scaffolding to support all pupils to access the task? How have they considered how the scaffolding might be removed over time?

Feedback notes:

Reflection

- > As you were planning, which of the module principles felt most natural to you? Which principles do you think you are already using to support pupils to think hard?
- > Which of the module principles do you think you are not yet using, or do you find more challenging?
- > What are you next steps in response to this clinic? What or who will support you to achieve these?

Notes:

Option C: I Do 2

Mrs García is a secondary Spanish teacher. She is currently teaching a Year 8 class a unit on 'hobbies and activities'. Pupils have spent the last couple of weeks learning the vocabulary and grammar structures needed to describe the sports they play. They have been practising how to recognise these through listening and reading comprehension tasks, as well as through choral repetition and translation both to and from English and Spanish.

Having secured this knowledge, Mrs García feels that pupils are now ready to independently apply the vocabulary and structures they have learned to produce sentences that reflect their own free time activities.

In the lesson, Mrs García begins with a vocabulary retrieval activity. She uses a quick matching game, where pupils pair up Spanish verbs and hobbies with their English meanings. After this, she explains to pupils that they will be practising their speaking skills by working in pairs to answer the question: "Qué haces en tu tiempo libre?" ("What do you do in your free time?").

Mrs García knows that pupils will need to think carefully to prepare for this discussion task. She explains that before talking with their partner, pupils will have a minute to prepare and write down what they will say, to answer the question. She reassures the class that this thinking and planning time will help them feel more confident when it comes to speaking aloud.

To support them further, she provides a sentence frame with this structure:

Verb + Activity + Opinion + porque es + Adjective

She demonstrates how to use the sentence frame to form two example sentences:

Juego al baloncesto. Me gusta porque es divertido.

Hago natación. Me encanta porque es relajante.

She knows that because they are focusing on constructing their sentences, pupils are likely to forget what they know about Spanish phonics and pronunciation. Therefore, she uses her two example sentences to draw out key sounds that they will need to pronounce:

Juego al baloncesto. Me gusta porque es divertido.

Hago natación. Me encanta porque es relajante.

As she circulates the room, Mrs García listens in to pupils' speaking. After each partner in the pair has answered, Mrs García regains the class' attention. She asks them to do the same again, this time changing their answer but without the preparation time beforehand to write down what they will say. She also asks pupils to note down in English, the sport their partner mentions and their opinion of it.

Task: Take notes while the facilitator models how the module principles appear in this scenario.

Module Principle	Response
Plan a knowledge-rich curriculum	
Sequence content so it logically builds	
Use questioning to deepen understanding	
Scaffold for success	

Close

Reflection

1. Of the module principles, which do you already use to help you to support pupils to think hard?
2. Which of the module principles will you use more in order to support you to:
 - a. Support pupils to think hard through talk tasks?
 - b. Scaffold challenging tasks so they are accessible for all?

References

- Barker, J. & Rees, T. (2020). Persistent problems in school leadership. Ambition Institute.
<https://www.ambition.org.uk/blog/persistent-problems-school-leadership/>
- Kennedy, M. (2016). Parsing the Practice of Teaching. Journal of Teacher Education. SAGE Publications, 67(1) pp. 6–17. <https://journals.sagepub.com/doi/abs/10.1177/0022487115614617>
- Ward, A. F., Duke, K., Gneezy, A., & Bos, M. W. (2017). Brain drain: The mere presence of one's own smartphone reduces available cognitive capacity. Journal of the Association for Consumer Research, 2(2), 140–154. <https://doi.org/10.1086/691462>